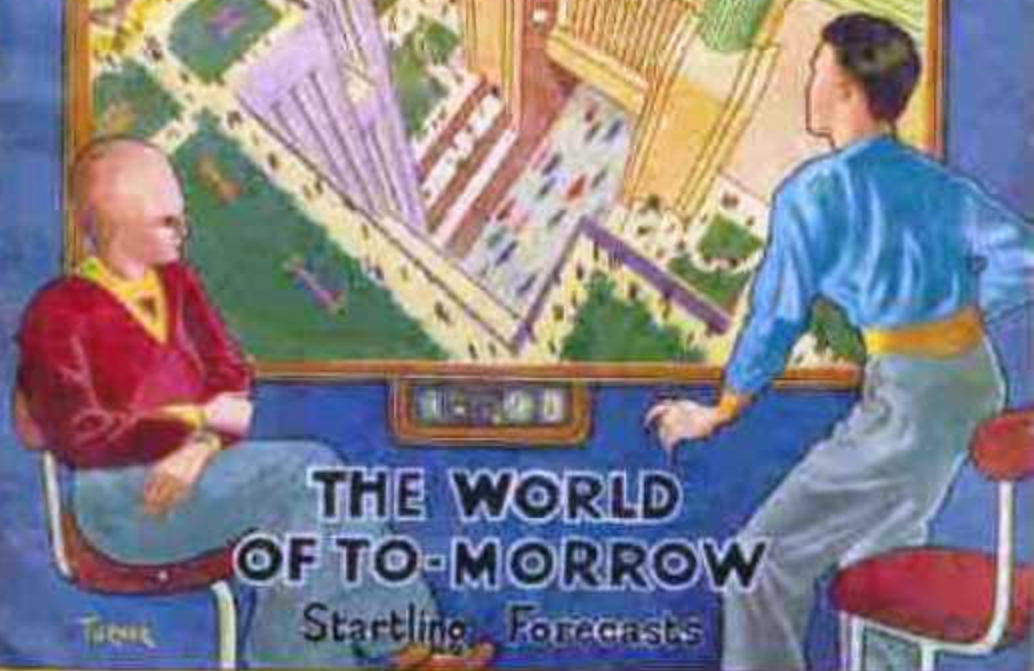


TALES of WONDER

Nº 11

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THE WORLD OF TO-MORROW

Startling Forecasts

INVISIBLE MONSTER by JOHN BEYNON

TALES OF WONDER

and Super-Science

No. 11.

Published Quarterly

Summer, 1940

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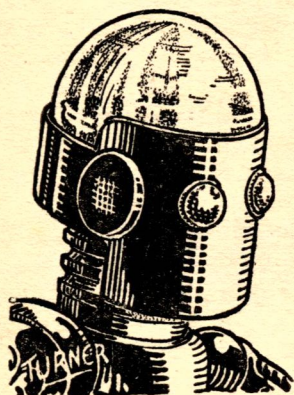
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TALES OF WONDER

and Super-Science. No. 11

WALTER H. GILLINGS, EDITOR

SEARCH FOR IDEAS: Reader's Amazing Visions Of



THE WORLD OF TOMORROW

FASCINATING visions of the world as it may be hundreds, even thousands, of years in the future, have been conjured up by readers of *TALES OF WONDER*, in response to the invitation given them in our last issue in pursuance of our unique *Search for Ideas*. Visions of a world in which man has built up a mighty science, giving him complete mastery over his planet . . . in which he will live as in a Utopia, both on and under the Earth's surface . . . in which marvellous cities reach for miles into the skies, and robots are the slaves of mankind . . . from which great ships will go out to other planets . . . or, if disaster overtakes us, a world that may be visited by beings from space and found to be barren and desolate . . .

On the cover of this issue, artist Turner has pictured *THE WORLD OF TO-MORROW* as he imagines it would appear to a Time-traveller from our own century, who is seen looking into a television screen imaging a colossal city of the era to which he has been transported. Seated opposite him is a typical inhabitant of that wonderful world—a man of the future, as Turner conceives him.

The most imaginative conception of the world of the future, for which a prize of Ten Shillings is awarded, was sent in by:

C. A. FIELDER,
39, Beechdale Road,
London, S.W. 2.

MAN'S progress, says Mr. Fielder, will not be constant. Many times will he black-out his towns and evacuate his cities. Sometimes, after world-wide scientific wars, he will find his mind "blackened out", his homes destroyed and his sciences lost. New dark ages will ensue, and man will go far back; the continents will lose touch with each other, and truth will be banished from the planet. But man will not defeat himself indefinitely, and out of chaos, destruction and superstition, the right way of life will emerge.

Slowly, but with gathering momentum, progress, of a kind in which science and the arts will flourish, in which logic and truth will be paramount, will spread to the remotest parts of the Earth. In that far distant future, courageous skill in scientific, mechanical and engineering fields will make man the true master of the planet. He will move seas, make deserts fertile, control the weather, melt the polar snows; and, with man's unlimited power and control of gravitation, the uninhabited mountain chains will be uprooted and thrown out into space where, as satellites, they will serve as observatories from which giant telescopes will scan the heavens.

From these satellites, and from the Moon—to which an atmosphere, seas and rotation will be given—mighty ships of the void will be launched, bound for the planets and beyond. But colonisation of other worlds and interstellar travel will appear commonplace compared with the change in man himself. The future *homo sapiens*, his life, homes, thoughts, worries, pleasures and ideas, would be barely understood by us of the twentieth century.

In strange and beautiful cities, with high towers challenging the skies, will live a man who does not sleep, to whom disease is not a menace, whose life lasts for centuries, and to whom most mysteries of Time and Space have been explained; though other and more complex problems will be defying him. These citizens of the future will have no need of cars or aero-

planes. Thought-broadcasting having progressed to perfection, they will be transmitted at the speed of light to their destination, be it next-door or the other side of the planet.

Food will be taken in tablets, and energy transferred directly into the body. In that world, men of the four races will mix and merge as logical and generous beings should. There will be opportunity for all; poverty, capital and labour will have been forgotten. But these men of the future will not be idle: artistic creations in light, sound, matter and vibrations will occupy them.

For the next most interesting Ideas received on this subject, four prizes of Five Shillings each have been awarded to:

A. G. HOAD,
49, Petersham Road,
Richmond, Surrey.

R. L. SOMERVILLE,
58, Williams Street,
Newport, Mon.

A. C. CLARKE,
211, Holtwhits Hill,
Gordon Hill, Enfield, Mddx.

FRANCIS R. FEARS,
6, Ferme Park Mansions,
Ferme Park Road,
Crouch End, N. 8.

MR. HOAD looks forward a thousand years to a world which to us seems Utopia, but to its inhabitants is only an improved world still progressing. There is no ruling class or distinctions of sex: women, released from physical limitations, are truly men's equal, and the governing bodies are fairly chosen. The people enjoy a high standard of physique, due as much to the excellent living conditions as to the fact that science bestows on them health-giving rays and, where necessary, new limbs and organs.

The immense, but comparatively few cities are all built to plan, both on and

under the Earth's surface. Beautiful structures reach high up to the clouds, connected by bridges, with living, working, recreational and other quarters all separate; while the centres of learning and government form cities themselves, this arrangement being made possible by the ease and rapidity of communication.

But it is not such a "press-button" world as we might imagine, because man knows that he is the most capable machine; and individual talents and craftsmanship are encouraged and developed. Nevertheless, power is almost unlimited, for science has discovered how to make all power-sources yield of their utmost. Thus, the vehicles of land, sea and air need carry very little fuel, and the great manufacturing machines require little attention.

Exploration of the Solar System is in progress, but without much result beyond additional knowledge of stars and planets. Science makes an intensive study of the mind and brain, to develop their powers, concentrating more upon the immaterial than on further mechanical development.

Much progress in this direction has been made already, and many phenomena that in the twentieth century were regarded as part of the "mysterious unknown", or wholly disbelieved, are now fully understood. Psychology, anthropology, and even spiritualism, were some of the roots from which this great science has sprung.

The result of this parallel development of mind, brain and body is a vastly superior race of men, but still by no means a perfect one. Wars, for example, are not altogether unknown; but they always end with a victory for the saner majority, and are not so devastating as has been imagined, since superior weapons call forth superior defensive measures.

READER SOMERVILLE is more pessimistic. He, too, surveys the Earth of a thousand years hence, but from the vantage-point of alien beings who, after studying it from afar,

have come to examine it at close quarters.

On landing in their space-machine, they learned that what they had seen in their telescopes was true. The landscape around them was as barren as the plains of Mars, except for a few great piles of age-worn masonry, rearing their craggy apexes like grim sentinels. A chill, restless wind moaned and rustled through the blackened heaps, as if resenting this intrusion into its lonely domain. It swirled into the faces of the visitors like a host of phantoms angry at being disturbed.

Little did they know that this now desolate planet was once the home of a race who, if ridden of the scourge of war, would have risen to the heights of civilisation. Little did they know that these great ruins, which almost spoke of stark tragedy, were once the beautiful homes of these people, huge, domed buildings rising to thousands of feet above the ground, whose architecture surpassed in beauty and design that of anything which had ever been built in the annals of mankind.

The great marble, glass and chromium walls looked down upon traffic and pedestrian lanes which linked them up like silver threads; and the coming of darkness would bring to life hidden lights of many colours, giving the appearance of a mythical fairyland brought to reality. It was hardly possible to realise that the wind which now howled so dismally once whispered gaily through the trees and shrubs of the parks, carrying with it to the topmost domes the laughter and songs of happy, care-free children and the murmuring of millions of voices, in an ever-increasing volume of happiness and contentment.

Then came the catastrophe. From the very beginning, men had fought between themselves, but had always recovered—until that blood-drenched year of 2440, when all humanity was wiped out in the fiercest and most hellish of all wars. The alien beings took one last, wondering look around, and flashed off into space with a roar, which echoed among the ruins like the despairing wail of the shattered souls

who haunted them. The strangers had come to Earth, and departed puzzled, leaving her to swing around her age-long path for the rest of Time, lonely and desolate.

IN PICTURING the world, at a date unspecified, when present technological and social trends have reached their inevitable conclusion, Mr. Clarke does not attempt to describe the most striking changes the future will bring; for these, he says, will be completely novel and unexpected, and cannot be foreseen, to-day. But, since man is a

social animal, he will still live in cities, which will be far smaller and saner than ours.

The city of the future may consist of only a few buildings, a mile or two across and as high as necessary. There will be no suburbs: the countryside will reach to the city walls. Artificial weather will be provided, and photomurals will give an endless range of scenery to those rooms within the interior of the buildings. Such cities would hold less than a million people, and be completely self-contained.

[CONTINUED ON PAGE 88]

THE CONQUEST OF SPACE—WHAT WILL IT BRING?

The possibilities of other worlds, and their exploration and exploitation by men of Earth, is a favourite topic of speculation among followers of science fiction and has formed the theme of countless stories. If man could succeed in launching himself into space and landing on the Moon or another planet, the whole of the Solar System would offer him vast sources of new materials and stores of knowledge which would certainly have a tremendous influence upon his future.

Those who have considered this question seriously believe that, when the dream of space-travel becomes fact, it will develop swiftly until the gulfs separating the planets are bridged as easily as we cross Earth's once uncharted seas, and regular traffic between the worlds will be commonplace. And, in due time, man may even venture as far as the universes beyond, extending his sphere of achievement to the distant stars, and doubtless encountering many fantastic forms of life and alien civilisations upon remote worlds. All of which must have its effect on the various aspects of man's career, and perhaps create fresh problems for him apart from technical difficulties.

Continuing our *Search for Ideas* on these fascinating subjects, we invite you to give free rein to your imagination and let us have your thoughts on THE CONQUEST OF SPACE: how it may be achieved, and to what it may lead in the course of the centuries to come. Limit your imaginings to 500 words, and send them to TALES OF WONDER, The Windmill Press, Kingswood, Surrey, marking the envelope "*Search for Ideas*," so that they arrive not later than July 31st, 1940. The most interesting contributions will be published in our next issue (Autumn, 1940). For the most imaginative conception, a prize of Ten Shillings will be awarded, and for the next best Ideas, four prizes of Five Shillings each are offered.

*The Thing Was Dangerous, And Must Be Destroyed . . . But
How When None Knew What It Was Or What It Looked Like?*



INVISIBLE MONSTER

By JOHN BEYNON

*Author of Worlds to Barter, The Venus Adventure
Sleepers of Mars, etc.*

CHAPTER I

THE "HURAKAN" RETURNS

"LISTEN!" said Dirk.
"Look!" said David.
"Hell's bells!" said Toby, and stopped the car.

"All out, quick! It's coming," Dirk warned them. He opened the rear door and tumbled out, with a cascade of bait tins, baskets, rods and reels. By the time he had disentangled himself, the others were already jumping into the ditch. He joined them.

The sky was full of a rumbling and roaring. From the west, a huge plane bore dead towards them as if intent on their destruction. With the rising Sun on her, she gleamed like molten silver; the plume of fire from her rear rockets stretched out like the tail of a minor comet, and she thundered like all the artillery in the world. A noise to stun, and a sight to terrify.

She grew still larger as she came. She

seemed bound to strike the ground where they crouched, but she did not. Instead she passed perhaps a hundred feet above the hill-crest where they cowered with their fingers in their ears. Great, roaring waves of sound buffeted them like physical blows. A wind wrenched as if it would tear their clothes from them. The standing car lurched in its force, and all but overturned. A surge of spent flame seemed to shrivel them, and they gasped in the sulphurous air. But for all that, their heads turned to follow the plane as she sped on.

Toby's lips were moving. His words were inaudible, but his expression said all that was necessary. Rapidly, the plane sank lower. She seemed to touch the tree-tops across the valley. A moment later, she hit. There was a spurt of pure white flame; she leapt twisting into the air, and then disappeared. The sound came rolling back to them, a mighty detonation capping the roar of the rockets. Then silence. . . .

The three men took their hands from their ears and looked dazedly at one another.

"God, what a crash!" shouted David, above his deafness. Dirk climbed back on to the road.

"What the devil was it, anyway?" he demanded. "It wasn't like any of the big strato-planes I've ever seen. Short, dumpy wings that didn't look as if they could lift her at all; and her lines were all funny, somehow." He looked inquiringly at the others. David shook his head.

"Got me beat," he confessed. "Must have been experimental—on trial, I'd say."

Toby climbed back into the driving-seat, and started up.

"Shove that junk back and pile in, Dirk," he directed. "The fishing expedition's off. I'll be mighty surprised if anyone could have lived through a crash like that, but we're going to see."

It was eight o'clock before they reached the wreck. Tracks were scarce, and it was impossible to bring the car closer than a mile. For the rest, they had to walk through the woods.

The big plane had come to her final rest in a clearing. Behind her lay a furrow of scattered and scorched trees which she had ploughed away. Her stern portion was tilted up, so that the rocket-tubes pointed at the sky. Her bows were a shapeless, tangled mass, while her middle showed several gaping splits. Even in her crumpled condition, her lines remained puzzling. David, looking at her with the memory of the crash fresh in his mind, was surprised that she had retained even a semblance of her former shape.

The three of them stepped from the trees and crossed the open space together, Dirk asking again:

"But what is she? I swear there's nothing like her on any of the regular stratosphere services."

A menacing creature from another world, if suddenly let loose on Earth, would be formidable enough by reason of its alien nature. But what if, in addition to its strange powers of destruction, it were utterly invisible? How could we combat such an enemy? Our most popular author has built an unusual story around this fascinating idea, and keeps us thoroughly interested until the problem is ingeniously solved.

SHE was no less puzzling as they drew near. David led the way to the bows, looking for her name. They stopped, surveying the wreckage. The massive steelium plates had crumpled like paper, and all the six port-holes were smashed and gaping. Jagged ends of twisted framework protruded here and there like picked bones. The identification number was buried somewhere beneath the pile of inter-locked rubbish.

David was about to turn back towards the stern when Toby gave an exclamation. At his feet lay a broken section of steelium plate still bearing faintly the outlines of three letters.

"K—A—N," he read out. "What country's that?"

David frowned for a moment, and looked puzzled. Then an incredulous expression came over his face. He looked at the wreck again, wide-eyed.

"My God! The *Hurakan*," he said. The others stared.

"I believe you're right," said Dirk, at last. "Yes, it is the *Hurakan*."

The three of them gazed, awestruck. It was no strato-plane, but a space-ship—Earth's fourth space-ship. One had gone to the Moon, and returned. Two had set out for Mars, and never

been heard of since. The fourth, the *Hurakan*, had shot out, a year ago, bound for Venus. And now she was home—what was left of her.

"What an ending! Poor devils," said David, at length. "Just on the last lap. I wonder why they crashed? They can't be—still, we'd better look," he added, and led the way to one of the gaping cracks in the hull.

The other two, after a momentary hesitation, followed him within. They found themselves in a well-built sleeping cabin, which had been unoccupied at the time of the crash. David was thankful for that. He was not hankering for unpleasant sights. Toby strode across to the door in the opposite wall, and tugged at the handle. As he expected, it was jammed, and considerable leverage was necessary to free it. When at last, beneath their united efforts it did give way, the three men were precipitated into a main corridor.

Toby had had the forethought to come equipped with an electric torch. He drew it, now, and flashed the beam around. To the left, leading forward, a tangle of twisted metal choked the way, but to the right the floor stretched away bare and empty, jerked from the straight where the sections of the ship had strained apart. They had taken only a few steps when a splintering crash, somewhere towards the stern, made them stop short. David jumped at its unexpectedness.

"What was that?" he asked uneasily.

"Cooling off, probably," Dirk guessed. "She would be in a fine state of heat by the time she hit. Some bits of the wreckage must still be contracting."

Nevertheless, there was a discouraging eeriness about these sounds aboard a dead ship, which none of them relished. Perhaps, David thought, they had been mistaken, and someone had managed to survive the impact. He raised his voice in a hail. The echoes sped depressingly about the metal walls, but there was no reply.

Toby led on. Thirty feet along the

corridor, a door to the left stood slightly ajar. They pushed it back, and found themselves in a small living-room, dimly lighted by an empty port-hole. The furnishing was simple, consisting of a desk, a table, three or four chairs, and a bookshelf with bars to hold the books in place. But the discovery which most interested David was that the walls were lined with charts, which he and Dirk stopped for a moment to examine. They held little interest for Toby, however; and with a word to the other two, he left them to continue his exploration of the ship.

DAVID, poring over a chart on which was a thick, red line, was about to remark upon it to Dirk, but a sudden sound stopped him in mid-sentence. The same cracking, crushing noise which had startled them before, became audible again. This time it was far louder, and seemed closer. Then, hard upon it, came Toby's voice, calling them. They stared at each other.

The cry was repeated with a note of alarm, and with one accord they made for the door. A few yards away, the ship's broken back had caused the floor to tilt upwards; and as they scrambled up the slippery metal, they called back encouragingly. The quality of the second cry was hard to associate with Toby; it gave a sense of rising panic. A rattle of pistol shots ahead spurred them on still further. What was there to fire at? Dick wondered.

"Where are you?" he called. Toby's voice answered from the right, and simultaneously there came another wrenching creak of metal. David thrust back a door, and the two of them stood gazing within.

They faced a square store-room. The walls were lined with deep shelves and rows of lockers, save for a space in the middle of the right-hand wall, where both shelves and the partition behind them had fallen away to reveal a dark aperture. The light from the two small port-holes was uncertain, but it seemed

to David that the edges of the dark gap bulged and bent even as he looked at them. Away in the left-hand corner crouched Toby, his eyes fastened on the dark hole.

"What——?" David began stepping into the room.

"Stop!" Toby switched his gun on him. "Don't come a step nearer—there's something nasty loose about here." The pair noticed that their arrival had taken the note of panic from his voice, but for all that, his manner was tense.

"But——"

"For God's sake, do what I tell you! Now stand back and hold that door open—and clear right out of the way. I've got to jump."

David obeyed, wonderingly. There seemed no sane reason why Toby should want to jump. Puzzled, he watched the other kick off his shoes and throw down his jacket. He tossed his pistol across, and crouched tensely. Both of his friends knew him to be the possessor of no mean muscles, but the power of his standing jump amazed even them. Toby launched himself in a magnificent leap which would have done credit to an acrobat. It was superb; but it was not enough.

