
VARGO STATTEN
SCIENCE FICTION MAGAZINE
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VARGO STATTEN
SCIENCE FICTION MAGAZINE

ALL NEW STORIES • NO REPRINTS

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FICTION

FEATURES

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Editorially Yours

AS we go to press we learn that the first number of the VARGO STATTEN MAGAZINE has been a trade "sell-out", a matter for some modest jubilation on the part of those members of the staff who have worked so hard to make it a lasting and widespread influence in this field. It now only remains to see what reception it gets at the hands of the readers. Alas, printing technicalities have produced the somewhat paradoxical situation of going to press with our second number before we have had time fully to measure the readers' reactions to the first issue. For that reason we still have to wait for the March issue before printing any complete outside assessment of our overall policy, or of still further livening up the ROCKET MAIL with still more of the bouquets and the brickbats so beloved of Science Fiction followers. Meanwhile, from the industrious few who wrote immediately on seeing first copies, we have received letters and telephone calls that are both an encouragement and a stimulant to still further editorial effort.

IN the main, in the first issue, we surely covered enough fields to suit the mood of most science fictionists. We went beyond zero; we saw the established world of robots; we dabbled with super explosive; marvelled at a futuristic predicter; puzzled over a scientific mystery murder; saw the world saved by a balloon; and even dabbled on the edge of religion and the worker of the future. That, surely, covered a wide field. Notice that we did not cling to the inevitable space opera, complete with hero in tight pants, aided and abetted by a girl too beautiful to be true.

WE feel, and letters to us confirm the belief, that we did a good job. The first plunge is always the most gruelling, but having survived that all we need now is your continued support. Tell us whether you, in the majority, prefer "Time" stories, interplanetary, science with a dash of fantasy, abstract science, or plain blood-and-thunder-set-in-2254—and whatever the majority wills shall be!

AND you young writers in the game, unhonoured and unsung as yet, either sex, (and there are some fine feminine writers of s-f!) don't forget that we're waiting to hear from you and perhaps give you the break you're looking for.

EVEN had it been deliberately planned we could not have selected a more appropriate time to launch this new venture. Only yesterday Science Fiction was the pleasure and the interest of the few. Today it is news, with many of our most conservative and exclusive dailies and weeklies devoting whole columns of reviews to the latest books in the Science Fiction and Science Non-Fiction tradition. The fallacy that Science Fiction could be airily dismissed as merely *escapist* literature has been fully and finally exploded. Actually it is vastly less fantastic or even detached from reality, than any average run-of-the-mill romantic novel. But it is only now that intelligent newspapers and critics have got around to admitting the fact, and to realising that Science Fiction readers were not so much trying to get away from life's realities, but rather were trying to find out where we were going in the future.

ANOTHER gratifying indication that Science Fiction is commanding a new and wider respect is that such an august body as the *Publishers Advertising Circle* should devote one of their lunch-time meetings to discussing "The Facts about Science Fiction". Three viewpoints were presented respectively by Mr. Arthur C. Clarke as author, Mr. Herbert Jones of Sidgwick and Jackson as publisher, and Mr. Eric Williams of *Books and Careers* as bookseller. Mr. Arthur C. Clarke needs no introduction, holding as he does a high place in the respect of readers for his *The Exploration of Space*, and also his chairmanship of the British Interplanetary Society. In his talk he annihilated quite a few fallacies, not the least of these being that Science Fiction was an American Invention. He emphasised the point that it was only because of the rise of so many Science Fiction magazines in America that people were under this quite false impression.

AT the same meeting Mr. Herbert Jones, whose firm Sidgwick and Jackson is doing such excellent work to further the cause of Science Fiction, spoke of his firm's aspirations in this field. He also pointed out that the Autumn Export Number of *The Bookseller* had, for the first time, made Science Fiction a separate reference section of fiction publishing. Mr. Williams, of *Books and Careers*, found that if Science Fiction titles were exhibited in the shop window with special showcards, then a stream of people would come in to buy books in this tradition. He believed that such accompanying announcements were essential as his experience showed that Science Fiction buyers would only show their enthusiasm when encouraged to do so by the bookshop. All of which is vastly gratifying to the Editor of a magazine whose principal aim is to encourage the reading of Science Fiction—and British Science Fiction in particular.

VARGO STATTEN,
London.

A SAGA

By VOLSTED

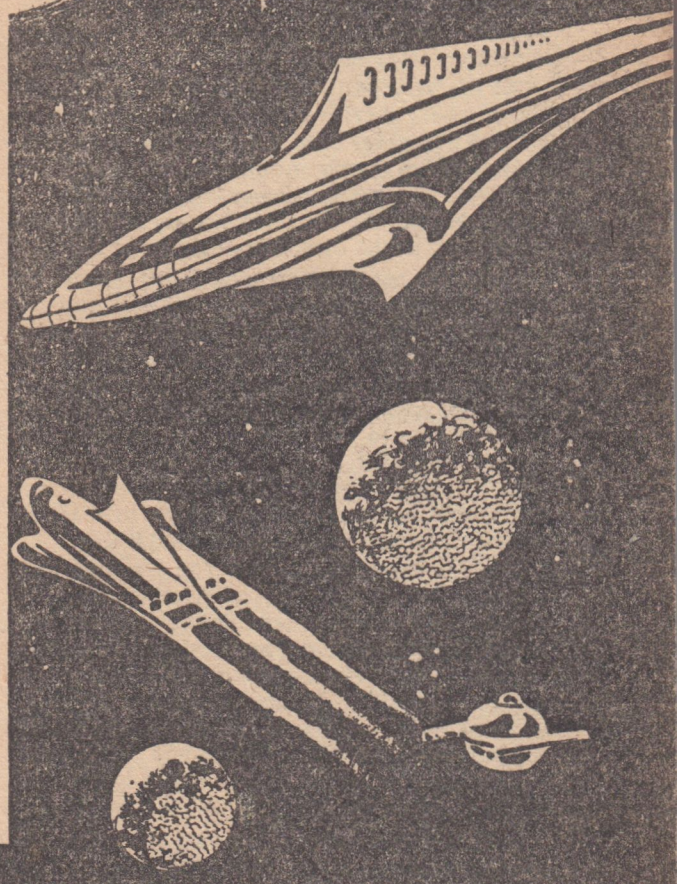
THE mass of neutronium which approached the Earth in the year 2270 was never visible through the world's telescopes. It made its presence felt entirely by instruments and when scientists first discovered what was coming they were considerably shocked and of course communicated their findings to their governments.

From the governments the news was passed on to the public and was made as unsensational as possible in order to prevent any possibility of panic. One of television's leading scientists explained it in this way—

"Neutronium, ladies and gentlemen, is a metal of almost incredible density. The density in scientific terms is 2,000 times greater than that of platinum. Take a match-box full of neutronium and it would take an extremely powerful crane to even raise it off the ground ! Heading towards this world of ours there is a mass of this substance. Where it has come from we do not know, but the possibilities are that it is a piece that has broken away from a distant world or sun of almost unbelievable density: by a sun one might almost call it a star.

OF 2270 A.D.

GRIDBAN



For instance, take the Companion of Sirius for example. That, of course, is a white dwarf, and a fragment from that, if placed in a match-box, would take a powerful crane to raise it from the ground.

"How this extreme weight is produced can only be theorised but it is generally assumed that pressures are the main cause. The shell of satellite electrons which can be broken by the attacks of X-rays, or the fierce collisions going on in the interior of a star, can also break by the application of continued pressure. Therefore it is possible that this neutronium may have come from a world upon which these inconceivable pressures exist. This fact would produce an almost bare nucleus with the heavier atoms retaining a few of the closest electrons, forming a structure of perhaps one hundredth of a complete atom.

"The compression produces vast weight by comparison with size. Let us take a simple example in physics: in a monatomic gas like Helium a 32-fold increase in pressure gives an 8-fold increase in density if the heat of compres-

sion is retained in the gas. There you have an example of heat pressure, but on a world that is a child of a heavy sun, the Companion of Sirius, for example, the very pressure of that world would produce similar, even greater, results. At a very rough estimate a match-box full of the substance would, as I have said, require a crane to raise it. The proportion of weight is roughly one ton to the cubic inch . . . ."

Such was the scientist's somewhat abstruse but nevertheless scientifically accurate explanation of the substance heading in to the Solar System from the south of the sidereal hemisphere. But in general the public was not interested in the nature of neutronium: they wanted to know what it would *do*.

Here again the scientists explained that the tremendous weight of this substance hurtling past the Earth—for, praise be, it had been calculated that the Earth was not exactly in the path of the substance—would cause colossal tides to be raised because of the neutronium's superior gravitation and severe earthquakes were also possible.

At the very best, according to the scientists, Earth would survive after an extreme battering such as had never been known in history before —after which the neutronium, so small as to be invisible, and yet so immensely gravitative as to nearly tear the Earth to pieces, would pass on its way in the direction of the sun.

Here the neutronium would be bound to swing inwards under the sun's colossal gravity, for heavy though the neutronium was, and powerful though its gravitative field might be, the sun was still the monarch of the solar system. So, summed up, it meant that Earth had fourteen days in which to prepare itself for the biggest upheaval that had ever been known. And, having weathered wars and crises throughout his interminable history, man set to work to prepare himself for the fatal day.

The day came, and went. The scientists had not been wrong. Enormous tides were raised on the side of the Earth facing the hurtling neutronium as it moved at thousands of miles an hour some two million miles distant from the Earth itself. Landscapes were flooded, cities partly torn down, mountains levelled, and colossal areas laid waste by fire and earthquake —then the commotion slowly began to subside as the invisible substance travelled sunwards.

And it was upon the sun that the scientists were concentrating all their attention. The world's greatest telescopes, marvellously accurate and powerful in these advanced days, were trained on the orb of day so that upon the astronomical screens there might be observed the effect of neutronium when it fell into the sun's photosphere. The actual descent of the neutronium into the sun was not observable for the simple reason that despite the masking screens in front of the telescopes, the intolerable glare of the sun's photosphere prevented the neutronium being visible even for an instant. It was only known on the instruments that the substance *had* fallen into the sun after which the scientists could do nothing but sit back and wait to see what happened.

Yet even these results were some months before they made themselves visible, then towards the close of 2270, not very far from Christmas time, there came the first signs of the repercussions which the neutronium had caused in the orb of day. Briefly summed up, the sun had suddenly taken upon itself a colossal number of spots. Through the telescopes these titanic caverns of darkness yawning in the sun's face, and spreading far down from the solar equator to the poles, represented a solar state of affairs never before known, for never in astronomical history had it been recorded that spots had appeared so low down as to reach the solar poles. It was something more than sun spot activity: it was the gradual disintegration of the sun's surface itself—and this, with the passage of time, could only mean the collapse of the orb of day into a white dwarf, which in turn could only mean the extinction of the solar system as a whole.

Once again the television scientist reported on the situation, outlining with a commendable lack of scientific fecundity the reason for the sun's orange hue by day. He explained that the sun, being a G-type dwarf, exists very close to the border line of extinction. Raise or lower the temperature on the surface by several thousand degrees and instability must result, causing a complete collapse of the atomic set-up of the sun itself and its failure to give forth the normal energy, light, and heat. The scientist could not explain how long it would be before the dying sun would cause the Earth to become sheathed in a colossal, glacier-like shell, but that such a state of affairs *must* eventually come about he was grimly sure. Everything would be done to save the human race from extinction—and upon this not very cheering note he retired from the situation and left the public to figure out for itself exactly what was likely to happen.

Behind the scenes, however, a great deal was done, or at least was being attempted. Most famous of all astro-physical personalities in this year of 2270 was undoubtedly Captain Mark Senver, one of the most experienced scientists which the college of Space Navigation and Astro-physics had ever produced. If any man

had any chance of solving the problem which was now confronting the whole of mankind, and not only mankind but all the solar system, that man was Captain Senver.

On earth he was not to be located and finally it was discovered that he was out in space busy charting a new route for the general space lines from Jupiter to Pluto, so immediately a space-radio communication was sent to him and no one was more surprised than he when he received it. As a matter of fact he did not receive it personally for at the time when the message came through he was indulging in his rest period and had to be awakened by his colleague Martin Dodd, who, besides being his co-pilot, was officially the navigator and scientific recordist.

Captain Senver's first awareness of the message which had been sent to him was when Martin Dodd shook him into wakefulness and told him quickly what had happened. Senver listened in silence, lying on his bunk, a small porthole behind his reclining head looking out onto the unimaginable blackness of space with its eternal back-drop of glittering stars.

"And what," Senver asked, sitting up, "do they expect me to do, I wonder? Just wave my hand and turn the sun back into something normal, or what? It's perfectly obvious what is the matter with it; we have seen that out in space here—as for me being able to put it right—well, the thing's ridiculous!"

Dodds shrugged. "Nevertheless, Mark, back you'll have to go. You can't ignore an order of the Interplanetary Corporation, so the sooner we get on the move the better."

"Have you asked Lucy what she thinks?" Captain Senver enquired slowly, getting up from his bunk and buttoning up his uniform.

Lucy Ainsworth was the special delegate of the Interplanetary Corporation. On every space trip which was made, no matter how famous the pilot might be, there always went a representative of the Interplanetary Corporation—at least upon experimental trips such as this one. The main reason was that all details and information gathered by the pilot and his navigator must also be the property of the Interplanetary Corporation. Since one could not discriminate between the honest and the dishonest pilots it was the only way by which the Corporation could maintain its monopoly of spacial knowledge and lay out the routes of the future along which space machines must travel. Usually the delegates of the Interplanetary Corporation were women, entirely business-like, and as utterly devoid of romantic leanings as were their more earth-bound sisters in this advanced year of 2270.

"No," Martin Dodd replied. "I haven't told Lucy yet, but I don't see it would make much difference if I did. You've had your orders from headquarters and they've got to be obeyed. Lucy has nothing to do with it."

"I disagree," Mark Senver answered. "No decision is ever taken aboard a space machine without all the parties aboard the machine agreeing to it. I'll come into the control room and you'd better awaken Lucy from the rest period and see what she has to say."

Dodd nodded and departed from the small cabin, afterwards hurrying along the metal lined corridor to Lucy Ainsworth's private quarters.

In a matter of perhaps five minutes all three were in the main control room with its banks of instruments and enormous observation windows. Outside there loomed the giant worlds of Jupiter and in the remoter background ringed Saturn, and beyond him again the outer planets of Uranus and Neptune and the far-flung speck of Pluto.

Captain Senver, tall, dark-headed, square chinned, gave Lucy Ainsworth a questioning glance. She was a tall girl, slim figured, attired in the conventional silk blouse and maroon slacks of a space traveller. At Senver's glance she spread her hands negatively.

"If the Corporation says return, you must return," she said quietly. "There's nothing else for it, Mark."

"Well, I don't like it," he growled. "It means that we've covered something like two hundred and fifty thousand million miles all to no purpose. To get called back to handle a business which is quite beyond us! We're not super beings and I think it's about time the Corporation realised the fact."

"That being the case," Martin Dodd said, "why not radio back to the Interplanetary Corporation and tell them of the impossibility of the thing they ask? There is no sense in returning all that distance home to tell them that when we can do it by radio."

"Particularly," Lucy Ainsworth pointed out, "as we have discovered that new star."

Senver nodded and looked at her thoughtfully. Although their reason for being in space was primarily to chart a new route for space machines travelling in the regions of Jupiter and Pluto, they had—by very reason of being so far out in the solar system—discovered a hitherto unknown star much nearer to the solar system than Alpha Centauri, formerly known to be the nearest star to Earth. It meant, in a word, that they had discovered a nearer star than Alpha. Martin Dodd sighed.

"We were just doing very nicely in getting all the details about that star, ZX70 as we have called it, and now we have to break off and return to Earth!"

It was characteristic of Captain Senver that he made up his mind on that moment. He turned to the space radio equipment and switched it on, afterwards sitting down before the instrument and waiting while the radio waves travelled at the speed of light towards Earth. Despite this velocity of one hundred and eighty-six thousand miles per second it would still take several minutes for the waves to reach the Earth and then return to this distant point beyond Jupiter. Finally, however, contact was made, and not only in sound, for upon the space-television screen immediately below the instrument's speaker there appeared the crabby face of the President of the Interplanetary Corporation. Senver rose and saluted briefly.

"Captain Senver reporting, sir," he announced. "I would be glad if you could give me the full details of your assignment to me without my having to return to Earth. We are in the midst of a most important investigation concerning ZX70, the new star which has appeared, considerably nearer to us than Alpha Centauri."

The President hesitated, then answered:

"The only reason for summoning you all the way back to Earth, Captain, was so that you could have at first hand various opinions of the scientists concerning the present decline of the sun. Obviously the sun's very serious condition must be visible to you out in space—even more clearly indeed than to us on Earth here, who are viewing it through the filter of an atmospheric blanket—but I did feel that the fullest details would help you perhaps in working out some means by which the sun can be restored to normal."

Senver gave a rather grim smile. "From what I have seen of the sun, sir, and the analysis I have made of it, there is no possible way in which it can be restored to normal. It is obviously changing into a white dwarf, and when that happens it will mean the death of the solar system entirely. Heat and light will both fail and every planet will obviously become wrapped in a glacial shell. That is why I consider it necessary to continue the investigations of star ZX70, in the belief that around this star there might exist planets to which we might make an effort to travel. Since ZX70 is comparatively near to our solar system, as compared to Alpha Centauri that is, we should be able to make the journey within a time reasonable enough for the younger members of the community, therefore I . . ."

"Much though I appreciate your scientific endeavours in the scientific investigation of ZX70, Captain Senver, I must inform you that it is the wish of the Corporation in general, and the scientists in particular, that you make every effort to restore our *existing* sun. You are a man of immense scientific experience, and we are convinced that if you bend your peculiar genius to the problem you will find a way to restore our orb of day. For obvious reasons a mass exodus to any planets around this star ZX70 to which you refer would not be practicable. Therefore, since you do not wish to return to Earth for the full details, you will kindly consider yourself assigned to the problem of working out a method of saving the sun. You will report back to me the moment that some scientific procedure has presented itself to you. That is all."

The space radio blanked and the screen became dark. Senver switched off and sat in grim silence for a while, Dodd and Lucy Ainsworth looking at him seriously. Finally Senver raised his head and looked through the great porthole upon the distant reddened orb of the sun. It hung there almost like the winter sun as seen from Earth on a foggy afternoon, except that never before had that disc appeared so pock-marked and so blackened with spots. It looked for all the world like some gigantic red orange upon which spots of ink had fallen.

"Much as I appreciate the old boy's faith in my genius," Mark Senver said drily, as he got to his feet, "I think he's completely off his horse. The decline of the sun is obvious and its death inevitable. I think we should ignore the Space Corporation's orders and instead concentrate all our attention on discovering if ZX70 has any planets, and if so report back to the President that the assignment is one beyond human solving with ZX70 as our only hope. . . What do you two think?"

"For myself," Dodd replied, "I have nothing to add to your statement, Mark. After all you are the skipper and it's up to you."

"Well, it may seem strange," Lucy Ainsworth said, "but I take the exactly opposite view!" Then as the two men looked at her in wonder, she added, "I believe that the assignment should be carried through if it is humanly possible. And I further believe, Captain Senver, that you have the necessary ability to master the problem if it *can* be mastered. My suggestion is that we take off for the sun, study it at very close quarters and decide then if there is any solution

within the bounds of scientific possibility. From this distance we cannot possibly determine how badly the sun is collapsing."

Senver considered for a while then at last he nodded.

"Yes, of course, it is possible that you may have the right idea, Lucy. In any case it can't do any harm to go and look at the sun at close quarters, just in case something *does* occur to us. All right, let's be on our way. Full speed ahead, Martin."

Martin turned to the main control board and switched in the current which gave the necessary power to the jets. Immediately the machine, which had been more or less floating within the gravity field between Jupiter and Saturn, proceeded to get on the move. Thereafter it was chiefly a matter of hurtling through space at the most inconceivable velocity, always with that red orb of the dying sun always ahead of them.

There were the customary spells of duty, and the rest periods during which they either slept or relaxed or indulged in whatever their personal fancy dictated. Till at last there came a time when the orbit of Mercury, nearest planet to the sun, had been crossed and all the red, overpowering majesty of the orb of day lay straight ahead.

It was a pitiful reflection on the decline of the sun that the purple shields usually used across the windows were no longer necessary in order to view the monarch of the day, so low was his light. In fact the nearer the space machine travelled to him the more it became obvious that that normally intolerably bright photosphere was nothing more than a seething red cauldron with all the energies burnt completely out of it. And across this cauldron loomed the fissures and bottomless craters which were actually entrances into the core of the sun itself. It hardly needed the instruments to decide the issue: it was perfectly obvious that the sun was doomed. And such was the information which Captain Senver immediately radioed to the Earth.

"Then in your belief," the President asked anxiously, "there is no possible way of rejuvenating our dying luminary?"

"None whatever," Senver answered, shrugging. "I wish that I . . . ." He broke off, his eyes suddenly hard in thought as he looked at the screen.

The President, some ninety million miles away on the Earth, looked at him keenly.

"What is it, Captain Senver? Has something occurred to you?"

"Perhaps," Senver answered slowly, that faraway look still in his eyes. "If you'll give me just a while to consider this matter, sir, it's possible that I may have a practical suggestion to offer. . . ."

CAPTAIN Senver did return to earth after all and to the Interplanetary Corporation, for here was a matter that he felt was better given in person than over the space radio. To a specially convened meeting of the Interplanetary Corporation he gave forth his views, receiving at times coroboratory evidence from Martin Dodd and Lucy Ainsworth.

"Whilst, Gentlemen, rejuvenation of our dying sun is impossible," Senver said, looking about him at the assembled rows of scientists as they waited anxiously for his pronouncements, "It might be possible to still save the solar system by exchanging our sun for another one!"

There was the silence of complete amazement. The President looked at Senver in wonderment.

"But how is such a thing possible?" he demanded. "I'm aware that we live in an age of supreme cosmic engineering but to endeavour to exchange our sun for another one is—well, frankly, absurd!"

Senver was quite undisturbed. "I have gone into all the necessary mechanics, sir. What it amounts to is this: I spoke to you of a far distant star to which I have given the assignation of ZX70—a star existing between Pluto and Alpha Centauri. I have examined that star very closely and have arrived at the conclusion that it has no attendant planets. It is just a star on its own with no family and of course it is also a mystery why it has never appeared before in astronomical photo-plates. It just seems to have suddenly come into existence, the reason for which is not at all clear. However, that is beside the point. What I am suggesting is that perhaps ZX70 could be forced to take the place of our own sun. ZX70 is plainly a healthy young star of the G-type variety just like our own sun and of a similar mass and size which of course is an enormous advantage."

"An advantage, maybe," one of the scientists remarked, "but how do you propose to manoeuvre ZX70 across such an enormous distance of space and be rid of our own sun into the bargain?"

There was no hesitation in Senver's answer. "For that, sir, we should need a fleet of space ships equipped with de-gravitators, which as you know are projectors emitting beams which neutralise the power of gravity. Thereby, the gravity of the star ZX70 could be rendered void, which shouldn't be difficult because there are no

other planets around it which could afford a counter-gravity."

"But just de-gravitating it would not be enough," the President protested.

"True," Senver admitted. "We should need to enlist the help of the scientists of Mercury who, as you are well aware, gentlemen, have the secrets of magnetic attraction. I have already contacted the chief scientists of Mercury and they are quite willing to lend their very considerable scientific knowledge to the scheme. Chiefly, of course, because Mercury is as much doomed as the rest of the planets when the sun expires. Although the Mercutians live under the surface of the planet, at least on the sunward side, so as to avoid what is normally the torrential outpouring of its furious energy, they know that the death of the sun would also mean the death of their race. Hence they are quite willing. The Mercutian scientists did, however, raise the question of the distance of ZX70, but we are fortunate, gentlemen, in that according to celestial mechanics light is *not* the maximum speed of a space flyer any more than sound is the limit of speed of an aircraft. If necessary, the speed of light can be exceeded many, many times. So that is not a deterrent."

"Your theory is of course colossal," the President admitted. "Indeed it is one of those theories which have made you so famous in the Astra-physical World, Captain Senver, but I would still like to know how our existing dying sun is to be got rid of."

Senver smiled a little. "The idea, sir, is to move the new sun, that is ZX70—by the use of the gravitators and the Mercutian magnetisers—to a position near the orbit of Pluto. When we have got it that far we will de-gravitate our normal sun. The result of that will be to cause the planets of the solar system to move into new orbits round the *new* centre of gravity. Naturally," Senver continued, spreading his hands, "there will be earthquakes and terrific upheavals but at the end of it there will be light and warmth and a young and vigorous sun. The whole thing is nothing more than a gigantic feat of cosmic engineering. All I require from you, gentlemen, is permission to carry out this scheme in my own way and I believe that I can guarantee success."

Certainly there was no hesitation about the permission being given and within twenty-four hours Captain Senver had made all the necessary arrangements, not only for his own fleet of twelve machines fitted with de-gravitators, but also for twelve Mercutian machines fitted with de-magnetisers. The point of rendezvous with the Mercutians had been arranged as the orbit of Venus and with this the first details were complete.

So Senver set off once again with Dodd and Lucy Ainsworth with him. There was no real reason why Lucy Ainsworth should have gone on this particular expedition. She only did so because it was her personal wish, and not as a delegate of the Interplanetary Corporation.

As arranged, the twelve Mercutian machines were contacted at the orbit of Venus and thereafter the vast flight beyond the solar system into the great outer deeps of space commenced.

It was a flight which meant velocity being built upon velocity and necessitated that the inmates of each space machine, be they Mercutian or Earthly, should spend most of their time in a state mostly approaching suspended animation, leaving automatic controls to do the work for them, for there was no flesh and blood structure that could stand up to the frightful acceleration demanded as the vessels hurtled onwards at first one, then two, then three times the speed of light towards that distant mystery star ZX70.

In Captain Senver's machine the alarms were all set to awaken him and Lucy Ainsworth and Martin Dodd the moment their machine came within measurable distance of the mystery star. But for some unknown reason those alarms never operated and it was possible that every vessel might have been plunged into ZX70 but for Lucy Ainsworth. She, despite the fact that she was in a condition very close to a coma, also had a mind extremely sensitive to danger. And it was this that suddenly aroused her from her torpid condition, and despite the crushing pressures that were weighing her down she looked about her in the bright lights towards the automatic controls.