In mid-air, he was suddenly checked. The others gave an astonished cry. Toby had struck something—an invisible something which stood between them. For a second, he seemed to hang in the emptiness, scrambling madly with legs and arms; then he began to slip, first slowly, and then more rapidly, for all the world as if he slid down a curved surface to the floor.

David and Dirk stared in stupefaction as the other struggled and fought, with wildly threshing limbs, against something unseen. David broke the spell, and took a step forward, but Toby noticed the move.

"No, no! Go away!" he shouted. "I'm done. I——"

His voice broke into a scream of agony, and his body slumped inertly.

Half-way up one thigh, a deep line appeared; then, as though severed by an axe, the leg came away with a jerk. But it did not fall; instead it started to drift slowly across the room. With incredulous horror, they saw that the limb was unsupported. It travelled some nine inches above the ground, creeping with a steady, unswerving motion towards the break in the wall. Foot first, it edged inch by inch out of the room, into the darkness beyond.

David's senses were reeling. He felt Dirk's grip on his arm, and tried to speak, but his mouth was queerly dry. He forced his eyes back to the fallen Toby, and caught a sudden breath. An arm, like the leg, was being detached: there was the same sharp indentation, but still no visible agent. As the arm jerked free, he saw that the denuded shoulder was scored by deep grooves.

He sprang back, pulling Dirk with him. Both knew that Toby was past all help, and in a wordless panic, they clattered and slid down the sloping corridor to seek safety in the open.

CHAPTER II

PREY OF THE UNSEEN

A FIVE-MILE dash in the car brought them to the townlet of Clidoe. In the police station, they poured out a confused statement to a stolid and unsympathetic sergeant. There was reproving suspicion in the glance with which he favoured them. An excited entrance coupled with rambling incoherence was, in his experience, frequently to be associated with excess of alcohol. Accordingly, he hid his likeable, though not very brilliant, self behind a stern and chastening stare.

"Just who are you, and what are you doing?" he demanded.

David gave their names, and explained. The sergeant approached and

scrutinised them more closely. They were excited, but he had to admit that they showed none of the signs of intoxication. Furthermore, the time was barely eleven o'clock.

"Well," he said, returning to his desk and picking up a pen, "suppose you tell it to me all over again, but slowly this time."

Evidently the alcoholic theory was merely shelved, for his tone was not encouraging. David pulled himself together, and with occasional promptings from Dirk, recounted the affair in orderly detail. The sergeant listened throughout with an air of defensive reserve, more than tinged with disbelief. At the end of the recital, he said:

"I've had a report that a ship went over at an excessive speed, some hours ago. What did you call her?"

"The *Hurakan*." David spelt out the name. "You know—the one they sent to Venus."

The sergeant grunted. "Now, just what was this—er—assailant like?"

"That's just what I've been telling you. It wasn't like anything. You couldn't see it."

"It was too dark in the ship?"

"No, I tell you, it was invisible."

"Invisible, eh? And yet it killed a man?" His voice was a trifle weary. "What's this you're trying—a hoax?" he demanded, with a sudden change of tone.

He watched them keenly while they both protested vehemently. He had no longer any doubt that the men had received a shock, but this yarn was pretty much like spook stuff. . . . He pulled one ear reflectively and frowned. The matter would have to be cleared up.

"Rankin," he called over to a constable, "you've heard these men's story. Get along, now, and check up on it."

"Yes, sir." The constable saluted, and turned to go.

"I'll show you the way," David suggested.

"No, can't allow that," the sergeant

said firmly. There was something queer behind this. At any rate, one man was dead, and he was taking no chances. "I'll have to ask you to stay here until Constable Rankin makes his report."

"But you don't realise! This thing, whatever it is, is dangerous, damned dangerous. We could show——"

"No. If it's serious, I'm going to hold you—if it's a joke, you're going to pay."

The two gazed helplessly at each other. Dirk shrugged his shoulders.

"Oh, all right." David subsided on a hard bench and gazed moodily at a framed card of police regulations. "But don't blame me for anything that may happen," he added. "I've warned you."

Constable Rankin strode unemotionally out of the station, and they heard him start up a motor-cycle. The sergeant began to make laborious notes with a scratchy pen.

THREE hours later, at almost two o'clock, the sergeant began to look worried. There had been ample time for a ten-mile ride and a cursory examination. He began to feel misgiving, sharpening into definite apprehension. He plied the two men with a fresh batch of questions, and the answers did little to relieve his mind. Neither David nor Dirk had any doubt as to the reason for Constable Rankin's prolonged absence, and they said as much. The thought of the man calmly walking to such a death stirred a queasiness in their stomachs.

"We'll give him another half-hour. If he's not back by then, we'll go and have a look," the sergeant said, uneasily.

It was after three when they arrived, reinforced by two constables, at the spot where they must leave the car. David led the silent party through the trees. The two reserve policemen strode forward with puzzled stolidity, while the sergeant wore a worried look which showed that his disbelief had weakened.

As they came within sight of the fallen ship, he drew a whistling breath.

"Lord, what a ship—and what a crash!" he murmured. His attitude to the others underwent a subtle change as he asked: "Now, at which break did you enter?"

David pointed to the gap near the bows. "Through there," he said; "and we began working back to the stern. The store-room must have been about amidships." He felt a little sick at his memory of that room. The sergeant nodded.

"You lead the way, and show us exactly what happened," he suggested. David and Dirk both shook their heads emphatically.

"I'll be damned if I do," said the former. "I've told you how dangerous it is—and then you tell me to go ahead. That's not good enough."

The sergeant gave a contemptuous snort, and motioned his men on. They were half-way across the clearing when there came the sound of splintering, yielding metal. The two friends looked at each other and hesitated.

"What's that?" asked the sergeant, sharply. "Somebody looting her, I'll be bound. We'll catch 'em in the act."

A few yards from the break, he halted and began to give instructions in an undertone. After one sentence, he was interrupted by a further creaking and wrenching of metal plates; then they all swung about and gazed sternward. Incredulously, they saw that the side of the ship was bulging. One of the plates of solid steelium was slowly bending outward. Fascinated and speechless, they watched this toughest of metals bulge still farther. The sergeant gasped audibly, for he knew the well-nigh fabulous strength of the material.

The rivet heads stripped off with a rattle like a monster machine-gun in action, and the plate fell outside with a crash. The five men continued to stare nervously, but nothing emerged. Whatever had provided the tremendous force

behind the plate remained unseen. The sergeant pulled himself together with an effort.

"We'll start there," he said. "Keep close to the hull as we work up, and we'll take them by surprise."

David and Dirk hung back, and did their best to dissuade him, but he was not to be put off. His manner held a curtness which covered no little misgiving. The party edged along beneath the overhanging side of the ship. Eight feet from the recent hole, their fears were justified. The foremost policeman gave a sudden bellow and leaped back.

"What the——?" the sergeant began, but his words dried up and his eyes widened in astonishment. Pain was ousted momentarily by surprise even in the injured man. He stood, with blood streaming from his severed wrist, gaping inanely at his lost hand as it floated slowly away in mid-air.

David snatched a handkerchief from his pocket, and sprang forward to make a tourniquet. The sergeant recovered rapidly from his first shock, hesitated, and seemed about to advance.

"Don't be a fool," said Dirk, gripping his arm. "It'll get you, too."

THE sergeant retreated a pace, his eyes still fixed on the moving hand. Without audible comment, he watched it drift into the dark opening. As he turned to the others, his face was pale.

"I've got to apologise to you two gentlemen. I didn't realise what you'd seen. And to think I sent poor Rankin——"

He broke off at the sound of creaking metal. The plates to either side of the original hole were bending and sagging ominously. The party beat a hasty retreat, carrying the injured man, now in a dead faint. In silence, they watched the contiguous steelium being torn slowly and relentlessly from its rivets, until there was a hole in the

Hurakan's side four times as large as before.

David, at a safe distance, circled round to catch a glimpse of the interior. He was looking, he knew, at approximately the spot where Toby had met his end, but the walls of the store-room were now reduced to so much warped and mangled metal on the floor. Of the broad, wooden shelves and lockers which had lined it, there was no sign. Vaguely, he wondered what had become of them; they ought to have been lying crushed with the metal. The sergeant came up to him with all dignity cast aside. It was evident that he now felt well out of his depth.

"I'll have to get help. Will you take a message for me to the Police Station? And there's Dawkins, too," he nodded towards the injured policeman. "He needs treatment as soon as he can get it. If you and your friend would take him in the car while we keep watch here . . . ?"

David agreed. He waited while the sergeant scribbled a note; then he and Dirk, bearing the unconscious man between them, moved off towards the car.

At five o'clock, after they had dropped the unfortunate Dawkins at the hospital and reinforced themselves with a good meal, they returned to find that the force of police at the *Hurakan* had been considerably augmented. The sergeant greeted them with undisguised gloom. He pointed out that the hole was much enlarged, and that further plates had been wrenched off in other parts.

"Hanged if I know what to do," he admitted. "The inspector ought to be along any time now, thank the Lord. Though I don't know what he'll be able to do about it, either. Just look at this."

He picked up a stout branch some three inches in section, and holding it extended before him, advanced cautiously towards the gaping hole. A six-inch length was lopped off with a

crunch. He retreated hurriedly and came back, pointing to deep, gouged grooves in the wood.

"Teeth," he said; "not a doubt."

David nodded. It reminded him, unpleasantly, of Toby's shoulder. He looked quickly back at the ship, and remarked on the number of fresh breaches in her sides.

"And that's not all." The sergeant indicated a small bush which grew four or five yards away from the ship. "Watch that," he said.

The bush was cracking and bending towards them beneath invisible pressure. It gave way as they looked, and was crushed into a mass. Then it lifted slightly above the ground and began to drift in the wake of the piece of branch, on a slow journey to the ship.

"It's big, and it's advancing," added the policeman. He picked up a stone and tossed it high into the air. Its curving flight towards the hull was uncannily interrupted. It hung for a moment, before rolling a yard down and sideways. Then it rested, to all appearances unsupported, and stationary save for a slight pulsating rise and fall. All the watching men felt a touch of that trepidation which is bred by the incomprehensible.

A startling shriek from the other side of the ship stung them into action. They rounded the stern, to collide with a group of men and women travelling at a surprising speed.

"What's wrong here?" the sergeant demanded. One of the men pointed behind him and shouted something unintelligible as he ran on.

"Damned sightseers," puffed the sergeant. "Just as well they're scared. Can't they run, though?"

With a full view of the other side, they stopped. The reason for the runners' panic became plain. One sightseer would pry no more. His body, in dismembered sections, was drifting towards the ship.

David looked at Dirk, and then turned to the other. He was feeling

sick with the sights of the day, and suggested that they might be allowed to leave. The sergeant nodded.

"Yes. It wouldn't do me much good to keep you here now, but I'd like you to be handy to-morrow—the inspector may want to have a word with you both." He produced a large handkerchief and mopped his face. "That is," he added, "if the inspector ever turns up."

CHAPTER III

THE GROWING MENACE

THE two succeeded in finding a passable hotel in Clidoe, and returned the next morning to find that the inspector had at last arrived and taken command. Little had been possible during the night beyond the posting of guards to warn off the curious, but with daylight, a phase of activity had set in. A judicious tossing of stones had determined roughly the extent of the danger area, and it had become apparent that it now extended all about the ship in an approximate oval. The actual verge, however, was by no means regular, since here and there, invisible extensions projected three or four feet in advance of the main substance.

Rows of sticks, planted at regular intervals, had enabled the average speed of advance to be estimated at something over a yard an hour. The sergeant, again on the scene, greeted them and expressed his doubts of the value of this calculation.

"It may be," he pointed out, "that this is not an advance at all, as they mean it, but merely the normal rate of growth."

"God forbid!" said David fervently.

"What scientists have they got on the job?" asked Dirk.

"None. They reckoned they could tackle this thing all right without them

—it'd mean extra expense to bring them along."

Dirk grunted. "Probably save you expense in the end," he commented.

They looked out across the clearing. Save for the increased number of holes in her sides, the *Hurakan* looked just as they had first seen her the previous day. The sunlight bathed her, glittering in sparkling flashes from her polished plates. To all appearances, there was nothing amiss between her and them; nothing to stop one from walking right up to her and entering. Staring intently, one could fancy, perhaps, the slightest haze about her; something more tenuous than rising heat, but enough to make the edges not quite sharp. Nevertheless, David realised that, unwarned, he would have walked right into the invisible trap without a suspicion.

With the relinquishing of his responsibility to the inspector, the sergeant's spirits had become more normal. The other had taken over without enthusiasm, and was now a troubled man. He nodded in a depressed way to David and Dirk, as they came up, and asked a few questions in a tone which showed that he expected little help from them. A few minutes later, a man in military uniform strolled across from the protecting cordon, and introduced himself.

He was, it seemed, a Captain Forbes, and not displeased with the fact. He gazed across at the *Hurakan* in a bored style, and his manner was a blend of faint amusement and superiority. He spoke of his commander who had sent him, but had given no reason.

"Well, Inspector," he said, "you've certainly managed to stir up our people—they've sent me along to reinforce you with a party of men and a machine-gun. What's it all about?"

The sergeant explained the situation again; and the inspector, though he had heard it before, listened to his subordinate with an expression of increasing anxiety. At the end of the report,

and David's description of Toby's end, he nodded slowly and gazed thoughtfully towards the ship.

"As we have no more evidence to go on, we must conclude that the crash killed all the men aboard and set free some queer specimen they were bringing home with them, as our young friends here seem to think. Or else that the thing got free on the journey, attacked them, and possibly killed the only men competent to land the ship properly. But there's no proof which it was."

Captain Forbes, with a scepticism born of little imagination, protested.

"But that sounds absurd. What do you reckon the thing is?"

David disclaimed all pretence of knowledge, but suggested that it was some kind of animal. It might equally well be a plant, he admitted, but he thought not.

CAPTAIN FORBES smiled with a kindly tolerance, lit a cigarette, and began to saunter towards the ship. Dirk caught him by the arm.

"Don't be a fool! I don't blame you for not believing us, but take a look at this."

He caught up the branch which the sergeant had dropped the previous day, and exhibited the teethmarks. The captain examined them with close attention, and lost his ambition to advance at the moment.

The inspector turned to David.

"You've thought of no way of tackling this thing, I suppose?"

David shook his head. Dirk chimed in: "I've thought of one thing which may, or may not, be important."

"And that is?"

"To prevent it from reaching the trees, if possible. You notice that it has consumed all the wood it has found. That may be merely a method of removing obstruction, but I doubt it: it didn't deal with the metal that way. I shouldn't be surprised to find that it feeds on wood."

With his eye, the inspector measured

the distance between the wreck and the trees—a quarter was already covered in the majority of places. Captain Forbes fidgeted impatiently.

"Look here, Inspector, I know this is your show, but what about letting me try my machine-gun on the thing—that'll tear it to bits."

The other hesitated, and then agreed. He had little faith in the power of a machine-gun against the creature—if such it was—but no harm seemed likely to result. As the captain strolled off, a thought struck him, and he scribbled a few words on a piece of paper which he handed to a constable with instructions for him to hurry.

A puzzled-looking party of machine-gunners arrived, and was steered into position a few yards from the danger line. When it was explained that they were to set up their weapon at this spot, they appeared at first resentful, and then amused. They planted the gun with the air of men who humoured the half-witted.

"Bit o' target practice—only there ain't no target," muttered one of them.

The gunner settled himself. "What do we aim for, sir?"

"Just aim straight ahead."

The man shrugged his shoulders nonchalantly, and drummed a short burst. The crew gasped audibly. Each bullet had uncannily mushroomed out, and now hung, a splotch of lead, in mid-air.

"Can't say as I like this," one of the men muttered nervously. "What the hell is it, anyway?"

The gun choked out another rattling burst, with identical results. David shot a sidelong glance at the captain; the expression of the latter was highly gratifying. The gunner turned an astonished face.

"Any more, sir?" he inquired.

"Look out!" shouted David. The blobs of lead had risen and surged forward. The gun crew, now thoroughly rattled, jumped back. One man tripped over the tripod and fell. There came a crunching sound, followed by a cry of



agony—and the man's boot, with his foot still inside, began to move slowly away. His companions turned and dragged him back.

Captain Forbes's face turned a peculiar colour as he stared foolishly at the severed boot. For the first time, it seemed to dawn on him that the affair was not a hoax, after all.

"Well, your machine-gun hasn't cut much ice," commented the inspector, unkindly. "When they bring the stuff I've sent for, we'll try another trick."

They were forced to wait for half an hour before a small party appeared carrying a bulky object, which a closer view revealed to be a bale of cotton-waste. Behind them followed two more men carrying cans of petrol.

"Soak the stuff," directed the inspector, as they lowered it. "Pour the lot over it—and get some long poles."

The lighted bale flared furiously. Four men approached and began to lever it forward with the poles, while the rest stood intently awaiting the outcome.

"If it's a success, we'll get some flame throwers," the inspector was saying.

The bale came to an abrupt stop as it met the unseen barrier. It rested there, flaming smokily.

"Push again!"

The obstruction had withdrawn, and the bale was able to advance a full turn before the next check. The sergeant showed what for him was unusual excitement.

"Bit hot for it," he gloated. "We've got it moving, now!"

But he was too optimistic. Just as the poles came forward for a further thrust, there came a thud which shook the ground; the flames were snuffed out, and nothing but a charred smear remained of the flattened bale. The pole-holders speedily retreated.

"Damned if it hasn't jumped on it!" snorted the sergeant indignantly.

THE inspector pushed back his cap and scratched his head. His expression, as he gazed towards the *Hurakan*, was one of utter loss. Captain Forbes was no less taken aback, but after a few minutes' thought, he broke into a smile. He stepped closer to the inspector, and made a suggestion. The other looked doubtful.

"I'll have to get permission," he demurred. "After all, someone owns the ship."

"They won't mind when they understand the danger. Much better destroy the ship than let this thing grow."

"How long will you take?"

Captain Forbes considered. "Till tomorrow morning."

The inspector nodded. The plan seemed sound. Nevertheless, he glanced uneasily at the line of measuring sticks. The danger area would be close to the trees by the next morning. The captain saw his look, and interpreted it rightly.

"I know you'd like to tackle the thing now, but what can we do?"

Dirk, who had watched the last two attacks on the creature without com-

ment, walked over to them. The inspector's attempts to come to grips with the danger seemed to him childish and highly unscientific. He was reminded of some boys he had once seen poking a sleepy lion with sticks—but there was a difference, for the boys had been able to rely upon the protection of the bars. Now, Captain Forbes had succeeded in producing something which was probably another hair-brained scheme.

"Why not get some biologists on the job?" he suggested.

The captain did not receive the remark kindly. There was no reason that he could see why a terrestrial biologist should be an authority on a form of life imported from Venus—if, indeed, it had come from there. Moreover, he pointed out that you did not call in a biologist when you wanted to destroy even an Earthly wild animal. Dirk was curt.

"That's just what you should do. After all, it was the biologists who destroyed the pests in Panama and similar unhealthy spots. For all you know, you may be fooling around with a barrel of high explosives. Just suppose the creature had been inflammable, as it might easily have been—you'd have started a fire which would have spread for miles."

"You are not a biologist yourself?" asked the captain coldly.

"I am not."

"Then I'll thank you not to interfere. Further, I will remind you that you have no standing here."

The inspector, less sure of himself, made to interrupt, but changed his mind. He did not feel a great deal of confidence in the captain, but he sympathised with his resentment. Dirk's face went red with anger.

"While you're playing around, this thing is growing. If it gets right out of hand, Lord knows what may happen—and the responsibility for it will be yours!"

"That being so, will you please

refrain from further comment? Since you seem to have no constructive help to offer, I see no reason for you to remain here."

Dirk checked the retort which occurred to him. He turned on his heel and strode angrily away into the trees.

"Damned meddler," muttered the captain as he watched him go. Turning back to the inspector, he added: "If we are to be ready by to-morrow morning, I'll need to get busy immediately."

CHAPTER IV

THE MONSTER MULTIPLIES

DIRK did not return to the hotel, nor did he leave any message. David was scarcely surprised, for Dirk was not one of those to take rebuke easily, the less so when it was scarcely merited. In consequence, he made a solitary breakfast the next morning.

There was no mention of the *Hurakan* affair in any of the newspapers. He had expected headlines in elephantine type, but repeated search failed to reveal even a paragraph on the subject. It was the more perplexing since the ship had now lain on the hillside two nights and two days. On his way to the scene, he stopped at the Police Station and picked up the sergeant.

"What's happened to the journalists?" he asked as they started. "This ought to be a godsend to them."

"It was, but we shut down on them."

"That's a notable achievement—but why?"

"They were going to spread themselves; there'd have been day trips running by this time and—well, you remember what happened to that sensation-seeker the other day. Besides, there are going to be some fireworks to-day, and we want the place clear."

They approached the wreck to find that the danger area had shown a

greater increase than had been expected. Only a narrow margin of safety, of a few yards' breadth, now lay between it and the trees. The inspector and Captain Forbes looked up to greet them, and then returned to the study of an enlarged photograph. David gave an exclamation of surprise, and the captain grinned.

"Good, isn't it? Just been delivered."

"But how on Earth——?"

"Bit of brainy work up at the Flying Field. They sent a plane over yesterday and fired off a few feet of film—naturally, there wasn't a sign of the thing when they developed. Then some bright lad had the idea of rigging up an infra-red camera, and sent it over. Here's the result."

The print showed the site of the *Hurakan* and the immediate neighbourhood. Of the ship herself, little but the upper surface was visible, the rest being submerged in a dark area which extended all about her. At first glance, this shadow appeared to be a smooth oval, but a closer view revealed that the edge was serrated into a series of blunt projections. David found it disappointing, and said so.

"Can't tell much from that," he murmured. "I mean, it still doesn't show us whether we are dealing with a single creature or a mass of the brutes."

"Anyway, I'm certain that it is animal and not vegetable," rejoined the inspector. "And that's not really so strange, when you come to think of it. After all, it's not a very great step from the transparent living things we have on Earth, to a creature of complete invisibility. Did you notice that everything that it has snapped up travelled right into the ship? I have an idea that we shall find it to be one individual with multiple throats, and a central stomach somewhere in the *Hurakan*. In fact, Captain Forbes' plan is really built upon that idea."

"What is the plan?"

The inspector explained. It had been calculated that any object snatched by

the invisible creature would require—at its present size—just over two minutes to travel into the ship. A number of bombs had been constructed, and equipped with timing devices to give a further half minute's grace. They had then been placed in wooden cases, to make them palatable to the creature; and he had every hope that the simultaneous explosion of this indigestible meal would settle the matter. It entailed, of course, the annihilation of the ill-fated *Hurakan*, but she could now be of little value.

"Why not detonate the bombs by short waves and make certain that they coincide?" David asked.

The captain shook his head. "That was the first idea, but there's the masking effect of the metal hull to be considered, and it's quite likely that the body of the creature may act in some degree as a shield. The timing method seems more certain."

DAVID stood back and watched the preparations. Forty or fifty men had been assembled, and the captain was instructing them in their duties. The sergeant came to his side and chatted. He seemed to have no great faith in the plan, and concluded with the opinion that they had better look for cover if they did not wish to be blown to pieces themselves. David recalled seeing a disused hut which would be ideal for the purpose, since it stood back in the woods a hundred yards from the main clearing. He led the way around the narrow, free space which still remained.

At a convenient spot, they paused to look at the deployment of the captain's troops. At regular intervals, all around the edge of the clearing, men were taking up positions facing the ship. At a glance, it seemed impossible that there could be any danger lurking in that sunlit space—it still appeared that one might walk right up to the *Hurakan's* glittering sides and encounter no

more obstacle than the empty air. Each of the encircling men held a pole in his right hand, on the end of which was mounted the wood-cased bomb, while in his left hand was a string attached to the pin. One or two of them were noticeably nervous, and others seemed to regard the whole affair in the light of a joke. The majority waited phlegmatically for the signal.

At the sound of three sharp whistle blasts, each pole-bearer snapped into sudden action. The weapons were tilted horizontally, the left hands tugging smartly at the strings, and the pins fell free. The cordon closed with levelled staves, in the manner of old-time pikemen.

They took three paces, and then a sharp crackling ran around the line as the bulbous wooden heads were snapped away, to begin their slow journey to the wreck. The men of the cordon sprinted for cover, dropping their shortened poles as they went. For a full half-minute, David and the sergeant continued to watch the uncanny progress of the flock of destructive balls, slowly and silently converging. Then, they, too, thought of shelter and made for the hut.

The meagre light from two grimy windows enabled David to inspect the place. Such furnishings as had occupied it had long since been removed. Only a few sagging shelves were left; a broken axe-shaft and remnants of other tools lay about, with a few dribbled paint cans and other rubbish not worth the labour of removal. He sat himself down on a pile of leaves in one corner. The sergeant came and joined him. Their heads bent together over a large, business-like watch of the latter's.

"Still a minute to go."

As if in prompt contradiction came a muffled, double thud, quickly followed by a third. The sergeant shook a disapproving head. Bad workmanship—luckily, it didn't matter a great deal in the present circumstances. In-

creasingly tense, they watched the second hand crawling towards the main burst. It came fifteen seconds before it was due. First a crash, and then, right on top of it, a stunning roar, as though the premature explosion of one bomb had fired the rest.

Instinctively, they clapped their hands over their ears, while great waves of sound sent the windows tumbling into fragments. They were battered and swirled around, as the aerial breakers surged over them. A patter of scattered debris rained overhead, and a violent thud caused the entire structure to tremble. Dislodged dirt rattled down, and closely following it came the slither of something falling from the sloping roof. It landed with a soggy thump outside the door.

David grinned. "I'll bet that was a part of the brute," he said with satisfaction. "If it gets over that little meal, it'll——"

He stopped suddenly. Somewhere near at hand had risen a scream of fear, a scream mounting in agony till it stopped with a suggestive suddenness. The two looked at each other in consternation. That scream could only mean one thing—something had gone wrong, and the danger was not past. The sergeant opened his mouth to speak, but was silenced by another tearing scream, closer than the first.

FOR some minutes after that, the air rang with anguished cries.

David clapped his hands back over his ears to shut out the sounds of torment. He darted a glance at the sergeant, and could see that his face was pale and grimly strained; he was rising in the manner of one who feels that he should act, but does not know what course to take. He stepped towards the door, but David was swifter; he rushed past him and stood barring the way.

"No," he cried. "Give me that stick first."

Wonderingly, the other picked it up

and handed it to him. David pulled the door an inch or two ajar, and thrust the stick downward through the slit. There was a swift crunch, and he withdrew it, appreciably shorter.

"You see?" He pointed to the unmistakable marks of teeth at the end of the stick.

The sergeant took it from him; and then he, too, thrust it at the crack—higher up than before. He struck smartly downwards. Two feet from the ground, it hit an obstruction and broke off short in his hand. He looked at David.

"We could easily jump over it," he suggested.

"And land on another one, perhaps." David shook his head, and paused for a moment before adding: "Now we're in a hell of a mess! That bomb idea was a complete flop—the danger's been scattered all over the place."

Another cry of pain came from the surrounding trees. A rattle of rapid fire began in the distance. A moment later, a section of the door's bottom edge snapped off and began to float away. Hastily, they slammed it shut and slid the bolt.

"We'll have to get out of here pretty soon," muttered the sergeant.

They gazed speculatively out of the shattered windows. The sunlight filtered down through the branches to fall on ground which *looked* bare, but . . . David turned his attention to the cobwebby space overhead. Safety, for a while at least, seemed to lie up there. With the other's help, he grasped a roof truss and swung himself up. The boarding proved to be in very bad condition, so that he was able, by standing on the beam, to kick a hole through the rotting roof.

Shortly afterwards, the two men sat side by side on the coping, staring through the deserted wood. There was not a man in sight. Far away to the right, they could still hear spasmodic shooting and an occasional cry. David gave a hail, but it brought no answer—

there had been too many cries. The firing was slackening now, and he wondered whether the fact indicated escape or defeat.

"I guess we'll have to stay here till somebody turns up," he said, at length.

The other did not answer; he was staring in fascination at a patch of open ground. Its whole surface appeared to be in motion. Drifting streams of sticks and chips of wood were oozing to several centres. David looked about hastily, and observed the same seeping movement in a number of places.

"There must be dozens of them!"

The sergeant nodded. "And we're in the middle," he added. "And it all comes of this gallivanting about the Universe. I never did think much of it. Stick to your own planet, is what I say; it's quite big enough. But will they? Not so's you'd notice it. They go flinging themselves into space, and then what happens?" He paused aggrievedly. "They have to go and bring back this blasted thing from Venus! Damn' silly, ain't it?"

In their present predicament, David felt inclined to overlook the future prospects for interplanetary travel which were opened up by the more or less successful return of the *Hurakan*, and agree with the sergeant.

"If we could only see the thing, we might be able to do something," he grumbled. Then suddenly an idea struck him, and he swung himself back through the hole in the roof. As he searched through the accumulated rubbish, he noticed that a quarter of the door had already gone. An exclamation of satisfaction told the sergeant that he had made a find.

"What is it?"

There was no answer for a while. Finally, David said: "Can you see the door from there?"

The sergeant found that, by craning over to the limit, this was just possible. David's head and shoulders appeared through the empty window-frame alongside the door. His hand held a battered

can of red paint, which he proceeded to pour out, but instead of reaching the ground, it threw the shape which lay there into visibility. It was a mere miniature, but even so, it was a far more alarming object than the aerial photograph had suggested.

CHAPTER V

THE INVISIBLES' SECRET

THE main mass of the creature was hemispherical, with the flat side resting on the ground. The domed top was bare and smooth for more than half-way down its side, but for the rest of the way, it bristled with blunt projections. At the end of each of these was a wide mouth, snapping continuously and full of sharp teeth. David concentrated on one of these "heads," and daubed it thoroughly.

He noticed that, if necessary, the wide jaws were capable of opening far back, like those of a serpent. It made him shudder to think of the size of the original invader of the *Hurakan*, though even this little specimen was a long way from being harmless. He was able, now, to see the way in which the mouths wrenched lumps of wood from the door, bolting them whole in the same way that Toby's leg had been bolted. Repulsive as the creature was, it became less perturbingly uncanny than had been the sight of the objects drifting down its unseen throat.

David even felt slightly heartened—one could at least fight a visible enemy. He slopped his paint this way and that, to detect the presence of any other. Only one was within his range, and the section which was revealed showed it to be even smaller than the first; but despite its mere nine-inch diameter, the many mouths snapped no less ferociously. As he leaned yet farther out, a cascade of dirt rattled past his head.

"Hi!" called the sergeant's voice, in some agitation. "There's one of the darned things up here."

David scrambled back to the roof, the paint can, which was his only weapon, still in his hand. The sergeant was staring and pointing towards a spot near the centre of the coping. Already, the supports had been laid bare, and a piece of wood was rising into the air. His pot was almost empty, but he flung the last few drops at the place. They were enough to reveal two or three pairs of snapping jaws. The creature was not only on the roof with them, but it was gnawing away at the supports.

He threw the useless can away, and looked around. Branches thrust themselves against the end wall of the hut. It would be a fair jump to the tree-trunk. He looked at the other doubtfully. The policeman grinned as he saw that look.

"Used to do a bit of jumping in the old days, and I'm still good for that distance," he said.

He led the way to the end, scrambling astride the gable. There was need of hurry, for the whole roof would collapse the moment the creature began seriously on the main tie-beam. He stood there, poised on the extreme gable-end, steadying himself with a hand on David's shoulder. He launched, with a powerful leap, well into the branches.

"Good. Now climb up a bit, and I'll come over."

He felt his right foot slip as he took off, and heard the sergeant's startled cry. Desperately, he grappled at the branches, only to feel them snap beneath his weight. Something sluggishly yielding broke his fall. Like a flash, he hurled himself to one side and rolled. Even as he went, he heard the tearing sound of fragments of his coat ripping away. The sergeant's voice called after him hoarsely. David sat up, and in that momentary rush of elation which follows a narrow escape, grinned up at him.

"I fell on one of 'em," he announced.

"What do you know about that?"

"Fell on it?"

"I did; and it's a lucky thing for me that it hasn't got teeth on top. It was right under the tree, and——"

He stopped suddenly, as he noticed that the creature was eating into the tree-trunk. It was not big, he judged, for the floating chunks of wood were no larger than lumps of sugar; nevertheless, the tree was slowly but surely being undercut.

The other had started to descend, but he called to him to stop. With a stick dropped by one of the retreating bombers, he thrashed furiously at the invisible feeder. There was no apparent effect; the wood chips continued to flow neither slower nor faster than before. David calmed himself. At the present rate, it would be some time before the tree fell—that was, if the food did not cause the animal to grow. With a swift inspiration, he thrust a broken branch into the undercut, so that it must be gnawed through before the trunk could be consumed further. Behind him, the roof of the hut collapsed with a startling crash.

"Not much too soon," he muttered, as he watched the rising cloud of dust.

"Look here," objected the sergeant, "I can't stay up here forever."

"Why not? It's the safest place."

ANOTHER smashing thud caused David to jump around. Less than forty feet away, a tall tree had toppled and fallen. It became uncomfortably clear to both of them that this was not a safe place, after all. The sergeant's perch was overtopped by trees on all sides, many of them already showing deep cuts. Any one of them falling in his direction would certainly sweep him down. He began to descend hastily.

"Wait a minute. You can't come down the trunk," David told him. Cautiously testing the way before him with his stick, he made for a spot

beneath the lowest spreading bough. He thrust all around, and ascertained that the ground was indeed as empty as it looked.

"All clear here; you can drop." The sergeant obediently landed beside him. "Now, we've got to get clear of this place at once. The best way will be—good God, what's that?"

There was no need to ask. A crackle of snapping sticks was followed by a swashy thud almost beside them. One of the creatures, caught in the higher branches, had succeeded in eating away its own supports. They backed away in haste. The sergeant pulled out a handkerchief and mopped his damp brow.

"Like a blinkin' nightmare," he mumbled, looking nervously around and above. "That was a near thing. I don't like this at all. The inspector said there was only one of the brutes."

"Did he? Well, he was wrong. So was Captain Forbes. Dirk was the only one of us who had any sense—he cleared off. And that's just what we are going to do now—if we can."

They began a slow journey. Every foot of the ground had to be tested with sticks, which they waved before them like the feelers of some giant insect. Frequently, they cast anxious glances upwards for fear of another falling creature, or of the trees themselves. An hour and a half of such progress found them more nervy and jumpy than ever. Each had discarded several sticks worn down by constant snapping, and so far, they had encountered no sign of any other survivors. The sergeant paused, and wiped his forehead again.

"We must get clear of 'em soon," he said, without a great deal of conviction.

"I think there are less of them now," said David, "but they're bigger. They've been growing hard all the time we've been getting here. Come on."

Five minutes later, there came a snap which removed a ten-inch length of David's stick. He recoiled. So large a

bite proclaimed it as a monster which should be given a wide berth. They started beating around to one side, without any success, and then tried the other. The way ahead proved to be completely blocked by a semi-circle of the snapping invisibles. The only thing left to do was to retrace their steps and detour around the spot.

They turned back, by common consent, and began to trace the path with waving sticks. The sergeant was in the lead, and he knew that they had an almost straight track for some yards. He was the more surprised, therefore, when he encountered an obstacle straight ahead. He grunted and tried either side, in vain. The two looked at each other.

"We found a way in, so there must be a way out," David said desperately.

If there was, they both failed to find it. The circle about them seemed complete.

"Listen!" said the sergeant.

FOR half an hour they had been penned in the diminishing circle, and lusty hails from both had failed to produce any result. Save for the invisible monsters, they might have been alone in the world. Faintly, out of the silence, came an unmistakable "Hullo!" Both replied with full lung power.

"Coming!" the voice sang back. "Stay where you are."

Any other course being impossible, David replied with instructions to hurry; but it took another fifteen minutes before they saw the owner of the voice cautiously approaching. He was a small young man with large glasses, and he whistled cheerfully. One hand waved a long, metal rod before him. Beneath the other arm he clutched a bundle of thin sticks, each tipped with a white knob.

"Hullo! What's wrong with you two?" he asked.

"Surrounded," answered David

curtly. The casual air of the newcomer irritated him considerably.

"Uncomfortable," commented the young man. "Never mind. We'll soon have you out of that."

He thrust with his rod until he encountered the snapping barrier. Snatching a stick from his bundle, he held out the knobbed end. Immediately it had been broken off, he held out other little sticks to left and right to suffer the same fate.

"Who are you?" he asked. The sergeant told him.

"They thought you were done for," he said, pointing back over his shoulder. "Most of your lot were."

Curiosity got the better of David's disapproval of the nonchalant young man.

"What are you doing? Poisoning them?"

"No, we haven't found a suitable poison for them yet. Watch."

He pointed to the recently swallowed white knob, and they saw that it had turned to a bright blue.

"Methylene blue wrapped in soluble paper," he explained. "Away goes the paper and, presto! visibility. My boss, Cadnam, the biologist, had some hundreds of these pills made up. A man called Dirk Robbins came to him in a fearful state, yesterday. Cadnam saw that we'd have to make the brute visible before anything else could be done."

"Good old Dirk!" enthused David.

The other nodded. "He had a bit more sense than the rest of you," he said, ungracefully. "Unfortunately, by the time we got here, some fool had been feeding fireworks to the brute."

The blue stain, growing less intense as it dissolved, rapidly spread throughout the creature. They could see, now, not only the domed outline which they had expected, but could look right into it as though it were a stained specimen on a slide. It became easy to trace the many throats to their common stomach, and also to observe a kind of vascular

system. At the root of each of the many "heads," a kind of valve could be seen rhythmically contracting and expanding. The young man pointed to one of these organs, and shook his head.

"That's what caused most of the trouble," he explained. But neither David nor the sergeant felt in the mood for a lecture. More than four feet of the creature blocked their way to freedom, and visibility had not interfered in the least with its appetite. They said as much.

"Oh, that's all right," said the young man cheerfully. He drew a rapier-like instrument from among his bundle of sticks, and set himself to piercing the contractile organs with care and accuracy. As he worked, he continued to explain.

"A very interesting arrangement, not unlike a heart—but the thing only needs one heart really, and it's got scores. It's a kind of composite animal, and when it was blown to bits, every part with a pulse like that became a separate individual. It quickly re-formed, and began to live on its own. When two of them press closely together, they merge again—I expect that that's how you got surrounded. A very primitive form, really. So far as we know at present, the only way of killing them seems to be to put every pulse out of action—as long as there's one left going, it can rebuild itself."

When he had finished off all the heads he could reach from his side, he tossed the spike over to David. After a few minutes' work, the erstwhile danger became no more than an inert lump of bluish jelly over which they could climb.

"Thank God for that!" said David as they reached the far side in safety. The sergeant grunted, and mopped his brow again. The young man led them back over the way he had come.

"What about the original creature? Was that entirely shattered?" David asked.

"Most of it was, but it's building up again. However, we'll be able to deal with it, now that we can see it. Even I felt it was a bit creepy, at first. Transparency is one thing—invisibility, quite another."

They came at length to irregular rows of the creatures, already stained. They were still gnawing the trees, but seemed almost harmless when deprived of their armour of invisibility. In the distance was a group of men diligently disposing of the monsters with sharp probes. The young man bade them good-bye.

"Keep straight ahead," he directed. "It's clear there. And it would please me if you would tell Captain Forbes what I think of him, when you see him."

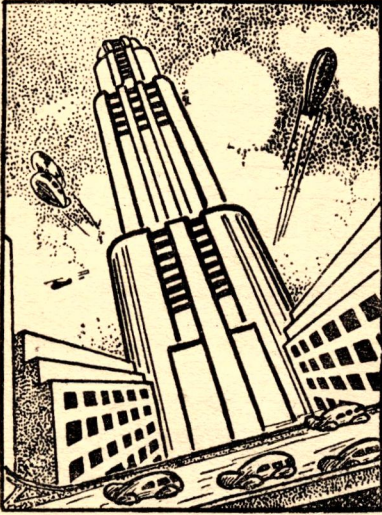
"He's safe?"

"Sure to be. That kind always comes out of it all right."

He was correct. When they reached a group which seemed to be at the centre of operations, the captain was amongst it. He seemed to be explaining that the failure of his attack was due to the premature explosion of two of the bombs. Dirk detached himself from the others and greeted them heartily.

"Let's clear out," he said, a few minutes later. "The gallant captain now has a theory that it would be quicker to gas the brutes. We'll be safer a few miles away."