She could not understand why she had been aroused, but she meant to find out. Scrambling off her bunk she half tottered to the window and looked out. Then she gave a gasp of amazement for not more than forty million miles away there loomed the blinding orb of ZX70 and towards it the space machine, and indeed the other twenty-three machines in the background, were hurtling at demoniacal speed.

In those few moments Lucy forgot the physical handicaps weighing her down and quickly awakened Senver and Martin Dodd as they lay upon their bunks. Senver was the first to arouse and in a matter of seconds Lucy had made the situation clear to him. Immediately he struggled from his bunk, and with considerable effort reached the switchboard and released the current for the forward jets of the machine which instantly reacted and began to slow down

the headlong falling towards that blazing star.

Martin Dodd for his part snapped on the radio and warned the commanders of the other Earthly and Mercutian vessels of the danger ahead. Evidently his warning was received—it being assumed that the alarm signals had not sounded in the other vessels either—for the remainder of the fleet also began to blaze forth with their forward jets, hereby saving themselves from hurtling straight onwards to destruction.

"Do you think we'll pull through?" Lucy asked Senver anxiously as Senver stood by the porthole staring with slitted eyes at the blazing mass of ZX70.

"Yes, I think so." His voice was taut with strain. "What I can't understand is why the alarm signals didn't work! It almost seems as though somebody or something wanted us to crash into that star or sun or whatever you prefer to call it. However, we're not going to do that now; we're winning the struggle. Of that I'm pretty sure."

As the minutes passed belief became justified for the tremendous power of the forward rockets proved sufficient to break the tremendous attraction of the nearby luminary and, little by little, the twenty-four machines with Senver's vessel in the lead swung round in a mighty arc broadside to ZX70, and gradually began to pull away from its influence. It was this turning around in space, however, which brought to the notice of the travellers the gleaming point of a solitary planet, something which they had never seen before when examining this area from the remoter deeps of space. Indeed they had assumed that ZX70 had no family of worlds at all, yet here was one—and only one. The moment it came into view Martin Dodd hurried to the telescopic equipment, adjusted the eyepiece, and peered intently through it. After several moments of scrutiny he looked up in surprise.

"That," he declared, "is the strangest planet I ever saw! Looks to me to be entirely metallic. Even bolted together! Like a colossal metal globe designed by cosmic engineers. You'd better take a look, Mark, and see what you think."

Mark and Lucy looked in turn and over the radio the commanders of the other space machines were commanded to do likewise, until finally there was no doubt about the fact that here was a metallic, man-made world, at a distance of some sixty million miles from the luminary.

"Do you think it possible," Lucy asked thoughtfully, "that there is some kind of life either on or within that metallic-looking planet which tried to destroy us?"

"Highly likely," Senver muttered, for at the moment he was too absorbed with a second scrutiny of the mystery planet to take up Lucy's suggestion. After a while, he said:

"That planet seems to be composed of a metal or at least some kind of substance which does not reflect light photons and is therefore normally invisible. That could account for us not being able to observe it when we were a great distance from it. However, whatever may be the case as regards that planet we're certainly not going to explore it. We came here for a definite purpose and that purpose is to transfer ZX70 to the region of Pluto. The sooner we begin the better."

With that he turned to the radio instruments, made the position clear to the other Earthly and Mercutian commanders, finally adding in a grim voice:

"There may be life on that distant planet which all of us can see, so it behoves us to get busy right away with the plan we have in mind. If there is intelligent life on that world which tried to hurl us into the sun it may also try to prevent us transferring that sun. So the sooner we get busy, the better. Action stations, every one of you."

"Communication received, Captain," came the voice of the spokesman of the following machines, "we only await your signal to operate the de-magnetisers and de-gravitators."

Senver nodded and turned quickly to the instruments.

AS Lucy Ainsworth had assumed, the metallic planet definitely was inhabited. The beings populating it were not unlike Earthlings in appearance, but it was clear from their greater cranial development they were much higher in the scale of intelligence. Chief amongst these master scientists was a being known as Rad, and it was he with his colleagues, in the midst of their governing laboratory, who were fully aware of Captain Mark Senver's intentions to steal the star ZX70. which of course to Rad and his race represented their sun. Rad also it was who had done his utmost by negative energy to try and drive—to them—the alien fleets into the sun before they could make any attempt at invasion, since that had been Rad's original expectation when the fleets had first been sighted. Now, thanks to tapping Captain Senver's radio message to the rest of his fleet, the inhabitants of the metallic world knew exactly what was intended and, perhaps not unnaturally, they had no intention of having their luminary stolen without even permission being asked.

"It would appear," one of Rad's followers remarked, in his own strange language, "that these aliens will act almost at any moment and endeavour to steal our sun. We must act first. The only way that I can suggest is that we use use the dissembler upon them."

Rad nodded slowly, thinking. He was a high-domed being with a long thin nose, a taut mouth, and unusually large dark blue eyes. Indeed amongst his own race he would probably have been considered handsome. The dissembler to which his colleague had referred was to the intelligent inhabitants of this planet a very every day invention. It emanated a powerful energy which broke down the atomic structure of any organic or inorganic structure at a distance, transferred it over the necessary distance, and then reassembled it in its original form in Rad's laboratory. It was indeed organic television, if such a process could be graced by such a name.

"It might be worth our while to steal the woman to begin with," Rad decided presently, "since she appears to be a pretty close friend of this Captain Senver who is giving all the orders. She might be able to tell us a good deal, and it might conceivably stop the plans that these aliens have. Yes, we will see what we can do. . . ."

With that Rad turned to the wilderness of instruments with which he was surrounded and after making calculations with a mathematical computator, he threw a master switch.

The result of this aboard Senver's vessel was almost immediate. Lucy standing by Senver's side suddenly began to become transparent and almost as quickly disappeared altogether. Senver and Martin Dodd stared in amazement at the space where she had been. Over the radio came the insistent cry of the following captains in the neighbouring vessels for Senver's final order to begin the feat of cosmic engineering. But Senver ignored it. For the moment he was too utterly astounded by the disappearance of Lucy Ainsworth from his side.

"What the devil . . ." he began in bewilderment, but before he could complete his sentence the anxious calls from the captains of the other vessels were drowned out by a powerful radio wave carrying an entirely alien voice. It spoke English with difficulty, slowly and in a very bass voice. But everything the voice said was clear enough.

"We have no clear knowledge of from where you aliens have come but of this we would warn you: if you carry out your intentions to steal our sun—for a purpose which is not entirely clear to us—the life of the woman whom we have captured will be forfeit. The issue is left with you."

On that the brief communication faded out and Senver found himself staring blankly at Martin Dodd's astounded face. There was a long silence in the control room, and since the pilots in the other machines had also heard the message they too held off communicating until their chief should make a move.

But Senver was in a decided quandary. He had to choose between completing the mission upon which he had come or saving the life of Lucy Ainsworth. It had only just dawned upon him at this moment that Lucy Ainsworth meant a great deal more to him than he had realised. Up to this point he had always looked upon her as a scientific observer working for a scientific organisation, but now she had been abducted it was a very different matter. She meant a great deal more than the solar system, at least to Mark Senver.

"The only thing I can suggest," Martin Dodd said, as Senver looked at him worriedly, "is to find Lucy and follow out our plan afterwards. We're obviously going to be up against it here, something which we had not anticipated."

"Probably you're right," Senver agreed. "But there's no guarantee that if I hold off taking ZX70 as arranged that these beings will return Lucy. No, definitely we've got to find her and get her out of their clutches."

His mind made up Senver switched on the radio and gave the necessary details to the commanders of the accompanying ships. There was a considerable amount of argument but as the Commander, Mark Senver's way had to be followed, so in a long trailing stream the vessels turned away from ZX70 and began to head towards the mysterious metallic world in the depths of space. . . .

With the passage of about six hours they had reached it, to behold it entirely airless—a monstrous globe—held together by a marvellous process of cosmic welding allied to riveting. Here was cosmic engineering *in excelsis*.

It was plain that the inhabitants of the mystery world had the fleet under observation, for as it approached an enormous valve opened in the planet's metallic surface and even had Senver and his followers wished to avoid that valve they could not have done so, for some internal magnetism dragged them irresistibly towards it, and so down into the colossal lighted underworld of this strange planet.

What happened after that neither Senver, Martin Dodd, nor any of the Earthlings and Mercutians involved in the business could afterwards tell. It seemed that some electrical

process blanked out their faculties, for the next thing they knew—at least that Captain Senver and Martin Dodd knew—was that they were gradually recovering their senses in a dimly lighted cell. Where their space machine had gone or where their followers were they had no idea. It seemed they were being closely observed, however, for hardly had they recovered consciousness than there appeared in an inset panel upon the wall the face of the scientific ruler of the planet. For a moment or two they stood staring at it more in interest than in consternation, remarking how similar to an Earth being this creature looked. Rad, for his part, from the laboratory was studying his two captives intently and presently he spoke.

"From where have you come and how dare you invade this region? What world have you come from?" These were the three questions which he asked in his imperious bass voice. There was no hesitation about Senver as he gave the answer. He explained the whole intended project of using ZX70 to replace the dying sun of his own solar system.

"And we were not aware that there was a populated planet near this particular star, or rather sun," he concluded. "We do not come as destroyers, merely as cosmic engineers striving to save our own system from destruction."

"I do not believe you," Rad replied coldly. "I and my followers consider that you are a band of interplanetary marauders and most certainly you shall not have our sun under any pretext whatever."

"My position," Captain Senver replied, "is desperate! I have got to save our solar system but naturally I do not desire that you or your fellows should be incommoded in any way because of that necessity. What I do suggest is, that if you will give us your sun we will also de-gravitate your world and take it along with us in tow. Thereby you will still enjoy the benefit of your sun and so will our entire solar system. It is a case of a neighbour world helping a system which is otherwise doomed. In short your planet will be able to assume an orbit near Pluto and thereby be allowed to carry on as it is now—in a different part of space, of course—but quite unmolested."

"Your plan," Rad replied, "is still unacceptable. We do not share our benefits with any other race in the universe. We are master scientists from a far part of the universe and we are anxious to live in peace, without being interfered with in any way, to solve the ultimate mysteries of time and space. We deliberately created that sun of ours, which you call ZX70, by scientific means. As for our metallic world here, it is actually a spherical spaceship of colossal size, and it is our scientific processes which accounted for ZX70's sudden mysterious appearance in the firmament. Of course, the invisibility of our spaceship world is to prevent it being normally seen. As I have said, we desire peace and not for any proposition which you can offer do we intend to trade our peace or mingle with others. Later I shall decide what shall be done with you; for the time being you shall say here. I have other matters to attend to."

With that the screen blanked and the communication ceased. Senver gave Martin Dodd an uneasy glance.

"I only hope that the other matters he referred to have nothing to do with Lucy," he said anxiously.

As a matter of fact Lucy was at that moment in Rad's laboratory, quite unaware of what had happened to her colleagues and most certainly she had not been told that they had been drawn down to this mystery world and been imprisoned. In silence she sat watching Rad as he appeared from a neighbouring room of the laboratory—from where he had made his radio communication to Senver—and she endeavoured to show no nervousness as the master scientist paused a few feet from her and surveyed her intently. Behind him were grouped his fellow scientists—silent, unemotional beings who seemed to regard this woman of Earth purely as a biological specimen.

"Since you are a woman," Rad said slowly, reading the English language from her mind with considerable difficulty, "I have decided that you shall become my mate."

At Lucy's horrified recoil, Rad only smiled slowly and added:

"There are only men left in this spaceship from my world and though we can live a long time we would naturally prefer to make certain of a descendant. It's fortunate that we are more or less similar in physique—that is to say we are not insectile or otherwise different in characteristics."

It was on the tip of Lucy's tongue to scream forth a refusal and then she stopped herself. She was an intelligent woman, accustomed to dealing with the most exceptional circumstances, and here she well appreciated that any refusal on her part would make not the slightest difference to the ruler's intentions. The thing to do was to work with him, not against him, and by that means she might conceivably discover what had happened to Senver and the rest of her friends, and if possible effect their release.

"You do me an unusual honour," she said finally. "Upon my own planet I am only considered an ordinary woman amongst millions—yet you, the obvious ruler of this world, have decided to make me your queen."

"I have," Rad assented calmly. "To-night the banquet to announce our union will take place. For the time being you will return to your cell."

"Am I entitled to ask," Lucy inquired, "where my friends are and what has happened to them?"

"You are entitled to ask, yes," Rad nodded his big head briefly. "They are all inside this world of ours in prison, and there they will remain till I have decided what I shall do with them. As to your space fleet it is on the surface of this planet awaiting destruction. Now do not ask any more questions, for I do not propose to answer them." He made a brief motion to the two guards who were standing by. "Take her away and return her to her cell until you receive further orders from me."

On the face of it there was nothing more Lucy could do, and certainly Senver, Martin Dodd and the rest of the imprisoned men, both Mercutian and Earth men, could make no move to help themselves. There were guards everywhere and their cells were electrically locked. If there was to be any way out of this difficulty only Lucy could find it, and she, knowing by now that her colleagues, were all in prison and in Rad's clutches, was fully alive to the situation. This was no time to earn Rad's enmity for she was the only one who had the possible key to full freedom.

Accordingly she apparently accepted passively Rad's decision that she should become his wife. She made no murmur as a few hours later guards brought her special clothes which looked very much like Grecian-styled garments which she was ordered to wear for the banquet to take place that evening. "Evening" was of course only a misnomer since inside this eternally illuminated underworld there was neither night nor day, time being governed entirely by enormous and queerly designed clocks.

Fully aware of the responsibility resting upon her, Lucy entered the enormous banqueting hall at the appointed time and found Rad was present in his most elaborate robes, whilst upon either side of the long table sat the dignitaries and master scientists of the race. Everywhere men, nowhere a woman, but even so Lucy did not lose her nerve. She moved silently to the chair which had been placed for her beside Rad. After that, under the pretext of being absorbed in the pleasure of her meal, she remained silent whilst she thought out what she must do next. The food, she noticed, was palatable enough even though strange to her unaccustomed palate, but it was curiously flat and tasteless, a fact which she presently brought to the notice of Rad as he sat by her side giving her occasional admiring glances from his penetrating dark blue eyes.

"I, Rad, am of another world," she said at last, "and for that reason I find your food is unsuitable for me; that is unless it is rendered more savoury. There is one particular condiment which we use a lot on Earth, indeed which is a necessity to our particular physical structure, and I am wondering if you have any of it. If I do not have some I am liable to die."

Rad looked at her in wonder then a troubled frown crosed his features.

"You have but to name what this strange substance is and I will endeavour to have it obtained for you," he promised.

"We call it sodium chloride, or more commonly, salt."

Rad was silent for a long while, his eyes searching her, then presently it seemed to dawn on him what she meant. Evidently he had read the details from her mind. For some reason he gave a little shiver.

"Is it possible," he asked deliberately, "that any being can consume sodium chloride, as you call it? We have vast quantities of the substance in our laboratories but we call it by another name; indeed to us it is deadly poison, but if you require some I will have it obtained immediately. I read from your mind that to you it is not poison but a necessary item of nourishment."

With that Rad made a signal to one of the nearby servants, gave him brief instructions, and presently he returned with a transparent container filled to the brim with salt. Lucy looked at it, smiled faintly to herself, and then sprinkled some of it on her food. In aghast silence the gathered scientists watched her go on eating entirely unmoved, till at last they were assured that to her sodium chloride was indeed quite a normal part of her diet. But in Lucy's mind one point remained outstanding, and it was something which Rad had said. To him sodium chloride was deadly poison. Therein perhaps lay the one loophole which she sought.

To this end she was successful in confiscating some of the salt in the voluminous garments she was wearing, whilst Rad's attention was distracted towards the scientist on his left-hand side. None were aware that she had any of the salt in her possession when the banquet was over.

But it was over only as far as the eating was concerned for Rad rose to his feet and at his imperious command the conversation of the assembly ceased and his voice boomed forth.

"I have decided that I and this woman of Earth shall form a union, something which has not happened in our race for many, many cycles past. The union itself will take place with due celebrations some little time hence, at a date which I shall later fix. This is but the preliminary announcement . . ."

Rad could not proceed any further for the cheering and congratulations of his colleagues in general and the assembly in particular. Throughout it all Lucy remained silent, her face averted, thinking how best she was going to extricate herself from the predicament in which she had landed.

Not indeed that she had much opportunity at that time for having made the announcement and brought the banquet to a close Rad stated briefly that scientific matters compelled his attention and that for the time being Lucy must return to her captivity. To this she raised no objections: it would give her time to think. And once back in the room that had been provided for her she *did* think, and very hard.

When at length a solution did occur to her she wondered why she had not thought of it long before. First she made up her lips with the lipstick which she had been allowed to keep and to this she added a coating of the rather sticky, glycerine-like substance which she normally used as an eye lotion—all part of the cosmetics which she, and practically every woman of her time, carried around with her. When she had finished her lips felt so sticky that she could hardly move them, but this was not the finish.

Into the cloying upper surface she rubbed considerable quantities of the salt which she had confiscated. It was impossible to behold it when she surveyed herself in the mirror and any way the lights were dim enough to prevent anything unusual being noticed. Thus made up and prepared she summoned the servant and informed him that she desired to see Rad immediately on private business. If, as she hoped, he would consider her more important than his scientific pursuits the rest might be comparatively easy. That he had a very strange-looking weapon in his belt she knew full well for she had noticed it at the banquet. If she could once get her hands on that there might still be a way of getting out of this underworld.

So with the message dispatched by the servant, she sat on the settee-like bed and waited for something to happen. To her relief Rad was quick to obey her summons. He came into the room swiftly, alone, and looked at her inquiringly. Giving him a smiling glance Lucy said:

"Am I not more important to you as your future wife than your scientific pursuits, Rad? I felt that at least we were entitled to a few moments together. There is something I did not mention at the banquet because really it concerns only us two, and that is that on my own world we seal a bargain of union with a kiss."

Rad looked puzzled as he came forward.

"And what is this kiss?" He seemed to be trying to read her mind, a performance for which Lucy was quite prepared, and she deliberately confused her thoughts so he could not possibly read what she was intending to do.

"If you will sit here I will show you," she said quietly.

Not by any means averse to the suggestion Rad seated himself beside her, and though it took every ounce of her courage to perform her actions Lucy deliberately put her arms round his thick, strong neck and kissed him full upon the lips. When she withdrew again he sat considering, as though he were debating a scientific problem. It was not obvious whether he had enjoyed the experience or not. Lucy for her part sat watching him anxiously, wondering if her ruse would succeed, her eyes fixed on the massive, yellow-metalled weapon in his belt.

"For some reason," Rad said, getting to his feet, "I believe that you, woman of another world, are not to be . . ."

That was as far as he got. Suddenly he swung round, his eyes flaming hatred towards her, but before he could take the necessary steps to reach her as she jumped to her feet he clutched desperately at his mouth, then his throat, and suddenly collapsed upon the floor.

Lucy stood staring at him fixedly, wondering at the peculiar physical structure of the being that sodium chloride could so quickly inflict death, if death it was. She went down on her knees and quickly examined him, satisfying herself within a few seconds that he was indeed dead. She hesitated no longer. Wiping her lips quickly with the back of her hand she then snatched the weapon from his belt and crept to the door of the room. Opening the door she looked outside. The corridor was deserted.

But such luck could hardly hold for long. When she reached the end of the corridor she suddenly ran into one of the servants who had been attending her. Instantly her gun came up level with his stomach and she said briefly:

"If you value your life, my friend, take me to the leader of our expedition, Captain Senver. I

am fighting for my own planet now, not for yours, and hurry! "

Evidently the servant placed value on his life for he did not hesitate to obey her instructions, or else it was that he knew the frightful power of the weapon she was holding. Whatever the explanation he finally conducted her to Captain Senver's cell and at her orders released the electrically controlled lock. In wonder Senver came out into the corridor with Martin Dodd close behind him.

" Lucy," Senver cried embracing her, but she gestured quickly.

" We have no time to waste, Mark. I've taken a long chance to get this far; now the rest is up to you if you can manage it. Here, take this weapon, you'll be able to handle it better than I can. I don't know how powerful it is or what it can do."

Senver did not hesitate, and still using the servant as their guide and keeping other servants and guards at bay with the weapon, which evidently was powerful enough to prevent any of them trying conclusions with it, they were finally led to the enormous room where the rest of the Earthlings and Mercutians had been imprisoned.

With their release Senver gave a grim smile.

" It begins to look as though the situation is getting in hand," he said briefly, glancing at Lucy; " thanks to you, my dear. All we need to do now is find a way to the surface. Here, you— " He dug his gun into the waiting servant's side. " Show us how we escape from here."

Still without raising any objections the servant did as he was bid, leading the way through an endless series of passages and staircases without ever once encountering any other inhabitants. This was probably accounted for by the fact that it was the sleeping period in the underworld during which time only a few of the scientists engaged on important business were at work. And since they were at work they were obviously not aware of what was happening outside their particular task. It was when the great outlet valve to the surface had been reached that the guide turned and looked at Senver.

" If I open this, Earth Man," he said briefly, " it will mean that all the air in this world of ours will escape to the surface and we will die. And, he added significantly, " so will you."

Senver reflected for a moment.

" Where is our fleet? " he demanded. "What has happened to it? "

" It is about a mile from here, on the surface."

Senver looked at his assembled colleagues.

" Are you prepared to risk death on the exterior of this world on the chance that we might reach the fleet? " he asked quickly. " It is a fact that the absolute vacuum of space acts as an insulator against heat radiating from the body. It is only a question of whether we shall be able to survive long enough without air to reach our vessels without space suits. But it is the only possible way we are to do it if we are to manage. There is also another point. If this valve is opened the air in here will be ejected outwards with tremendous force and we shall be carried with it. We shall leave behind us a world of dead scientists but on the other hand we may accomplish our mission. Are you willing to risk it? "

There was no hesitation on the grim faces of those assembled round Senver at which he motioned to the servant.

" Open the valve," he ordered curtly.

It was plain the servant knew what the opening of the valve would mean to his race but evidently he still feared the weapon more than anything else. He pushed the lever up controlling the valve and the great operculum overhead began to slide open swiftly. Instantly, even as Senver had foreseen, the air within the metallic world gushed outwards in a stupendous roar. As though carried on the top of a water spout the entire party was hurled to the outside of the planet and carried some fifty feet upwards before the slight attraction of the metallic world began to drag them down again. Each one of them fighting desperately against the suffocation of interplanetary space, which was an even greater problem than the unimaginable cold. But as Senver had said, the immense cold acted as an insulator, together with the airlessness, and there was a chance that they would survive perhaps for five minutes but certainly not more.

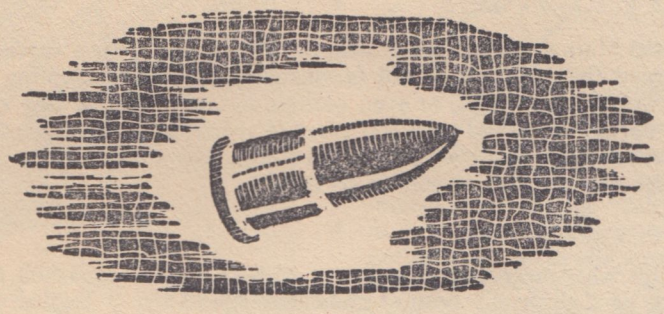
In this direction, however, Providence was on their side for the outward ejection of the atmosphere within the metallic world had flung them nearly half the distance to the silent rows of space machines on the metallic plain which had been placed there for destruction when Rad was to have given the order.

So as each one began to descend from the initial fall he struggled desperately forward step by step, foot by foot, yard by yard, Senver holding tightly on to Lucy Ainsworth and dragging her along with him. Slowly, inevitably, the first of the long line of vessels began to come nearer and below in the metallic world of the scientists there was asphyxiation and death. . . .

Of the two hundred souls who set out for ZX70 only fifteen returned. Amongst them

were Mark Senver and Lucy Ainsworth and several Mercutians. Martin Dodd had paid the price of asphyxiation on the far distant world, but there had at least been enough of the engineers of Mercury left to make the project of removing ZX70 from its orbit and transferring it to a point near Pluto's orbit successful. Thus-wise was the assignment of 2270 successfully completed, and there shone down upon the earthly solar system, recovering from the onslaught of being removed from its normal position to an entirely new one round its new sun, all the warmth and light it could ever need. But amongst the highbrow scientific circles of Earth, Mercury, Venus, and all the other worlds of the system, it was never known that a woman's kiss and a little common salt had made the project possible.

THE END



SCIENCE FACTS AND SPECULATIONS

FACETIOUS NOTE. During the Christmas season there was a moment of great excitement at London Airport. Over the loud speaker system a sepulchral voice announced: "Hullo Earth, this is Rocket Ship Luna calling from outer Space". The airport officials failed to trace the ghost voice, but their matter of fact theory was that some reveller had managed to get access to an unguarded microphone. Rocket Ship Luna is the name of the space ship in the B.B.C.'s "Journey Into Space" serial. A mundane dénouement—at least to the two Science Fiction enthusiasts who were on the scene!—but a dénouement that saved alerting the Vargo Statten Magazine Staff in readiness for the scoop of the century.

* * *

One man has set the star-gazers talking. He is Dr. H. Percy Wilkins who soon hopes to photograph the newly discovered bridge on the moon. This bridge was first observed by Dr. Wilkins during December, in the 15-inch telescope, and does not show in any existing photographs of the moon, nor is it included in the complete map of the moon for which Dr. Wilkins is noted among astronomers. This bridge is a natural formation, and would make any of the world's great bridges pale into insignificance. Its span is approximately two miles long and one and a half miles wide, and it joins two promontories named Lavincium and Olivium. The bridge is at least 5000 feet high, and can be seen only on certain nights about twice monthly, when the sunlight strikes it edgewise, casting the shadow of its arch. Why does such a massive span not collapse under its own weight? The pull of gravity on the moon is six times less than on earth.

* * *

"There is no reason why man should not go to the moon." This is not just another Science Fiction reader talking, but no less an expert than Dr. John Porter,

of the Royal Greenwich Observatory, speaking to a large audience at Chelsea Polytechnic on a "Voyage Into Space". He went on to say that "people are inclined to laugh about this idea of space travel but these are the people who should stop to think about flying bombs during the war".