He Told Of An Age Of A Thousand Marvels That Had Yet To Be . . . And They Burned Him As A Sorcerer



THE MAN WHO SAW THE FUTURE

By

EDMOND HAMILTON

Author of The Comet Doom, The Space Beings, etc

JEAN DE MARSELAIT, Inquisitor Extraordinary to the King of France, raised his head from the parchments that littered the rude desk at which he sat. His glance shifted along the long, stone-walled, torchlit room to the line of mail-clad soldiers who stood, like steel statues, by its door. A word from him, and two of them sprang forward.

"You may bring in the prisoner," he said.

The two mail-clad figures disappeared through the door, and in a moment came a clang of opening bolts and the grating of heavy hinges from somewhere in the building. Then the returning soldiers entered the room with another man between them, whose hands were fettered. He was an upright figure, dressed in drab tunic and hose. His dark hair was long and straight, and his face held a dreaming strength, altogether different from the battered visages of the soldiers or the grim, changeless mask of the Inquisitor. The latter regarded the prisoner for a moment, and then lifted one of the parchments from before him

and read from it, in a smooth, clear voice.

"Henri Lothiere, apothecary's assistant of Paris, is charged, in this year of our Lord, one thousand four hundred and fifty-four, with offending against God and the King by committing the crime of sorcery."

The prisoner spoke for the first time, his voice low and steady.

"I am no sorcerer, Sire."

Jean de Marselait read calmly on from the parchment.

"It is stated by many witnesses that, for long past, that part of Paris called Nanley has been troubled by works of the Devil. Ever and anon, great claps of thunder have there been heard issuing from an open field without visible cause. They were evidently caused by a sorcerer of great power, since even exorcists could not halt them. It is attested by several persons that the accused Henri Lothiere did, in spite of the diabolical nature of the thing, spend much time at the field in question. It is also attested that the said Henri Lothiere did state that, in

his opinion, the thunder-claps were not of diabolical origin, and that if they were studied, their cause might be discovered.

"It being suspected from this that Henri Lothiere was himself the sorcerer causing the thunder-claps, he was watched, and on the third day of June was seen to go in the early morning to the unholy spot, with certain instruments. There he was observed going through strange and diabolical conjurations, when there suddenly came another thunder-clap, and the said Henri Lothiere did vanish entirely from view in that moment. This fact is attested beyond all doubt.

"The news spreading, many hundreds watched the field during that day. Upon that night, another thunder-clap was heard, and the said Henri Lothiere was seen by these many persons to appear at the field's centre, as swiftly and strangely as he had vanished. The fear-stricken hundreds around him then heard him tell of how, by diabolical means, he had been transported hundreds of years into the future, a thing surely possible only to the Devil and his minions; and they heard him tell other blasphemies before they seized and brought him hither, praying that he be burned and his work of sorcery thus halted.

"Therefore, Henri Lothiere, since you were seen to vanish and to reappear, as only the servants of the Evil One might do, and were heard by many to utter the blasphemies mentioned, I must adjudge you a sorcerer, whose penalty is death by fire. If anything there be that you can advance in palliation of your black offence, however, you may do so now, before final sentence is passed upon you."

Jean de Marselait laid down the parchment, and raised his eyes to the prisoner. The latter looked around him uneasily for a moment, then seemed to steady himself.

"Sire, I cannot change the sentence you will pass upon me," he said

How many men have had to suffer, in the past, for their belief in things too fantastic for those not gifted with their powers of imagination, which were regarded as evil and often rewarded with death! A few centuries ago, far-seeing prophets like Roger Bacon dreamed of to-day's wonders, and their predictions were condemned as supernatural visions instead of being recognised as inspired glimpses of the future. The versatile Mr. Hamilton gives us a novel little story in this vein.

quietly, "yet do I wish to relate once more what happened to me and what I saw. Is it permitted me to tell you that from first to last?"

The Inquisitor's head bent, and Henri Lothiere spoke, his voice gaining in strength and fervour as he continued.

"SIRE, I am no sorcerer, but a simple apothecary's assistant. It was always my nature, from earliest youth, to delve into matters unknown to men, the secrets of the Earth and sea and sky. I knew well that this was wicked, that the Church teaches all we need to know, and that Heaven frowns when we pry into its mysteries, but so strong was my desire to know that many times I concerned myself with things forbidden.

"I sought to know the nature of the lightning, the manner of flight of the birds, the way in which fishes are able to live in the waters, and the eternal mystery of the stars. So, when these thunder-claps were heard in the part of Paris where I live, I did not fear them so much as my neighbours, but was eager to learn what they meant, for it seemed to me that their cause might be learned.

"I began to go to the field from which they issued, seeking to study them. I waited there, and twice I heard the great thunder-claps myself. I thought they came from near the field's centre, and I studied that place, but could see nothing there. I dug in the ground, I looked up into the sky, but there was nothing; and yet still, at intervals, the thunder-claps sounded.

"I continued to go to the field, though I knew many of my neighbours whispered that I was engaged in sorcery. Upon that morning of the third day of June, it had occurred to me to take certain instruments, such as loadstones, to the field, to see whether anything might be learned with them. I went, a few superstitious ones following me at a distance. I reached the field's centre, and started the examinations I had planned. Then suddenly came another thunder-clap, and with it I passed from the sight of those who were watching.

"Sire, I cannot well describe what happened in that moment. The thunder-clap came as though from the air around me, stunning my ears with its terrible burst of sound; and at the same moment that I heard it, I was buffeted as though by awful winds and seemed to be falling downwards through terrific depths. Then, through the hellish uproar, I felt myself landing upon a hard surface, and the sounds quickly ceased from all about me.

"I had involuntarily closed my eyes at the great thunder-clap; but now, slowly, I opened them. I looked around me, first in stupefaction and then in growing amazement. For I was not in that familiar field at all, Sire, that I had been in a moment before. I was in a room, lying upon its floor; and it was such a room as I had never seen before. Its walls were smooth and white and gleaming. There were windows in the walls, and they were closed with sheets of glass so smooth and clear that one seemed to look through an opening. The floor was of stone, smooth and

seamless as though carved from one great rock, yet seeming not, in some way, to be of stone at all. There was a great circle of shining metal inset in it, and it was on this that I was lying.

"All round the room were many great things, the like of which I had never seen. Some were of black metal, and seemed contrivances or machines of some sort. Black cords or wires connected them one to the other, and from part of them came a humming sound that did not stop. Others had glass tubes fixed on the front of them, and there were square, black plates on which were many little handles and buttons.

"**T**HERE was the sound of voices, and I turned to find that two men were bending over me. They were men like myself, yet they were, at the same time, like no men that I had ever met. One was white-bearded; the other plump, and bare of face. Neither of them wore cloak, tunic or hose; instead, they wore loose and straight-hanging garments of cloth.

"They were both greatly excited, it seemed, and were talking rapidly to each other as they bent over me. I caught a word or two of their speech, in a moment, and found it was French they were talking. But it was not the French I knew, being so strange, and with so many new words, as to be almost a different language. I could understand the gist, though, of what they were saying.

"'We have succeeded!' the plump one was shouting. 'We've brought someone through at last!'

"'They will never believe it,' the other replied. 'They'll say it was faked.'

"'Nonsense!' cried the first. 'We can do it again, Rastin; we can show them before their own eyes!'

"They bent towards me, seeing me staring at them.

"'Where are you from?' shouted the

plump-faced one. 'What time—what year—what century?'

" 'He doesn't understand, Thicourt,' muttered the white-bearded one. 'What year is this now, my friend?' he asked me.

"I found voice to answer. 'Surely, Sirs, whoever you be, you know that this is the year fourteen hundred and fifty-four.'

"That set them off again into a babble of excited talk, of which I could understand only a word here and there. They lifted me up, seeing how sick and weak I was, and seated me in a strange, but very comfortable chair. I felt dazed. The two were still talking excitedly; but finally, the white-bearded one, Rastin, turned to me. He spoke to me, very slowly, so that I understood him clearly, and asked me my name. I told him.

" 'Henri Lothiere,' he repeated. 'Well, Henri, you must try to understand. You are not now in the year 1454. You are five hundred years in the future, or what would seem to you the future. This is the year 1954.'

" 'And Rastin and I have jerked you out of your own time across five centuries,' said the other, grinning.

"I looked at them, uncomprehending. Rastin shook his head.

" 'He does not believe,' he said to the other. Then, to me, 'Where were you just before you found yourself here, Henri?' he asked.

" 'In a field on the outskirts of Paris,' I said.

" 'Well, look from that window, and see if you still think yourself in your fifteenth-century Paris,' he told me.

"I went to the window. I looked out. Mother of God, what a sight was before my eyes! The familiar, grey little houses, the open fields behind them, the saunterers in the dirty streets—all these were gone, and a new and terrible city lay about me! Its broad streets were of stone, and great buildings of many levels rose on either side of them. Great numbers of people, dressed like the two beside me, moved in the streets,

and also strange vehicles or carriages, undrawn by horse or ox, that rushed to and fro at undreamed-of speed! I staggered back into the chair.

" 'You believe now, Henri?' asked the white-bearded one, kindly enough. I nodded, weakly. My brain was whirling. He pointed to the circle of metal on the floor, and the machines around the room.

" 'Those are what we used to bring you from your own time to this one,' he said.

" 'But how, sirs?' I asked. 'For the love of Heaven, how is it that you can transport me thus from one time to another? Have ye become gods or devils?'

" 'Neither one nor the other, Henri,' he answered. 'We are simply scientists, physicists—men who want to know as much as man can know, and who spend their lives in seeking knowledge.'

"I FELT my confidence returning. These were men such as I had dreamed might some day be.

" 'But what can you do with time?' I asked. 'Is not time a thing unalterable, unchanging?'

"Both shook their heads, as Rastin answered: 'No, Henri, it is not. Though only lately have our men of science discovered that.'

"They went on to tell me of things that I could but dimly understand. It seemed that their men of knowledge had found Time to be a mere measurement or dimension, just as length, breadth or thickness. They mentioned names, with reverence, that I had never heard—Einstein and De Sitter and Lorentz. They said that just as men use force to move or rotate matter along the three known measurements, so might matter be rotated from one point in time, the fourth measurement, to another, if the right force was used. They said that their machines produced that force, and applied it to the metal circle. They had set the force to rotate

any matter on the circle from five hundred years before, to this time of theirs.

"They had tried it many times, they said, but nothing had been on the spot on those occasions, and they had rotated nothing but the air about it from one time to the other, and the reverse. I told them of the thunder-claps that had been heard in the field, and that had made me curious. They said they had been caused by the transporting of the air about that spot from the one time to the other, in their trials. But I could not understand these things.

"They said, then, that I had happened to be on the spot when they again turned on their force, and so had been rotated out of my own time into theirs. They said they had always hoped to ensnare someone living in a distant time, in that way, since a living man from the past would be a proof to all the other men of knowledge of what they were able to do. But still I could not comprehend, and they saw, and told me not to fear, though I was not fearful, but excited at the things that I saw around me. I asked of those things, and Rastin and Thicourt explained some of them to me, as best they could. Much they said that I did not understand, but my eyes saw marvels in that room of which I had never dreamed.

"They showed me a thing like a small glass bottle with wires inside, and told me to touch a button beneath it. I did so, and the bottle shone with a brilliant light exceeding that of scores of candles. I shrank back, but they laughed, and when Rastin touched the button again, the light vanished. I saw that there were many of these things in the ceiling of the room, and on the walls.

"They showed me also a rounded, black object of metal with a wheel at the end. A belt ran around the wheel, and around smaller wheels connected to many machines. They touched a lever on this object, and a sound of humming came from it; and the wheel turned very

fast, turning all the machines with the belt. It turned many times faster than any man could ever have turned it, yet when they touched the lever again, its turning ceased. They said that it was the power of the lightning in the skies they used to make the light and to turn that wheel!

"My brain reeled at the wonders that they showed me. One took an instrument that he held to his face, saying that he would summon the other men of knowledge to see their experiment that night. He spoke into the instrument as though to different men, and let me hear voices within it, answering him! They said that the men who answered were leagues separated from him!

"I could not believe—and yet, somehow, I did believe, though I was half-dazed with wonder. The white-bearded man saw that, and encouraged me. Then they brought a small box with an opening, placed a black disk on the box, and set it turning in some way. A woman's voice came from the opening in the box, singing. I shuddered when they told me that the woman was one who had died years before. Could the dead speak thus?

"**H**OW can I describe what I saw there? Another box or cabinet there was, with an opening also. I thought it was the like to that from which I had heard the dead woman singing, but they said it was different. They touched buttons upon it, and a voice came from within it, speaking in a tongue I knew not. They said the man was thousands of leagues away from us, in a strange land across the western ocean, yet he seemed by my side!

"They saw how dazed I was by these things, and gave me wine. At that I took heart, for wine, at least, was as it had always been.

"'You will want to see Paris—the Paris of our time, Henri?' asked Rastin.

"'But it is different—terrible——' I demurred.

"'We'll take you,' Thicourt said; 'but first your clothes——'

"He got a long, light coat which they bid me put on, and that covered my tunic and hose, and a hat of grotesque, round shape which they put on my head. They led me, then, out of the building and into the street. I gazed, astounded, along that street. It had a raised walk at either side, on which many hundreds of people moved to and fro, all dressed in as strange a fashion. Many, like Rastin and Thicourt, seemed of gentle blood, yet in spite of this, they did not wear a sword or even a dagger. There were no knights or squires, or priests or peasants. All seemed to be dressed in much the same manner.

"Small lads ran to and fro, selling what seemed sheets of very thin, white parchment, many times folded and covered with lettering. Rastin said that these had written upon them all the things that had happened through all the world, even but a few hours before. I said that to inscribe even one of these sheets would take a clerk many days, but they said that the writing was done very quickly by machines.

"In the broad, stone street, between the two raised walks, were rushing back and forth the strange vehicles I had seen from the window. There was no animal pulling or pushing any one of them, yet they never halted in their swift rush, and carried many people at unthinkable speed. Sometimes, those who walked stepped before the rushing vehicles, and from them came terrible warning snarls or moans that made the walkers draw back.

"One of the vehicles stood at the walk's edge before us; we entered it, and sat side by side on a soft, leather seat. Thicourt sat behind a wheel on a post, with levers beside him. He touched these, and a humming sound came from somewhere in the vehicle; then it, too, began to rush forward. Faster and faster along the street it went, yet neither of them seemed afraid. Many thousands of these vehicles were moving

swiftly about us, as we passed on, between great buildings and along wider streets. Then the buildings grew smaller and we were passing through the city's outskirts; though I could scarce believe that it was Paris in which I was.

"We came to a great flat, open field beyond the city, and there Thicourt stopped, and we got out of the vehicle. There were big buildings at the field's end, and I saw other vehicles rolling out of them across the field, different from any I had yet seen, with flat, wing-like projections on either side. They rushed out over the field; and then I cried out as I saw them rising from the ground into the air. Mother of God! They were flying!

"**R**ASTIN and Thicourt took me forward to the great buildings. They spoke to men there, and they brought forth one of the winged vehicles. Rastin told me to get in, and though I was much afraid, a terrible fascination drew me. Thicourt and Rastin entered after me, and we sat in seats with the other man. He had before him levers and buttons, while at the front was a great thing like a double-oar. A loud roar sounded, and it began to whirl so swiftly that I could not see it.

"The vehicle rolled swiftly forward, bumping on the ground, and then it ceased to bump. I looked down and shuddered. The ground was already far beneath. I, too, was flying in the air!

"We swept upward at a terrible speed that increased steadily. The thunder of the thing was terrific, and as the man at the levers changed their positions, we curved around and over, downward and upwards in the manner of birds. Rastin tried to explain to me how the thing flew, but it was all too wonderful, and I could not understand. I only knew that a wild, thrilling excitement held me, and that it were worth more than life itself to fly thus, if but for once, as I had always dreamed that men might do some day.

"Higher and higher we ascended. The earth lay far beneath; and I saw now that Paris was indeed a mighty city, its vast mass of buildings stretching away almost to the horizons below us. A mighty city of the future, that it had been given my eyes to look upon! There were other winged carriages darting to and fro about us; and they said that many of these were starting or finishing journeys of hundreds of leagues in the air. Then our own flying vehicle began to descend. It circled smoothly down to the field like a swooping bird, and when we landed there, Rastin and Thicourt led me back to the ground-vehicle.

"It was late afternoon by then, the Sun sinking westward, and darkness had descended by the time we rolled back into the great city. But in that city was not darkness! Lights were everywhere in it; flashing, brilliant lights that shone from its mighty buildings, and that blinked and burned and ran like water in great symbols upon them. Their glare was like that of day!

"We rode through these lanes of lights, and stopped before a great building into which Rastin and Thicourt led me, and in which were many people upon endless rows of seats. I thought it a cathedral at first, but saw, soon, that it was not. The wall at one end of it, towards which all were gazing, had on it pictures of people, great in size, and moving as though themselves alive! And they were talking one with another, too, as though with living voices! I trembled at such magic!

"With Rastin and Thicourt in seats beside me, I watched the pictures, enthralled. It was like looking through a great window into a strange world. I saw the sea, seemingly tossing and roaring there before me, and then saw on it a ship—a vast ship, of size incredible, without sails or oars, holding thousands of people. I seemed upon that ship, as I watched, seemed to move forward with it. They told me it was

sailing over the western ocean, that never men have crossed. I feared!

"Then another scene: land appearing from the ship. A great statue, upholding a torch; and we on the ship seemed to pass beneath it. They said that the ship was approaching a city, the city of New York, but gathering mists concealed all from us. Then, suddenly, the mists cleared, and there before us lay the city.

"**M**OTHER of God! What a city! Range upon range of great, mountain-like buildings aspired as though to Heaven itself. Far beneath, narrow streets pierced through them; and we seemed to land from the ship, to penetrate those ways between the vast, towering buildings. People, millions upon millions of them, rushed through the endless streets. Countless ground-vehicles speeded to and fro, while other, strangely different ones roared above the streets, and still others below them!

"Winged flying-carriages and great airships sailed high above the titanic city, and in the waters around it, great ships of the sea and smaller vessels were coming and going. They sailed beneath colossal bridges such as no man ever dreamed of, that reached out from the city on all sides. And with the coming of darkness, the city blazed with living light!

"The picture changed, showed other mighty cities, though none so terrible as that one. It showed great mechanisms that appalled me: giant metal things that scooped in an instant from the earth as much as ten men might dig in days, vast things that poured molten metal like water, and others that lifted loads hundreds of men and oxen could not have stirred.

"They showed men of knowledge, like Rastin and Thicourt beside me. Some were healers, working miraculous cures in a way that I could not understand. Others were gazing through giant tubes at the stars; and the picture showed

what they saw, showed that all of the stars were great suns like our Sun, that our Sun was greater than Earth, and that Earth, which was round like an apple, moved around it instead of the reverse! How could such things be? I wondered. Yet they said that it was so; and I heard, but could scarce understand.

"At last, Rastin and Thicourt led me out of that place of living pictures, and we went again through the streets to their building, where first I had found myself. As we went, I saw that none challenged my right to go, nor asked who was my lord; and Rastin said that none now had lords, but that all were lords, king, priest and noble having no greater power than any other in the land. Every man was his own master! It was what I had dared to hope for in my own time; and this, I thought, was the greatest of all the marvels they had shown me.

"But, when we had returned to their building, Rastin and Thicourt took me first to another room than the one in which I had found myself. They said that other men of knowledge were gathered there to hear of their feat, and to have it proved to them.

"'You would not be afraid to return to your own time, Henri?' asked Rastin, and I shook my head.

"'I want to return,' I told them. 'I want to tell my people what I have seen—what the future is that they must strive for.'

"'But if they should not believe you?' Thicourt asked.

"'Still I must go—must tell them,' I said.

"Rastin grasped my hand. 'You are a bold man, Henri,' he said.

"Then, throwing aside the cloak and hat which I had worn outside, they went with me to the big, white-walled room where first I had found myself. It was lit brightly, now, by many of the shining glass things on ceiling and walls, and in it were many men. They all stared strangely at me and at my

clothes, and talked excitedly, so fast that I could not follow them. Rastin began to address them.

"He seemed explaining how he had brought me from my own time to theirs. He used many words that I could not understand; and I heard again the names of Einstein and De Sitter, that I had heard before, repeated frequently by these men as they disputed with Rastin and Thicourt. They seemed to be disputing about me.

"One big man was saying: 'Impossible! I tell you, Rastin, you've faked this fellow!'

"Rastin smiled. 'You don't believe, then, that Thicourt and I brought him here from his own time, across five centuries?'

"A CHORUS of excited negatives answered him. He bid me stand up and speak to them. They asked me many questions, part of which I could not comprehend. I told them of my life, of the city of my own time, of king and priest and noble, and of many simple things they seemed quite ignorant upon. Some appeared to believe me, but others did not, and again their dispute broke out.

"'There is a way to settle the argument, gentlemen,' said Rastin, finally.

"'How?' they all cried.

"'Thicourt and I brought Henri across five centuries by rotating the Time-dimensions at this spot. Suppose we reverse that rotation and send him back before your eyes—would that satisfy you?'

"They all said that it would. Rastin turned to me. 'Stand on the metal circle, Henri,' he said, and I did so.

"All were watching very closely. Thicourt did something with the levers and buttons of the mechanisms in the room. They began to hum, and blue light came from the glass tubes upon some. All were quiet, watching me, as I stood there on the circle of metal. I met Rastin's eyes, and something within me made me call farewell to him. He

waved his hand, and smiled. Thicourt pressed more buttons, and the hum of the mechanisms grew louder. Then he reached towards another lever.

"A terrific clap of thunder seemed to break about me, and as I closed my eyes before its shock, I felt myself whirling and falling as though into a maelstrom, as I had done before. The awful sensation ceased in a moment, and the sound subsided. I opened my eyes. I was on the ground, in the centre of the familiar field from which I had vanished upon the morning of that same day. Though it was night, now, for that day I had spent five hundred years in the future.

"There were many people gathered around the field; and they screamed, and some fled, when I appeared in the thunder-clap. I went towards those few who remained. My mind was full of the things I had seen, and I wanted to tell them of those things. I wanted to tell them how, in the future, would be realised the marvels which my eyes had beheld, and of the freedom that was enjoyed by the people of the future. I wanted to tell them how they must work towards that future time of wonder.

"But they did not listen. Before I had spoken minutes to them, they cried out upon me as a sorcerer and blasphemer, and seized me and brought me here to the Inquisitor—to you, Sire. And to you, Sire, I have told the truth in all things. I know that in so doing I have set the seal upon my own fate; and that only sorcerer would ever tell such a tale; yet, despite that, I am glad.

Glad that I have told what I saw five centuries in the future—glad that I saw! Glad that I saw those things that sometime must come to be . . ."

IT WAS a week later that they burned Henri Lothiere. Jean de Marselait, lifting his gaze from his endless parchment accusations and examens, on that afternoon, looked out through the window at the stone room's end, and saw a thick curl of black smoke rising into the blue heavens from the distant square. There came dimly to his ears the thunderous shouting of the crowd. He rested for a moment, thoughtful, his pen upon his chin.

"Strange, that one," he mused. "A sorcerer, of course, but such a one as I have never heard before."

His eyes went out again to the thick, black smoke, and a thought came to him.

"I wonder," he whispered, "was there any truth in that wild tale of his? The future— Who can say what men might do . . . ?"

There was silence in the room as he brooded for a moment more; then he shook himself, as one ridding himself of absurd speculations.

"But, tush—enough of these crazy fancies! They will have *me* for a sorcerer if I yield to these wild visions of the future."

And, bending again with his pen to the parchment before him, he went on with his work.

Things to Come . . .

DIMENSION OF CHANCE

by

Clark Ashton Smith

THE RADIO-TELESCOPE

by

Stanton A. Coblentz

In A Perfect World, He Was The Only Master Mind . . . And He Sentenced Mankind to Death!



EXPERIMENT IN GENIUS

By

WILLIAM F. TEMPLE

*Author of The Smile of the Sphinx, Lunar
Lilliput, etc*

FOREWORD

THE last convulsions of the Three World Wars not so much ended as died away, around the year 2000 A.D. Among the ruins, Man took stock of himself. Obviously, he had failed—but where?

The handful of original thinkers came, most remarkably, to an agreement. Man had failed because he had lost his religion, by which they meant a racial system of moral principles. In clumsy books printed on hand-presses—for almost all the useful machinery of the world had rusted or been wrecked—they explained that the people who had chased money, identifying it with success, were actually chasing security. That it had never dawned on these same people that lasting security could only be found in a social system based firmly on moral principles. That these gold worshippers were, paradoxically, the most frantic suppressors of those who had tried to establish such a system.

And so on. . . .

The concrete result of it all was the actual founding and development of a World State, based upon justice, freedom and tolerance, and abiding the chief principle of Christianity, which said that "All men are brothers," and put into four words the content of a thousand learned sociological treatises. There was peace. There was equal opportunity for all. There was education in character, as well as in mind and body.

Much repetitive, unpleasant labour was done by machinery. That which was not was shared out to a few hours a week for each person, and done gladly, for people liked to give as well as to get, in this free world. For the rest, the people just worked at what they pleased, which was generally what they could do best. There being no competitive rush and scramble for money, work became a pleasure.

So the New World went on, for a thousand years. . . .

CHAPTER I

THE STAGNANT ERA

THE State Biologist lay on his back under a tree amid rolling parkland, and stared up at the tiny, green leaves of spring. He had been reviewing the world in his mind, and he was disturbed. One thousand years of peace. One thousand years of absolute freedom from bondage and frustration. What had it brought?

"Stagnation," said the Biologist, to the empty air. "Stagnation."

Everyone did their work competently, but progress had slowed almost to a complete halt. No one seemed to have any original ideas nowadays, nor make any new discoveries. The general level of intelligence was indeed a level. The Biologist, who had a weakness for analogies, had a mental vision of life as water. A rushing, agitated river had run into a large, placid lake; and now, after centuries, the level surface was showing the green and yellow warning signs of stagnation.

And suddenly the Biologist saw where the trouble lay. *There were no geniuses in the world.* No Einsteins, Newtons, Beethovens, da Vincis, Shakespeares. None of those abnormal people who stood head and shoulders above the crowd, and saw the land around the crowd, and pointed the way the crowd should go. Everyone in this civilisation was too normal, too ordinary. The handful of original thinkers who had conceived this world were long dead, and their descendants were healthy, normal, unoriginal people.

The Biologist skipped to another analogy. He imagined mankind as a group of cattle in a field. The geniuses were those rare cattle who sought escape from the world, who looked for gateways to other fields and found them, and made larger the territory of mankind. But, to-day, no one wanted to escape from the world. They had no motive. They were too content. All

What is genius? What makes some men develop abnormal capacities, in one direction or another, which enable them to influence the whole course of progress? Can you imagine a world in which genius had become extinct? The author of that memorable story, "The Smile of the Sphinx," returns to our pages with another remarkable tale in which he pictures such a situation, and the results of an attempt to remedy the deficiency

the cattle stood there in the field in true bovine manner, and they would stand there until they rotted from inaction.

"The world needs its geniuses," said the Biologist, decisively, to the boughs above him.

He got up, and went back to his apartment in the State Laboratories Building. He spent the next few months in the State Library, across the way, investigating very closely the lives of the great men of the past, mostly pre-2000 A.D. He found that genius had little to do with heredity, apparently, but much to do with childhood environment and upbringing, and often the physical blemishes of the great man. Caesar was an epileptic, and Napoleon undersized; Edison was deaf, and Nietzsche was a hunchback; Beethoven was ugly as well as deaf; Byron was lame, Kant another hunchback; and so on.

He decided that oppressive circumstances, handicaps and frustrations in childhood, started the mental career of geniuses. First, the victims sought escape from the harsh world which oppressed them to a safer one, which was generally a world of their own imagination. And there, if they were of a rebellious or resentful nature, they planned ways of gaining power in the

world from which they had fled. Most of all, they desired respect, since they had received so little of it.

He consulted the State Psychologist on the matter. The Psychologist listened to the Biologist's theory. Then he went into a long theory of his own which said much the same thing, only he borrowed from Nietzsche and Adler, and dragged in the "Will to Power" and the "Inferiority Complex."

"The trouble to-day," he said gravely, "is that everyone is brought up too perfectly by the State. Everyone, to-day, is physically perfect. There are no injustices or inequalities. Therefore, no inferiority complexes. Therefore, no geniuses."

"Just what I've already told you," said the Biologist to himself. And, aloud: "I think it would be a good thing for the State to have a limited quota of geniuses. Let us put it before the Administration, and see if they agree. And if they do, let us experiment in the raising of a genius!"

THEY duly put it before the Administration. There was a long debate. The Administration finally agreed about the necessity for geniuses; but, on humanitarian grounds, they objected to the method of the experiment. And it was only because there was a growing movement in favour of the physical sciences that the two finally got away with it.

For, owing to the way it had prostituted itself in the cause of war in the past, science had fallen into the background in this moral world. Now there had been a revival under the slogan, "Science in the Service of Humanity," and it was catching on. Much knowledge had been lost for ever in the eruptions of the World Wars, and science knew even less to-day than it did a thousand years ago. But there was quite a wave of enthusiasm for it, now; though this might ebb if no new discoveries were made, for few experiments brought real results.

The Psychologist and the Biologist stood alone in a ward of the State Nursery. They were about to make their choice. Outside waited the State Nurses, silent, but finding it hard to approve the experiment, even though it had been endorsed by the Administration as "ultimately for the good of humanity."

"Lord!" said the Biologist, surveying the rows of cots. "I can't even tell which are boys and which are girls."

"We must have a boy," said the Psychologist. "Four ounces more brain. This row are all male," I am informed.

They both walked slowly along the row. The babies, blue-eyed or brown-eyed, dark or fair, or completely bald, lay there watching, or asleep, or kicking, or sucking their little fingers, or playing with toys or bedclothes. The two scientists came to one little, brown-eyed baby who was very pleased with himself, indeed. He was waving a red rattle, laughing delightedly, and dribbling.

The Psychologist acted on a sudden impulse. He swooped down on the child and snatched its rattle away in one swift, rude grab. The baby was startled, and looked surprised for a moment, gazing wide-eyed at its tiny, empty hand. Then its lower lip protruded, and it began to cry.

"Uh—her—her—hoo!"

"It's got to be this one, now. Infantile frustration already fixed," whispered the Psychologist urgently, as the shocked Nurses hurried in.

"Er—we'll take this one," he said, as pleasantly as he could, to the expressionless Chief Nurse.

"Very well. I'll wrap him up," said the Chief Nurse, trying to keep the hostility out of her voice.

"Lord!" said the Biologist again, to himself. "Almost as if he were shopping!"

So the baby, Bruce Lion, went to a new home—the Psychologist's apartment in the State Library Building, just across the way from the Biologist. Here

a special diet was worked out for him, which was sparse in certain vitamins. The Biologist also suggested experimenting with the baby's glands, so that he would grow up over-sexed and under-sized. But the Psychologist demurred.

"Too dangerous. We don't know enough about it. Anyway, I believe it can all be done by diet."

BRUCE grew up to be a pale-faced little boy, thin, small, and very short-sighted. A pair of spectacles had to be made for him. They were the only pair of spectacles in the world of 3004 A.D.; indeed, they were the only pair that had been made in the last three hundred years. This unpleasant fact was brought home regularly to Bruce by the Psychologist, who had a chart by which he reminded the boy systematically that he was small, weak, pasty and, in fact, the only unhealthy physical specimen in a world of perfect physiques.

The Psychologist was unbelievably subtle in arranging Bruce's repressions and neuroses. He based many of these on examples gleaned from research into early Victorian family life. The principles of the State were withheld from Bruce. He was fed carefully with a distorted view of things. He was taught that sex was shameful, that pleasure was sinful. Temptations were planned for him, and when he had yielded to them, he was severely chastised. Any ideas that he expressed were mocked at and discouraged.

In his presence, the Psychologist and the Biologist always put on a special air. They often pretended that he really wasn't there, ignored his faltering attempts to speak to them, and if they did deign to answer, did so with such condescension and contempt that Bruce found it too painful to continue. But, out of his presence, they were very different. The Biologist, in particular, was upset.

"I feel that I can't go on much longer," he said, striding up and down

the room. "I know I started it, but—it's almost unbearable. The poor kid! Every time I see the tears in his eyes, I feel I want to go down on my knees to him and make amends. Though, Lord knows, it's impossible now. I'm bitterly sorry that I ever began it."

"I know, I know," said the Psychologist, biting his nails and staring into space. "It's damnable! But we've got to go on, for the boy's own sake as well as mankind's. We can't abandon him, just a hopeless warp, now. The process must be carried through to the end, so that at least he may have the consolation of developing some talent far above the general level."

"But will he?" exclaimed the Biologist, halting by the window. "Supposing he hasn't the rebellious spirit? Supposing he just escapes to his dream world and stays there?"

The Psychologist gave a shrug, indicating helplessness.

"Another thing," said the Biologist. "Supposing he turns out to be a martial genius, another of the Alexander or Napoleon type? A useless anachronism, who'll attempt to become a dictator? And fail, because there's not enough moral ignorance for him to build upon?"

"Again, our work would be wasted," answered the Psychologist. "But it's one chance against several. He may instead become a musical, literary, artistic, engineering, scientific, or organising genius. Have you noticed the amount of time he has spent in the Library lately?"

For, in one direction, there was no real frustration for Bruce. Although the Psychologist and the Biologist told him little, actually, the way to information was left temptingly open. He was allowed the run of the State Library, Laboratory, and the art studios, music rooms, workshops, and gardens in the vicinity of the State Buildings. The two scientists did not want him to miss anything that might fire his imagination and his ambition.

He wandered around these places, a

lonely figure, observing, pondering, sometimes daring to ask questions. The workers there had been told to give him any information he desired about their methods, but impersonally—they should not get into general conversation with him. Finally, he divided his time between the Library and the Laboratory. And there he grew up to the height of exactly five feet and the age of eighteen, when an important thing happened.

CHAPTER II

THE TURNING POINT

IN THE chemical department of the State Laboratory was a pretty, blonde girl assistant. She was an amateur chemist, too, and an enthusiastic supporter of the "Science in the Service of Humanity" movement. Her name was Freda.

She had been there a year before Bruce really began to feel strongly about her. Although she had been advised by the Administration to give Bruce any information he desired in a purely professional and detached manner, she could not prevent some of her natural friendliness showing through the assumed coldness. Bruce sensed it; and as so few people were in the least kind to him, he sought her company on various pretexts. Strangely, she did not seem to object to this.

The Psychologist and the Biologist noticed the attachment, and kept an eye on it. Then, one day when he was in the Library, a portrait in the book he was reading reminded Bruce of Freda; and suddenly he saw a picture of her in his imagination, and he felt a strong wish to be with her again. So he went across to the Laboratory.

She was out. As Bruce waited, a growing ache to see her again settled in his heart. He picked up the pestle and mortar which she had used that morn-

ing, simply because her fingers had touched them. He had fallen in love. When Freda returned, his heart leapt at the sight of her eyes, her smile, and her golden hair.

"Freda," he blurted. "I—you see, I must be with—I—er—could you lend me your Tafts' *Electron Paths*?"

She got it down from the shelf, where it had been in plain view.

"I thought you were in the Library," she remarked.

Bruce was saved the task of an adequate reply by the entry of the Biologist in search of test-tubes.

"Afternoon!" said he, abruptly, and asked Freda if she could find him some tubes. Bruce mumbled something in reply, and fixed his gaze on Freda as she searched in a cupboard.

The Biologist noted the gaze. He saw the yearning in it. He knew what it meant. When he saw the Psychologist, he said: "Bruce has fallen in love with the Laboratory assistant, Freda. He's in the acute stage."

The Psychologist was intensely interested.

"This is a super-opportunity!" he said, excitedly. "We must arrange to have it stopped. Don't you see? The sexual urge is the strongest of all, and if we frustrate it, it should be diverted to furious energy in some sort of work. If he has any talent at all, now is the time to give it the biggest fillip it'll ever get."

The Biologist reflected that he would have been happier if he had kept his mouth shut. Still, he could only agree.

THEY sought out the girl when she was alone, and talked with her.

"Freda, do you know of Bruce's feelings for you?" asked the Psychologist, outright. She looked a little puzzled.

"No. I don't really understand him. Why, has he said anything?"

"Not verbally. But the Biologist swears that he has fallen in love with you."

She looked away. "Possibly, that's true. He certainly wants to see me a lot lately. And, in a way, I have grown quite fond of him. Somehow, I want to mother him."

"If he asks you to marry him?" asked the Psychologist.

"I may agree. But I really am not certain how I feel about him, yet."

"You shouldn't marry him," said the Psychologist. "Bruce is not really a man of this world. He is a scientific experiment in the cause of progress. If you marry him, you will spoil the experiment and stand in the way of all mankind."

"Another thing," added the Biologist, with some reluctance. "Bruce is the only constitutionally unhealthy person in the world. As a biologist, I can assure you that any children he may have would likewise be unhealthy. He would start a stream of unfit descendants, which would broaden and, in time, taint the health of the whole race. It would be unfair to create others suffering from his inherited disabilities."

Now, Freda was one of the strongest supporters of the "Science in the Service of Humanity" movement, and she readily saw the Psychologist's points. She also desired children of her marriage. So, and yet reluctantly, she agreed to change her post to a more distant laboratory and never see Bruce again.

Then the Psychologist and the Biologist had a talk with Bruce, in the Biologist's private laboratory. They did not tell him that he was the subject of an experiment, but they did tell him about his constitutional unfitness to marry, and the danger to the race if he did.

"Has Freda left because of this?" asked Bruce, in a low, husky voice. He seemed paler than ever, and was trembling.

"Yes. You know her creed of 'Science in the Service of Humanity.' She could not go against it."

Bruce stood there for a moment, breathing sharply, his hands clenching and unclenching. Then suddenly came the outburst, through gritted teeth.

"Why am I always frustrated? Why am I inferior to everyone else? What curse has been laid upon me? At every turn, I am stopped. I won't stand it! I won't stand it!"

He turned his hot gaze upon the two scientists. His eyes positively glared from behind their lenses.

"You two!" he ground out. "You have deliberately mishandled me since I was a child. Why? *Why?* I have never harmed you. The injustice of it!"

He boiled over into uncontrollable action. *Smash!* went an empty carboy to the floor. *Crash!* went a glass shelf of bottles.

He snatched a steaming retort from the very heart of a chemical experiment in progress. It came flying towards the two men, trailing appendages of broken glass and rubber tubes. They ducked. It hit the wall above their heads, and exploded. A dark stream of acid ate its way rapidly down the wall. The two, deafened and cut, skipped hastily away from it.

The door slammed behind Bruce. His voice was heard receding down the corridor, hoarse with rage.

"I will go my own way! No one shall stop me!"

Silence.

"Phew!" said the Psychologist, after the pause, picking a glass splinter from the back of his hand. "He's got a spirit of rebellion, all right! I think we shall have our genius."

BRUCE avoided everyone after that. He spoke to nobody if he could help it. Most of his time was spent in the State Library, poring over books, and filling books of his own with endless notes. He was always on edge, and highly-strung. He developed a feverish, jerky little walk.

Sometimes he went across to the State Laboratory and did experiments

that were incomprehensible to the professors there. He told no one what they meant, but carried on silently with his work. Several years passed in this way. The Psychologist and the Biologist had become very curious, and somewhat impatient.

"We've gone a bit too far," said the latter. "We've hurt him too much. He's been driven into himself altogether. Perhaps we'll never learn what he's up to. He's obviously turned out to be a scientist, but what line of research is he pursuing?"

"What?" echoed the Psychologist.

And then, one day, they got something which might be a clue. Bruce had been working all day in the Library, and one of the reference books he had left on the desk was found by the Psychologist to contain some sheets of calculations in Bruce's nervous scrawl. The Psychologist could make nothing of them; neither could the Biologist. They took them to the eminent Professor Hurst, who was a leading mathematician. The Professor was puzzled, and said so.

"It appears to be a problem in physics, but most of these symbols seem to be Lion's own. I can find few accepted symbols. I think this either concerns a subject beyond our present knowledge of physics, or else, as is more likely, it is an equation in cipher. Leave it with me, and I will study it."

Some time later, he called on them in a state of great excitement.

"I identified that equation. It is the Millan-Thorne equation on electron orbits, only it's done in cipher, with the usual symbols replaced by others."