* * *

Dr. Porter expanded the theory that if these could be made to fly as they were, then there is no reason why a larger and more efficient machine should not be made. From a speed of 25,000 m.p.h. the space ship would ultimately slow down to about 400 to 500 m.p.h. An unmanned rocket would take about five days for such a trip, and could be equipped to take photographs. It would infer meeting the moon at right angles and, for any manned space ship going at the same speed as the moon, a landing should not be difficult.

* * *

He selected Mars as probably the most interesting planet for a space ship adventure, but warned that this was a still far distant project, representing as it did a journey that would take weeks, or even months to complete. A way to the stars? No, said Dr. Porter. It would take 800 years to reach the nearest one, and so man must be content with the planets. But "I am stopping at home" he said. "Frankly, I can't imagine why anybody wants to go there".

* * *

The cynics who sneer at stories about Robots can be squashed for all time. In New York an "electronic brain" translated Russian into English in a matter of seconds, thus opening up a new field for science in the translation of languages by machine.

* * *

The mechanical brain—normally employed in solving problems in nuclear physics, rocket trajectories, weather forecasting and other mathematical wizardry—took sixty Russian sentences and translated them at the rate of two and a half lines a second.

* * *

This sounds like Russian without tears! And the method? A girl typed Russian words on a machine that automatically punched holes in a card, and the card was then fed to the brain. These holes set up electronic signals making the "brain" flip through its memory—a record as yet of only 250 Russian words and their English equivalents. It then applied its "logical elements" in the shape of a series of grammatical rules, and wrote the translation.

* * *

The test was the culmination of ten years' experiments with mechanical translation. Professor Leon Dostert, in charge of these experiments, anticipates that the time will soon come when the machine could take a foreign book in at one end and come out with an English translation. This means that interlingual books might be an accomplished fact within five years.

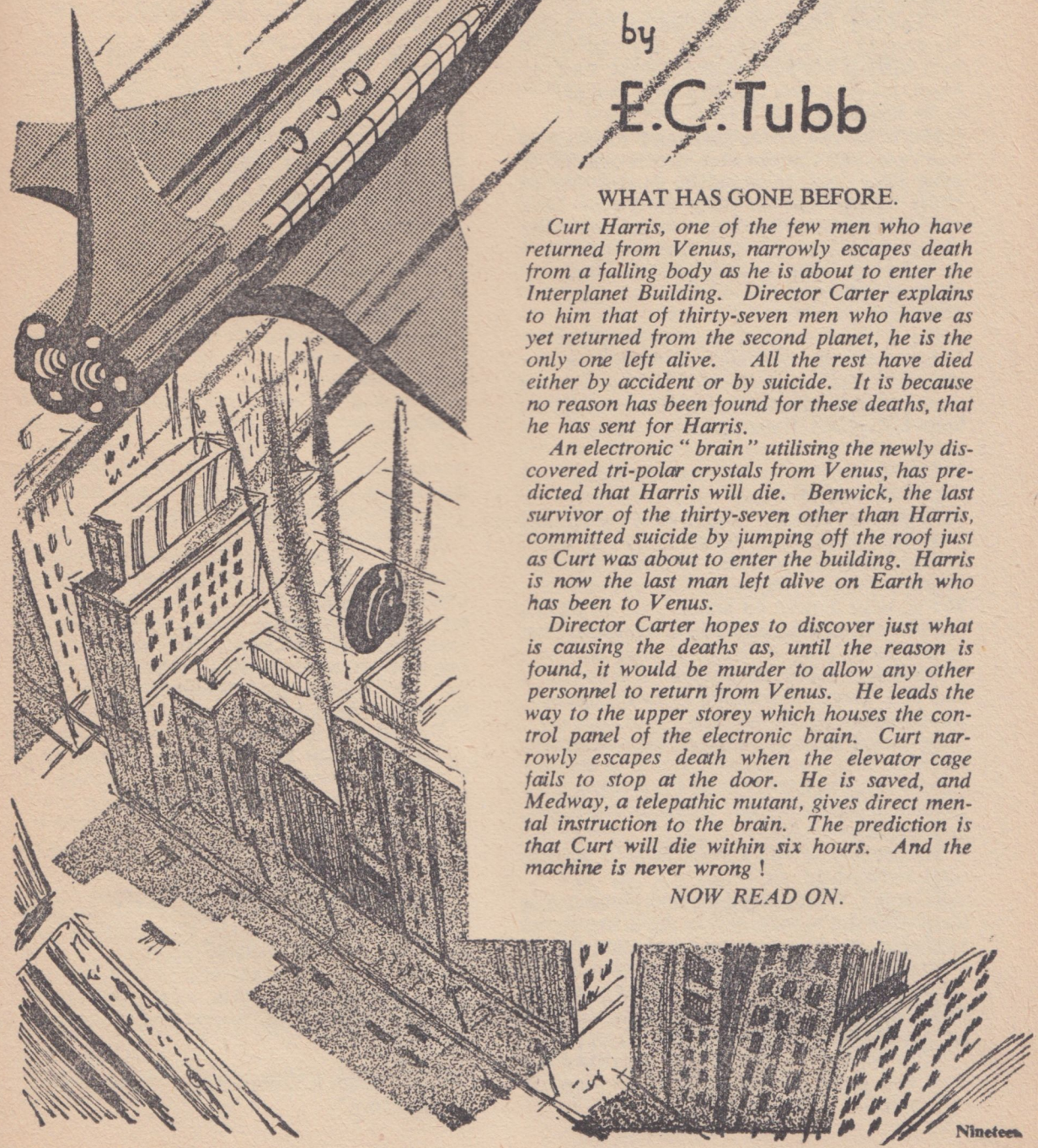
* * *

The B.B.C. serial *Journey Into Space* has ended at long last; starting with a too remarkable likeness to the film *Destination Moon*, it was apparently lengthened by popular request until the later instalments were little but sheer padding, and it was plodding on with the grim tenacity of a spaceman under 3*g* to its inevitable end . . . . complete exhaustation of ideas, freshness, realism and interest. Surely the B.B.C. could have found an s-f author to script an s-f serial?

THE INEVITABLE CONFLICT

by

E.C. Tubb



WHAT HAS GONE BEFORE.

Curt Harris, one of the few men who have returned from Venus, narrowly escapes death from a falling body as he is about to enter the Interplanet Building. Director Carter explains to him that of thirty-seven men who have as yet returned from the second planet, he is the only one left alive. All the rest have died either by accident or by suicide. It is because no reason has been found for these deaths, that he has sent for Harris.

An electronic "brain" utilising the newly discovered tri-polar crystals from Venus, has predicted that Harris will die. Benwick, the last survivor of the thirty-seven other than Harris, committed suicide by jumping off the roof just as Curt was about to enter the building. Harris is now the last man left alive on Earth who has been to Venus.

Director Carter hopes to discover just what is causing the deaths as, until the reason is found, it would be murder to allow any other personnel to return from Venus. He leads the way to the upper storey which houses the control panel of the electronic brain. Curt narrowly escapes death when the elevator cage fails to stop at the door. He is saved, and Medway, a telepathic mutant, gives direct mental instruction to the brain. The prediction is that Curt will die within six hours. And the machine is never wrong!

NOW READ ON.

CHAPTER FIVE

THE sun was still warm when he left the building. On the pavement a dull stain marred the smooth concrete, the sole trace of where a man had landed and dashed out his life in a spray of blood. Curt glanced once at it, then, his nerves keyed and his muscles trembling with a watchful caution, signalled to a passing hire car.

"Landing field," he snapped to the driver. He grunted as the acceleration surge drove him back against the pneumatic cushions, then, relaxed, his grey eyes clouding with thought.

Six hours !

Maybe less, he couldn't tell, but if the machine was right, and Carter swore that it couldn't be other than right, he would be dead within six hours. Dead with the other thirty-six. Dead with Benwick who had been warned, protected, and yet who had still confirmed the prediction by jumping from a roof, two thousand feet above the street.

Six hours !

For a moment panic gripped him and he leaned forward, tapping the driver on the shoulder, ready to order him to return to the promised protection and watchful caution of the huge Interplanet Building.

"Yes ?"

"Never mind." Curt relaxed again and forced himself to think.

Hiding was useless. Death wasn't something to be kept at bay with locked doors and sealed rooms. Benwick had tried that—and Benwick was dead. No ! If he was to win this conflict he must depend on himself, not on others, for this was a personal battle. His life against —what ?

What had killed those men ? What thing had they brought back with them from Venus which had made them die ?

He closed his eyes with a sudden weariness, throwing back his memories, trying to discover the one fact which could solve the problem, save the men at present isolated on the second planet, and save his own life.

The car slowed with a whine from its turbine.

"Landing field, sir."

"Good." Curt opened the door, fumbling in his pockets for money, and as the driver stared at him, he could see the man's face alter, change expression, sharpen with ugly suspicion.

"Hey ! Look at you ! What's that on your suit ? Blood ?"

"Never mind. What do I owe ?"

"Not so fast." The driver unlatched his door and thrust his legs towards the concrete of the field. "You . . . ."

A shadow darkened the sky and instinctively Curt twisted and began to run. He didn't look up. He didn't even turn his head to look at the yelling driver. He bent his head and his long legs thrust at the concrete as he flung himself frantically away from the thickening shadow.

Behind him came a scream and the rending of metal.

He stopped then, and finally turned. Behind him the cab was a twisted mass of metal. A shattered wreck from which oozed a thin stream of blood. A wheel rested across it, the landing wheel of a stratoliner, and dimly he heard the shouts of men as they raced towards the scene.

Sickly he turned away.

Another accident. Another million to one chance happening just at the time when he would suffer from it. A wheel had fallen from a stratoliner, a thing which should have been impossible, but which had happened. If he had stayed to argue with the driver. If the man hadn't grown suspicious at the sight of the dried blood spattering his suit. If he hadn't run . . . .

He sighed and shivered a little.

Mechanically he strode towards the depository, claimed his baggage, hired a shower and washed and changed. He left his ruined suit in the cubicle, then, sitting over a cup of steaming coffee, planned his next move.

Six hours !

He couldn't forget it. The machine had predicted that he would die within six hours, predicted it with the maximum probability factor. 99.99 per cent. Almost a hundred per cent., but the machine could not predict a hundred per cent. In that he had been right. The machine was not infallible, if it were then it wouldn't have left even a slender hope.

He still had a chance !

The coffee was hot and he sipped it, feeling it warm his stomach and ease the tension of his nerves. Somehow he felt that if he could live through the next six hours he would be safe. If the prediction failed in one instance, it could fail again, and if it did ?

He smiled and left the table.

The library was cool and restful, the last place one would associate with violence and the scene of unpredictable accidents. Curt nodded to the attendant and headed for one of the reading rooms, then, as the plain-faced woman called to him, paused and returned to the desk.

"Yes ?"

"That room is occupied, sir. A party from the academy."

"I see. Have you another which I could use?"

"Certainly, sir. Are you a resident of the city?"

"No."

"There are the public rooms, they are free, of course, but if you wanted a private cubicle there would be a small fee." She smiled apologetically. "As you are a non-resident I'm afraid I shall have to insist on the fee."

"That's all right. I'll take a private room."

"Yes, sir. For how long?"

"I'm not sure. There are some things I want to study. Shall we say six hours?"

"That will be a credit an hour. If you decide that you no longer need the room, I will rebate the excess payment." Smoothly she accepted his money and stamped his ticket on the time clock. "What books would you like, sir?"

"I'm not sure," he said slowly. "Have you information on Venus?"

"Yes. Books, tri-dimensional film, and reader tapes. Which would you prefer?"

"Books. I'll send for the other things if I need them."

"As you wish, sir. There is a projector in the room and you may order from the vaults any material you wish. Is there anything else?"

"Accidents," he said abruptly. "I'm not sure just what I want but have you anything dealing with unpredictable accidents?"

She frowned. "Just what do you require? Statistics? Insurance reports?"

"No. Something more personal than that." He hesitated, searching for words. "Have you anything relevant to a person to whom accidents happen? Someone who always seems to be in trouble. A fated person you might say." He stared at her, hoping that she wouldn't think him a fool, then, to his relief, she smiled.

"Now I know what you mean. Accident prones."

"You have something?"

"Yes, sir. I think so. Shall I send in a selection?"

"Please do." He smiled at the plain features of the librarian and strode towards the door of the private cubicle. Idly he glanced at the illuminated dial of a large clock, and smiled as he noted the time.

Five hours.

Five hours left to beat his fate, and where would he be more safe than in the seclusion of a public library?

Softly the door of the cubicle swung behind him.

The books he had asked for arrived on a small lift and he hefted them, studying their titles. The Venusian material he ignored, he had asked for it merely to explain his presence, but the other volume held his interest.

Accident Prones. A report on unpredictable accidents and some speculations. The author was a doctor who followed his name with a string of initials. Curt grunted, then, relaxing in the comfortable chair, adjusted the reading light and began to turn the pages of the heavy volume.

Two hours later he stared thoughtfully at the ceiling.

The book was interesting, and to him, even more than that. It was based on the statistical results of insurance company records, and it proved, beyond any possible doubt, that such things as accident prones really did exist. They were people whose mere presence caused accidents to happen. Why, no one knew. They were guiltless, personally unresponsible for what happened around them, but their very presence ensured that the accident rate of the locale would increase.

It was a fact that had long been known, and the author had followed several case histories, plotting each accident, the death rate, the monetary damage, and the effect on the unfortunate prones. Not that they ever suffered, the accidents happened around them, not to them, but the insurance companies learned of them, refused to insure them, stepped up the rates wherever they were employed, and in general made their lives a misery.

Curt narrowed his eyes in concentrated thought.

The machine had predicted his death within a certain period. Could it have guessed that he was an accident prone? He shook his head, the suggestion was fantastic, and yet . . . .?

He rose to his feet, noting the name of the doctor who had written the book, and stepped out of the cubicle.

"Tell me," he said to the librarian. "I want to get in touch with the author of that book you sent me. Doctor Fenshaw. Have you a registry?"

"Yes, sir, but you won't need it." She smiled at his blank expression. "If you want to contact Doctor Fenshaw, I can help you. He lives in the city and is quite well known here."

"Good." His relief must have been obvious. "Will you ask him to meet me here please?"

"To meet you here?" She frowned. "Surely it is your place to visit him."

"Please!" He swallowed and tried to smile.

"Tell him that I have a very good reason for asking him to come. Tell him I have some extra material for his book. Tell him anything, but please get him to come here!"

"Really!" She recoiled a little from the desperation in his eyes, and he forced himself to smile. "I can't explain now," he said gently, "but the doctor will thank you for getting him down here to see me. I promise you that he will. Just tell him . . . ." He hesitated, and she stared at him with suspicious eyes.

"Yes?"

"Tell him that you have found an accident prone—in reverse!"

Grimly he stared at the swinging hands of the large clock.

CHAPTER SIX

DOCTOR Fenshaw arrived an hour later. He came just when Curt had almost given up hope, and he smiled at the young man, easing his bulk into the private cubicle. Curt rose, offering the use of the single chair to the fat man, and leaned against the wall, his grey eyes narrowed as he stared at the doctor through a film of smoke.

Fenshaw grunted, wheezed a little, spread his bulk into a more comfortable position, then, with a peculiar sharpness, stared at Curt with eyes almost lost behind their folds of tissue.

"Are you the young man who insisted that I come here?"

"Yes."

"May I ask why?"

"I'm afraid," said Curt simply. He removed his cigarette from between his lips, stared at the glowing end for a moment, then dropped it and deliberately crushed it with his heel. "You may think that I'm crazy, doctor, and then again you may not. It's a chance I have to take."

"Suppose that you let me be the judge of that?" Fenshaw wheezed as he fumbled in his brief case and produced a thick pad of ruled paper. "Now! Lucy, the girl out front, said that you had something important to tell me. She mentioned an accident prone 'in reverse'." He stared at Curt, the soft light glinting from his tiny eyes. "That is a peculiar statement to make, young man. So peculiar that I've gone to quite a bit of trouble getting down here. I hope that my journey will not be wasted."

"It won't be," said Curt grimly, and glanced at his wrist watch. "Would you be interested to learn that my death has been predicted to take place in the next two hours? Accurately predicted, I mean, with a probability factor of 99.99 per cent."

"The cybernetic machine?"

"Yes. You know about it?"

"Naturally. As a man somewhat prominent in public life I know all about that machine they have in the Interplanet Building. They claim that it is never wrong."

"Exactly, that's what has me worried." Curt stared at the fat man. "I came here because I thought that a library would be the safest place. While waiting I read your book. It struck me that of all men you would be the one most able to help me. Will you?"

"Help you?" Fenshaw looked puzzled. "How?"

"You know all about accident prones, those people to whom, or rather, around whom, accidents continually happen." He paused, fumbling for his cigarettes. "Suppose that I were to tell you that three times within two hours I have had narrow escapes from death? Once when a man committed suicide by jumping from the roof of the Interplanet Building. He landed at my feet, missing me only by a fraction, and his blood sprayed all over me. Then an elevator cage signalled its arrival. I stepped past the opening doors and almost plunged down the lift shaft. The third time a wheel fell off a stratoliner and smashed the car I had only just left. Three accidents, Fenshaw. Each of them almost fatal. Each of them caused by a ten million to one chance of time, place and circumstance. Would you say that such coincidence was normal?"

"Unusual perhaps, but it could happen, and if what you say is true, it did."

"It's true right enough, and that isn't all." Rapidly Curt told the fat man about the thirty-six men who had returned from Venus and died by suicide or freak accident. He mentioned Medway and the cybernetic machine, the supposedly infallible machine which had predicted his death. When he had finished a thin film of sweat glistened on his features and his hands trembled a little as he lit a cigarette.

"So you see, Fenshaw, I'm in trouble. If that machine can be trusted then I'm due to die within two hours."

"Not necessarily." Fenshaw shook his head. "The prediction for your death within six hours was exactly the same for both nine and twelve hours. It is quite possible that, even though you had a high probability factor for the six-hour period, you will be safe for the whole twelve hours."

"No. The machine can't give a hundred per cent. probability, it has to take into account the remote, unknown, factor which could just possibly happen to throw its prediction out."

"Perhaps, but if it were certain that you would die within the six-hour period, then why

bother with the nine and twelve hour ones? If the machine was convinced that you would die within six hours, surely the later predictions would be unnecessary?" Fenshaw smiled at Curt's relieved expression. "However, all that is unimportant now." He riffled his papers. "Your story interests me. I have examined several hundred accident prones but never have I found one who claimed to operate 'in reverse,' so to speak."

"You would hardly expect to," said Curt irritably. "They would have died before they could even guess anything was wrong."

"Admitted. But all the same it is a new field of research. I am deeply interested in it, deeply interested." The fat man stared for a moment at the smooth screen of the viewer.

"First, a few questions, then, with your permission, I'd like to run some tests on you. I have the equipment in my private laboratory back home."

"Is it far?"

"About fifteen minutes' drive."

Curt shook his head. "I'd rather not leave here for the time being. But I'll answer your questions."

"Good." Fenshaw adjusted his pad of ruled paper. "Now. Have you ever experienced any other accidents prior to your trip to Venus?"

"A couple, no more than seemed normal, the usual trifling things which annoy rather than worry."

"I see. Now while you were on Venus?"

"None."

"How do you mean 'none?' Did any accidents of any kind take place while you were there?"

"I . . . ." Curt frowned. "Now that you mention it there weren't! Not one! Not even a cut finger or an unexpected fall. I was there six months and in all that time I never heard of an accident to either the Terrestials or to the natives."

"I see. And after your return?"

"There was the stratoliner breakdown. It made me late for my appointment, but it was a normal thing, a jet engine cut out."

"Normal?" Fenshaw raised his eyebrows. "With the maintenance those engines have?" He made a note on his paper. "Anything else?"

"Nothing until I arrived in the city here. I'd been busy, working on some Martian artifacts, and I'd taken a vacation to England. Everything seemed normal until I got here. Then Benwick almost killed me when he jumped from the roof. That was the first of the three accidents I told you about."

"I see. Then the machine predicted your death and you almost fell down the elevator shaft."

"No. The accident with the elevator came before the machine's prediction."

Fenshaw nodded, then, pursing his thick lips, leaned back in his chair.

"So it boils down to this," he said thoughtfully. "We can discount the engine failure, that was hardly an 'accident' and it didn't threaten you personally. The suicide missed you, but then he could have either missed several other people or even hit one. Again I'd say that it was not a 'personal accident.' The elevator shaft is something different. Tell me, did the other men with you hang back at all?"

"How do you mean?"

"Did they wait for you to get in front of them? It would be natural for a young man to be impatient, you could be relied on to enter the elevator first."

"I don't remember," said Curt. "Is it important?"

"It could be." Fenshaw stared down at his papers. "Of all the accidents that with the elevator shaft is the most suspect."

"I don't understand."

"No? Look at it this way. Suppose that it wasn't an accident at all? Suppose that the failure of the cage to stop at that floor had been — worked?"

The fat man's eyes glistened a little as he stared at Curt.

CHAPTER SEVEN

IT was a tempting thought. Human enemies were understandable, the danger from them could be guarded against, but . . . .

Curt shook his head.

"You don't agree?" Fenshaw shrugged, his gross body seeming to quiver from the motion of his gesture. "As you wish. Now. You were examined by the machine and your death predicted. After that you left the building, caught a cab, and barely managed to escape death when a wheel from a stratoliner crushed it. Is that all?"

"Yes."

"I see." Fenshaw bit his lip. "It doesn't seem too bad to me. You have had a couple of near misses, but that isn't anything abnormal. Sometimes these things run in sequence, you know the old saying about 'things coming in threes,' and I think that you are worried without just cause."

"So you think that do you?"

"I'm sorry, Harris, but I do."

"Then what about the other men? Why should they all be dead now?"

"I'm not interested in the other men. It

doesn't matter how many others have died, I am only interested in you. What if thirty-six men have died from suicide or accident? What if . . . .?" He paused, and his little eyes glittered as he stared at Curt. "Wait! Thirty-six men commit suicide. What does that presuppose?"

"They didn't all commit suicide," protested Curt. "A few died from accident."

"Ignore them. They would have died anyway. No. Something drove those others to kill themselves. What?"

"If I knew that I would know everything." Curt shifted his weight to a more comfortable position as he leaned against the wall. "That is the one answer Director Carter is looking for. Until he finds it he daren't recall any more men from Venus. Not while every Venus-return dies within a year after reaching Earth."

"So?" Fenshaw nodded as if in confirmation of a suspicion. "Now. What single thing could have happened to all those men? What common factor must they all have had?"

"Space flight?" Curt shrugged at Fenshaw's expression of annoyance. "What else? But that can't be the cause because those who have returned from Mars are unaffected."

"Then it must be something peculiar to Venus. Think, Harris! What happened on the second planet? What one thing do you all do on arrival, or on leaving, or while living there?"

"We breathe the same air, eat the same food, associate with the same natives. We all do the basics, there is no choice, but, Fenshaw, aren't you forgetting something?"

"What?"

"I'm still alive. I intend to remain alive. If it was something common to all wouldn't I be dead by now?"

"Isn't that what you're afraid of? Dying I mean? If you're not then why am I here?"

"Of course I'm afraid of dying, what man isn't? Do you think I like knowing that some damn machine has given me only a few hours to live? Death itself isn't so bad, we all come to it, it is inevitable, but to know that you're going to die within a certain time, that nothing you can do will stop it ." He shuddered and wiped sweat from his face and neck. "Sorry, Fenshaw, but this thing is getting me down."

"And yet you weren't worried until you learned the prediction of the cybernetic machine?"

"No."

"Doesn't that tell you something?"

"I don't know." Curt tried to control his irritation. "Don't play with me, Fenshaw. Time is running out." He glanced at his wrist. "According to the machine I've only got an hour. If you can help me at all, get on with it."

"I can't do anything here, you must come back with me to my laboratory. I have machines there, delicate instruments for measuring the electronic potential of the brain, other instruments. I must test you, Harris. I must find out whether or not your ESP factor has varied from the norm."

"What has that to do with it?"

"Maybe nothing, but then again, maybe everything." Fenshaw lifted his huge bulk from the chair. "The paraphysical sciences are still new, Harris. We have only really scratched the surface of the hidden potential of the human mind. Telepathy. Teleportation. Telekinesis, we are stumbling on the verge of finding out just how and why they work. In my work with accident prones I discovered that they have a different Extra Sensory Perception factor to the normal person. It is hard to describe, but it is almost as if such people are human accumulators of a strange type of energy which in some way controls the Hiesenburg Uncertainty Principle."

He smiled a little at Curt's blank expression.

"Let me put it this way. It is theoretically possible for anything to happen. Literally, that is. The Moon could fall to the Earth. The Sun could go out. The Universe could collapse. These things don't happen because the probability against them is so high that for all practicable purposes they don't exist. An accident prone alters all that."

"How?"

"The probability of the wheel of a stratoliner falling off and smashing a car is so remote as to be in the realms of utter improbability. However, an accident prone seems to have the power to alter the probability factor. Things which are impossible merely become improbable. Things which are improbable become highly possible. And so we have a succession of utterly unpredictable accidents."

"And you think that all the men who have returned from Venus are accident prones?"

"Perhaps, but as you said, accident prones in reverse. However, it isn't quite as simple as that. Most of them committed suicide. I'd like to know just why."

"I don't feel like killing myself," protested Curt. "If it applied to the others why not to me?"

"That," said Fenshaw grimly, "is what we're going to find out."

The plain-faced woman smiled at them as they left the small cubicle, her eyes lingering on Curt's young features, and as they passed, she put out her hand.

"Your ticket, sir."

"My ticket?" Curt frowned. "What do you mean?"

"If you'll let me have your ticket," she explained, "I can give you your rebate for the unused time."

"Here." He tossed her the little slip of pasteboard. "You may keep the rebate."

"But, sir!"

"Forget it. Buy yourself a flower or something. I don't want it." He followed the fat man into the street.

"We'll take a cab," said the fat doctor, and raised his arm to hail a passing hire car. Curt shrugged, not greatly caring what they did or where they went. For some reason his mind seemed dull, his spirits low. He no longer seemed to care about the prediction of the machine, and depression, a thick, vitality-sapping depression, closed around him.