"What, that check on Voricher's work?" asked the Biologist, catching some of the excitement.

"What's all this?" asked the Psychologist, ignorant of mathematics. The Professor explained.

"Voricher did some chance experiments with electrons, and got a definite result. But no one could find a way to check it mathematically. Millan and

Thorne managed to work out the first half of the equation, and then got stuck."

"Has Bruce finished it?" asked the Biologist, eagerly.

"Oh, certainly. He's changed symbols again for the second stage, perhaps more than once. I cannot work it out quite the way he has—he's obviously taken some short cuts beyond my powers. But, in studying his calculations and endeavouring to translate them, I got glimmerings of the method; and then it suddenly burst upon me, and I saw the way to the result."

He paused for a moment, then added more soberly:

"I think you will find that Bruce Lion is a mathematical genius. He has a mind that may open up new worlds of research before us. I must congratulate you two gentlemen on the success of your long and patient experiment; it should be of the greatest help to mankind."

"The congratulations are due to Bruce, not us," said the Biologist. "He has suffered all his life to produce this success. Let us go and tell him why he has suffered, and how it has proved to have been worth it."

CHAPTER III

IN THE SHADOW OF DOOM

SO THE three of them went in search of Bruce. He was in the first place that they looked—the State Library, sitting at his desk in a secluded corner, with a tall pile of books beside him. He was writing rapidly, and did not look up as they approached. They took the spare stools by his desk, and sat themselves down, a little uncomfortably. The Biologist coughed.

"Bruce, we have come to apologise to you," he said, with something of an effort.

Bruce looked up sharply. He had changed quite a bit in the last few years.

He had a decided stoop; his face looked almost old, and there were premature lines of worry in it. His eyes had sunk somewhat, although they were brighter and more restless.

"I don't want your apologies," he answered, in a voice that seemed to be rusty from disuse.

The Biologist tried again. He recounted how Professor Hurst had discovered that Bruce had solved the Millan-Thorne equation, which had baffled everyone hitherto. He said he would explain why Bruce had such unusual mathematical ability; and he began to explain about himself and the Psychologist, starting rather vaguely.

"We have never meant you any personal harm, Bruce. Ours was a bitter course, taken against our will, and only because we knew it was the only course. We hoped that the end would outweigh the means. If you knew why——"

"I know why," interrupted Bruce, rudely. "I know all about the psychology of genius—now. I know all about many things. I know all about the ethical principles of this civilisation, for instance, which were withheld from me and betrayed."

"It was in the cause of mankind!" exclaimed the Psychologist.

"It was in the cause of science and knowledge!" exclaimed Professor Hurst.

Something like a sneer passed over the face of Bruce Lion.

"So you think that the rights of civilisation to knowledge come before the rights of the individual? Well, I can assist you. Take this very problem I am working on."

He tapped the sheets before him. The three men leaned forward eagerly, as if drawn by wires.

"It is an analysis of the atomic structure of the Sun. I am comparing it with the records of observations taken over a long period. I have just reached the certain conclusion that the Sun has periods when its activity wanes for short intervals. We have not had such a period for hundreds of thousands of

years; but one is due, comparatively, almost any moment. I intend to work out the exact date."

"What will happen?" asked the Psychologist, frowning.

"The ultra-violet radiation of the Sun will fall off to an extent that will just about finish the larger animals on this planet—including Man."

"We can produce enough artificial sunlight, ultra-violet rays and heat to keep us all alive for many years," said the Biologist, quickly.

"Purely domestic," said Bruce. "You cannot produce enough ultra-violet rays to maintain the ozone layer in the upper atmosphere. That thin, protective layer is maintained by the ultra-violet radiation of the Sun. When the production slackens, much of the ozone will revert to ordinary oxygen. Then the layer will become dangerously thin—in fact, it will let through the destructive rays which permeate all outer space; rays which will steadily break down the cells of the body, and rot it like a disease."

"The cosmic rays?" asked Professor Hurst.

"I did not say the cosmic rays," said Bruce, enigmatically.

"But can you do anything about it?" inquired the Psychologist, trying to keep from sounding anxious.

"I intend to do just one more thing about it: work out the exact date that it will begin."

"But—but——"

"If this civilisation puts its right to knowledge before the right of the individual, it shall *have* knowledge," said Bruce Lion, in a voice so inexorable that his three hearers felt hope slipping from them like a garment that is loosed.

THE placid surface of the civilisation of 3025 A.D. was ruffled. Ripples of agitation began to run across it when the news became known. They became more like waves when the people learned that all their scientists could not help them.

There was some excuse for the scien-

tists. They were such a new and young profession that they had not the confidence of long tradition. For scientific knowledge had relapsed after the World Wars, and only recently had it been treated with respect. Again, they could get no facts to work on. In the face of their appeals, Bruce Lion maintained a grim and complete silence. Therefore, some of them attempted to reassure the public by asserting that it was possible that Bruce had made an error. But they knew, and the public knew, that a mind of a calibre at least sufficient to solve the Millan-Thorne equation was hardly likely to make such an error.

The surface of civilisation began to assume the aspect of a stormy sea. For everyone felt that they were under sentence of death. All their work, all their plans, all their thoughts, had become empty things. Nothing seemed worth while, when all mankind was doomed soon to end in utter futility. Nervous disorders sprang up everywhere in a world which had been free from them for centuries. For people were used to living peaceful lives, and had grown unaccustomed to dealing with trouble. Now that trouble of such magnitude had burst upon them without warning, they were thrown into confusion and near-panic.

Then some philosopher conceived a creed which spread, and was adopted, by the agitated and unbalanced multitudes.

"Knowledge has caused more misery to mankind than anything else," he said. "The more you are aware of, the more you have to worry about. Man was happy in the Garden of Eden before he picked the forbidden fruit from the Tree of Knowledge. Let us give back that fruit!"

Further: "Because knowledge is limitless, we shall always have only a little of it; and a little knowledge is a dangerous thing, whereas ignorance is more often bliss. I say Bruce Lion must never let us know the date when the world is doomed! For, if he does, he

will destroy hope, and we shall be as people already dead. Where there is hope there is life. This disaster may not happen for hundreds of years yet, for all we know at present. Let us refuse to know more! Let us ask Bruce Lion to keep silence!"

So, a deputation representing this widespread view came to Bruce Lion to beg him not to continue with his calculations. He received them with an inscrutable and unchanging countenance, his eyes regarding them from behind the thick lenses like the unwinking eyes of a bird. But he could not restrain a start when he noticed among the group the figure of Freda. Then he ignored her, and listened to the plea of the leader of the deputation.

He gave his answer in a voice with an edge like the north-east wind.

"I shall have finished my calculations to-morrow. I shall know the exact date then. *And so shall you!* Good afternoon, gentlemen."

They protested. They tried again and again. Their arguments surged and broke over Bruce like the sea over a rock, but the rock remained immovable. Finally, they saw that it was useless, and dispersed, still chattering and arguing among themselves. But one of them remained behind: a slight figure, still young, with a crown of golden hair. Freda.

SHE approached him as he sat silently at his desk.

"Bruce!" she said, and stopped as she saw that this little man, who had dealt so coldly and imperiously with the deputation, was trembling. He kept his gaze down on his work, but he could not write, for he could hardly hold his pen.

"Bruce, are you ill?" she asked, concernedly, and came beside him.

"No," he said, huskily. He took off his glasses and wiped them. Only then did he look up. His face was still expressionless.

"What do you want?" he asked.

"I want to make a personal appeal."

"For those people?"

"For all of us. Bruce, I believe, as I have always believed, in that slogan, 'Science in the Service of Humanity.' The happiness of mankind comes before the cold facts of knowledge. Science must use discrimination in revealing knowledge, or it may cause much unhappiness. Look how it contributed towards the horror of those ghastly World Wars, by putting explosives into the hands of ignorant children! People with more knowledge than the rest have a proportionate responsibility. With your great knowledge, you can help——"

"Freda," he interrupted quietly. "Why have you never come to see me before this?"

"I thought the Psychologist and the Biologist had explained."

"Yes, but after that? When I had broken away from them and was working on my own? I thought, for friendship's sake, if nothing more——"

"You never visited me," she pointed out, gently.

"No, I thought you did not care, and——"

"I didn't know, Bruce. Honestly, I still don't know."

Bruce's lips tightened. He hardened himself to say something his soul shrank from saying.

"If you will marry me, I will keep my calculations to myself. Moreover, I will seek a way to save mankind, although I cannot promise that there is one. Now let us see how deep are your beliefs in the 'Service of Humanity.'"

He waited so tensely that he felt something inside him must break.

"I will marry you," said Freda, presently.

They settled down in an apartment within reach of the great blocks of State Buildings among which Bruce had spent his life. And, strangely enough, they were happy, for Freda came to care for Bruce a lot. When Bruce publicly announced his intention to work on finding some method to safeguard mankind against the rays to come, the world

became a great deal happier, too. Although they never settled down again to the calm of previous centuries, people once more went about their work and made plans for the future. They had regained hope.

Freda and Bruce decided to have a child. For Freda had faith in Bruce. She believed that he would find the way to the salvation of man, and that the future would bring peace again. And when he did so, the old arguments of the Psychologist and the Biologist would be insignificant against the tremendous debt the whole race would owe to Bruce Lion.

With the child came tragedy. By a million-to-one chance, something went wrong. Freda died—and her son lived. Bruce came near to madness in his despair. He went about the State Buildings with a face almost unrecognisable as his own. Sometimes it was twisted with grief or pain. Sometimes it was set with cold ferocity, or flushed with wild rage. Sometimes it was the face of an imbecile, stupid, empty.

No intelligent word could be got out of him. Those who attempted to speak to him were either ignored or made the victims of incoherent abuse. He worked all day in the Laboratory or the Library, where he had fits of destructive frenzy whenever, apparently, he was balked; and he returned alone each evening to his apartment, and his son.

For some years he went on like that, the most famous man in the world, and the centre of its hope. Meanwhile, people began to fall again towards doubt and despair. Was Bruce Lion still working on their salvation, or had he abandoned them? Or had he gone out of his mind?

CHAPTER IV

THE GREAT BLUFF

THEY were reassured when Bruce began to quieten down gradually, at least, outwardly; and they were relieved when he eventually gave

out that he was still working on the problem and thought he was near the solution. And then, one day, he announced that he believed he had reached it.

He asked for a meeting of the Administration. When this body of scholarly advisors and social managers had assembled in the Council Room, he mounted the dais, a small, bent man with hair that was already greying.

"Gentlemen, I have called this meeting because I believe it is an historic moment, and I think you would like to witness the final triumph of the mind of man against Nature. I have at last succeeded in making a preparation which, introduced into the bloodstream, will start organic changes in the human body."

He held up a hypodermic syringe. "These changes should make us all proof against the cancer which would normally be caused by what I have named—egotistically, perhaps—the Lion Rays. Moreover, these organic changes will be permanent, and they will be hereditary."

The administration broke into a storm of clapping. When it had at last died down, Bruce went on.

"I have tested this preparation on many kinds of animals. It functions perfectly. I see no reason why it should not function perfectly with a human being. So I am going to make the first test—on myself."

Somebody shouted: "No!" Bruce ignored him, and continued.

"If there are no adverse results within the first five minutes, I shall be able to confirm, with absolute certainty, that mankind is saved. The Administration will then be able to arrange production and distribution immediately, for it takes a long time for these changes to come about completely, and time is limited."

There were cheers, mingled with murmuring. One of the murmurers, the man who had called out before, stood up.

"Surely it is unwise for you to experiment upon yourself——" he began, and was startled by the vehemence of Bruce's interruption.

"I thought I had long ago made it clear that the right of a civilisation to knowledge does not include the right to risk or ruin an individual's life! I myself was once the victim of an experiment; therefore, I seek no victims for my experiments. Pasteur injected himself with his own serums. The discoverer of chloroform tried it on himself first. I intend to carry out my experiment in the same spirit!"

He bared his arm, took up the hypodermic syringe, and inserted the needle. There was complete silence when he laid the syringe down again.

"I am sorry, gentlemen, for that outburst," he said, rolling his sleeve down. "Actually, it was all rather unnecessary. For I cannot conceive that there is any great risk. In five minutes, we shall know for certain."

He sat down, and stared unseeingly at the floor. The audience sat there uneasily, eyeing his lowered head, looking at one another questioningly, and whispering opinions and hopes. Somebody observed that Bruce was under the stress of great emotion. He was shaking a little, and seemed to be breathing erratically. Suddenly he lifted his head, with a loud, indrawn gasp that made everyone jump. His face was convulsed in a spasm of agony, and they all saw the tears on his thin, pale cheeks.

"Freda! Fre——!" he jerked out, then pitched forward from his chair. He sprawled over the edge of the dais, and hit the floor face downwards. The only pair of spectacles in the world splintered and were finished, as the need for them was finished.

NO ONE could find out why Bruce Lion died. Doctors examined the hypodermic syringe, and found it empty. Obviously, Bruce had injected every drop of his preparation. Yet, when they performed an

autopsy on the body, they found nothing foreign in the blood that responded to any of the tests they knew. What mysterious stuff was it that defied detection and analysis?

A search of Bruce's apartment revealed nothing but an enormous number of note-books, filled with writing in a cipher that baffled every expert, though they spent years on them. Meantime, the world relapsed into something like the state it had been in directly after the revelation of the disaster to come. Ambition was again paralysed, and there was a hectic attempt to cram as much pleasure into each of the last days as possible.

But the "last days" went on indefinitely. Ten years after Bruce's death, the scramble for pleasure died down. The people had had a surfeit. Now, they fell into a mood of dull resignation, and ceased to watch the Sun with apprehension. Some slight measure of interest in life and discussion returned, and the philosophers of the austere wrote and talked busily.

But the people could not school themselves to feel content. They were in bondage to futility. They felt they would never be free or happy again, so long as that awful Sword of Damocles was suspended over their heads. Then, just sixteen years after the death of Bruce Lion, a startling book was published; a book which set free all mankind at one stroke, and gave the gift of life back to the world.

This book contained an impressive array of thoroughly checked and reliable facts and statements. Through these, and through verified calculations and known psychological principles, it proved beyond any doubt that Bruce Lion was not a scientific genius at all, but a great bluff! It showed that Bruce had *not* solved the Millan-Thorne equation, but only cunningly pretended that he had. All he had done was to copy the first half from a book, supplanting the usual symbols by others. The second half and the result were just a fake, a

collection of calculations that looked impressive, but actually meant nothing. Similarly, all the writings in Bruce's note-books meant nothing. There was no cipher.

It was Professor Hurst who actually finished the Millan-Thorne equation. Trying to form sense out of Bruce's gibberish, the right method suddenly occurred to him. He thought he was inspired to it by Bruce's symbols, but that was only a coincidence. The Professor had spent a lot of time in the past grappling with that same problem. His subconscious mind had been at work on it, and suddenly divulged the result at that moment.

Seizing upon the prestige of this lucky chance, Bruce had got away with his story of the Sun's periods and the non-existent Lion Rays. For, taking him at Professor Hurst's valuation, the scientists thought him a master mind who understood things far beyond their own comprehension.

THIS amazing piece of play-acting was done to compensate for the feeling of inferiority imposed upon Bruce, particularly in regard to Freda. He was madly in love with the girl, and when she jilted him because of his inferiority—which was as he imagined it—he was filled with a raging desire to impress her and win her respect.

Knowing of her great enthusiasm for science, he studied hard to become a great scientist; but he found, to his fury, that he had no talent whatever in that direction. He could absorb knowledge easily, but he could not build anything out of it. He had no creative genius: in fact, he seemed to have no natural talents at all.

So, he decided to try a great bluff. He put up the pretence of being a scientific genius immersed in unprecedented research work. He hoped that Freda would hear of it, and be interested enough to come and see him. Probably, he hoped to gain her close

friendship—and perhaps more. But, unfortunately, she did not come.

He was getting desperate when one of his little poses was unexpectedly fruitful. He had left the cipher and fake Millan-Thorne equation on his desk, knowing that the intensely curious Psychologist and Biologist were likely to investigate it. He hoped he would fool them into thinking he had solved it. Its actual solution was something he had not anticipated.

But, cleverly, he grasped that vantage to put over his tremendous bluff about the Sun. Obviously, some such scheme had been fermenting in his mind before that. Partly, it was because he wanted his revenge on a world which had treated him, and him only, so cruelly. Partly, it was because, knowing Freda's fervour for the "Science in the Service of Humanity" movement, he might be able to make a bargain with her: marriage, in return for seeking an antidote to the threat which he had invented. Both these motives were successful.

After the terrible shock of Freda's sudden death, he felt he had lost the only thing in his life which made it wroth while. He struggled on with the bluff for some years, hoping that time would heal his agony, but it did not. Finally, he decided to leave this life. "We may suspect that he had a wild hope of finding Freda again," suggested the author.

Even to the last, the warped, approval-starved mind that Bruce's upbringing had given him kept up the

show of pretence. He put on a "martyr to science" act. It was no wonder the autopsy on his body had failed to reveal the cause of death. The hypodermic syringe had been empty all the time. He had deliberately injected a bubble of air into his bloodstream, which was fatal when it reached his heart. An undetectable suicide. . . .

"But," said the writer of this book, "in one way, Bruce Lion *was* a genius. He was one of the greatest actors who ever lived!"

So ended the book of revelations about Bruce Lion. But one thing, perhaps, may be added: a fact which may give material for thought to the students of heredity and the effects of environment.

The writer of this book, which had freed the world from a living death, and which was of such analytical brilliance as to reveal the unmistakable genius of its author, had himself had a strange upbringing in early childhood, and a strange parent. A parent whose fame towered over the child like a Colossus, and made him feel very small indeed. A parent of strange moods and frenzies, who was sometimes nearly mad, and always overbearing and crushing. A parent who hated him fiercely because his birth had caused death.

He, too, had had to fight his way up through feelings of inferiority, through discouragement, repression and injustice—this writer, this genius, this son of Bruce Lion.

Things to Come . . .

WANDERERS OF TIME

An Amazing Story of the Far Future

By John Beynon

They Worshipped Him As A God, Those Strange Beings Of That Lonely World, Where An Awful Fate Awaited A Lost Traveller of Space . . .



MASTER OF THE ASTEROID

By

CLARK
ASHTON SMITH

*Author of City of Singing Flame,
World of Horror, etc.*

MAN'S conquest of the inter-planetary gulfs has been fraught with many tragedies. Vessel after vessel, like a venturesome mote, has disappeared in the infinite—and has not returned. Inevitably, for the most part, the lost explorers have left no record of their fate. Their ships have flared as unknown meteors through the atmosphere of the further planets, to fall like shapeless metal cinders on a never-visited terrain, or have become the dead, frozen satellites of other worlds or moons. A few, perhaps, among the unreturning fliers, have succeeded in landing somewhere, and their crews have perished immediately, or survived for a little while amid the inconceivably hostile environment of a Cosmos not designed for men.

In later years, with the progress of exploration, more than one of the early derelicts has been descried, following a solitary orbit; and the wrecks of others

have been found on ultra-terrene shores. Occasionally—not often—it has been possible to reconstruct the details of the lone, remote disaster. Sometimes, in a fused and twisted hull, a log or record has been preserved intact. Among others, there is the case of the *Selenite*, the first known rocket-ship to dare the zone of the Asteroids.

At the time of its disappearance, fifty years ago, in 1980, a dozen voyages had been made to Mars, and a rocket base had been established in Syrtis Major, with a small, permanent colony of Terrestrials, all of whom were trained scientists as well as men of uncommon hardihood and physical stamina. The effects of the Martian climate, and the utter alienation from familiar conditions, were extremely trying and even disastrous. There was an unremitting struggle with deadly or pestiferous bacteria new to science, a perpetual assailment by dangerous

radiations of soil and air and Sun. The lessened gravity played its part also, in contributing to curious and profound disturbances of metabolism.

The worst effects were nervous and mental. Queer, irrational animosities, manias or phobias, never classified by alienists, began to develop among the personnel at the rocket base. Violent quarrels broke out between men who were normally controlled and urbane. The party, numbering fifteen in all, soon divided into several cliques, one against the others; and this morbid antagonism led at times to actual fighting and even bloodshed.