He didn't even realise that he was walking.

Memories filled his brain, memories of the hot, eternally cloudy skies of Venus. He remembered the thick jungles, the strange insects and animals, the natives with their paradoxical life of primitive simplicity and extreme sophistication. He could almost smell the ground mists and feel the warm rain, and his skin prickled to the memory of never-to-be-forgotten heat.

Something tore at his arm. Something else shrilled with a thin, high-pitched sound, and a blow on his thigh made his entire leg go numb.

Startled, he looked about him.

Fenshaw gripped him by the shoulder, his fat face pale and his eyes narrowed behind their folds of fat. A car rested, slewed a little, just past him, and the white-faced driver looked as if he were about to be ill.

"You fool!" Fenshaw shook him like a dog. "If I hadn't jerked you back you'd be dead by now. What is the matter with you, Harris? Do you want to die?"

"What?" Curt shook his head, trying to clear his senses. "No, I don't want to die. What happened?"

"You stepped into the street as if you were asleep. If I hadn't been here that car would have killed you. You wouldn't have stood a chance!"

Curt paled as he realised what had happened.

CHAPTER EIGHT

IT had been a moment's forgetfulness, an instant of carelessness, but it had almost cost him his life. Lanson had died like that. He had stepped in front of a turbine car and been run down. Now he had done the same. If it hadn't been for the fat man . . . .

Curt gulped and rubbed his bruised thigh.

He couldn't win! Twice he had been lucky. Twice now since the machine had predicted his death he had been saved by a miracle. But how long would his miracles last? And even if he did manage to live through the next hour, what of the following six? The prediction covered twelve hours, not six, and he bit his lip as he realised that his own mental narrowing of the time limit would lead to his own danger.

He had started off by being super-cautious. A mere shadow had made him run for his life, and his instinctive action had carried him clear of the falling wheel. But that caution hadn't lasted. He had daydreamed, lost his awareness of the external world, grown careless—and he had almost died!

Next time there wouldn't be a friendly hand to save him, a warning shadow to make him run. Next time death would come and he would be powerless to resist it. How long could he beat his own fate?

How could he win this inevitable conflict with its inevitable end?

He turned to the fat man.

"Look," he said apologetically. "I can't come with you to your laboratory. Not now. Later, perhaps, but not at this moment."

"Why not, Harris?"

"I'm afraid, Fenshaw, that's why. I almost died then, no matter what the reason, I almost died. I don't think I can beat the machine. I . . . ." He gulped, wiping sweat from his face and neck, and stared with awful fascination at an approaching turbine car.

Why continue to struggle? Why not just end it all now? One step, one tiny step, and his worries would be over forever. It would be so easy. Just one step. One step. One step . . . .

He gasped as Fenshaw's fat palm cracked against his cheek.

"Harris! What's the matter with you, man? Snap out of it!"

"Sorry." Curt hardly noticed the pain in his cheek. "I can't take it any more, Fenshaw. I can't win, I know that now. I was a fool ever to suppose that I could."

"Then what are you going to do? Kill your-

self ?" The fat man didn't trouble to disguise his contempt. "Is that your solution to your problem ?"

"No," gasped the young man. Then he stared at Fenshaw, a new light in his grey eyes. "Yes !"

"What ?"

"Quick, Fenshaw. Tell me. Is there a Hibernation Centre in this town ?"

"Yes, but . . . ."

"Take me there. Take me there as quick as you can. Hurry !"

The fat man pursed his lips, then, as he saw the almost frenzied expression on the young man's features, lifted his arm and signalled to a hire car.

"Hibernation Centre." He relaxed against the cushions and stared at Curt. "Well ?"

"Don't you see ? The machine predicted that I would die within six hours. I know now that the prediction is true. I will die within six hours, nothing can stop that, but I can choose the manner of my death."

"Are you insane ?"

"Perhaps." Curt glanced at his watch and sat on the edge of the seat. "You know what happens at the Hibernation Centre ?"

"Naturally, I'm a doctor remember."

"Well then. Isn't it technically true that a man in deep freeze 'dies'?"

"Technically, perhaps," admitted the fat man slowly. "The heart stops. The metabolism ceases. The tissues and the blood freeze. There is no respiration. Yes, I think it is safe to say that in the accepted sense of the word the occupants of the Hibernation Centre are dead. They can be revived, of course, but by all tests they are really dead."

"Exactly." Curt stared triumphantly at the fat man. "The machine had predicted that I must die within a certain period of time. Well then ? Suppose that I do die ? Suppose that I enter the Hibernation Centre and the deep freeze ? I would be 'dead,' wouldn't I ? The prediction of the machine would have come true, and, whatever it is that is hounding me, would be satisfied. The fact that I can be revived after the danger period has nothing to do with it. I'll be 'dead,' and the 99.99 per cent. probability factor will have come true."

"You think that it will work ?" Fenshaw stared at the young man. "You hope to cheat fate, but supposing that fate won't let itself be cheated ? Not everyone can be revived, you know. Quite a few applicants for deep freeze die, really die I mean. How can you be sure that you won't be one of them ?"

"I can't," said Curt grimly. "I can only take that chance."

He swallowed as the car drew to a halt outside the towering height of the Hibernation Centre.

Deep freeze was a fad, but it had its uses. Elderly women took the treatment, extending their last few years in the hope that new discoveries in the future would restore their beauty. Others, sincere students of history, slept away the years, waking long after they normally would have died, and took interest in seeing whether or not their predictions had come true. Others used the forgetfulness of Hibernation. Thrill seekers, the bored, the worried, the jaded, the travellers into a new era.

Men and women could rest in the chilly vaults of the Hibernation Centre for decades, perhaps even for centuries, though the place hadn't been established that long. Their metabolism was slowed by drugs, the blood treated to prevent clotting, then, when finally they were ready, instantaneous freezing was applied and they rested, frozen corpses, until the time came for their revival.

It was a form of suspended animation. It was free to all—if they could pay the high fees, and it had its own dangers.

Not everyone was successfully revived. Sometimes bodies couldn't stand the shock of powerful drugs, the shock of freezing and thawing, the stoppage of all life processes. Most came through, but the Centre made no secret of the fact that the responsibility rested with the applicant.

In effect it was a gamble, extended life against accelerated death, but despite that, the Centres did good business.

A young man smiled at Curt as he entered the reception hall.

"Yes, sir. You wish Hibernation ?"

"Yes. As quickly as possible."

"Certainly, sir." The man smiled as Curt took a wad of money from his inner pocket. "For how long a period, sir ?"

"Twelve hours."

"What ?" The receptionist narrowed his eyes. "You must be joking, sir. No one hibernates for only a day."

"Sorry." Curt glanced at his watch. "Better make it twenty-four hours then."

"Impossible. The revivication process takes at least two days. To accelerate it would endanger the subject."

"Damn it all, man, don't argue with me !" Curt bit his lip as he looked at his watch. "I must be within the deep freeze within thirty minutes. "Revive me in the shortest possible time. How long would that be ?"

"Five days, sir." The receptionist shrugged. "Naturally the fee will be the same as for a longer period."

"To hell with the fee! Hurry!"

Later, as he rested naked in the vat, waiting for the sharp pain of deep freeze, Curt had time to think and to worry. Drugs flowed in his veins, robbing him of fear, easing his tormented spirit, bringing a false euphoria, but his mind was still active.

Would his insane plan work? Would his action fulfil the cybernetic prediction? Would he rise again from his icy bed? Or would fate laugh at his efforts and end the conflict by bringing real death?

He didn't know. He couldn't know. And as he watched the swinging hands of a pale-faced chronometer swing towards zero hour, he just didn't care.

He was going to die. In that the machine was correct, but the prime problem still remained.

Why should he die at all? What was the thing which hounded all those who had come from Venus? What....

Pain stabbed at him, a sharp icy agony, over as soon as it had begun.

Softly the clock marked the zero hour, the end of the six-hour prediction, and in the vat Curt's dead body rested in a film of ice.

END OF PART II

40 Cranley Gardens,
London, S.W.7.

Dear Sir,

It is with great interest and no small suspicion that I received in somewhat reluctant hands the first copy of your magazine.

I cannot help but agree with Ken Slater (Ghu rest his soles) that the name of the great Multiman does not fill me with unalloyed awe. I naturally suspected the worst. Happily I am able to tell you that the worst was not so bad as I had feared.

It would be hypocritical to tell you that the Vargo Statten Magazine is a shining example of what every science-fiction magazine should be. (But in any case I am a perfectionist.) However, if Lord Macaulay should see fit, in his undoubted wisdom, to write a vindication of the penny dreadful then there is no shame in my writing a vindication of crude science-fiction.

The deliberate statement by the editorial board that it aimed at a "popular" science-fiction publication was honest and I believe sincere. That the magazine caters amply for the non-initiate science-fiction reader is an undoubted fact. If one is to judge by the reported sale of Scion science-fiction novels an awful lot of people read them: presumably they must also like them or they wouldn't be repeat buyers. There is a definite place in this country for the simpler type of science-fiction story: at present no other magazine is aimed at this definite market and therefore I can only wish you every success, with at the same time the fervent prayer that some of your readers will learn to appreciate the delights of the great masters of science-fiction. On the whole the first issue is a creditable effort: doubtless it will improve as time goes on and the desires of your readers become more crystallised.

In any case, even if the magazine were very much worse than in fact it is, your initiative is commendable: not a single reprint, not a single American author, and 8 per cent. of the letterpress devoted to fandom is an achievement worthy of a good deal more praise than you are likely to get from such a sour character as myself.

With every sincere wish for the prosperity of the magazine,

STUART MACKENZIE,
Publishing Editor, "Space Times."

EDITORIAL NOTE: Our problem now is to wonder whether to blush with pleasure, or grind our re-

maining teeth. But it is refreshing to find a critic who recognises that even magazine publishing is based on the harsh facts of commercial survival.

White Waltham,
Berks.

Dear Sir,

When listening to "What Do You Know" I heard that it is not possible to pour out any liquid on a journey to the Moon, and that everything has to be drunk through straws. Can you tell me if there are any other interesting facts about such a journey?

ARTHUR JOHNSTONE.

EDITOR'S REPLY.

Dear Mr. Johnstone,—

The most interesting fact about any journey to the Moon is of course the valid fact that such a journey is possible. Today, engineering skill has overcome all the problems inherent in such a tremendous proposition, and those ardent fans and believers in space travel who have consistently advocated the building of a space ship are in a position to do it provided that funds for such an enterprise are made available.

One of the great problems which has to be overcome in any consideration of space travel is that once away from the Earth (or any other planet) "gravity" will slowly diminish to a point where it cannot be appreciated.

Now when you pour a liquid out of a bottle it falls down into the glass because gravity pulls it down. So, if there is no gravity, the liquid will not fall out of the bottle, but will just stay where it is. You are therefore quite correct in your statement that liquids would have to be sucked up into the mouth.

There is another alternative. If you were to shake the bottle some of the liquid would be forced out by "surge." It would then float about in the space ship as a globule of liquid, and you could drink it by putting your lips to the globule and sucking it into your mouth.

Naturally, this absence of gravity would not only affect liquids, but everything else in the space ship. Passengers and crew would be "weightless," so that to get from one place to another you would simply point yourself in the right direction and shove off. Of course, you would have to exercise caution; if you pushed too hard you might end up with a nasty bump on the head from too violent a conflict with the opposite wall.

One solution to this very serious problem of no-gravity, and its effect upon both humans and loose equipment in the space ship, is to have a constant acceleration which would give an effect similar to that of gravity. At present, however, full research has not reached the point of devising a propellant which will give enough thrust in relation to its mass to make this possible.

An interesting speculation has been that of peristaltic movement. Some medical writers believe that in the absence of gravity the digestive system will not function normally and that therefore once in "3-4" burps will be the order of the day. Others say that the digestive system is independent of gravity, because it operates solely on muscular contraction, and therefore there will be no burping. So far as we know, at the time of writing, nobody has been into space in "3-4", and so this is yet another of those 64 dollar questions which cannot be answered until man really does go to the Moon.

Yours sincerely,
THE EDITOR.

Carlisle.

Dear Sir,

Why is it that although Venus is nearer to Earth than Mars everyone writes about starting colonies on Mars and don't say anything about Venus?

I think your magazine is very good and have ordered it from my newsagent.

ROBERT ATKINSON.

EDITOR'S REPLY.

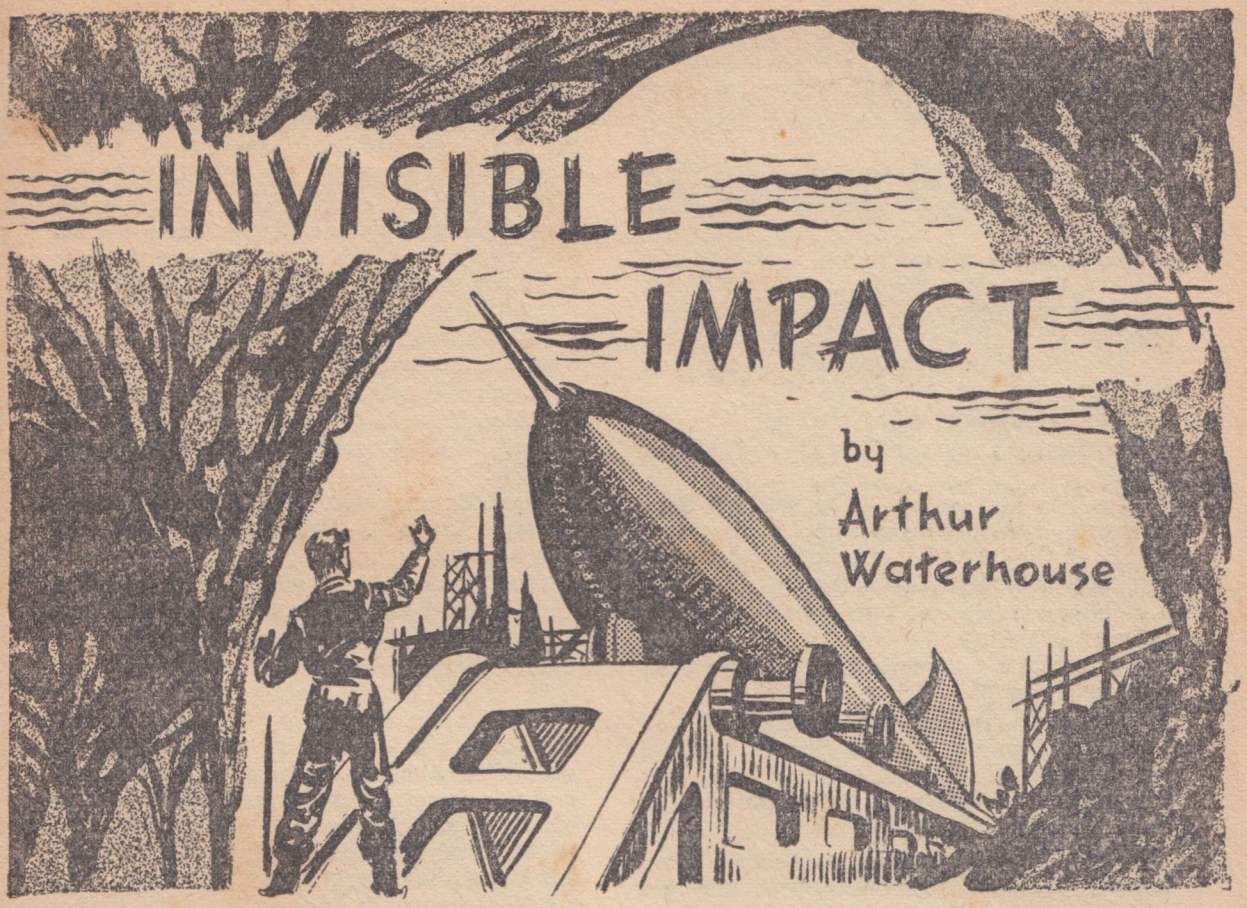
Dear Mr. Atkinson,—

One of the demands of the Science Fiction fan is that the Science Fiction he reads is based on known scientific facts. Now, we know a good deal about Mars; it is readily observed through telescopes and in recent years astronomers have been able to ascertain many facts and deduce many more hypotheses from those facts, about the Red Planet.

Unfortunately Venus is shy. She hides herself inside a curtain of impenetrable mist or cloud and we do not know even whether Venus spins on its own axis or not. When the Science Fiction writer is confronted with the existence of a planet about which he knows virtually nothing he has either to tactfully ignore its existence altogether or largely invent a state of conditions which he presupposes to be those of life on that planet. In the case of Venus, the astronomers still disagree. Some say practical vegetation, others deserts, some say a long day, some a short day. With Mars there is no such doubt. We know exactly how long a Martian day is. We know exactly how long it takes the Moon round the Sun. We know there are ice caps; we are today quite sure that there is vegetation on the fringe of those ice caps.

Because the writers know so much more about Mars and have such a vastly greater mine of information which they can tap, somewhat naturally they use Mars as a background to fit in with what you, the reader, already know or can verify. Don't forget that Science Fiction of today is very often truth tomorrow: Science Fiction writers never forget this.

Yours sincerely,
THE EDITOR.



"COME IN." Sir Gustave Hind, Head of International Spaceways Corporation glanced up from his desk as the door opened and a tall smartly dressed man in his middle thirties walked into the room. "Sit down, Hanbury," he said. "Won't be a jiffy."

Harvey Hanbury crossed the thickly carpeted floor, lowered himself leisurely into a deeply upholstered leather chair, stroked the creases of his elegantly tailored slacks, and waited. Sir Gustave worked on among his papers. Hanbury lit a cigarette, blew out a stream of smoke, waited, and then:

"You really *did* want me, Gussie!"

Sir Gustave snapped out of his preoccupation.

"Don't call me Gussie," he barked. "Of course, I want you. Why do you think I sent for you, if it wasn't to clear up some darn mess."

"Well, I'm here, and waiting."

Sir Gustave impatiently pushed the papers on the desk back into a drawer, then surveyed his visitor for a moment. Hanbury's air of superior elegance and indolence was absolutely deceptive, he knew. It had been the same at college, too. Hanbury, always the couldn't-care-less bloke, popular and easy going with other men, but when occasion arose utterly dependable, springing into action like a boxer out for the "kill."

Strange they should both gravitate to International Spaceways, he to become the head, and Hanbury to be Chief Special Agent, S.I.6. —Spaceways Investigation Department, a job calling for brains, daring, and superb physique.

"Look, Hanbury," he said, leaning over the desk, "I'm putting you on to a job that's going to tax all your powers of detection, and probably stamina as well."

"Sounds interesting," said Harvey, crossing his long legs, and stroking his dark waving hair. "Go on, Gus, spill it!"

Sir Gustave shrugged at the impossibility of curbing the other's easy familiarity. Rising from his chair he stepped to a wall map of the planetary system. Pointing to a place halfway between the Moon and Venus, he said: "This is the trouble spot——"

"That's the Interstellar Space Station," remarked Harvey, casually.

"Exactly," said Sir Gustave. "This week

the third luxury space liner has smashed up there. Why? don't ask me! That's what *we* want to know. The only thing we do know is that it must stop. You understand, Hanbury, it's got to stop!"

"Oh, quite," conceded Harvey. "But wouldn't I appreciate the difficulty a little better if you explained—"

"Wait, damn it, can't you," snapped Sir Gustave, returning to the desk. "This business is driving me crazy. It's already cost the Corporation three millions, and if it goes on, well, the conclusion's obvious—nobody will travel in our liners, they'll be too scared."

"Any casualties?" asked Harvey.

Sir Gustave's eyes narrowed and glinted angrily.

"Yes," he said, sadly. "The first and third liner completely destroyed with all passengers and crews. The second was luckier. Its passengers were on the island when the ship smashed."

Hanbury sat upright with a jerk, his whole body tense, alert.

"Why didn't I know before? Who's been keeping it dark?"

"No one," replied Sir Gustave. "You would have known if you'd been in London. It's all happened in the last ten days. I thought you might have known. Didn't you use the radio while you were away?"

"Too darn busy to listen to bulletins from London," said Harvey, briskly. "I only got back yesterday, and I haven't had time to read a newspaper, yet."

"Well, this is the dope, then," said Sir Gustave. "The crashes have occurred immediately after the liners have clamped on to the airlocks. In each case they've just disappeared without a trace. It isn't a case of faulty airlocking, or clamps failing. Examination has proved nothing wrong in that direction, though in two cases the outer airlock doors have twisted like a sheet of tin, and but for the inner corridor precious atmosphere would have escaped into the Void. It's all a shocking mystery. One baffling thing the engineers on the island did find was, that surrounding the vicinity of the wrecked airlock, was a heavy layer of snow. The last fatality was actually seen by two maintenance men working on the shell of the station, and yet it wasn't."

Hanbury stroked his well shaven chin in bewilderment, a perplexed look coming into his eyes.

"That takes some understanding, doesn't it?" said Sir Gustave, noticing the look on Hanbury's face. "All I can tell you is that the men swear the spaceship was there one minute, then they saw a huge cloud of hissing steam that rose high above the station, and when the void was clear again snow lay thick around the place where the airlocked ship had been anchored. But it had gone, Hanbury—gone!"

"Something struck it," said Harvey decidedly. "That's the only explanation. As you know, Gus, when two objects collide in free space, the terrific speed at which they travel—about seven miles per second, remember—causes complete vapourization, and nothing's left."

"That's true," conceded Sir Gustave. "But what did the striking?"

"Can't rule out the possibility of meteorites," reminded Harvey. "Who's in control of Interstellar? What does he think? Ghastly worry for him!"

"Jarrett's out there. He's sending frantic messages for help. Says he dreads the next liner arriving."

"Can't blame him," said Harvey, swinging round in his chair. "You want me to go along, I take it," he added, rising to his feet.

Sir Gustave hoisted his thick-set body upright. Still looking upwards into Hanbury's lean brown face, he said with an earnest expression on his own jowled one: "I want you to do more than go along. I'm relying on you to stop this dreadful business, and find the cause. It's up to you, Hanbury, or else we're sunk—ruined." He stopped abruptly as Harvey gazed down at a photograph staring up at them from a folded newspaper lying on the desk. Harvey stroked his chin thoughtfully. Sir Gustave said:

"What do you make of that affair? Missing scientist, eh! Seems queer to me! I'll bet he's up to his ears in debt, or else it's a woman, and he can't face it."

"Motchkiss," mused Harvey. "Wasn't he an expert on guided missiles, or something like that, Gus?"

"For heaven's sake stop calling me Gus. I don't mind, really, you know that, but some of the staff might hear, and the impression won't be good. The Chief lets an S.I.6 man call him Gus. The answer to your question is yes," Motchkiss was a rocket man. Ever met him, Harvey?" he asked, coming to his side.

"No, can't remember," Harvey replied. "And I *can* remember faces." He slid the newspaper away from him. "Well, I'll get going. Give me a tinkle if you get any fresh dope. You have my number. I need an overhaul to my space flyer before I start for Interstellar, and I want to see the job's done thoroughly. I'll be seeing you sometime—Gus!"

The door clicked shut. Sir Gustave sat down,

relieved. Now that Hanbury was on the job, perhaps he'd get a little peace of mind. This liner wrecking was a mysterious, ghastly business. Like Jarrett, he dreaded another space liner arriving at the station. Bookings for the Solar System Luxury Tour were already dropping fast. The newspapers had been quick to splash the news. ANOTHER DISASTER IN SPACE. The headlines haunted him. Strange how Hanbury hadn't heard whilst away, or since his return to town.

The planetary radiophone buzzed on his desk. He snapped on the visor screen. Jarrett's troubled face confronted him.

"What is it, Jarrett?" he asked. Sir Gustave's limbs trembled and his voice faltered, as if he were seeing a ghost.

"Another one's gone," the controller gasped, frantically. "The Mayfair Queen. No survivors."

Sir Gustave groaned.

Harvey Hanbury had just arrived back at his flat after supervising the overhaul of his space flyer when Sir Gustave 'phoned him. Three hours later he was lying prone on the pressure board of his atom powered flyer. Automatic control was steering it through the last tenuous strata of Earth's atmospheric envelope. He was on his way to the Interstellar Space Station. Hour after hour the spaceship hurtled across the deeps of star emblazoned black space. Then he was clamping on to an airlock of the anchored station. Already Hanbury had been in radio communication with Jarrett, and the big radar screens of the station had recorded his approach.

Jarrett was at the airlock to greet him. Lines of anxiety scored the controller's gaunt and hollow-eyed face.

"Come to my office," he said, leading the way. "Let me give you the lowdown on this grisly business. It's murder, Hanbury—nothing else, murder!"

The special agent regarded the controller intently. Obviously he was suffering from deep emotional strain. He looked weary from lack of sleep. The wreckings had shattered his nerves, and Hanbury well knew how life on an isolated space station for months on end could undermine a man's morale. At the end of a long spell it needed only a slight defect of administration; some small omission on an assistant's part to disrupt the orderly routine, and a controller went completely haywire.

In this case the disruptions were grave, the consequences appalling.

"Take it easy, Jarrett," he said, closing the office door. "Sit down,"—he helped himself to a chair, "—now, I'm all attention!"

"Look, Hanbury, another liner's due to dock in half an hour. I can't take it easy. My nerves are bucking like a bronco, but this is what's happened up to now, as far as I can tell you—."

Ten minutes later Hanbury knew that the ill-fated spaceships had arrived at the station according to schedule. Then, within minutes the wreckings had occurred.

"Have you any theory as to how it's happened?" asked Hanbury. "We know that they just couldn't disappear of their own accord."

"I've thought of many things," said Jarrett, in a tired voice. "The likeliest is that some kind of eruption has taken place on the Moon's surface, probably caused by the Sun's intense mid-day heat; many times hotter on the Moon than on any Earth place, remember; or by an unregistered volcanic action; and a stream of explosive gas from the internal lunar depths is flowing across outer space. Maybe it normally by-passes the station, but when a ship is docked at No. 5 airlock the atomic radiations from the heated jet tubes attract the gaseous stream, and on contact a terrific explosion takes place."

"Could be," mumbled Hanbury, tersely. "And the answer to that is—have the big liners anchor at another airlock. Better still, move the station. But look at the clock, it's almost time that liner was anchoring. Let's go along and watch her come in."

Jarrett reached across the desk and snapped on the intercomm. "Hello, No. 5 Airlock. Is the radar showing anything?"

"The Queen of Wessex on her way in," came the airlock officer's voice. "We have spoken to her by radio, and given her the 'all clear.' She seems a bit early — due in two minutes."

Jarrett snapped off the voice, and leapt to his feet.

"We'll only just make it," he said, keyed up. "She'll be here any time, now."

The two men raced across the big deck of the station. At the airlock landing officials moved busily about, their faces taut with anxiety and suspense. Jarrett peered intently through a big porthole.

"Here she comes," he said, his voice shaking.

Hanbury looked out. Looming up from a distance of less than a hundred miles the huge liner, her navigation lights burning like minor constellations, tore through space. Then she was braking down and floating alongside. Soon her passengers were landing.

"Hurry along, please," called the officials, "Clear the ship. Hurry along!"

Jarrett turned to Hanbury and breathed thankfully.

"Thank God, that's all right," he said. "Let's

have a word with her commander, everyone seems to be off."

He moved forward. Hanbury remained rooted to the porthole window. "Come on, Hanbury," called the controller, over his shoulder. His glance caught Hanbury's face, suddenly chalk-white and twitching.

"My God!" yelled Hanbury, "she's gone! Look, Jarrett—steam!"

An official wearing a terrified look was slamming the big airlock door, then clamping it. Jarrett staggered to the porthole window, and as Hanbury pointed to the steam-clouded glass it cleared sufficiently for them to see snow falling.

Jarrett screeched hysterically. "Snow! Snow! Snow!" he jibbered.

A medico among the fortunate passengers attended to him. Back in his office and comparatively calm again he sat listening as Hanbury radioed London the news of the fresh disaster. Meanwhile the excited and frightened passengers settled down to wait for the relief liner, which by Hanbury's arrangement with London Spaceport would arrive at a different side of the station.

Freed from helping with the necessary resuscitation of the passengers, and more especially the nervously collapsed controller, Hanbury donned a spacesuit and, with two maintenance men, went outside the station and began a thorough examination of the exterior of No. 5 airlock and the surroundings, still under a thin blanket of snow. But in spite of the most exhaustive scrutiny they could find nothing to help elucidate the mystery.

Back in the controller's office, Hanbury announced:

"I'm going on to the Moon. Maybe your hunch is right, Jarrett, maybe not. Meanwhile to obviate further disasters all spaceships arriving will use airlocks at the other side of the station. But I don't suppose another will arrive before a relief man comes with the ship from London. You're going home for a spell. Ganton is coming to take over."

Jarrett smiled weakly. He needed a rest, heaven knew.

Hanbury wasted no time in setting out for the Moon. A radio call informed him of Ganton's arrival at the Interstellar Station. Hanbury agreed to keep in touch, and learned of Sir Gustave's fresh anxiety concerning the use of another airlock. Only No. 5 it appeared was capable of safely receiving the big Solar System space-cruisers.

"Do your best, Hanbury," pleaded Ganton. "And let's get the ghastly mystery solved and the service back to normal. The Chief's going bald headed."

Poor old Gussie, thought Hanbury, switching off the radio.

Through the observation screen of his flyer he could see away on his right the long flaming fingers of the sun's fiery prominences, and slightly left and to his front the Moon's globe looming larger and larger. A few more hours and he'd be there.

Just his luck to arrive in the night period, he mused. Then on reflection it occurred that it might be helpful. He didn't want the officials at the big lunar spaceport to know of his arrival. He wanted to make his investigations in secret. He hoped their radar wouldn't pick him up on the screen. Hanbury decided to make a wide detour. He knew the terrain of the Moon, well enough, and he guessed that if anything unusual and nefarious was happening it wouldn't be in the vicinity of the spaceport. Hanbury decided on a spot free from mountains and deep ravines where disaster might easily overtake his landing. Night landings on the Moon weren't for the inexperienced, he knew only too well. He managed to bring his flyer down safely on the edge of a plateau, which on closer inspection proved to be a beach of calcified pumice.

Donning a spacesuit he climbed down and began searching for a place where he could hide the flyer. Probably he'd not make much progress with his investigations till the dark period had passed, and he didn't wish his arrival to be known to other flyers, or prospecting explorers who happened along.

Luck favoured his search. In a huge mound of poriferous rock he found a cave. Immediately the flyer was taxied inside. There he ate some tablets of food concentrate, drank sufficient water for his needs, and fell asleep in his ship's pressurized cabin.

Awake again in a few hours he slipped into his spacesuit and began to explore the nearby surroundings. Pumice-like mounds of rock seemed to be everywhere, making him realize his good fortune at landing without mishap. All these pumice formations were evidences of surface eruption of some kind. Hanbury couldn't recall seeing them in this particular area on his previous flights. They could be recent, he reasoned. On the other hand they might be older than time itself, at least what he knew of it. And he wasn't sure regarding his lunar topography. But how could he hope to find the evidence that might prove Jarrett's plausible theory?

The mouth of a yawning cave gaped before him. Curiously he entered, and felt his body heat lowering slightly in spite of his insulating spacesuit. The floor was slippery and smooth, and in the light of his torch gleamed grey-black.

Hanbury bent to examine it. Ice! His torch lit the walls and roof. Yes, he was in a cave of ice. At one side hung a curtain of jagged-toothed icicles, while here and there stalagmites of ice-coated pumice stood pinnacle-like towards the roof. Cautiously he strode ahead. To his right at the cave side was a wide gently sloping gallery like a ramp in an Earth city garage. And it looked man-made. Turning to face the entrance he glanced at the Solar compass in its magnetic case fastened to his waistbelt. The mouth of the cave faced directly opposite to the position of the Interstellar Space Station. Coincidence, thought Hanbury. But that ramp fascinated him, and then he saw the heavily sheeted machinery at the rear of the cave.

What was this? His excitement mounted and his nerves tautened as he strode forward. Somehow he felt this was a secret cave. A quick look round revealed an electricity plant. Lighting tubes were clamped to the roof and walls where the ice had been chipped away. Hanbury searched for the switch. What was that? Voices! Had his earphones tricked him? No! Over his portable radio they came distinctly.

Then, into the cave walked five men. Hanbury hid behind a tall pumice stalagmite. At the back of the cave one man bent over the electrical plant and next moment the cave was flooded with light. Hanbury's heart thumped madly as he recognized their high toned speech as Martian. Thankful for the concealing pinnacle of pumice he watched through one of its large open pores.

At the foot of the wall ramp stood a piece of equipment that completely baffled him. Somehow the whole set-up reminded him of the ramps he had seen in France, from which the Germans had once fired doodlebugs on London. Then one of the men turned and faced him. Through the visor of his helmet he could just distinguish the man's features. But he never forgot a face, and Hanbury knew the man was Motchkiss, the missing scientist. So that was where he had absconded—to Mars! Now he was on the Moon, and for what purpose? Hanbury soon found out.

At that moment a jeep-cum-bulldozer ran into the cave. As it advanced it pushed before it a mass of crushed ice. The others began to shovel it into a huge torpedo-shaped mould, and Hanbury stared in amazement as electricity was switched on and the whole mass began to solidify. Making a torpedo of solid ice! For what devilish purpose? he pondered. And what gigantic luck to have stumbled on the place! Then their voices came through on his earphones.

"You got the time the big ship reaches Interstellar, Ziphor?" said one.

"O-fourteen Earth hours," said another.

Someone sniggered: "Another one goes to its doom."

"We shall rule the Earth as well as the planets," said one.

"We have much time yet," remarked another. "Earthmen will be confounded when they learn of *our* mammoth Moon station. The finest in existence—"

"And when the Interstellar Station has ceased to function we shall control the whole of spaceways," said another.

"Already they are losing trade, eh, Motchkiss?" chuckled a voice.

"The missile's ready," said Motchkiss, moving to the rear of the ramp. "Hoist it into position while I coil the spring."

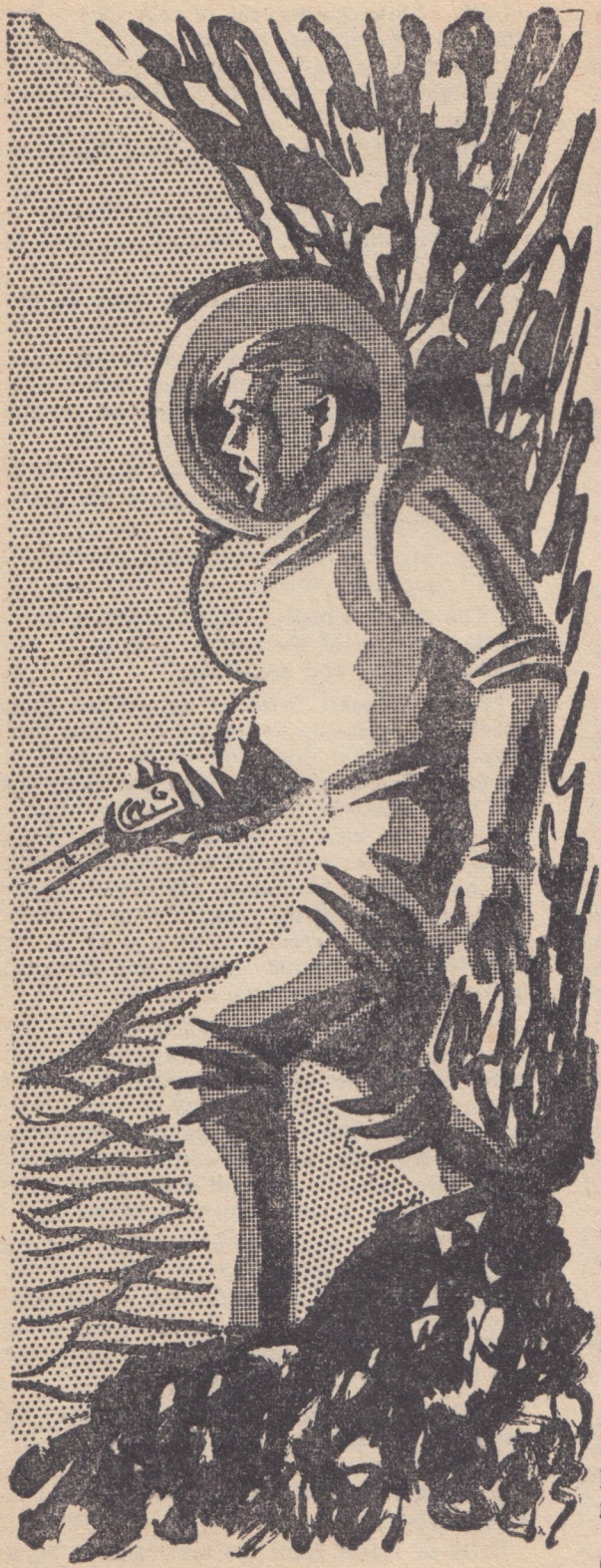
Hanbury's heart froze as he realized their intention. Furiously he felt for his flame gun, then decided that discretion would pay-off in the end. Five-to-one, they were too many for him. Incredibly he stared at the active Motchkiss. At the base of the ramp he had flung aside a cover to reveal the piece of equipment that had puzzled Hanbury. He saw a similar cover being slid off the ramp, and in a groove lay a huge metal spring, its coils thick as his body. Motchkiss pulled a lever and the huge spring began to compress.

Hanbury gasped at the wonder of it all. He was then conscious of an instrument attached to his belt registering violent agitation. That meant powerful magnetism was at work. His brain clicked. The huge spring was being compressed by extremely powerful magnetism. Must have a tensile strength unknown to him. Doubtless a secret invention of these people.

Lost in intent observation Hanbury saw the huge spring compressed to its limit, and the torpedo being lifted by mechanism on the jeep, then handled to slide down the ramp into firing position. Motchkiss then pulled another lever and the spring shot forward.

Hanbury never saw the torpedo leave the ramp, but he did see the spring snap and fly. The greater portion of it flew at a sharp angle, and the next moment the cave wall behind him was collapsing.

Cries of alarm from the crew almost burst



his earphones, and as the dust of the shattered pumic settled in the cave he heard the voice of Motchkiss:

"I told Iphczani his ultra-magnetic spring wouldn't last long. Not nearly strong enough for the job. That one won't reach Interstellar. The beam won't guide that to any place. Better get back to the station and report."

"Thank heaven," breathed Hanbury inside his helmet, "that's one liner that will be saved."

"Don't know why Iphczani doesn't fire a hydrogen rocket and blow the space station to blazes," said another of the crew. "We must control all the spaceways, there is no other way to universal power."

"Agreed, Ziphor," said a confederate. "But a hydrogen rocket would leave tell-tale explosion burns and scorches, and a universal war could be touched off. This way leaves nothing. We must use guile to destroy our rivals."

Motchkiss had walked over to the jeep.

"Come on, get aboard," he said. "Let's get going."

Hanbury waited till they had passed from the cave, then tried to move. So intently had his mind had been focused on the ice torpedo crew that he hadn't realized his own predicament. Shocked and dismayed he discovered that he was half buried in a deep drift of wall debris. In his excitement he hadn't noticed the powdered pumice and slivers of ice settling around him. With the powerful cave lights switched off and only his torch for aid, it was like peering through a grey fog. He wiped the film of dust from his visor, and began to dig himself out. But with only his hands for implements it was tiring, and his hampering spacesuit made the task more difficult.

When at last he stepped from behind the stalagmite and took stock of himself he was alarmed to note his low supply of oxygen. The indicator showed barely enough for half-an-hour.

How far was that cave? A speedy examination of the ramp's firing equipment was made, and he left the cave. Outside he hurried with ten-league strides. Which of the pumice mounds concealed his flyer?

Scrutinizing each one at close quarters was as bewildering as solving a maze puzzle. But at last, with his oxygen almost giving out, he saw its welcome tail.

With lassitude fast overtaking him he managed to open the airlock, creep inside, slam the operculum, and then pushing off his helmet he lay exhausted on the pressurized cabin floor gulping down the reviving air.

After a while he regained his activity. At the controls he reversed the flyer out of the cave,

taxied over a smooth stretch away from the mounds, and was spaceborne.

One last look back at the grey-black Moon and he set the course for Interstellar. With the automatic control guiding the machine through the star spangled deeps, where the ice torpedo would now be forever falling, unless it touched Earth's envelope and melted, he settled himself to sleep. But what was this on his radar screen? Hanbury instantly alerted.

Two spaceships hurtled at terrific speed towards him, and compared with his own velocity they would quickly overtake.

Through the window a few seconds later he saw them. Strange looking craft and giving no signals of recognition. A light stabbed out from one, then the other. Hanbury instinctively saw danger. They had opened fire.

A rapid manipulation of his own flyer, plus maximum acceleration brought him facing their larboard. Watching his radar-sighted electronic cannon he let them come into dead-centre, then depressed the button. Once!—a momentary adjustment—twice! Both had disappeared — the blackness of space was unmarred by any moving object.

Again throwing in the automatic control, he lay back in his cockpit seat and this time, slept. Hours later he was asking Interstellar for permission to come in.

Ganton greeted him smiling as he stepped on to the space station's deck. A short stocky man, through hours of staring into space, he said briskly:

"No mishap to the last one, Hanbury."

"I know," replied he, tersely. "I saw it happen."

Ganton looked puzzled. Hanbury took his arm.

"First," he said, "some decent food. Then we'll chat."

In the restaurant Hanbury ate as he talked. Ganton was amazed by his revelations.

"The Martians," he gasped. "What devilish ingenuity! A torpedo of ice flying on a beam and directed on to a liner as it airlocked. No chance for it at all—"

"None. Jarrett was right. It's cold murder. Strange thing is, unless the Spaceways Police can find that cave, no one is likely to believe me. And even I might not find it again so easily. There were hundreds of pumice mounds. But I have an idea that might help. The next step mustn't be muffed. Once let those thugs discover that someone is after them, and it would be too easy to destroy all evidence of the ramp's existence."

Ganton was keyed-up with excitement. "What do you suggest we can do in case they install another spring and fire off another torpedo at us?"

"Just this. Until I can get back to London and report, and Gussie gets the police moving, I suggest your engineers erect a huge reflector to trap the sun's rays, and then deflect them across the path of the beam directed by the Moon crew on to us. I have an approximate charting of the cave's position. At any rate, it's not a thousand miles from the new spaceport, and we know where that is. So an imaginary triangle drawn from there to the cave and down to here, although an extremely elongated one, must hold the beam somewhere."

Ganton nodded.

"Then it's easy enough to direct the deflected sun's rays across it——"

"And bend the beam," put in Ganton excitedly.

"Exactly. If another torpedo follows its predestined course, it'll bypass us and shoot away on a harmless trajectory of its own."

"Barring a collision with anything else," put in Ganton. "But that risk isn't greater than a collision with a meteorite."

He rose swiftly, crossed to the restaurant office where an intercommunication 'phone stood on a table. He said to the answering voice:

"Ganton speaking. Send Grey and Myers to me at once. Yes, my office!"

Returning to Hanbury he told him: "I've sent for my two best engineers. We'll get busy right away. Come and meet them."

Before the next luxury liner was due at No. 5 airlock a huge reflector stood on the roof of the station. It trapped the sun's direct burning rays and by means of powerful polished reflectors it directed them at a slight angle away from the airlock and the station.

"Now we shall see what happens," Ganton had said when the job was finished.

"Nothing, I hope," Hanbury had replied. "If another ice torpedo is fired you'll never see it coming, and as it passes you'll know nothing about it."

"Except that it won't hit us," commented the delighted controller.

The next space liner arrived, airlocked, and departed in safety. Sir Gustave Hind, in his London office, sat anxiously waiting and watching the radar screen for its arrival at the city's main spaceport. Hanbury, now on his way to headquarters, caught up with it as it entered the Earth's atmosphere, and escorted it home.

Sir Gustave was still rejoicing at its safe arrival, already announced by 'phone, when Hanbury tapped on his office door and entered.

"Well, Gus," he beamed, "that job's all

sewn up, I reckon. And barring accidents the gang are in the bag, too."

Sir Gustave rose and held out a hand.

"This is one time when I'm glad to hear you call me Gus," he said. "Hanbury you're a wizard."

"If you'd seen me covered in that damned powdered pumice in the cave, you'd have thought I looked like one, too," grinned Hanbury, taking a proferred cigarette.

"Sit down, Harvey, tell me about it."

For an hour the two men chatted.

"I'll report to the Spaceways Police without delay," said Sir Gustave, at last. "You'll be going back with them, I suppose!"

"You bet I am," snapped Hanbury. "I'll get that devil, Motchkiss. He's my pigeon. But I couldn't fight them five to one"

Before another space liner was due at the Interstellar Station, Hanbury with a squad of International Spaceways Police was back on the Moon. The police had flown their own machine, and Hanbury had piloted his speedy flyer.

In the hold of the big police ship were half-a-dozen latest type metal diviners, a vastly improved edition of the mine detector. By using a devious route away from the big lunar spaceport their landing in a crater a little distance from the pumice mounds had escaped notice.

Hanbury led the way towards the mounds. Ten men arrived and a commander followed him.

"Get those metal diviners busy," ordered the commander as they neared the piles of grey calcified lava. "They'll tell us when we're near the one containing machinery."

True enough one did. "This'll be it," said an officer, as the instrument he carried reacted sharply to the presence of metal, and he pointed ahead to a large lump of spongy-looking stone.

"Looks like it," commented Hanbury, moving to the cave's entrance. Cautiously he peered inside and signalled the others to advance. "They're doing some repairs now," he told the commander.

With guns ready they stepped into the cave mouth. So busy were the crew that they never noticed the police. Hanbury strode carefully over the ice floor, prodded one bending figure, and as the man turned and glanced over his shoulder, signalled hands up.

Instantly the man yelled alarm and confusion reigned. Swiftly the police held each man — all but Motchkiss. Working at the rear of a piece of machinery he was able to grab a powerful gun and blast a hole in the brittle pumice wall.

By the time Hanbury could get round to him he was disappearing through the gaping exit. Hanbury refrained from shooting an easy mark.

Leaping through the hole in pursuit he saw Motchkiss taking huge giant strides in the direction of the crater where the spaceships were parked. Motchkiss must have spotted them and instantaneously evolved a plan.

Reaching the big police ship he swung the airlock clamp-lever, pulled the door open, scrambled inside and slammed it. The pilot, who had remained on guard, turned in his seat at the vibration. Motchkiss, whipping off his spacesuit helmet, snapped out: "Get going! Quick! You heard!"

Momentarily confused, the pilot hesitated, and in that brief time. Hanbury swung the airlock door and clambered aboard.

Motchkiss spun round and fired. Luckily Hanbury was still on his knees and the spurt of flame passed over him. The ship jerked suddenly forward throwing Motchkiss to the floor.

Hanbury grabbed him. Struggling and swaying they rose. The big ship was moving fast, the airlock door still open. Motchkiss tried to throw Hanbury. The special agent side-stepped, swung a heavy fist upwards, and Motchkiss reeled backwards towards the open door. Hanbury reached to grab him. Motchkiss slewed away, lost his balance and fell threshing into starlit space.

Hanbury, awe-struck for an instant, slammed the airlock door. Then striding to the cockpit he yelled to the pilot:

"He's gone! Take the ship down again. We've got the crew in the cave."

Turning, he looked through a porthole window, and shuddered. Motchkiss' body was floating along beside the ship, his face already bloated seemed to be watching.

"We'll take this bunch to International Headquarters," said the commander over his radiophone when the ship landed. "The Paramount Court will deal with the maleficent authorities."

Hanbury nodded. "Okay, let's be on our way," he said.

SIR GUSTAVE, cheered by the news from Hanbury over the radio, greeted him smilingly in his London office. For a while the two men discussed the diabolical plotters, now incarcerated. Then Hanbury rose to go.

"No more assignments for a month, please," he said, from the door. "I want to fish a Devon trout stream."

"Better leave your address," advised the chief.

"Not likely," grinned Hanbury. "This is going to be a holiday. So long, Gus."

THE END

WHO'S WHO

in Fandom

(Or The Four Stages of Fandom)

☆

ERIC BENTCLIFFE

My interest in science fiction (though at that time I did not know it as such) started with "Tuppenny bloods," such as Hotspur and Wizard. By the time I had reached the venerable age of fourteen I had graduated from these to the novels of Wells and Verne, and then I discovered that magazines of the genre were to be obtained. Astounding science fiction became my first love. I was an embryo-Fan.

The second of the four stages of Fandom was entered upon after I was demobilised from the R.A.F. At this period SF was hard to get and what could be obtained was expensive. I decided to write to one of the leading American magazines in an attempt to find someone willing to exchange the U.S.A. publications for the British. My letter was published in September of 1951 and I was greatly astonished to receive letters from some thirty people. I began to ex-

change letters and magazines with several American Fans. I was hooked. I was a neo-Fan.

My initiation into the third-grade of Fandom came fairly soon. Fanzines began to thud and drift through my letter box, the family started to give one another knowing looks accompanied by light touchings of the temple. Then one day I came across the address of a fan who lived only a few miles away. Inspired by the desire to find out if he was as crazy as myself (for by this time the family were suggesting that a visit to a psychiatrist might not be in vain), I wrote him a letter. From this letter and our further correspondence stemmed the Nor'-west Science Fantasy Club, with my correspondent, Dave Cohen, as secretary and myself as chairman. I was now an active Fan.

Shortly after the club had been formed someone suggested that we publish a magazine. I became the editor of SPACE TIMES and a Fan-editor; this is the final stage of Fandom and one in which you no longer have the time to read science fiction. But one in which you have the time of your life.

Fanfare and Such-like

By "INQUISITOR"

Any Martian anthropologist who tries to classify *homo science-fiction fan* will rapidly acquire an ache in both heads. One can imagine some of the description . . . . "Its natural habitat is magazine stalls, bookshops, and libraries; it generally exhibits a high degree of intelligence combined with an astonishing memory for old stories. The latter it collects with a passion shared by only one other Terrestrial creature, (See JACKDAW), etc., etc."

But then will come the 64 Universal Credit question: Are fans gregarious? Do they flock?

One school of thought will answer "Yes," or occasionally, "Yesh." Pupils of this school will be found clutching a glass in one hand and a magazine in the other, talking away in club rooms and hotel rooms and saloon bars about all the topics in the known universe.

The school that answers "No" is naturally enough, rather hard to contact, and the only representative of it whom I know is an earnest and intelligent youngster who told me that he was afraid that meeting science-fiction authors in the flesh would destroy the pure interest value of their stories for him. What horrible visions occurred to him when he tried to visualise an s-f author I thought best not to enquire, being a firm believer in meetings, parties, Conventions and get-togethers. (Have YOU booked for the Manchester Convention yet?), and in this connection I hope to publish details here of the regular meetings. If you hold, or are thinking of holding, regular sessions, please let me know.

★ ★ ★

The oldest regular meeting of s-f fans and professionals in this country is the London Circle, formed in late '46 by fans who were drifting back from the chaos of the war years. Its regular Thursday meeting became known in all parts of the world; two professional magazines were born there, several large-scale Conventions

were planned there, and visitors from the country and abroad were assured of finding congenial company every Thursday night. The Visitors' Book, started in 1950, contained over 300 names by the end of '53 and read like a *Who's Who of British Science Fiction.*

But you'll notice that the above is in the past tense. In December, the manager, Mr. Mordecai, moved to another house, and the friendship and consideration he'd shown to the Circle was such that they moved with him. They are still busily engaged in the discussion of the why, when, how and who of the Cosmos in the saloon bar of the Globe in Hatton Garden. The night is the same—Thursday—and there is the same lack of formality which many think has been the cause of its long life.

There are no fees, no minutes, no set discussion; anybody is free to wander in or out as they please. There is one honorary post, that of Secretary, which is held appropriately enough by the young lady who recently initiated the Fantasy Secretary Bureau for the typing of s-f manuscripts. In the London Circle there is only one rule —sign that Visitors' Book on your first visit!

★ ★ ★

Other clubs, organisations and libraries have been established in such far-flung places as the Medway towns, Windermere, Bradford, Manchester, Leeds, Birmingham, Kettering (Northants), Lowestoft, Portsmouth, Cheltenham, etc., and I will give some details of these in later columns. Special mention should also be made of the Fantasy Art Society, a correspondence club for practicing artists, amateur and professional. News of the club and its news-letter, can be obtained from Harry Turner, 9 Willow Bank, Moston, Manchester 9. Incidentally, I hear that a Fantasy Art Exhibition is being planned for this summer.