One of the cliques consisted of three men—Roger Colt, Phil Gershom and Edmond Beverly. These three, through banding together in a curious fashion, became intolerably anti-social towards all the others. It would seem that they must have gone close to the border-line of insanity, and were subject to actual delusions. At any rate, they conceived the idea that Mars, with its fifteen Earth-men, was entirely too crowded. Voicing this idea in a most offensive and belligerent manner, they also began to hint their intention of faring even further afield in space.

Their hints were not taken seriously by the others, since a crew of three was insufficient for the proper manning of even the lightest rocket vessel used at that time. Colt, Gershom and Beverly had no difficulty at all in stealing the *Selenite*, the smaller of the two ships then reposing at the Syrtis Major base. Their fellow colonists were aroused one night by the cannon-like roar of the discharging tubes, and emerged from their huts of sheet-iron in time to see the vessel departing in a fiery streak towards Jupiter.

No attempt was made to follow it; but the incident helped to sober the remaining twelve, and to calm their unnatural animosities. It was believed, from certain remarks that the malcontents had let drop, that their particular objective was Ganymede or

However careful and complete the preparations for a journey into space may be, when men come to venture further and further into the void, there will still be unknown factors to contend with apart from the perils of space itself. It seems probable that the effects of such a voyage on the travellers themselves, both mental and physical, will play a great part in its success or otherwise, and that as much attention will have to be paid to the human element as to the technical problems of interplanetary flight. Such is the theme of this story, which also presents us with a interesting picture of life on one of those myriad tiny worlds circling between Mars and Jupiter.

Europa, both of which were thought to possess an atmosphere suitable for human respiration.

It seemed very doubtful, however, that they could pass the perilous belt of the Asteroids. Apart from the difficulty of steering a course amid these innumerable, far-strewn bodies, the *Selenite* was not fuelled or provisioned for a voyage of such length. Gershom, Colt and Beverly, in their mad haste to quit the company of the others, had forgotten to calculate the actual necessities of their proposed voyage, and had wholly overlooked its dangers.

AFTER that departing flash in the Martian skies, the *Selenite* was not seen again; and its fate remained a mystery for thirty years. Then, on tiny, remote Phoecea, its dented wreck was found by the Holdane expedition to the Asteroids. Phoecea, at the time of the expedition's visit, was in

aphelion. Like others of the planetoids, it was discovered to possess a rare atmosphere, too thin for human breathing. Both hemispheres were covered with thin snow; and lying amid this snow, the *Selenite* was sighted by the explorers as they circled about the little world.

Much interest prevailed, for the shape of the partially bare mound was plainly recognisable and not to be confused with the surrounding rocks. Holdane ordered a landing, and several men in space-suits proceeded to examine the wreck. They soon identified it as the long-missing *Selenite*.

Peering in through one of the thick, unbreakable neo-crystal ports, they met the eyeless gaze of a human skeleton, which had fallen forward against the slanting, over-hanging wall; and it seemed to grin a sardonic welcome. The vessel's hull was partly buried in the stony soil, and had been crumpled and slightly fused, though not broken, by its plunge. The man-hole lid was so thoroughly jammed and soldered that it was impossible to effect an entrance without the use of a cutting-torch.

Enormous, withered, cryptogamous plants with the habit of vines, that crumbled at a touch, were clinging to the hull and the adjacent rocks. In the light snow beneath the skeleton-guarded port, a number of sharded bodies were lying, which proved to be those of tall insect forms, like giant *phasmidæ*. From the posture and arrangement of their lank, pipy members, longer than those of a man, it seemed that they had walked erect. They were unimaginably grotesque, and their composition, due to the almost non-existent gravity, was fantastically porous and unsubstantial.

Many more bodies, of a similar type, were afterwards found on other portions of the planetoid, but no living thing was discovered. All life, it was plain, had perished in the trans-Arctic winter of Phoea's aphelion.

When the *Selenite* had been entered, the party learned, from a sort of log or note-book found on the floor, that the skeleton was all that remained of Edmond Beverly. There was no trace of his two companions; but the log, on examination, proved to contain a record of their fate, as well as the subsequent adventures of Beverly almost to the very moment of his own death from a doubtful, unexplained cause.

The tale was a strange and tragic one. Beverly, it would seem, had written it day by day, after the departure from Syrtis Major, in an effort to retain a semblance of morale and mental coherence amid the black alienation and disorientation of infinitude. I transcribe it herewith, omitting only the earlier passages, which were full of unimportant details and personal animadversions. The first entries were all dated, and Beverly had made an heroic attempt to measure and mark off the seasonless night of the void in terms of Earthly time. But after the disastrous landing on Phoea, he had abandoned this; and the actual length of time covered by his entries can only be conjectured.

SEPT. 10th.—Mars is only a pale-red star through our rear ports; and according to my calculations, we will soon approach the orbit of the nearer Asteroids. Jupiter, and its system of moons, are seemingly as far off as ever, like beacons on the unattainable shore of immensity. More even than at first, I feel that dreadful, suffocating illusion which accompanies ether-travel, of being perfectly stationary in a static void.

Gershom, however, complains of a disturbance of equilibrium, with much vertigo and a frequent sense of falling, as if the vessel were sinking beneath him through bottomless space at headlong speed. The causation of such symptoms is rather obscure, since the artificial gravity regulators are in good working order. Colt and I have not

suffered from any similar disturbance. It seems to me that the sense of falling would be almost a relief from this illusion of nightmare immobility; but Gershom appears to be greatly distressed by it, and says that his hallucination is growing stronger, with fewer and briefer intervals of normality. He fears that it will become continuous.

Sept. 11th.—Colt has made an estimate of our fuel and provisions, and thinks that, with careful husbandry, we will be able to reach Europa. I have been checking up on his calculations, and find that he is altogether too sanguine. According to my estimate, the fuel will give out while we are still mid-way in the belt of Asteroids; though the food, water and compressed air would possibly take us most of the way to Europa.

This discovery I must conceal from the others. It is too late to turn back. I wonder if we have all been mad, to start out on this errant voyage into cosmical immensity with no real preparation or thought of consequences. Colt, it would seem, has even lost the power of mathematical calculation: his figures are full of the most egregious errors.

Gershom has been unable to sleep, and is not even fit to take his turn at the watch. The hallucination of falling obsesses him perpetually, and he cries out in terror, thinking that the vessel is about to crash on some dark, unknown planet to which it is being drawn by an irresistible gravitation. Eating, drinking and locomotion are very difficult for him, and he complains that he cannot even draw a full breath—that the air is snatched away from him in his precipitate descent. His condition is indeed painful and pitiable.

Sept. 12th.—Gershom is worse. Bromide of potassium, and even a heavy dose of morphine from the *Selenite's* medicine lockers, have not relieved him or enabled him to sleep. He has the look of a drowning man, and seems to be on the point of strangu-

lation. It is hard for him to speak.

Colt has become very morose and sullen, and snarls at me when I address him. I think that Gershom's plight has preyed sorely upon his nerves—as it has on mine. But my burden is heavier than Colt's, for I know the inevitable doom of our insane and ill-starred expedition. Sometimes, I wish it were all over. . . . The hells of the human mind are vaster than space, darker than the night between the worlds; and all three of us have spent several eternities in hell. Our attempt to flee has only plunged us into a black and shoreless limbo, through which we are fated to carry still our own private perdition.

I, too, like Gershom, have been unable to sleep. But, unlike him, I am tormented by the illusion of eternal immobility. In spite of the daily calculations that assure me of our progress through the gulf, I cannot convince myself that we have moved at all. It seems to me that we hang suspended, like Mohammed's coffin, remote from Earth and equally remote from the stars, in an incommensurable vastness without bourn or direction. I cannot describe the awfulness of the feeling.

SEPT. 13th.—During my watch, Colt opened the medicine locker and managed to shoot himself full of morphine. When his turn came, he was in a stupor, and I could do nothing to rouse him. Gershom had become steadily worse, and seemed to be enduring a thousand deaths, so there was nothing for me to do but keep on with the watch as long as I could. I locked the controls, so that the vessel would continue its course without human guidance if I should fall asleep.

I don't know how long I kept awake—nor how long I slept. I was aroused by a queer hissing, whose nature and cause I could not identify at first. I looked around, and saw that Colt was in his hammock, still lying in a drug-induced sopor; then I saw that Gershom

was gone, and began to realise that the hissing came from the air-lock. The inner door of the lock was closed securely, but evidently someone had opened the outer man-hole, and the sound was being made by the escaping air. It grew fainter, and ceased, as I listened.

I knew, then, what had happened—Gershom, unable to endure his strange hallucination any longer, had actually flung himself into space from the *Selenite*! Going to the rear ports, I saw his body, with a pale, slightly bloated face and open, bulging eyes. It was following us like a satellite, keeping an even distance of ten or twelve feet from the lee of the vessel's stern. I could have gone out in a space-suit to retrieve the body, but I felt sure that Gershom was already dead, and the effort seemed more than useless. Since there was no leakage of air from the interior, I did not even try to close the man-hole.

I hope and pray that Gershom is at peace. He will float for ever in cosmic space, and in that further void where the torment of human consciousness can never follow. . . .

Sept. 15th.—We have kept our course somehow, though Colt is too demoralised and drug-sodden to be of much assistance. I pity him when the limited supply of morphine gives out. . . .

Gershom's body is still following us, held by the slight power of the vessel's gravitational attraction. It seems to terrify Colt in his more lucid moments, and he complains that we are being haunted by the dead man. It's bad enough for me, too, and I wonder how much my nerves and mind will stand. Sometimes, I think I am beginning to develop the delusion that tortured Gershom and drove him to his death. An awful dizziness assails me, and I fear that I shall start to fall; but somehow I regain my equilibrium.

Sept. 16th.—Colt used up all the morphine, and began to show signs of intense depression and uncontrollable

nervousness. His fear of the satellite corpse appeared to grow upon him like an obsession, and I could do nothing to reassure him. His terror was deepened by an eerie, superstitious belief.

"I tell you, I hear Gershom calling us!" he cried. "He wants company, out there in the black, frozen emptiness, and he won't leave the vessel till one of us goes out to join him. You've got to go, Beverly—it's either you or me—otherwise, he'll follow the *Selenite* for ever."

I tried to reason with him, but in vain. He turned upon me in a sudden shift of maniacal rage.

"Damn you, I'll throw you out, if you won't go any other way!" he shrieked.

Clawing and mouthing like a mad beast, he leaped towards me where I sat before the *Selenite's* control-board. I was almost overborne by his onset, for he fought with a wild and frantic strength. I don't like to write down all that happened, for the mere recollection makes me sick. . . .

Finally, he got me by the throat, with a sharp-nailed clutch that I could not loosen, and began to choke me to death. In self-defence, I had to shoot him with an automatic which I carried in my pocket. Reeling dizzily, gasping for breath, I found myself staring down at his prostrate body, from which a crimson puddle was widening on the floor.

Somehow, I managed to put on a space-suit. Dragging Colt by the ankles, I got him to the inner door of the air-lock. When I opened the door, the escaping air hurled me towards the open man-hole together with the corpse, and it was hard to regain my footing and avoid being carried through into space. Colt's body, turning transversely in its movement, was jammed across the man-hole, and I had to thrust it out with my hands. Then I closed the lid after it. When I returned to the ship's interior, I saw it floating, pale and bloated, beside the corpse of Gershom.

SEPT. 17th.—I am alone—and yet, most horribly, I am pursued and companioned by two dead men. I have sought to concentrate my faculties on the hopeless problem of survival, on the exigencies of space navigation, but it is all useless. Ever I am aware of those stiff and swollen bodies, swimming in the awful silence of the void, with the white, airless Sun like a leprosy of light on their upturned faces.

I try to keep my eyes on the control-board, on the astronomic charts, on the log I am writing, on the stars towards which I am travelling. But a frightful and irresistible magnetism makes me turn at intervals, mechanically, helplessly, to the rearward ports. There are no words for what I feel and think—and words are as lost things along with the worlds I have left so far behind. I sink in a chaos of vertiginous horror, beyond all possibility of return.

Sept. 18th.—I am entering the zone of the Asteroids, those desert rocks, fragmentary and amorphous, that whirl in scattered array between Mars and Jupiter. To-day, the *Selenite* passed very close to one of them—a small body like a broken-off mountain, which heaved suddenly from the gulf, with knife-sharp pinnacles and black gullies that seemed to cleave its very heart. The *Selenite* would have crashed full upon it in a few instants, if I had not reversed the power and steered in an abrupt diagonal to the right.

As it was, I passed near enough for the bodies of Colt and Gershom to be caught by the gravitational pull of the planetoid; and when I looked back at the receding rock, after the vessel was out of danger, they had disappeared from sight. Finally, I located them with the telescopic reflector, and saw that they were revolving in space, like infinitesimal moons, about that awful, naked asteroid. Perhaps they will float thus for ever, or will drift gradually down in lessening circles, to find a tomb in one of those bleak, bottomless ravines.

Sept. 19th.—I have passed several more of the asteroids—irregular fragments, little larger than meteoric stones, and all my skill of spacemanship has been taxed severely to avert collision. Because of the need for unrelaxing vigilance, I have been compelled to keep awake at all times. But, sooner or later, sleep will overpower me, and the *Selenite* will crash to destruction.

After all, it matters little: the end is inevitable, and must come soon enough, in any case. The store of concentrated food, the tanks of compressed oxygen, might keep me alive for many months, since there is no one but myself to consume them; but the fuel is almost gone, as I know from my former calculations. At any moment, the propulsion may cease; then the vessel will drift idly and helplessly in this cosmic limbo, and be drawn to its doom on some asteroidal reef.

Sept. 21st.—Everything I have expected has happened, and yet, by some miracle of chance—or mischance—I am still alive. The fuel gave out yesterday—at least, I think it was yesterday. But I was too close to the nadir of physical and mental exhaustion to realise clearly that the rocket explosions had ceased. I was dead for want of sleep, and had fallen into a state beyond hope or despair. Dimly I remember setting the vessel's controls, through sheer force of habit; and then I lashed myself in my hammock and fell asleep instantly.

I have no means of guessing how long I slept. Vaguely, in the gulf beyond dreams, I heard a crash as of far-off thunder, and felt a violent vibration that jarred me into dull wakefulness. A sensation of unnatural, sweltering heat began to oppress me, as I struggled towards consciousness; but when I had opened my heavy eyes, I was unable to determine for some little time what had really happened.

Twisting my head so that I could peer out through one of the ports, I was startled to see, on a purple-black sky, an

icy, glittering horizon of saw-edged rocks. For an instant, I thought the vessel was about to strike on some looming planetoid. Then, overwhelmingly, I realised that the crash had already occurred—that I had been awakened from my coma-like slumber by the falling of the *Selenite* upon one of those cosmic islets.

I WAS wide awake now, and hastened to unleash myself from the hammock. I found that the floor was pitched sharply, as if the vessel had landed on a slope, or had buried its nose in the alien terrain. Feeling a queer, disconcerting lightness, and barely able to re-establish my feet on the floor, I gradually made my way to the nearest port. It was plain that the artificial gravity system of the flier had been thrown out of commission by the crash, and that I was now subject only to the feeble gravitation of the asteroid. It seemed to me that I was light and incorporeal as a cloud, that I was no more than the airy spectre of my former self.

The floor and walls were strangely hot; and it came to me that the heat must have been caused by the passage of the *Selenite* through some sort of atmosphere. The asteroid, then, was not wholly airless, as such bodies are commonly supposed to be; and probably it was one of the larger fragments, with a diameter of many miles—perhaps hundreds. But even this realisation failed to prepare me for the weird and surprising scene upon which I gazed through the port.

The horizon of serrate peaks, like a miniature mountain range, lay at a distance of several hundred yards. Above it, the small, intensely brilliant Sun, like a fiery moon in its magnitude, was sinking with visible rapidity in the dark sky that revealed the major stars and planets. The *Selenite* had plunged into a shallow valley, and had half-buried its prow and bottom in a soil that was formed by decomposing rock,

mainly basaltic. All about were fretted ridges, guttering pillars and pinnacles; and over these, amazingly, there clambered frail, pipy, leafless vines with broad, yellow-green tendrils flat and thin as paper.

Insubstantial-looking lichens, taller than a man, and having the form of flat antlers, grew in single rows and thickets along the valley. Between the thickets, I saw the approach of living creatures, who rose from behind the middle rocks with the suddenness and lightness of leaping insects. They seemed to skim the ground with long, flying steps that were both easy and abrupt. There were five of these beings, who, no doubt, had been attracted by the fall of the *Selenite* from space, and were coming to inspect it. In a few moments, they neared the vessel and paused before it, with the same effortless ease that had marked all their movements.

What they really were, I do not know, but for want of other analogies, I must liken them to insects. Standing perfectly erect, they towered seven feet in the air. Their eyes, like faceted opals, at the end of curving, protractile stalks, rose level with the port. Their unbelievably thin limbs, their stem-like bodies, comparable to those of the *phasmidæ*, or "walking-sticks," were covered with grey-green shards. Their heads, triangular in shape, were flanked with immense, perforated membranes, and fitted with mandibular mouths that seemed to grin eternally.

I think they saw me with those weird, inexpressive eyes, for they drew nearer, pressing against the very port, till I could have touched them with my hand if the port had been open. Perhaps they, too, were surprised, for the thin eye-stalks seemed to lengthen as they stared; and there was a queer waving of their sharded arms, a quivering of their horny mouths, as if they were holding converse with each other. After a while, they went away, vanishing swiftly beyond the near horizon.

Since then, I have examined the *Selenite* as fully as possible, to ascertain the extent of the damage. I think that the outer hull has been crumpled, or even fused in places, for when I approached the man-hole, clad in a space-suit, with the idea of emerging, I found that I could not open the lid. My exit from the flier has been rendered impossible, since I have no tools with which to cut the heavy metal or shatter the tough, neo-crystal ports. I am sealed in the *Selenite* as in a prison; and the prison, in due time, must also become my tomb. . . .

LATER.—I shall no longer try to date this record. It is impossible, under the circumstances, to retain even an approximate sense of Earthly time. The chronometers have ceased running, and their machinery has been hopelessly jarred by the vessel's fall. The diurnal periods of this planetoid are, it would seem, no more than an hour or two in duration, and the nights are equally short. Darkness swept upon the landscape like a black wing, after I had finished writing my last entry; and since then, so many of these ephemeral days and nights have shuttled by, that I have now ceased to count them. My very sense of duration is becoming oddly confused. Now that I have grown somewhat used to my situation, the brief days drag with immeasurable tedium.

The beings whom I call the walking-sticks have returned to the vessel, coming daily, and bringing scores and hundreds of others. It would seem that they correspond in some measure to humanity, being the dominant life-form of this little world. In most ways, they are incomprehensibly alien, but certain of their actions bear a remote kinship to those of men, and suggest similar impulses and instincts.

Evidently, they are curious. They crowd around the *Selenite* in great numbers, inspecting it with their stalk-

borne eyes, touching the hull and ports with their attenuated members. I believe they are trying to establish some sort of communication with me. I cannot be sure that they emit vocal sounds, since the hull of the flier is sound-proof, but I am sure that the stiff, semaphoric gestures which they repeat in a certain order before the port, as soon as they catch sight of me, are fraught with conscious and definite meaning.

Also, I surmise an actual veneration in their attitude, such as would be accorded by savages to some mysterious visitant from the heavens. Each day, when they gather before the ship, they bring curious, spongy fruits and porous vegetable forms which they leave, like a sacrificial offering, on the ground. By their gestures, they seem to implore me to accept these offerings. Oddly enough, the fruits and vegetables always disappear during the night. They are eaten by large, luminous, flying creatures with filmy wings, that seem to be wholly nocturnal in their habits. Doubtless, however, the walking-sticks believe that I, the strange ultra-stellar god, have accepted the sacrifice.

It is all so strange, unreal, immaterial. The loss of normal gravity makes me feel like a phantom, and I seem to live in a phantom world. My thoughts, my memories, my despair, all are no more than mists that waver on the verge of oblivion. And yet, by some fantastic irony, I am worshipped as a god . . . !

* * * *

Innumerable days have gone by, since I made the last entry in this log. The seasons of the asteroid have changed: the days have grown briefer, the nights longer, and a bleak wintriness pervades the valley. The frail, flat vines are withering on the rocks, and the tall lichen-thickets have assumed funereal autumn hues of madder and mauve. The Sun revolves in a low arc above the saw-toothed horizon, and its orb is small and pale, as if it were

receding into the black gulf among the stars.