★ ★ ★

I thought I would be able to give the readers of the *Vargo Statten Magazine* some really red-hot news, but it turned out that the dull thump which shook the house at Christmas wasn't a flying saucer landing in the back garden but the Christmas number of SPACE TIMES, the Manchester fanzine, landing on the front door mat. It contained fiction by Arthur Clarke, Charles Dickens and A. Vincent Clarke (rather odd collaborators, but this was a fan parody on *Christmas Carol*), and M. M. Badler, articles by three professional editors, including Mr. Paterson of this magazine, verse, features, etc., etc., totalling 120 pages. In face of this gigantic effort, the poor reproduction and stencilling of some of these pages shouldn't be criticised too harshly. 47 Alldis St., Grt. Moor, Stockport, Cheshire, is the address for enquiries, or better, subscriptions (6s. per year).

FISSION, Vol. 1, No. 1, dated January, '54, edited and published by teen-age fans Colin Parsons and Geoff Wingrove, is a lithographed fanzine, and as far as I know only the second to be produced by this process. Containing articles by the well-known Ken Slater, and author Bryan Berry, and stories by professional authors F. G. Rayer and H. J. Campbell, this shows plenty of promise. I'm surprised, though, that with this particular method of reproduction being used there were not more illustrations to break the interior text. The price is 9d. per issue, the address, 31 Benwood Court, Benhillwood Road, Sutton, Surrey.

The other lithographed fanzine mentioned above is ZENITH, a superbly produced job co-edited by Harry Turner of the Fantasy Art Society and Derek Pickles. Turner's war-time ZENITH set a standard in duplicated art-work that has rarely been surpassed, and this revival in more sophisticated form should prove equally enjoyable. The second issue is now available, at one shilling, from 197 Cutler Heights Lane, Bradford 4, Yorks.

HYPHEN, which can be read as a pun or as denoting the link between British and U.S. fans, specialises in humour, and considering that most fans reach for a pun with lightning quickness and have an other-worldly sense of humour on the most serious of occasions, this is no mean recommendation. The more you know of s-f and fandom, the more you'll enjoy it, but you'll enjoy it anyway. It's published by Walt Willis, 170 Upper Newtownards Road, Belfast, Northern Ireland, and costs 9d. per copy. HYPHEN also carries news of the Big Pond Fund, an attempt (which may turn into an annual affair) to send a British representative to the next U.S. World Science Fiction Convention.

★ ★ ★

Most of the active British fans of the early '40s, those who were publishing and writing in the amateur field, have since appeared in professional magazines or "between hard covers," but the achievement of one of them, now known as Charles Eric Maine, is worthy of note; his story, *Spaceways*, has been broadcast, filmed, and published in book form! The book is published by Hodder & Stoughton at 10s. 6d., the film, made by Exclusive, has reappeared after a brief premiere in London last summer.

The scene of *Spaceways* is an experimental rocket site, where attempts are being made to establish an artificial satellite in stable orbit above the Earth. The scientist-hero discovers that his wife is having an affair with one of his co-workers. A rocket is launched, mysteriously fails to reach expected height, and simultaneously the lovers disappear. An M.I.5 agent believes that they have been murdered by the scientist and concealed in the rocket, which is now hundreds of miles beyond reach. How can the suspect prove his innocence?

This is a strong plot, worthy of better production than it gets in the film. Once again the effects of a small budget show too clearly, and the whole picture is made as if the cast are expecting THE END to flash into their faces at any moment.

★ ★ ★

Judith Merrill's first s-f story, "*That Only a Mother*——," was acclaimed as a minor classic when published in a leading U.S. magazine; since then she's written other shorts, edited a brilliant anthology and her first book has now been reprinted in this country. In *Shadow on the Hearth*, she returns to the theme of motherhood, for this is the story of a New York housewife and mother when the Atomic War starts and an A-bomb drops on the city. Don't expect slam-bang adventure here; this is a sincere character study which doesn't attempt to make a super-woman of the heroine, and as pure story it makes an interesting change from the standard formulae.

Sidgwick & Jackson have also published *Flight Into Space*, by Jonathan Norton Leonard, Science Editor of *Time*, at 12s. 6d., and *Man Into Space* by Heinz Haber at 30s.; the first is a general survey of astronautics, the second a detailed account of the probable psychological and physical effects of space-travel.

Another book from a Science Editor is *Explorations in Science* (Gollancz, 12s. 6d.) by Waldemar Kaempffert of the *New York Times*. It deals, on a very popular plane, with numerous subjects from spaceships to ciphers; not over-useful as a text-book, but it makes a good springboard for the imagination.

★ ★ ★

The range of fantasy . . . . Hollywood announces a "science-fiction thrill-chill melodrama . . . . scientist transforms a domestic cat into a sabre tooth tiger and himself into a sub-human being that ranged the world thousands of years ago." I wonder if they'll call it "The Piltdown Man Rides Again"?

From Athens comes news of the first Greek s-f convention, held in that city at the end of last year. For reports of this branch of fandom, contact the Athenian S-F Club, 45 Charilaou Trikoupi Street, Athens, Greece.

★ ★ ★

After six or eight month's silence the Liverpool S-F Society's official organ SPACE DIVERSIONS appeared at Xmas with 108 pages and the announcement that it was no longer bi-monthly but "irregular" Obviously including everything, good, bad and mostly indifferent received during the interval, the issue was a huge mass of assorted stories, articles, poems, etc., out of which the editors occasionally peered with embarrassed smiles. Worth noting were articles by professional authors Ted Tubb and Bryan Berry, but it's a pity that the superb duplicating wasn't matched by the spelling, format and contents. This issue costs 2/-, the usual price is 2/6d. for three, available from Norman Shorrocks, 12a, Rumford Place, Liverpool, 3.

TO a world surfeited with the majesty of advancing accomplishment war had come —and gone.

It had raged for twelve relentless months, decimating everything in its path and leaving but five million survivors out of the three hundred million who had formerly been spread across all parts of the globe. Now the survivors spent their time side-stepping the ghouls of war in the shape of disease, pestilence, famine, and exposure to the elements. Most of them lived almost as troglodytes, using colossal bomb craters as the bases for their homes, stealing food where they could, using whatever scorched and tattered fabrics they could find to create some kind of clothing, with which to protect themselves against the searing winds of winter. The year when this aftermath had come must forever remain unknown, mainly because those who had been left behind had hardly any conception of what year it now was. They had been through hell on earth and they were left dazed, battered, and wondering, lost to all sense of time and the common decencies of normal civilization.

What the war had been about very few could remember, but some seemed to recall it had begun with a quarrel between two nations which had rapidly flared up until the whole powder keg had been ignited. Following that had come the hail of atomic warfare and, lined behind it, all the colossal and shatteringly destructive paraphernalia of destructive warfare. That there were no victors now the struggle had ceased was obvious. There were only losers, and a few amongst the scattered millions who believed they might yet build again upon the ashes of the old. How true was this belief was proven in a matter of two years, for out of the chaos and rubble of the former scientific magnificence there began to arise a new civilization, patterned very much as the old one had been with tall, stately buildings, wide terraces, canyons of streets and lofty rooftop spaces wherein man could get the benefit of the upper air away from the enervating toxics of the lower levels. Only the genius of man, and the knowledge of past scientific accomplishments, had made this resurrection from absolute ruin possible.

By common consent of the survivors there was now only one ruler for the entire world. He had gained the position through unswerving integrity of purpose, strength of character, and

that inborn spark of genius which made him an unquestioned leader of men. His name was Carson Rhodes and there was about him a definitely Nordic appearance in that he was tall, broad-shouldered, blond and in every way an immensely impressive personality. But he did not rely upon his undoubtedly superb physique to make him worthy of the rôle of leader; it was his scientific ability allied to his unquestioned gift for organisation which had placed him at the summit of the men and women who had survived the greatest man-made catastrophe of all times.

Carson Rhodes did not work alone. He knew that one man's opinion can often be wrong so there was always a council of colleagues to determine with him the answer to any great problem which arose among the newly organised community. Such a problem did indeed arise in the third year after the end of the war. In many ways it was a comparatively trivial matter which was brought to Rhodes' notice, but with his usual thoroughness he investigated it. Summed up briefly, the problem concerned the sudden extraordinary behaviour of animals, both domestic and wild. There were at least twenty-seven cases of animals who, according to their owners, were actually clever enough to *reason* matters out for themselves. At first such a possibility seemed patently absurd but since forty-seven people could not possibly all be telling the same tissue of falsehoods it became a matter for investigation, and a very surprising investigation it proved to be when at length the inspectors delegated by Rhodes returned to his headquarters with their report.

"It seems to me, sir," explained Nathan Walsh, who filled the rôle of Rhodes' chief investigator, of "peculiar" matters, "that we are up against one of the most unique problems we have yet encountered. I investigated half a dozen of the cases which you handed over to me and in every instance I found the owners had been speaking the truth. There was the case of Joseph Adams' dog, which without a doubt was able to differentiate between coloured cloths without having had any previous training in this respect."

"By which," Rhodes asked, pondering, "you mean that it was not a matter of association of ideas in the dog's brain?"

"No sir, nothing at all like that. I put three cloths—a green, a blue, a yellow—on the floor and told the dog to select the yellow one. Without a moment's hesitation the dog did exactly as instructed and brought the yellow cloth to me. In another instance I investigated the case of a cat which proved even more sagacious than the dog. I put two playing cards on the floor—one was the nine of clubs and the other was the eight. You will realise what little difference there is between those two cards, sir, yet without pausing to even examine the cards the cat picked up the eight of clubs exactly as I had instructed and, what is more, it placed them on the kitchen table just by my giving the instruction 'place these on the table'."

Carson Rhodes was silent. Behind him spanned the enormous windows of his office which looked out on to the rebuilt city. The time was summer, the air was soft and warm, the sky was blue and cloudless, for the weather machines were functioning perfectly. In fact everything was now once again ordered, quiet and serene, and yet into the midst of it had come this strange enigma of animals which could reason for themselves—animals which had taken unto themselves the one prerogative presumed to belong only to human beings. The gift of reason . . .

"Naturally," Nathan Walsh said, after a pause, "there has to be an explanation for such an extraordinary state of affairs."

Rhodes gave him a brief glance from his deep blue eyes.

"Have you any suggestions to offer, Walsh?"

"At the moment, sir, no. As a matter of fact I haven't yet recovered from the shock of making the investigation. I thought perhaps you would have some ideas on the subject."

"Off-hand I have no ideas at all. But what I would suggest you do is obtain one of these animals and fetch it to the scientific laboratory where it can be examined by the experts. It's perfectly obvious that the sudden gift of reason is caused by some change in the brain and the apparatus which we have in the laboratory should be able to detect what that change is. You see, Walsh," Rhodes continued, as he saw the inspector looking vaguely puzzled, "we are now living in a world which is totally different from the one which existed before the war. During the war countless radiations hitherto unknown were released, and some were immensely destructive while others may have caused physical changes, the full results of which we have not even glimpsed. It is reasonable to assume that animals would be affected just as much as human beings, but in the case of an animal a physical change is usually obvious long before it appears in a human being, due to their much more sensitive nervous system."

"Well," Walsh said, thinking, "I fail to see sir, that human beings can become any cleverer than they are. After all, we already have the gift of reason and there is no other sense that

can possibly be developed, is there? What I mean is, if animals are sort of casting their shadows before, and giving a kind of hint to what may shortly happen to human beings, I fail to see that it signifies, because human beings have surely reached the highest peak of evolution?"

"Not by a long shot," Rhodes replied with a grim smile. "In fact compared to some of the forms of intelligence which must exist in the Universe I would be inclined to consider that we are, as yet, very small fry."

"Well anyway, sir," Walsh said, "I will do as you suggest and secure one of these animals for scientific examination . . . "

And Walsh did just this. That same evening an Alsatian dog, which seemed to be gifted with reason even more excessively than any of his fellows, was taken to the down-city laboratories and there handed over to the experts for analysis. Rhodes himself took no part in the examination, not because he was not capable of handling it but because so many other matters were constantly claiming his attention. Nonetheless, towards ten o'clock as he was about to leave, there came a sudden buzzing on the intercom-visiphone. He snapped the switch and looked at the small square of screen upon which the face of one of the laboratory technicians appeared.

"Have you the time, Mr. Rhodes, to come down to the laboratory?" the technician asked, and there was a certain mystified wonder in his voice which made Rhodes raise his eyebrows.

"Yes, I can spare the time, granting it is important enough."

"I am inclined to think this is, sir."

To which Rhodes merely nodded and switched off the instrument.

Ten minutes later he had reached the down-city laboratories and the night commissionaire immediately conducted him to the particular section of the great building where the experiment on the Alsatian had been and still was proceeding.

Within the huge brilliantly lighted room, entirely devoid of shadows, Rhodes beheld four scientists assembled, each one of them in his long white coat, and each of them looking, it appeared, particularly puzzled. The man who had done the 'phoning came forward as Carson Rhodes entered.

"I would not have taken up your time, sir, without real need," he apologised, "but in this instance I felt—in fact we all did—that your presence was necessary. We have thoroughly examined the Alsatian without hurting it in any way, and there is no doubt that its brain construction is entirely different from that of a dog before the war. This particular animal, we understand, is only three years old, which means that it was born just after the war ended. We have, of course, specimens of animals, especially dogs, which existed before and during the war years and the construction of their brains is completely at variance with the construction of this particular one."

"Which means," Carson Rhodes said, taking up the thread, "that something that happened during the war caused this dog to be born with a brain different from any dog before it?"

"That," the technician agreed quietly, "would seem to be the case, sir."

Rhodes frowned, reflected for a moment or two, then he motioned briefly with his hand. "I would like to see your reports and the photographic X-ray plates that you have made of this animal."

The technician nodded and in a moment or two Rhodes was in possession of all the necessary plates and reports. Seating himself at the nearby table he went through them slowly, pondering meanwhile, then at length he looked up.

"I gather that you gentlemen appreciate the significance of this extraordinary occurrence?" he asked.

The scientists nodded slowly as they came forward. The technician who had been doing all the talking up to now was the head of the laboratory, and as before he again took up the matter.

"In the case of one dog," he said, "it would be considered as a freak of Nature and dismissed as such. But we have positive evidence that over forty-seven animals are thus affected, covering various ranges—that is to say dogs, cats, rabbits, even white mice, and in many cases animals of the wild variety which are in the zoos. In every instance there is this peculiar intelligent addition, namely the gift of reason. Up to now Man has been the dominant factor in civilization because he alone—with the possible exception of the ant—has had the gift of reason. But if animals also are going to possess it we might find ourselves up against a very sinister and dangerous problem."

"Exactly," Carson Rhodes said, sitting back in his chair. "That was just what I was thinking. And it does not seem an altogether practical proposition to kill off animals everywhere in the world for the simple reason that thousands of them are probably breeding in places of which we know nothing. No, *that* is not the answer."

"As I see it," the technician remarked, "the answer lies in finding the cause and eliminating it. Once we have done that we can destroy

all animals with the assurance that any that are afterwards born, for there are bound to be some no matter how many we may destroy, will be normal."

Rhodes nodded slowly, pondering.

"Yes, that seems to be about the only solution," he agreed finally. "The best thing you can do, gentlemen, is to make tests of the still radio-active deposits left behind from the war and also take samples of the atmosphere to determine if there is perhaps some peculiar gas which is causing this extra brain formation in animals—in other words make all the tests that are necessary and report back to me at the earliest moment."

The assembled scientists nodded and Carson Rhodes got to his feet. For the moment he had done all he could: now it was up to the scientists. He had other matters constantly claiming his attention . . .

WITHIN a week the head technician reported back to Carson Rhodes' headquarters, and a particularly disquieting report is proved to be.

"The cause, sir," the technician said, "is not radio-activity left behind from the war nor is it anything in the atmosphere. We have made the most exhaustive tests in this direction and there is nothing whatever that could cause any change in physical structure. We do find, however, that there is an exceptionally strong increase in the amount of cosmic radiation reaching the earth's surface. Normally—and by that I mean before the war years—it registered somewhere in the region of nought point one per cent. of the total amount of cosmic radiation known to exist in outer space, the amount increasing of course as one goes higher, but our readings now show the cosmic radiations have increased three-fold and we can only think that this is the cause of the physical changes in animals."

"By cosmic radiation," Rhodes asked, "do you mean cosmic *rays* as such?"

"Yes sir, that is exactly what I do mean. I am referring to the ultra-short, extremely penetrative rays which have no known source in outer space but which are constantly descending upon our planet—and for that matter every other planet as far as we know. Normally the ionic layer in the upper reaches of the atmosphere absorbs a vast proportion of the cosmic rays, preventing us from receiving the full force thereof, but it would appear that the war and the immensely destructive power of the explosives released during that period, have so weakened the ionic layer at our atmosphere's limit, that cosmic rays are now getting through in much greater quantities than before. There is nothing illogical about it," the technician continued, "for scientists have always warned us that atomic war would probably cause vast changes in our atmospheric envelope, and such indeed seems to be the case."

"It would certainly explain matters," Carson Rhodes agreed, pondering. "To the best of our scientific knowledge cosmic rays are the main cause of evolution. Man has risen from the lowly protoplasmic slime to his present high status purely through the action of cosmic rays, which possess within themselves some catalytic power of changing the aggregates and molecular structure of a human body so that it gradually evolves from the protoplasmic state to the perfection that we see to-day. It can only mean that since cosmic rays are getting through they are speeding up the normal course of evolution. It is quite within possibility that in many tens of thousands of years animals will possess the gift of reason by the natural outcome of evolution, but in this instance the tens of thousands of years are being telescoped because cosmic rays are speeding things up to such an enormous extent. That, as I see it, can be the only explanation for the gift of reason which has suddenly descended upon animals."

"Yes sir," the technician agreed seriously. "That is what I think too, and so do the rest of my colleagues. It presents a very grave problem."

"It means," Rhodes observed, after a long meditation, "we have no means of destroying the cause of this sudden gift to animals. We cannot repair the ionic layer round the atmosphere: that is obviously impossible. On the other hand we face the prospect of increased cosmic rays affecting human beings as well, because as I told you earlier, we are not by any means at the limit of our evolutive development. What we might grow into in tens of thousands of years we do not know, but with this excess of cosmic rays descending upon us, we may very soon find out! In other words, it appears that since the war the weakening of the ionic shield around the Earth has produced what is technically called a mutation, that is a milestone in the journey of living things from the protoplasm to the perfect specimen."

The technician nodded, his face still troubled.

"As yet, sir," he said, "the shadow over our civilization is no bigger than the tiniest cloud on the horizon, and if it only remains in its present state we can probably deal with it. I would suggest that we destroy all animals everywhere as a safeguard, because it is becoming

increasingly obvious that now they have got the gift of reason they are quite beyond control and we are going to get into a very difficult predicament if we don't destroy them before they form themselves into armies and attack us."

Rhodes gave a rather grim smile at the fantastic prospect of a perfect civilization, rebuilt with all the knowledge and all the skill science could produce, suddenly being threatened by animals which had developed the gift of reason. And yet the threat was there. It was a very real thing and it had to be dealt with, and it seemed that the only possible way *to* deal with it was to destroy the animals before they could go too far.

"All right," Rhodes said at length, turning back to his work. "You have my permission to do whatever you think fit in the matter of eliminating all animals before they can become a threat to our security."

So the technician departed with his orders, and how he intended to deal with the matter did not particularly concern Carson Rhodes at that time, preoccupied as he was with the more important matters of rebuilding trade and finance through the re-built world.

But though the scientists, under the direct orders of the head technician himself, went to work to eliminate animals of every description both wild and tame in every part of the world, they were not entirely successful in their mission, for as Carson Rhodes himself had observed, there were countless places where the animals were breeding and bringing forth their young, and these were the ones which could not possibly be reckoned with. Accordingly, after an interval of two months, which brought the re-built world to a blazing summer, there came the first real sign of trouble.

It began in the equatorial regions where perhaps the heat of the sun had a good deal to do with incensing the wild animals to a fury against their human masters, and thereafter spread rapidly to the temperate climes. The fact remained that observers reported they had seen vast numbers of all types of animals herded together in what were obviously armies, and each army contained several animals at its head who evidently were responsible for directions and plan of attack. Before the atomic war such a sight would have been relegated to the realms of fantasy, but now there was not the slightest doubt that it was happening. Indeed why *should* it not happen since animals were quite capable of thinking and reasoning on a par with human beings, and therefore were determined—quite naturally—to extricate themselves from the subservient position in which they had existed for countless generations? Their main handicap lay in the fact that, physically, they were not enabled to perform the feats common to a human being, except in the case of monkeys and gorillas, whose physique being nearest to the human made them indispensable to this astounding new animal generation which had arisen.

There inevitably came a day when the animals struck with all their force, when they descended in their tens of thousands upon one of the many new towns which had sprung up independent of the capital city itself. The inhabitants of the towns, quite unprepared for this sudden onslaught by animals, were caught unawares and in many cases were torn to pieces before the situation could be got in hand by using modern weapons upon the invaders. Here, though, there was a difficulty since most of the weapons of war had been jettisoned at the close of the atomic onslaught, in the fond hope that nations would never again rise against each other. In this instance it proved disastrous for it gave the animals a chance to gain the upper hand, at least, in the outlying towns.

Carson Rhodes, however, immediately went into action. He gave orders for all the armaments necessary to be manufactured to deal with the ever increasing hordes which would likely be attacking the capital before very long. Sure enough the attack came, three weeks after the invasion of the outlying towns, but this time the animals were beaten. Destruction rained upon them from all sides and the spotless streets and buildings of the great capital were scarred with flames and stained with animal blood as the terrific massacre proceeded. It ended in the complete rout of the animals and the hasty retreat of those which survived the deluge of death which descended upon them. Whether they had learnt their lesson, and would not attack again, remained to be seen. For the time being the situation was in hand . . .

The menace of the animals was one thing, but there were also other ramifications stemming from this main trouble. Liners at sea were attacked by dense shoals of fish, some of them merely small fish but others from the very depths of the ocean large enough to incapacitate a liner if necessary; and indeed many of them did. Several liners bound upon long transoceanic journeys found themselves overwhelmed by these monsters of the deep and dragged down into the depths with all souls upon board. Immediately the order went forth from the capital that all liners must henceforth be fitted with the most modern defensive weapons to destroy all possibility of attack. In the air, too, the sinister menace lurked where

birds—in any case always gifted with that mysterious sense known as the homing instinct—attacked human foes with relentless fury.

The chief danger came from the birds of the eagle variety, their immense size and uncanny intelligence making them deadly foes indeed. Many pilots reported that fighting them was akin to trying to dodge the fastest jet fighter in existence. But here again, man, due to his superior weapons, was again the master and throughout the long hot summer the battle raged on land and sea and air until at last there came a time when no more attacks were reported and investigation revealed that there did not seem to be any particularly large generation of animals, birds, or fish visible. It could only mean that the havoc that had been wrought among their numbers had brought a cessation of hostilities—at least for a while.

Carson Rhodes, however, was looking beyond these preliminary manifestations created by an increase in cosmic rays. He was scientist enough to foresee that if animals, birds, and fish could thus be affected by a mutation in the evolutive scale, then so could *all* living things—including human beings. There were also the other forms of life, from which even more dangerous possibilities might be expected—

"The ants, for instance," Rhodes explained, to a gathering of scientists that he had summoned to his headquarters. "It has been known ever since scientific records have been kept that the ants, or termites if you prefer, are the cleverest insects known to man. They are intelligent, they have an ordered society, they are experts in battle, and they are absolutely fearless. A soldier ant is probably the most perfect war machine ever contrived by Nature.

"Did you ever stop to think, gentlemen, what is going to happen when the ants have also evolved in the same manner as the animals, birds, and fish have done? Frankly—" he looked about him with grim eyes—"I wouldn't give a red cent for our chances if the ants really gain the upper hand."

"And to exterminate them is, of course, impossible," declared the chief laboratory attendant, shrugging. "There are tens of millions of ant hills throughout the world, and to try to find even a quarter of them and destroy them would be next to impossible. Ants teem in the countless millions, there's nothing that we can do about them."

"In that I agree," Rhodes assented, then after a pause he gave a curious smile. "There is one thing that I think you gentlemen should all know; that is that I have been receiving reports that the cosmic rays are now also affecting human beings."

The assembled scientists glanced at one another in surprise then back towards Rhodes as he lifted a report from amongst the sheaf of papers on his desk.

"I have here," he continued, "reports from various parts of the world that many men and women have revealed—consciously and unconsciously—traces of intelligence far in excess of the normal. There is amongst these people a change in physical appearance. It would appear that skulls are becoming larger in both the case of men and women, and that can only mean that the brain material is becoming much more expansive than hitherto. Since that is the case there must very soon come a time when every living thing, or should I say when every human being, on the face of this planet, will be affected as are these few at the moment.

The change has come about in much the same way as it did with the animals — first just a few, then suddenly sweeping like wildfire through the whole species. If it should so happen, gentlemen, that human beings are evolved tens of thousands of years ahead of their time before the ant reaches the same peak of evolution, we shall be well able to deal with them; in that we shall be as advanced as they will be. In the meantime our best course is to have our weapons brought absolutely up to date and manufactured as quickly as possible in order that we can meet any sudden menace which may arise."

So into this paradise born of the cataclysm of war there had come the strangest menace known in the history of mankind. Man was relying for survival partly upon his weapons and partly upon winning the race in evolution. Carson Rhodes directed the scientists to keep constant watch upon the development of termites whilst he himself still attended to the more mundane matters of commerce and finance, the two inseparable pillars upon which society must always be built.

By the autumn he received reports that microscopic observation of the termite colonies had revealed that ants were indeed rapidly evolving and that their general movements and organisation showed a motivating intelligence far in advance of anything yet observed. On the other hand, across three quarters of the globe man too was rapidly evolving. In most of the towns and cities there were large-headed men and women and their intelligence was commensurate with the enlargement of their craniums. In a word every man and woman was destined to become a genius, that is by comparison with earlier standards.

To Carson Rhodes too, there came this

mutational point in his development, a day when he suddenly found that the problems which had baffled him hitherto were now no longer complex. He could solve them in an instant, which could only be explained by a sudden increase in his brain power. He found this mutation interesting, not to say fascinating. It was a new experience to discover that former riddles were riddles no more. He felt able to plan far ahead of the narrow compass within which he had been working. He envisaged enormous engineering changes for the capital which he himself had conceived in the first instance. In fact all over the world men and women were striding ahead of their normal standing and were bending the forces of science to their will as never before. But with this mutational change there also came a price, and it was one which Carson Rhodes—for all his prescience—had not foreseen. It was Nathan Walsh, his chief inspector of statistics and social order, who brought him the news.

"Genius," said Walsh, "is one thing, but *sterility* is decidedly another! I think you ought to know, sir, that for the past five months there has been no record of any birth, anywhere. It can only mean that Nature, in giving to mankind the gift of great genius, and evolving him far beyond the normal status, has exacted a merciless price. We are given ever increasing knowledge but no offspring to carry it on after a brief spell of life has ceased!"

Carson Rhodes sat in silence, absorbing the grim news. He was as handsome as ever but the extraordinary cranial development which had now come to him dwarfed the massive strength of his face. His head was truly enormous but still covered with that riotous mass of thick blond hair.

"This," he said finally, "is something with which we did not reckon. Have you reported it to the scientists?"

"Yes sir, I have. And they have made all the necessary biological tests and experiments but they are satisfied that there is nothing that can be done. The only way that we can ever bring normalcy back to the race, and indeed to the whole world, is to find a way to blot this incessant downpouring of cosmic rays. And in that particular field the scientists are none too hopeful. They are experimenting constantly, making tests upon the atmosphere, but so far have not produced any worthwhile solution."

Rhodes got to his feet and banged a heavy fist upon his desk.

"But this, Walsh, cannot possibly be allowed to go on! It means in a few years the death of the entire race and what is the use of genius if the race is to die? Somehow these cosmic rays have got to be stopped! We *have* everything else. Genius, progress, a fair sized civilization, and I fully believe that we now have the mastery of insects, birds, fish, animals, and so forth. We're certainly not going to be baulked by this sudden sterility which has descended upon us. I will see the scientists for myself."

And this was exactly what Carson Rhodes did. But far from achieving his object he received instead only another shock, and it was the chief technician who dealt it.

"I would like you to look at this, sir," he said, when Carson Rhodes had explained the reason for his visit to the laboratory. "Just tell me what you think of it . . ."

The technician produced a sheet of shining grey metal from a nearby locker and stood it up on the bench before him. Then at his signal one of the other scientists switched off the light. Rhodes waited impatiently, wondering what all this demonstration was about, then with some surprise he found himself looking still at that sheet of metal even though the room was in darkness. The sheet was glowing gently as though painted with phosphorescence. It hung there uncannily in the dark, a softly glowing rectangle.

"That," came the technician's voice, "is a piece of metal identical to the metal which was used to build this city. Of that, sir, you're doubtless aware?"

"Yes, of course I'm aware," Rhodes replied irritably. "What about it? Why all the glow about it? Has it been painted with something?"

"No sir—that is the point! That glow which you see is *inside* the metal itself. We have examined it through electron microscopes and it is perfectly obvious that the molecular structure itself is mutating just the same as everything else. Living matter in the shape of human beings and animals and so forth is not the only form of life to evolve. When you come to think of it, metals *also* evolve. Take the simple case of lead which changes in time to radium: that also can be called a mutation. In this case this metal is basically radio active and it means that it too is influenced by cosmic rays, is mutating into something else. There must come a time when its molecular structure will break down and it will alter into some new form entirely. What that will be we don't know, but the warning is there! Eventually, sir, this whole city is liable to come down round our ears and everything made of this metal—and I shudder to think

of the number of things which *are* made of it—will lose their present constitution."

Rhodes clenched his fists helplessly and looked at the impassive scientist.

"But this means that our whole civilisation is built on shifting sand!"

"That, sir, seems to be the case," the technician acknowledged, sighing. "Not only are we faced with sterility but also the breaking down of the very foundations of the civilizations which we have built up. The ghastly part is that we know of no way to circumvent the tragedy. Or, at least, not from the ground here. . . ."

Rhodes looked up sharply. "And what do you mean by that?"

"I mean, sir, that between us we have evolved a plan which might put a stop to the trouble. Obviously since it is the cosmic rays which are responsible for all our trials it is the *blocking* of these rays which must be accomplished if we are ever to get things back on an even keel again. We have acquired great genius through the cosmic rays which have reached us recently, and from the look of things we shall go on acquiring genius. For that reason it has not been difficult for us to evolve a plan which formerly would never have occurred to us.

"It is this: That we journey into space in specially-designed machines and harness the energy of the sun. We have evolved a system by which the sun's outpouring of electrical energy can be trapped and then re-radiated into what one might call a cocoon of electrical energy. Given enough machines and 're-distributors' as I will call them, it should be possible to form a shell of energy entirely round the Earth which, according to our calculations on paper anyway, ought to provide the Earth with a new ionic shield. By that means the cosmic rays will again be diverted so that only the normal quantity of nought point nought one per cent. of them descends upon the Earth. I am willing to make the experimental trip into space to view the possibilities of this theory if you will grant me the permission to go."

"Permission!" Rhodes cried. "This is not a case where one asks *permission;* it is for you to depart immediately and see what you can find! Everything depends on it! I never realised that the position was so desperate. Go at once, waste no time. . . .!"

* * *

THREE days later the head technician departed alone on his journey into the void to test the possibility of his theory. He went in a machine which had been miraculously constructed in less than twenty-four hours, so extremely efficient were the machine tools which newly acquired genius had produced. The machine contained within itself all the necessary instruments for making the solar tests which the technician required. So it was with a high heart that he fled from the imprisoning toils of Earth's gravitation and into outer space. He absorbed the initial shock of the take-off without harm since his evolution was now so complete that his mind was the absolute master of his body and refused to allow it to be subjected to any of the strains and stresses which normally would have been experienced.

Once he was twenty thousand miles beyond the limit of Earth's atmosphere the head technician surveyed the void and then the instruments around him. For some reason, however, he found it impossible now to concentrate upon the task for which he had come, and hard though he strove, he could find no explanation for the sudden blanking out in his powers of mental absorption. It was the effort he made to pin his mind down to the task on hand that made him oblivious to certain physical changes taking place within him, both internally and externally. Anybody who had been with him would have noticed that age was spreading over him like a mantle.

He had left Earth as a big-headed, comparatively young man, yet now he looked at least eighty—then ninety—then a hundred. Within a matter of seconds he leapt from middle age to old age, and beyond old age to extreme senility. Before he even had a chance to apprehend what had happened his life energy had completely burnt itself out in one exploding fury of racing years. As he died, a withered, incredibly aged man, the thought flashed through his mind that out here in space cosmic rays were even more powerful than they were on Earth, for the ionic shield, though badly weakened, was providing *some* kind of a screen.

But out here the naked force of them was overpowering, and never before had a venture been made into space to test the conditions reigning in the void. Therefore he had received the full impact of evolutive radiation and had burnt out his life in one mighty spurt. Insulated though the ship was, it had not proved sufficient to save him from destruction. Such were the thoughts that flashed through his mind as he collapsed to the floor—and died.

And the machine with its priceless instruments hurtled on into the depths of space. A great idea had come and gone. Defeated because no thorough knowledge of space had been gained before the project had been attempted.

And back on Earth Carson Rhodes waited desperately for news from outer-space. The hours became days and still he waited, till at last it was unwillingly forced upon him that something unforeseen had overtaken the head technician. What, then, was the position now?

Rhodes' only hope was immediate consultation with the scientists, which of course he held without delay. But the scientists could only confirm his own opinion, namely that the head technician had met with unexpected difficulty, been killed, or found the machine in which he had travelled uncontrollable when it had reached outer space. The fact remained that the great idea of using solar energy to resuscitate the Earth's atmosphere was now out of the question. There had to be some other solution to the relentless problem pressing in on all sides. Upon Rhodes, as leader, practically the whole onus of responsibility rested. It was up to him to think of a way out of the desperate predicament. And with every day it became even *more* desperate, chiefly because the biologists reported that there would be no end to the world-wide sterility until the cosmic rays were shielded, and also because the entomologists were of the opinion that ants were now commencing to enlarge their size.

Cases had been noticed of ants measuring at least six inches in length, which could only mean that as their evolution rapidly increased they were also enlarging in size, and that meant that there would come a day — and perhaps before very long too—when they would reach human or ultra-human size and would constitute the greatest foes that mankind had ever faced.

Somehow amongst these emergencies Carson Rhodes kept his head and still continued to direct the destinies of commerce, finance, and social order, but even he could not prevent the rumours that were constantly flying round and there began to rise an even more insistent public clamour that the scientists do something really definite to stop the cosmic rays which were gradually eating the heart out of this new, magnificent civilization.

It was on a winter's night some four months after the ill-fated departure of the head technician into space that the crisis really came. It showed itself not in a sudden invasion of termites but in a monstrous, glowing building at the southern end of the capital. Passers-by noticed that it seemed to be shining with an unearthly pearly lustre, as though it were bathed

from apex to base in St. Elmo's fire. It was generally accepted by the populace as an unusual electrical phenomenon and nobody thought any further about it. Except the scientists. They reported the matter instantly to Carson Rhodes and he personally hurried through the city streets to survey the building in question. There was no doubt about it as the men looked at it that it was apparently phosphorescent throughout its entire structure.

"It's that damned mutation," one of the scientists muttered. "I'd suggest, sir, that we get away from here as quickly as possible . . ."

The words were hardly out of his mouth before the pearly lustre bathing the building suddenly seemed to explode outwards in a vast coruscation of soundless, creamy light. And the building itself literally vanished into thin air leaving behind the enormously deep foundation which had been dug into the earth to form its base. Down there was darkness and an empty crater of rock and soil. Of the building itself there was no sign. Evidently the metal being of a highly radio-active type had evolved into a totally different form—one so rarified that it could no longer be classed as a material structure but instead had become gaseous and dissipated.

The actual dissolution brought no harm to Rhodes and the assembled scientists beyond causing them to stagger slightly before the pressure waves generated by the mutation. The moment they had straightened up and looked about them they noticed that other buildings were similarly affected. All down one side of the immense street in which they stood, and along which normal city folk were passing to and fro, buildings were commencing to gather to themselves that unholy glow.

Such was the beginning of the great mutation which swept through the city, and since all the buildings and the power houses, and the machines within the power houses, were constructed of identical metal they all suffered the same fate and, disastrously enough at approximately the same time. In one night of panic practically the entire city disappeared and with it the immense power machines which had made it the most scientifically governed city which had ever been upon the face of the Earth.

Dawn found a few odd buildings still standing, buildings which had been made of ordinary iron or in some cases of wood, but of the splendid paradise which it had taken so much labour to create, there was no trace.

Homeless, cursing the scientists and their leader for not having foreseen such an astounding calamity, the populace was left to fend as best it could, whilst Carson aroused himself to confer with the scientists to find some way out of this new problem. If ever a man was surrounded with monstrous problems that man was Carson Rhodes, and for all his newly acquired genius he was but human and needed rest and time in which to sort out the chaos into which he had been plunged.

It seemed that even this was not to be permitted him, for with the collapse of the weather machines, which had inevitably come when the special metal had mutated itself, there came a gradual and threatening change over the formerly perfectly balanced climate. By the afternoon of the day following the city's collapse, the sky had thickly clouded and a strong wind had whipped up from the nearby ocean.

This new capital city had been constructed a matter of no more than ten miles from the sea in order to make ocean journeys more simple, but now it was from this very sea that danger threatened—for as the afternoon deepened into the winter evening the strength of the wind increased until by the time twilight had arrived there was almost a hurricane tearing through the vast open spaces where the city had stood.

It sent the people scurrying for shelter, even as they had done in those tragic days that had followed the onslaught of war. They took the only way out of the dilemma and went underground, finding their way down into the great underground railway system which had existed under the city and which indeed still did exist since most of it was fashioned within enormous tunnels of specially tested steel which had survived mutation which had affected the so much more refined metal used for surface work.

In scurrying, tumbling hundreds of thousands the people hurried down into the depths. They even descended below the underground railways, down into the deep mine shafts from which the very metal that had made the city above had been produced. All contact with Carson Rhodes had been lost. Indeed all contact with any form of leadership had been abandoned. It was a case of every man for himself, driven by dire necessity and hurricane and flood into the nearest region of safety which offered itself. Not that Rhodes wanted to be leader any more: he had enough to do to preserve his own life, as indeed had his scientific colleagues, so they followed the example of the masses and also plunged underground into the mine shafts where, at least, they would be safe from the elements, and also where an emergency system of lighting was still in operation since mining was always proceeding both night and day, providing the necessary ores for a

power-hungry city, a city which had now ceased to exist.

What happened above after the weather machines had collapsed could only be left to the conjecture of the thousands who had imprisoned themselves below, for they had no television equipment or any scientific appliances whatever with which to view surface conditions. They were just glad of sanctuary and the chance to herd together, until they could form some definite plan—or until some definite plan could be formed *for* them.

So it was that inevitably Carson Rhodes came back into the picture in that he was compelled to mingle among the people whom he had ruled upon the surface. Under his directions a certain amount of order was extracted from the chaos and the people were distributed as evenly as possible, mainly in families, throughout the vast reaches of the underground workings. Clearly though this could only be a temporary expedient, and a return to the surface would have to be made as soon as it was announced that it was safe to ascend again. Down here the only food that existed was a very little that a few had snatched and brought with them. Rhodes promptly took it over and rationed it out as well as possible, only too well aware that at best it could not last the survivors above twenty-four hours.

When he had done all these things, arranging everything through the scientists and men who were still loyal to him, Rhodes made a special point of appearing in the midst of the people in the gigantic man-made cavern which formed the main headquarters of the underground working. Here, on a rising pillar of rock, he surveyed the countless, weary, hopeless faces turned towards him in the harsh glare of the artificial lighting. It was fortunate indeed that emergency lighting existed down here, and that it ran from its own battery system, for all sources of power which had existed in the city had naturally been completely destroyed.

"That we face the biggest crisis in our lives is more than obvious," Rhodes cried, raising a hand and addressing the hundreds who were turned towards him. "We do not know how the inhabitants of other towns and cities have fared, but it is a reasonable assumption, since their cities and towns were built of the same metal as ours, that they too must have suffered a fate similar to ours. Certainly their cities will dissolve around them if they have not already done so, and it is also possible that the breakdown in their weather machines will bring to them the hurricane and flood which descended upon us before we sought sanctuary down here."

"It was for you to have foreseen what would happen," somebody shouted in fury.

"In that, my friend, I agree," Rhodes answered tiredly, "but with the many responsibilities I have upon me I cannot possibly hope to cope with all of them. Many plans were formulated, of which you know nothing, to try and save us from the effect of cosmic rays descending upon us, but in every case the hand of fate seemed to be turned against us. Now that same fate has driven us down here. It has robbed us of our city, of our possessions, of our control of the climate. It has produced deadly danger in the shape of evolved insects, it has produced sterility so that the race cannot continue anywhere on the face of this Earth. Those are the problems which confront us, but because we are humans and because we are geniuses, of which there is no longer any doubt —we shall yet again master the smashing blow which has been dealt us. We must return to the surface, build anew with ancient metals which we know will never mutate under the force of cosmic radiations, and so laboriously climb up the ladder once more to the peak of eminence which we had achieved before this present catastrophe had come upon us. Above all, we shall master sterility."

"And what of the evolving termites?" somebody demanded. "What happens when they reach human proportions and attack us in their tens of thousands, as they most certainly will?"

"When that comes," Rhodes answered. "We shall face it as we have faced this—and what is more, we shall win! I have nothing more to say to you now; I ask only that you sleep and rest and trust in me. I will send scouts above to observe what conditions are and, when the time is propitious, I will advise you that a return to the surface can be made . . ."

BUT while Carson Rhodes was setting forth his plans with invincible spirit to his people strange changes were taking place on the surface of the Earth above. When wind currents and atmospheric pressures which had been held in place by machines for many long months suddenly collapse, something is bound to happen in the atmosphere. And it was happening now, for throughout the world — and weather machines had been in operation throughout the world — there now raged the most unholy tempest ever known in the planet's history since its early days.

Screaming winds and lightning bolts destroyed what remained of the vanished cities and drove the panic-stricken inhabitants underground to what shelter they could find. In the upper atmosphere electrical explosions far in

excess of anything produced by atomic warfare were raging, converging and exploding, repatterning afresh indeed that ionic layer which man's foolhardiness had almost destroyed. Nature in her inscrutable way was restoring the balance now that the hand of man had been removed. In time there must be a complete re-formation of that ionic shell which surrounds the Earth to form a great protection for the generations to come.

For generations *would* come. All unknown to Carson Rhodes cosmic rays had already begun to diminish upon the Earth, and even amongst his own group, to say nothing of the groups of people in other parts of the world who had fled underground, there was being removed the sterility which had descended upon Mankind. It could only mean that children would come with the passage of time, and would creep out of their underground shelters to gaze upon a new, strange world patterned afresh after the hurricanes and tempests produced by the final fling of the atomic age. Indeed for Carson Rhodes and his gathered thousands there was destined to be no escape, for the onrushing sea, driven by a tempest exceeding two hundred miles an hour, crashed inwards upon the land and down through the rocks, smashing even the rocks themselves and shifting with the colossal impact of an earthquake the great island on which the metal city had once stood.

There could only be one end to the tumult. The entire island sank beneath the screaming waves, descending down, and down, and down, straight into the depths of what must one day become the Atlantic Ocean. The descent continued until finally the great mountains which had reared up at the back of the ill-fated city were submerged to their absolute peaks.

Generations hence seamen would pass those peaks and name them the Azores Islands, and scientists would look over their faded records and wonder what was the real truth about Atlantis? Why did it sink? What happened to the land which in later years became known as Mu — or Land of Disaster — and above all what happened to the scientific race which had presumably existed there?

There would be none to say that, in a year that was nameless, atomic catastrophe had left behind survivors who had only marched into an even greater catastrophe.

SPACE was midnight sprinkled with diamonds. They glittered like a double handful of gems tossed by some careless jeweller across a piece of black velvet. Cold and hard. Awful in their terrifying remoteness, icy in their unwinking brightness, accentuating the immensity of the gulf between the stars.

Jud Weston stared at them, his body rigid against the pneumatic padding of the pilot's seat, his hands trembling a little as he adjusted the setting of the visi-screen.

He was afraid.

It was a normal fear; the fear of the unknown, and even while he fought it he knew that it was nothing to be ashamed of. Not now. Not during his very first solo flight into the dangerous spaces of the Asteroid Belt. He had trained for this moment. He knew just what each winking light on the instrument panel signified, each dial, each hovering needle. He knew the controls as well as he knew his own body, the levers to pull, the buttons to push, the things to do in case of emergency.

And yet he was still afraid.

Never before had he been alone. Always there had been an instructor, capable, friendly, reliable. Perhaps too reliable, it was natural to lean on one who knew so much.

But now he was alone.

He forced himself to relax, letting his body sink into the padding of his chair, letting his muscles rest, closing his eyes for a moment and filling his aching lungs with air. There was nothing to worry about. Here, within the smooth perfection of the scout ship, he was safe. Nothing could hurt him, nothing that is but his own carelessness, for he was ringed with warning instruments, and at a touch of his hand he could speed the ship from any danger.

It was silly to worry.

He smiled a little, deliberately pursing his lips and whistling with a forced abandon. He wondered if he would always feel like this, keyed up, nervous, overstrung, and knew that he wouldn't. This was the first time. There had always to be a first time to everything, but after that he would grow blasé, indifferent, wearing his black and silver uniform of the Space Patrol as the other, older men did. Wearing it with an almost contemptuous indifference as if winning the right to wear it was the easiest thing in the world. Instead of the hardest which it was.

He relaxed even further into his chair, sighing a little with anticipation as he visualised his future life. He would travel the space lanes, tread the soil of a dozen alien worlds, bring law and order, peace and justice to the far-flung outposts of civilisation. He. . .

Red flared from the instrument panel before him.

Sound came with it, the harsh buzzing of alarm signals, and even as he jerked towards the controls his eyes flickered over the visi-screens.

Nothing.

Space showed as always, midnight black spotted with stars. No Asteroid. No meteor. No solid object plunging towards him with silent menace. Space was clear—and yet. . .

The alarms warned of immediate danger.

Panic stabbed at him even as he cut the harsh alarms with a sweep of his palm. Desperately he glanced at the visi-screens scanning the entire area around the ship, searching space with frantic eyes, searching for the danger that must be there—but wasn't.

Still the warning signals flared red.

Something had broken the radar screen. Something had approached the vessel, was still approaching it, something invisible to the naked eye. Sweat started on his forehead, running in little streams down his back, making his palms clammy with fear of doing the wrong thing.

Sanity returned just in time.

The ship was loaded with instruments. The control panel covered with tell-tales and registering dials. Those instruments had been designed for one purpose only—to protect the ship.

It was about time he used them.

The mass detector registered an object within the electronic screen. A small mass, about twenty kilos, and yet large enough to smash the outer hull with its tremendous velocity. Jud smiled as he reached for the firing controls, feeding power to the steering tubes, jerking the ship from the path of the tiny meteor.

Directly into the path of two other objects!

He grunted, his stomach knotting as he jerked at the firing levers, weight thrusting at him with the savage force of acceleration pressure. Desperately he slewed the vessel, his eyes flickering from the flickering needles of the mass detector to the apparently empty expanse of space showing in the visi-screen.

Again the warning signals flared red.

Three objects this time. All small, all invisible to the naked eye, and yet each of them capable of wrecking the ship and letting the precious air into space.

Sweat glistened on his taut features as he remembered that he wore no space suit, that a tiny breach in the hull would bring agonizing death, and yet, even as his mind cringed to what might be, his trained hands and his trained reflexes drove the vessel to safety, away from the plunging menace of the invisible meteors, away into empty space.

The red warnings died. The flickering needles steadied. The normal murmur of smooth operation returned to the tiny vessel.

Jud Weston smiled as he relaxed in his padded chair.

★ ★ ★

He awoke and the ship was dark with a warm humid darkness; like soft black velvet, pressing against his staring eyeballs, clogging his ears, filling his lungs; like soft black loam; like a grave.

He gasped, sitting upright and fighting for breath, thrashing his arms around him, barely conscious of the impact of his bare flesh against hard metal.

The pain brought a quick return to sanity.

He was in his ship—and the lights were out. That was all, but—the lights couldn't go out!

Not on a space ship. Not with the terrible, ever-present danger of claustrophobia, the mind-tearing loneliness, the haunting isolation of the stars. No space ship was ever dark. The emergency lights always glowed, self-powered, sealed, almost unbreakable, they just couldn't die.

But they had.

He sat for a moment, feeling the cold sweat of fear chilling his body, sitting with his senses strained for the slightest sound, the faintest vibration, quivering with dark-induced dread.

Finally he moved, slipping his legs from the bunk, resting his feet on smooth metal of the floor, reaching blindly with his hands towards the instruments and controls he knew must be there. Metal jarred against him, bruising his body, disturbing his orientation, and for a moment he imagined that he must be in a strange vessel, things just didn't seem the same in the dark.

He paused, his eyes wide as they strained to see where sight was impossible, then, with a grim reluctance, he closed his eyes.

In his mind a pattern burned, the pattern of the interior of the ship.

Deliberately he divorced his senses from his eyes, then, with hands outstretched like delicate tentacles, he moved through the ship towards the control room.

Levers swung beneath his touch. Buttons moved, switches tripped and power should have flowed—but it didn't. The ship was dead. Carefully then, moving with an exaggerated slowness, he felt his way towards the engine room. Half-way there he paused, his ears

straining at a thin sound, a thin hissing sound, the sound of escaping air!

The hull had been punctured!

Air was escaping into space, the precious, life giving air and he was without a space suit, unprotected, in a ship without lights or power. Alone!

Fear clawed at him, and for a moment he stood quivering with indecision. What to do? What to do first? Seal the puncture? Repair the ship? Sanity came as he listened to the hiss of air. Obviously he had to find the space suit. Once he had found it he could take his time at both sealing the leak and repairing the lights.

Tensely he fumbled his way towards the locker.

It was empty!

It was incredible! Unbelievable! But it was true! The ship had no space suit, it was missing from its locker, and for a moment Jud sagged in utter despair. The suit should not have been missing, but then the ship shouldn't have been without lights, but it was.

The hissing of escaping air sounded louder, and he gasped, already feeling in imagination the lung-sickness of air-lack. Desperately he groped forward, trying to locate the leak by sound alone, spending frantic minutes before he realised that it just couldn't be done. The darkness baffled him, and the sound seemed to grow no louder whichever way he moved. With lights it would have been easy. There were special powders for just such a case, they drifted in the air, flowing towards the leak, marking it plainly to the naked eye.

But he had no light.

He gritted his teeth as he forced himself to remain calm, to think it out as he would have thought out a problem sitting at his desk in the space academy. The leak seemed small, if it wasn't he would have noticed the decreasing pressure of the air, and the ship held plenty of air at ten pounds pressure. There were reserve tanks also, if the pressure fell too much he could replenish it from the stores.

Obviously the lights came first.

He squatted by the silent engines and it was as if his fingers bore eyes. Delicately he traced the circuits, touching wires with a feather touch, his nerves tensed for the tell-tale burn of current. He started at the beginning, for if the entire ship were dead then the fault must be in a major lead near the generator.

Carefully he examined the pile, the compact boilers, the generator, the thick power leads, the junction box and the heavy fuses. He sweated as he worked, his eyes closed, his ears numb to the warning hiss of air.

A part of him wondered. Wondered how a ship, especially designed, with multiple circuits, could possibly die from lack of power. Normally it would have been impossible. The selenium operated emergency lights would have turned on as soon as the main lights dropped below a certain light intensity. The stacked accumulators would have supplied power for the radio and essential instruments. The atomic pile just couldn't be turned off and neither could it become exhausted.

Not unless. . .

He shook his head. The very thought was impossible. He was alone in the vessel, far out in space, away from any living thing. His suspicious thought was the wild product of a wilder imagination.

He grunted as current burned his searching fingers. He groped, found a break, fumbled with severed ends, and blinked at a floor of radiance. He stared down at his repair, a frown creasing his brows, and within him suspicion flared to angry life.

The cable had been cut.

But how? When? By whom?

The hissing of air recalled his immediate danger, and hastily he found the detection powder, expelled it, watched as it flowed towards the leak, then sealed the hull with one of the patent patches contained in the locker.

He was thoughtful as he finished the repair.

★ ★ ★

The two men stared at the bank of glistening instruments mounted on a panel near the bed. Wires ran from it, slender wires like gossamer threads, metallic and with a silvery sheen. Needles flickered on graduated dials and a stylo traced an erratic line on a slowly rotating drum.

"Well?"

"Tests satisfactory—so far." Wellman threw a switch and sighed a little as he rubbed his tired eyes. Coray nodded, his seamed features expressionless as he stared at the bed.

"The usual?"

"Yes. Primary reaction times and checking of impressed memories. Initiative and determination."

"I see. Degree of success?"

"Ninety-five per cent. He was a little slow both on instrument reliance and choice of action. Not too bad though. After all, a hundred per cent. would be perfect."

"He needs to be perfect," said Coray grimly. "We can't take chances on anything less." He sighed as he glanced towards the bed again. "What comes next?"

"Indoctrination."

"Running it now?"

"Yes." Wellman slipped a cylinder from his machine and replaced it with another he took from a padded box. With the smooth efficiency of long practice he rested a delicate needle on one end of the cylinder, threw several switches, studied the dancing needles of several dials, then paused, his hand resting on a button, staring at the elder man.

"You staying to watch?"

Coray hesitated, glancing at the chronometer strapped to his left wrist. "I don't know. Will it take long?"

"Not for us."

"How long?"

"A few minutes, we're operating on accelerated time sense, it won't take long."

"Well. . ." Coray glanced at his wrist again then stared at the smooth concrete of the roof. "I'll stay," he decided. "I'm not due at the laboratories for fifteen minutes yet."

"Right." Wellman pressed the button, then stiffened in strained attention, his eyes staring at the registering dials.

★ ★ ★

On the bed something moaned.

The plain was a mass of shifting sand, rust-coloured, convulsed into oddly shaped dunes, looking a little like the surface of some frozen sea. It stretched away towards the too-near horizon, bleak, bare, devoid of the slightest trace of vegetation or living thing.

Jud frowned at it, still not fully aware that he was awake and conscious. He had fallen asleep on his bunk within the scout ship. He had a confused impression of vivid dreams, and then. . .

He stood on the rust-coloured sand of an unfamiliar desert—and he didn't have the slightest idea as to how he had got there.

After what must have been a long time he moved, stepping cautiously forward, heading towards the too-near horizon, his booted feet scuffling the fine sand. He halted and stooping, scooped up a handful of the fine dust. It trickled through his fingers, and no matter how hard he tightened his grip, still the fine dust eluded his grasp. It was like trying to grip water, to grab hold of quicksilver or snag a handful of steam.

It just couldn't be done.

It worried him. It worried him almost as much as his having no memories as to how he had come to this place, and that was wrong, the dust shouldn't worry him that much

He halted, forcing himself to ignore his surroundings, forcing himself to concentrate on the thing of prime importance.

How had he come here?

Where was the ship?

Where was the ship!

He turned, and behind him the desert was as bleak and as deserted as that before him. Of the ship there was no trace, no sign, not even a vestige of twisted metal or patch of fused sand. Whatever else had happened he hadn't crashed—or had he?

He frowned, rubbing his forehead, trying to capture elusive memory. He had been on a scout ship, alone, and. . .

He sighed and shook his head. It was useless. Between his falling asleep on his bunk and waking here in the desert lay a void. It was a waste of time to try and recapture elusive memories. They weren't elusive, they were non-existent!

Still, he could have crashed, wandered from the wrecked vessel, suffered from mnemonic erasure. Such things could happen. He pondered about it for a moment, then reluctantly shook his head. No. He was unharmed, his ship-board clothing untorn, almost uncreased. He touched it, feeling the soft texture of the synthasilk, the broad leather belt around his middle, the heavy weapon hanging low in its holster.

A weapon!

He blinked at it, lifting it from its cradle, studying the flared barrel and pitted orifice, the oddly fashioned breech and the butt which snugly fitted his hand. A Weimar gun! One of the most powerful hand weapons ever made. He knew about them of course, but. . .

There had been no such weapon aboard the scout ship!

For a moment panic clawed at him, threatening his sanity with the coldness of the unremembered and the unknown. Then he remembered the severed cable on the ship and shrugged, slipping the heavy weapon back into its holster.

Slowly he began to stride across the desert.

How far he walked he never knew. Motion became a mechanical torment. Lift a leg, thrust it forward, put it down. Lift a leg, thrust it forward, put it down. Over and over, times without number, on and on. Before him the desert seemed to shimmer with irridescent motion, surging like the half-remembered oceans back home, seeming to grip at his weary legs, to trip his stumbling feet, to catch at him with invisible hands.

He hardly realised it when he fell.

He lay for a while, his body burning with fatigue and tormented by thirst. Against his face the dust seared his flesh as if it were acid,

and as he breathed it filtered into his lungs, irritating his throat, aggravating his terrible thirst. He gasped, then moved, his limbs twitching like those of a crippled spider. He rose, first to his knees, his weight supported by his arms, his head hanging from his neck. Painfully he climbed to his feet, his swollen tongue running over his bloated lips. He raised his head—and saw. . .

A great earthenware jug of water. It rested on the desert, not more than three paces from him, cool and sweet, with the cold sweat of condensation glistening on the pottery. Half as tall as himself it rested before him, and at the sight his thirst became a ravening horror.

He stared at it, then, his legs thrusting against the sand, lunged towards it. And stopped as he saw the thing squatting to one side.

Big it was, scaled, armoured with insect armour, limbed with insect limbs, fashioned like a swollen ant, like a spider, like some deep water crustacean. It stared at him with multiple eyes and serrated mandibles clicked as they gnashed at the thin air.

It stared at him—and deliberately tipped over the water container.

Jud stared at the vanishing spot of dampness, a little sound of protest rising in his throat, then screamed as huge jaws closed gently about his middle. He threshed, straining to reach his gun, then forced himself to relax as he stared at a twin of the thing he had seen squatting by the water jar.

"Friend," he croaked desperately. "Water."

He pointed towards his chest, then at the shattered pieces of the water jar. He pointed at his swollen tongue, made motions as if he were lifting a jug, pointed towards the sand which had drunk the precious water.

The multiple eyes stared emotionlessly at him.

"Friend." Jud waved towards the giant insect. "I'm your friend. Water. Give me water!"

The jaws began to close then and horror came on a ruby tide of pain.

They probed him. They found every nerve capable of transmitting pain and they teased and played with it until his entire body was a quivering nightmare. They twisted his limbs and seared his flesh. They worked on his fragile protoplasm with their chitinous limbs and his blood stained the sands of the alien desert. They stripped his bones and toyed with his internal organs. They played with his reactions and the sound of his screams seemed to spur them to fresh and still more diabolical inventions.

Finally he found his gun.

It amazed him. Even through the red hell of pain and terror the simple fact that he still had a weapon belted to his waist amazed him. The fact was second only to his incredible stupidity at not having used it before. He could have saved himself so much pain, so much agony, so much torment. All he'd had to do was to squeeze a trigger. Just lift the Weimar and point it at the insects. They would have died in crumped ash, he would have been safe, the water would have been his.

It would have been as simple as that.

Desperately he squirmed, half-surprised to find that he could still move. The gun felt slippery in his hand, and his fingers seemed to have lost their power. Grimly he bore down on the curved slip of metal, aiming the orifice at the ghastly mandibles of the thing stooping over him.

It died in a gush of ravening flame.

He rose, levelling the weapon, then hesitated as a chiton covered back scuttled across the desert. Need he kill? He lowered the weapon, then, as he saw what had been done to his body, jerked it up again. Fire seared across the desert and thin limbs threshed in dying convulsions. Again he fired. Again. Blasting the last vestige of black from the face of the desert, feeling hate grow within him, glorying in the destruction created by his pressure of his finger.

He lowered the weapon, staggering as a fresh tide of pain surged through his abused body, watching his wounds as though with alien eyes, staring at his blood as it stained the sand.

He turned—and stared at a great container of water.

It stood before him on the desert, beckoning, inviting, occupying almost all his vision. Almost!

The gun in his hand levelled and flared and a squatting insect dissolved into a gush of flame. He stared about him, then, satisfied that no other danger lurked nearby, staggered towards the water.

He drank, and drank, and kept on drinking. And as he drank the pain left his tormented body.

★ ★ ★

The cylinder spun and slowed, then clicked into motionlessness. Wellman sighed and relaxed against the padding of his chair, rubbing his eyes and staring dully at the dials of his instruments. Coray grunted, the sound of his exclamation surprisingly loud in the silence of the room.

"Well?"

Wellman shook his head.

"Not so good. Thirty per cent."

"That low!" Coray stared his surprise. "How is that?"

"Poor survival factor." The technician glanced towards the bed and shrugged. "Oh he's all right when it comes to handling mechanicals, but organisms are something else again. There seems to be a natural sympathy, an attachment, a desire to communicate before taking any decisive action."

"Is that bad?"

"No. In fact it would be very good—if we weren't fighting a war. In dealing with newly discovered races for example it would be invaluable, but we just can't afford for him to try and parley with the enemy. He'd be dead before he could say two words."

"I see." Coray frowned as he glanced at his watch. "What now?"

"We'll run the spool again, different surroundings of course, but with the same survival pressure. I'll alternate between excessive pain and environmental danger."

"Will that do it?"

"It should do, but . . . ." Wellman bit his lip as he stared at his instruments. Coray stared towards the bed.

"But what?"

"Memory. You know how we're working. A complete memory, essential memory of course, is impressed on the mind. He actually has no experience, only second-hand memory of what he imagines to be the truth. Over that memory bank we are imposing synthetic situations by means of the stimulus needles driven into the brain. Make no mistake about it though, Coray. He really experienced those situations. He really was in a scout ship and had to make a split-second decision as to the correct procedure to avoid unseen meteors. He really did awake in total darkness, with a leak in the hull and no space suit. He reacted in the only logical way he could."

"I know all that," said the older man impatiently. "But he was in no real danger, was he?"

"Yes." Wellman nodded and almost glanced towards the bed. "If he had guessed wrong he would have died. Psychological death can be as real as physical death, Coray, especially beneath this machine which accentuates 'dreams' into personal reality. If he had guessed wrong he would have died. There is no doubt about that."

"Then why didn't he die on the last test?"

"If he hadn't 'found' his gun he would have died, but the purpose of indoctrination isn't to cause death, it is to arouse hate. That is why he had a low score and yet still came through. Now he will hate all Martians. He will probably hate all insects too, but we can't help that. It's lucky in a way that the Martians are insects, it makes it easy for us to educate him to detest a certain life-form. If the Martians were humanoid it would be very difficult, almost impossible, for us to teach him to differentiate between enemies and friends."

"I'll take your word for it." Coray hesitated, glancing at his watch, and Wellman guessed that the elderly man didn't want to leave.

"Want to stay while I awaken him?"

"No thanks, I haven't time." Coray sighed as he stared at the bed. "Poor devil. Do you think he knows what is happening to him?"

"I don't know," said Wellman slowly. "I rather think that he does. He has a keen brain, remember, and even though his memory is broken, yet he may be able to extrapolate from his experiences the truth of what is happening. After all, we've given him clues enough. The cut cable and dead lights on a ship in which neither of these things could happen is a dead give-away. The rapid restoration of strength after his experience with the torturing Martians is another. The trouble with this system of training is that the more we give the more likely the subject is to realise that none of it is real. Once that happens then further 'dreams' are useless. Once the subject knows that all his experiences are purely mental, then he will tend to relax, knowing that everything will be all right anyway."

"But you said that unless he guessed right he would die," reminded Coray.

"That only applies while the subject believes that he could die. While he believes it, then he is in actual danger, but once he knows that he is dreaming, then he can't be hurt."

"I see." Coray stared towards the bed, his seamed features heavy with thought. "Who would have guessed that it would be like this, Wellman? When men reached for the other planets who could have guessed at the interplanetary war which would follow? Now look at us. The entire race of earth confined to its own planet. Blockaded by the Martian fleets. Without even room in space to train our future pilots. We are building the ships. We are conscripting the men to run them, but we have to depend on machines and 'dreams' to train the pilots."

"There's nothing wrong in that, Coray. This system makes it possible for us to train men without loss of equipment. We can turn out

qualified pilots faster than any other method, good pilots, hand made to do the job. We won't always be confined by the Martian fleets."

"No," said the elder man. "I suppose not." He glanced at his wrist and hurried towards the door. "I'm late! Send up your report will you, Wellman. I may need it at the meeting."

"I'll do that," promised the technician, and sighed a little as he sat before his machine.

After a long moment he rose and turned towards the bed.

Gently he removed the silver needles, slipping them from their seating in the skull and brain. He hesitated a while before reaching for the drugs which would restore consciousness, then, with exaggerated care, he slid the needle of the hypodermic into a white arm.

Slowly Jud Weston awoke.

He stretched, a brief expression of horror vanishing from his features as he stared at the man stooping above him. His wide eyes clouded a little as he stared about the white-walled room, at the gleaming machines, at the green-smocked man. Then, as realisation came and memory returned, he smiled.

"How did I do?"

"Well enough. How do you feel?"

"Not too bad." Jud rose and stared down at his body. He shuddered. "Those insects . . . ."

"They were Martians, Jud. Would you know them again?"

"You bet I would." He shuddered again, then smiled, an eager expression on his boyish features. "Did I pass? When will I get my uniform? Am I in the Space Patrol?"

"Yes, Jud, you're in the Space Patrol."

"Good. When will I get my ship?"

"Not yet, Jud," said Wellman gently. "You will have to wait for it, maybe wait a long time, but you'll have plenty more training before you head into space. You'd like that, wouldn't you?"

"Yes."

Wellman paused, staring at the bed.

"Tell me, Jud. How old are you?"

"I . . . ." He frowned, the smooth skin of his forehead puckering with doubt. "Why, five of course, didn't you know that?"

"Yes, Jud. I only wanted to be sure that you did."

Wellman rose from the edge of the bed and stared at his machine.

"You'd better go now, Jud. You know where to go don't you?"

"Yes, sir. To the barracks."

"Right. Hurry now."

He stood, staring at the glistening machine, his eyes never leaving the blank faces of the dials, and only when he was certain that the room was empty did he move.

* * *

Coray sat at his desk in the upper storey of the building and waited for what must come up from below. He seemed tired as he sat behind the wide expanse of polished wood, but that was only natural, all men seemed tired in this day and age. They had good reason.

Space travel had arrived and the Moon had been reached. Venus had known the tread of Man, space had been cleft with the atomic ships of space, and Mars had fallen to the victor—or so men had thought. But then the Martians had risen, pouring from their underground burrows, intelligent, coldly logical, and utterly alien.

But there was always a way.

Men had found it. Burrowed deep into their planet, hiding themselves from the scanning eyes of the invaders, trying desperately to rebuild their forces. But a man took twenty years to reach maturity. Twenty years of growth and training. Too long, and yet too short to give the essential experience. Boys could operate the space ships, but it took men, with the hard-won experience of many years, to save those precious ships from flaming destruction.

But there was always a way.

Coray shuddered a little as he remembered the thing on the bed and what had been done to it. He shuddered, then, as a slip of paper expelled itself from a machine at his side, straightened in his chair.

He read it and smiled. He pressed a button on his desk and tired-eyed laboratory workers left their vats and entered his office. He smiled at them.

"Success, gentlemen. After twenty years we have found success."

"You mean?" A man stepped forward, his eyes eager.

"I shall read you Wellman's report." Coray picked up the slip and cleared his throat.

"Report on prototype 'Jud Weston.' Tests successful. Efficiency over ninety per cent. Reaction time plus five. Enthusiasm high. Recommendations: Isolation so as to preserve the illusion. Prototype will be destroyed as per security measure."

He dropped the slip and smiled at the men.

"As you have heard, gentlemen, the test piece has proved successful. We can now enter full production." His seamed features hardened as he glanced up towards the hidden stars.

"Our androids will beat the Martians yet!"

THE LAW OF THE NEBULÆ

By F. DUBREZ FAWCETT

Subsequent to the acceptance of this story we learn that this author's first full-length S.F. novel will appear from Sidgwick and Jackson during the Spring publishing season. The title will be "Hole in Heaven."

FROM the whirling mass of the giant Nebula there shot out a tentacle like the writhing limb of an octopus; a tentacle billions of miles long, composed of glowing gas and cosmic dust, and carrying in its arm masses of rocklike fragments which it hurled into the void, as a slinger releases a stone.

It was as though the Thought-Process dwelling in the Nebula had said: "Life has come to some of our members, and there shall be no other life in the Cosmos but ours." For this is the Law of the Nebulae; that wherever Life arises, so must it scatter death."

Hundreds of thousands of years later, the stony hail reached the Milky Way, and one lone wanderer came upon the solar system of which Earth is a member. It rushed from the night, and blazed over Southern England a little before the dawn of January the Eleventh in the year 2005.

Professor of Astrophysics Kurten Hayward was one of the many observers whose automatic apparatus photographed the meteor-trail, plotted its course, captured the brief image of its spectrum on the screen, a spectrum shot with mysterious bands never known before.

The professor's assistant, Trainee Dilys Roberts, was there to note the bands. With deft pencil she made a rapid sketch on her faintly illuminated pad, while she spoke into the com, and Hayward came in, switched on the light, looked at the bands of the graph.

He said: "So they start in the yellow and come over to there! Or could you have been mistaken?"

"I am sure I saw it like that," Dilys answered, and Hayward knew that she was not given to inaccuracy.

"How soon can your graph be multiplated?" he wanted to know. "I'll have it televised to all observatories the moment you're ready."

And it was soon circulated to all stations.

Meanwhile the trail of dust left by the meteor became the sport of currents in the upper air. The residual fragments, no larger than small shot, settled scantily on the countryside over an area extending from Salisbury Plain to the Kent coast; from the upper reaches of the Thames to the South Downs.

There they lay and did their unseen work, until alarming reports began to circulate in the following May; reports of seed failing to germinate, of sterile eggs, and unproductive livestock; of withered buds, and blossoms barren for the bees.

It was as though a blight had fallen on the afflicted area, and the emergency instantly became one to be dealt with at Cabinet level. Reports also came in of similar, though smaller scale phenomena in Holland, Denmark and Pomerania.

Though the realm of astrophysics seemed far removed from that of mundane biology, Professor Kurten Hayward had for some time been haunted by an ever-recurring thought.

Could it be possible that ——?

Icy fingers gripped at his heart as he studied the full-page map published in that morning's *Times*, for he could no longer doubt that the blight must be connected in some way with the

meteor of early January. He sat at his desk, indicating the boundaries with the stem of his pipe.

"See there, Dilys. It must be more than a coincidence. Allowing for drift and other factors, the area is precisely that in which the meteor debris would have settled. The Ministry of Agriculture and Fisheries are barking up the wrong tree when they speculate on the origin of the sterility."

"You mean it could be caused by that meteor? Could it be some deadly principle from outer Space?" The face of the pretty Welsh girl paled at the terrible thought of an active malignity towards Earth; of some unseen enemy dwelling in the depth of the Cosmos.

If there did exist such an enemy, who could be sure that another blow would not be struck; perhaps an even more annihilating one?

It seemed to her then that she was in the presence of an event unprecedented in the history of mankind. Professor Hayward alone, of all scientists and researchers, had discovered the answer to the riddle that was rocking the world, and she, Dilys Roberts, an unassuming trainee, was with him in this supreme moment.

Biologists and chemists had studied the phenomena, each in their own sphere. Specimens of blighted growths and ungerminated seeds were being exposed on countless microscopic slides, observed and analysed by all the methods known to science.

But there was no specific answer to the problem, and the dread thought spread that this might be the beginning of the end, the eventual depopulation of the world.

Theories that the new "disease" was caused by unfilterable viruses, bacilli or other organisms, the effects of atomic explosions, or perhaps some comparatively local disturbance of natural laws, all had their adherents, particularly the atomic explosion theory.

"Man has forged a weapon of destruction," preached Archbishop Mannering. "He has, in his wicked urgings, wrested from Nature the secret of nuclear fission, of the horrific power lurking in the hydrogen molecule. He has rubbed his evil hands with glee, thinking in his heart: Lo, here is a Thing whereby I will smite my enemies. Deadly bombs and other instruments of the Devil have been exploded in the deserts, in remote islands. The mushroom clouds, lit by the fires of Hell, have soared upwards, sending their life-destroying radio-active rays round the earth, and now we seem about to reap the whirlwind. The sore affliction which threatens to exterminate all life is local, as yet, but it is spreading, and unless Divine intervention is obtained by constant prayer and the sincere repentance of sin, it is inevitable that we perish, and that Mankind will have lived in vain."

The theories of the "atomists," however, were weakened by one decisive factor. Though diligent explorations with Geiger apparatus were constantly being made, there was absolutely no evidence that the stoppage of life-reproduction could be attributed to radio-activity.

In fact there seemed to be no possible explanation till Professor Hayward, the Astrophysicist, had his momentous inspiration on that May afternoon when seated at his desk with his assistant.

Hayward said: "Dilys. If this is true we can at least know what we are up against. Oblige me by getting through to number ten Downing Street." He spoke in his usual unemotional way, though it was obvious to the girl that he was shaken by strong excitement.

Ten minutes later he was speaking to the Prime Minister.

"Yes, Sir. I am sure of it. I suggest as a first step an immediate and extensive comb-out of the most badly affected areas, through co-operation with the Home Office of all local authorities. It will involve the sifting of enormous quantities of soil samples, but it should be possible, by magnetic extraction, fluorescent screening, and other means, to isolate specimens of meteoric dust and larger particles for examination."

"Like looking for a pin's head in a cornfield," the Premier remarked. "But God grant that you are right, Professor. For unless we see our enemy we cannot grapple with him."

That night the announcement was broadcast that a new line of investigation into the cause of the blight had been opened up, and that there was every prospect of discovering a remedy. The wording of the broadcast had to be optimistic, in order to counteract growing symptoms of panic, for the spectre of famine was already rising, and people were looking at each other with questioning eyes as the areas of sterility spread insidiously day by day.

However, results of the comb-out were speedy. Within three days Kurten Hayward and many other investigators, had suspect matter to examine. Dilys Roberts touched the button which released the colour-camera shutter, thus photographing the spectrum of a tiny grain of metallic ore, heated to emit its ray of light which, passing through a prism, spread out its characteristic colour pattern in a rainbow ribbon.

The spectrum showed traces of iron, nickel, cobalt—and something else. And that "something else" produced interference bands identical with those Dilys had observed in January.

So here, at last, was something tangible to go upon.

Hayward's next step was to photograph the atomic structure of the specimen, obtaining pictures of its radiations; finally of slowing down the velocity of fissioned neutrons by moderators before getting down to what Hayward described as "the ultimate mesons" in a cloud-chamber.

He pointed out to Dilys the tracks of the charged mesons in the photographs; how the tracks diverged at varying angles after passing through the lead plates. Then he drew a whistling intake of breath.

He said: "This stuff breeds. Like hatching isotopes. And the isotopes breed. If these pictures are true, the emitted rays will go on and on, permeating everything, whether organic or inorganic. They permeate the life cells, the life principle, and make them sterile. Gamma rays have nothing on these radiations for penetrative power."

He started dictating to Dilys the mathematical formulae covering the behaviour of the mesons, the cloud-chamber automatic counter, the comparative figures for cosmic radiation. It was two o'clock in the morning, after ten hours of concentration, before the dictation was finished.

"To work out the x from these equations," he told Dilys, "would take me a couple of years. So we'll rush the figures round to the Physical Lab Calculator. The results ought to come out in a matter of hours."

So the "mechanical brain," the robot mathematician of the National Physical Laboratory at Teddington, had the various symbols fed into its slots, and its myriad valves got to work on the data, accepting this, correcting that, unerringly working to a logical conclusion.

Never before had any man-created mechanism dealt with a problem so vital to the future not only of humanity, but of every living and reproductive thing on the terrestial globe. Its indicator lights flashed and winked as it worked, then ceased suddenly, and a red light flashed over one of the banked batteries.

"Something wrong," Hayward said, and went haggardly to the spot. He found there, in the reject slot, one of the perforated cards bearing a portion of the data he had provided. He checked it over, discovered an error of one decimal point misplaced. The machine stayed inert, as though silently reproaching him for having tried to catch it out.

Hayward had a new card prepared, fed it in again, and the calculating process went on.

At length the result formulae came tumbling out, and an eager group of researchers fell upon them, classified them, fed their conclusions again into the robot until the answer to the terrible problem seemed to stand out stark and clear.

Hayward said: "Dilys. Turn up your notes on the duration of the shower particles; the table of microseconds. Thanks."

He compared the tables of the *n* and *u* mesons with the tables provided by the Calculator, then staggered all present by bursting into a fit of uncontrollable laughter.

It was not hysterical exactly, though his long hours of work, and sleepless nights, might have excused such an outburst. It was the laughter of a man who has seen an incredibly funny joke.

He said: "Gentlemen; we may pack up our worries. The rays don't breed any further than their fifth generation. Good old Mother Earth has got on her hind legs and neutralized the attack. In a matter of days the sterility waves will all have died, and the retarded processes will surge into new vigour. Dear, oh dear! Dilys, get me a clean handkerchief from my jacket up there. Thanks."

He took the handkerchief and wiped the laughing tears from his eyes.

Then he said: "If it hadn't been for this dear old robot, we'd have gone on worrying and worrying, trying all kinds of expedients, propagating panic, planning evacuations, perhaps unconsciously helping the cause of the invader by our mass fears, for Mother Earth demands of her children faith and hope above all things."

He said nothing about the Law of the Nebulae, nor did he speculate on its application to our own Nebula of the Milky Way which, to extra-Galactic observers, appears as no more than a handful of mist with here and there a sparkling gem on its fingers.

But the Law of the Nebulae is asserting itself; is directing the thoughts of Man to Space Travel. And wherever there is massed thought, so follows achievement.

In due time the Life Principle existing in our solar system will not be content to hurl a stone at distant galaxies, but will send emissaries of far greater destructive power; Men in machines; Men bent on conquest, prepared to destroy other forms of life wherever they find them, in the blessed name of Colonization.