The people of the asteroid appear less often; they seem fewer in number, and their sacrificial gifts are rare and scant. No longer do they bring sponge-like fruits, but only pale and porous fungi that seem to have been gathered in caverns. They move slowly, as if the winter cold were beginning to numb them. Yesterday, three of them fell, after depositing their gifts, and lay still before the flier. They have not moved, and I feel sure that they are dead. The luminous, night-flying creatures have ceased to come, and the sacrifices remain undisturbed beside their bearers.

THE awfulness of my fate has closed upon me, to-day. No more of the walking-sticks have appeared. I think they have all died, the ephemera of this tiny world that is bearing me with it into some Arctic limbo of the Solar System. Doubtless, their life-time corresponds only to its summer—to its perihelion.

Thin clouds have gathered in the dark air, and snow is falling like a fine powder. I feel an unspeakable desolation, a dreariness that I cannot write. The heating apparatus of the *Selenite* is still in good working order, so the cold cannot reach me; but the black frost of space has fallen upon my spirit.

I did not feel so utterly bereft and alone while the insect-people came daily, but now that they come no more, I seem to have been overtaken by the ultimate horror of solitude, by the chill terror of an alienation beyond life. I can write no longer, for my brain and my heart fail me. . . .

* * * *

Still, it would seem, I live, after an eternity of darkness and madness in the flier, of death and winter in the world outside. During that time, I have not written in the log; and I know not what obscure impulse prompts me to resume

a practice so irrational and futile.

I think it is the Sun, passing in a higher and longer arc above the dead landscape, that has called me back from the utterness of despair. The snow has melted from the rocks, forming little rills and pools of water, and strange plant-buds are protruding from the sandy soil; they lift and swell visibly as I watch them. I am beyond hope, beyond life, in a weird vacuum; but I see these things as a condemned captive sees the stirring of spring from his cell. They rouse in me an emotion whose very name I had forgotten.

My food supply is getting low, and the reserve of compressed air is even lower. I am afraid to calculate how much longer it will last. I have tried to break the neo-crystal ports with a large monkey-wrench for hammer, but the blows, owing partly to my own weightlessness, are futile as the tapping of a feather. Anyway, in all likelihood, the outside air would be too thin for human respiration.

The walking-stick people have reappeared before the flier. I feel sure, from their lesser height, their brighter colouring, and the immature development of certain members, that they all represent a new generation. None of my former visitors have survived the winter; but somehow, the new ones seem to regard the *Selenite* and me with the same curiosity and reverence that were shown by their elders. They, too, have begun to bring gifts of unsubstantial-looking fruit, and they strew filmy blossoms below the port. I wonder how they propagate themselves, and how knowledge is transmitted from one generation to another. . . .

The flat, lichenous vines are mounting on the rocks, are clambering over the hull of the *Selenite*. The young walking-sticks gather daily to worship; they make those enigmatic signs which I have never understood, and they move in swift gyrations about the vessel, as in the measures of a hieratic dance. I, the lost and doomed, have been the

god of two generations. Perhaps they will still worship me when I am dead. I think the air is almost gone—I am more light-headed than usual, to-day, and there is a queer constriction in my throat and chest. . . .

Perhaps I am a little delirious, and have begun to imagine things; but I have just perceived an odd phenomenon, hitherto unnoted. I don't know what it is. A thin, columnar mist, moving and writhing like a serpent, with opal colours that change momentarily, has appeared among the rocks and is approaching the vessel. It seems like a live thing—like a vaporous entity, and somehow, it is poisonous and inimical. It glides forward, rearing above the throng of *phasmidæ*, who have all

prostrated themselves as if in fear.

I see it more clearly now. It is half-transparent, with a web of grey threads among its changing colours, and it is putting forth a long, wavering tentacle. It is some rare life-form, unknown to Earthly science, and I cannot even surmise its nature and attributes. Perhaps it is the only one of its kind on the asteroid. No doubt, it has just discovered the presence of the *Selenite*, and has been drawn by curiosity, like the walking-stick people.

The tentacle has touched the hull—it has reached the port behind which I stand, pencilling these words. The grey threads in the tentacle glow, as if with sudden fire. My God! *It is coming through the neo-crystal lens. . . .*

TALES OF WONDER . . Readers' Reactions

You will help us if you will fill this up and send it in. Do not seal the envelope, and it will go for a penny stamp.

*To the Editor, TALES OF WONDER,
The Windmill Press,
Kingswood, Surrey.*

My reaction to the contents of the latest issue of TALES OF WONDER, in the order in which I preferred the stories (or other features) may be summarised as follows;

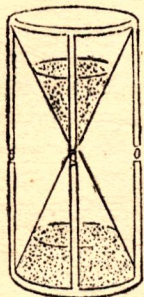
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*Shall We Ever Be Able To Travel Into The Past Or The Future?
In Other Words—*



CAN WE CONQUER TIME?

By I. O. EVANS

OF all the fantastic ideas that belong to science fiction, the most remarkable—and, perhaps, the most fascinating—is that of time-travel, first advanced by Mr. Wells in his famous tale of *The Time Machine*. Indeed, so fantastic a notion does it seem, and so many apparently obvious absurdities and bewildering paradoxes does it present, that some of the most imaginative students of science refuse to consider it as a practicable proposition, even while granting the possibility of other as yet fictitious marvels eventually materialising.

Can a machine, a drug, or some process of mind training be evolved that will enable a person of the "present" not merely to visit the past or the future, either physically or mentally, but return safely with his impressions? If so—and this would follow naturally—could some super-intelligent being from an age that has yet to arrive suddenly in our midst, or be observing us from afar? The idea, to put it mildly, does not sound very probable; but neither did any of the once fantastic ideas which have been conceived by man in the past, and have since been transformed into realities that have become commonplace. In a world so full of unexpected possibilities as ours, it would be rash to say that because something seems improbable it will never occur.

The widespread suspicion of this idea, however, may be largely due to

the fact that it is comparatively new. For although thinkers of old, such as Lucian and Bishop Wilkins, played with the still fictitious idea of space-travel—of which most of my readers will readily admit the distinct possibility, to-day—none of them seems to have considered the notion of travelling in time, except in the form of parables of semi-immortal beings who could watch in a lifetime the age-long transformations of the world. Time-travel is a modern idea that developed with the "non-Euclidean geometry" of the last century.

This involved the conception of a Fourth Dimension, a direction in space similar to the three which we know—up or down, back or forward, left or right—but at right-angles to each one of these. Try to imagine such a direction: we cannot. But this may be because our sense organs and our minds are only adapted to three dimensions; it does not follow that it may not exist. Try to work out its geometry: we can. Thus, although I do not know if there *is* such a thing as a four-dimensional cube, and I certainly cannot visualise it, yet I do know that if it existed this tesseract, as it is called, would have sixteen corners, thirty-two edges, twenty-four squares and eight cubes.

What has this to do with time-travel? That we shall see; but first let us consider a few interesting possibilities of the Fourth Dimension, if it exists. It would offer space for any

number of worlds with three dimensions, such as ours, all "side by side," just as in our world there is room for any number of flat, two-dimensional surfaces. Anything that moved in the fourth-dimensional direction would suddenly appear in, vanish out of, or pass through our world. By a return movement in the Fourth Dimension, anything could pass a three-dimensional barrier into, or out of, a sealed box or a locked windowless room.

WITH a thorough knowledge of the Fourth Dimension, a spy or criminal could remove plans or valuables from a strong-room without so much as touching its barriers or alarms, and even without being visible to its guards. A surgeon could see every detail inside the human body and remove a swallowed coin without touching chest or stomach, or operate on any organ without cutting through the adjacent flesh. A stage magician could vanish or produce objects, or convey them into sealed receptacles, without need of the orthodox tricks—or even actually vanish and reappear himself.

Is there any evidence that such things are possible? Flimsy and unreliable though it may be, there is! Houdini won world-fame by his incredible and still unexplained feats of escape from bonds and barriers. Was he just a superb conjurer, or had he some strange power of using four-dimensional space? There are the astonishing "apports" which are said to have been produced "from nowhere" during spirit seances, or to have been bodily transported through the walls of a locked room. We may recall, too, the queer accounts of showers of stones, or jets of water or oil, which have appeared inexplicably in the air over a field or inside an ordinary house.

Nor are stories lacking of human beings, and bigger objects, that have vanished completely from this three-

Several readers have lately protested against those of our stories which present the idea of time-travel on the ground that such a thing will always be impossible of accomplishment. Time, and its relation to the world in which we live, is a subject complex enough in itself; but when we think of visiting a world which has long since passed away, or which will not exist for thousands of years yet, our minds become filled with the mass of tantalising contradictions that is raised by such a doubtful notion. But the writer of this article, who in an earlier issue explained how we might conquer space, shows us quite clearly that it is not such a preposterous idea as it sounds.

dimensional world as though into "nothingness." Everyone has heard of the *Marie Celeste*, which was found devoid of its crew, in calm weather and with not the slightest trace of any disaster; and this is not the only ship whose crew has vanished, or which itself has disappeared, crew and all. Sailing ships, steamships, and aeroplanes, too, have passed from human ken as though into thin air, within recent times.

Individuals "disappear" with some frequency, and often the cause of their vanishment is a matter more for investigation by students of hyper-space than by the police. Sometimes, however, they have gone so mysteriously that neither cause nor method has ever been discovered. One such case attracted world-wide attention because the central figure was in the diplomatic service, and almost formed an "international incident." In 1809, while on an important mission, Benjamin

Bathurst walked round some horses at a Continental post-station—and was never seen again.

More astounding still, mysterious appearances have occurred, and gone down in the history of such baffling phenomena. The Princess Caraboo startled the good folk of a Somerset village by suddenly turning up in their midst, speaking in words and writing in characters unlike those of any known language. As inexplicable, and even more attractive of public interest, was the case of Kaspar Hauser, an adolescent lad of strange characteristics who wandered, likewise from "nowhere," into Nuremberg in 1828.

But the scientific reader may prefer the suggestion that the existence of a Fourth Dimension would account for certain problems of physics and biology: the existence of crystals which, in atomic structure, are "mirror images" of one another (dextrose and levulose, for example), and the infrequent occurrence of such creatures as snails whose form is the reverse of the normal type, the shell spiralling the opposite of the usual way. For mathematicians assure us that a solid, turned over four-dimensionally, would be reversed and become a mirror image of its former self.

NOW, let us try to imagine a being whose ideas are limited to two dimensions instead of three, so that the world to him consists merely of a surface; and then imagine that through this surface a number of our three-dimensional objects are passing. To this two-dimensional being, they would be visible only where they penetrated his world, as two-dimensional shapes which would mysteriously change according to the contours of the objects. It would be but natural for him to suppose that these shapes were the objects as they really existed; that those he had seen were passed and gone, and that those he had yet to see

would not be formed until some future moment. Yet, actually, all these two-dimensional shapes exist side by side and all at once, combining, in a way of which a two-dimensional being could not conceive, to form a three-dimensional solid.

Similarly, we can surmise that the world we know, consisting of three-dimensional objects which are continually subject to change, are really all that we can discern of four-dimensional objects which do not change at all, but merely pass through our world in some direction of which we can form only the vaguest idea. On the basis of this conception, past, present and future all exist *now*; a four-dimensional being would see them all simultaneously, although we, in our three-dimensional world, cannot.

Thus, it may be argued, everything that ever existed for us is still in existence now. Britain at the time of the Norman Conquest is still there! Thus, also, everything that will exist in the future *already* exists. The world of to-morrow—the ruin of civilisation or the progressive World State, as the case may be—is already somewhere in Time. The only thing is that our relative movement, fourth-dimension-wise, has not brought us to it yet.

For, according to this view, time is merely distance, measured in an unknown direction. Indeed, we are accustomed to representing time as distance, when we draw a graph of changes in rainfall or temperature. And Einstein gives us the proper mathematical treatment to convert it into distance by making use of that useful if mysterious quantity, the square root of minus one. Our world, he tells us, is a "fourth-dimensional continuum" of the three usual dimensions and time.

But if time is distance, then time-travel ceases to be an absurdity. It is merely space-travel, though of a somewhat different type to what we understand by that term. Rather, it is a matter of speeding up, or reversing, the

steady passage of our world through the Fourth Dimension, which we regard as the flow of time. By speeding up this movement, a time-traveller would witness events happening at fantastic speed; by reversing it, he would see them taking place backwards, just as we may produce this illusion by running a cinema film backwards.

The speeding-up process accomplished, the time-traveller would find himself in a future world; through the reversing process, he could visit a world of the past. Presumably, he would be able to move about the three dimensions of either of these worlds in the ordinary way, though perhaps not without attracting the attention of its inhabitants. His acceleration or deceleration through the Fourth Dimension checked, he would again share in the normal movement of the time-flow to which the Universe is subject, so that things would happen, and time pass for him, in the ordinary way. Then, let us hope, a reversal of his former movement through the time-dimension would bring him back to his own period, safe and sound.

PUTTING aside, for the moment, the question of whether this miraculous feat will ever be possible, let us consider the logical difficulties of the idea. We always think of any happening as being the result of something that occurred before it: the one is "caused" by the other, we say. But suppose the happenings of the past are altered through the influence of our time-traveller, what is to become of the effects which they have produced?

Suppose, for instance, that he fights with and kills a lad who, but for his untimely death, would have been the ancestor of the visitor from the future: the lad would have had no descendants, and there would have been no time-traveller! Would the latter, therefore, disappear automatically, never having been born? Then he could not have

journeyed into the past, and would not have killed the young man, who would thus live to have descendants, the time-traveller among them. So, the time-traveller would be able to go into the past and kill him, and he would have no descendants, so that there would be no time-traveller . . . and so on!

The argument may be crude, but the problem is a real one. How can a man of the present live in the past without affecting it? How can he affect it without upsetting the whole train of events which have given us our present world? Are all our ideas of cause and effect false? Can it be that the present does not depend on the past at all? Or is travel into the past just a self-contradictory and impossible idea? Most people, I imagine, would answer the last question affirmatively, and leave it at that.

But they must, surely, apply the same conclusion to the idea of travel into the future, in respect of which a similar problem presents itself. Let us assume that the time-traveller finds the world of the future enthralled by some appalling dictatorship, sprung directly from the activities of some super-Hitler who, in his own time, was still a child. Thereupon, he returns to his own world and assassinates that potential tyrant. Thus, the whole course of history is changed; and if he makes another time-journey of the same length as before, he will find what is virtually a different world.

Again, the supposition is exaggerated, but the problem is just as real. How can one visit the future without acquiring knowledge which, if brought back to the present, might influence future events? Is there no definite future at all, but only paths of probability, any one of which we might pursue? If so, what becomes of time-travel, which depends on a definite future to travel to?

Because of these logical difficulties, apart from the fact that we have not the foggiest idea how to set about it, actual

physical time-travel does seem improbable, to say the least. But there is another, more reasonable possibility—the idea of travel “in thought.” We are always “casting our minds back” in time and mentally “living in the past,” and in dreams the past returns for a fleeting moment in visible, audible form, when with a vivid reality we see, hear, and even feel things that we have left behind in time.

THERE is nothing very unusual about this. But what of the idea of mentally living *in the future*, in much the same way as, in remembering and dreaming about bygone things, we mentally live in the past? At first sight, this may seem as impossible as physical time-travel, for it still contradicts all our common-sense ideas about time. Is there any evidence that such a process can take place? There is, indeed.

First, there is a wealth of folklore and tradition to support the assertion that this strange power exists, in some measure, in certain persons: the stories of prophecies, of seers and sooth-sayers, of omens and “second sight,” in which the world abounds. Though there is much romancing and misunderstanding to be accounted for in considering them, the tradition is too strong, and too widespread, to dismiss as mere superstition. Moreover, we find evidence for similar powers, stripped of all mystical or supernatural associations, claimed by hard-headed thinkers of to-day, and even subjected to laboratory test.

Here, the outstanding figure is J. W. Dunne, with his curious faculty which he has explained in his book, *An Experiment With Time*, of dreaming about future events; not prophetically, be it understood, but inasmuch as, in his dreams, events which had yet to occur were depicted in roughly the same proportion as those which had already happened, distorted and entangled with

much meaningless stuff. He was able to experiment with this faculty, to test an analogous power of “fore day-dreaming” in his waking moments, to discover a similar power in others, and to devise a technique for developing and improving it. This power the reader may investigate himself, if he cares to follow Dunne’s simple, but somewhat exacting, process.

Others who have experimented along these lines include Mr. Wells himself, and the wife of Upton Sinclair, the American sociologist and author of the book, *Mental Radio*. So remarkable were the results obtained by Mrs. Sinclair that they led an American psychologist, Dr. J. B. Rhine, to make a systematic investigation of the subject, which showed, among other things, that certain individuals possess a very real capacity to forecast future events. Though, later, an English periodical conducted experiments on similar lines, and found the results inconclusive.

More spectacular was the experience of two educated and serious-minded Englishwomen who, while visiting Versailles, suddenly observed that the surrounding prospect seemed strangely transformed and “unnatural.” Soon, they saw buildings which were not then actually in existence; they met people dressed in the style associated with the court of Louis XVI, and claimed that they had actually seen and spoken with the contemporaries of Marie Antoinette. Dunne, who analyses this peculiar episode, holds that the women did indeed undergo a kind of time transformation, and suggests that the attention focused upon the French Revolution may have given a “mental permanence” to its events.

The less obtrusive evidences of this ability to dream or otherwise glimpse events out of their normal perspective, cannot be summarily dismissed; and it is reasonably apparent that some such power does actually exist. On the other hand, this power is both limited and fitful. Like mathematical or musical

ability, it is present in some people much more than in others, and in a few exceptional individuals—the equivalents of musical prodigies or calculating boys—it is present in an outstanding degree. It is associated traditionally with “seventh sons of seventh sons,” and, apparently in real earnest, with the female sex rather than the male; with people in sickness rather than the healthy, and with particular races and regions of the world.

Most difficult of all, it is associated with hallucinations and other abnormal states of mind. None the less, it lends itself to introspective analysis and experimental study. Many branches of science have had origins equally unsatisfactory, and yet have developed surprisingly, given due attention and the proper technique. Shall we ever be able to develop and systematise this capacity to see into the future; to

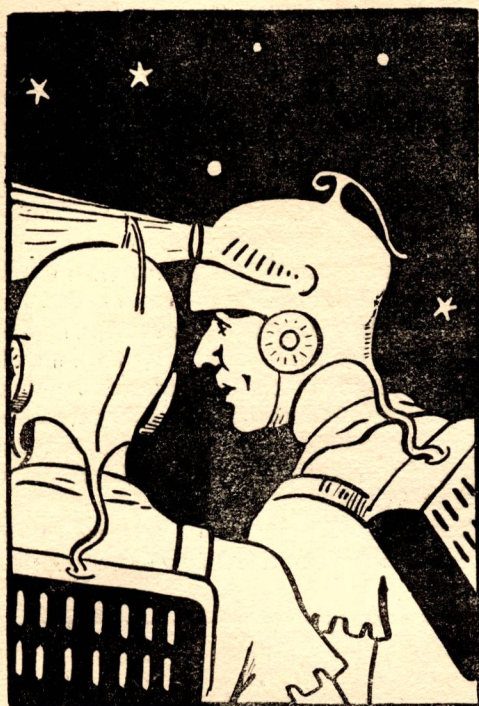
discover, for example, what bodily conditions—diet, exercise, drug influence, and so on—encourage it, and to put it to practical use?

If we do, and we can project our minds at will through the mysterious region beyond space which we call the Fourth Dimension, to explore the countless phases of existence that have yet to come as well as those that have been, what illimitable spheres of research may open up before us, what wondrous secrets of far-off worlds will be ours! We shall be able to explore the whole length and breadth of the Cosmos, from the beginning to the end of Time; to watch the panorama of the ages, and to know man’s ultimate fate just as certainly as we shall know his genesis. But whether we shall profit by that knowledge is a thing we cannot know—until we start to tear aside the veil which hides the future from us.



Do you believe
we shall travel
through space
to the planets?
Let us have your
Ideas on this
fascinating
subject.
See page 5 for
details.

From That Dark, Perilous Era In The Far Reaches Of The Time Stream Came A Message Of Hope For Man's Glorious Future . . .



UNDER THE DYING SUN

By

GEO. C. WALLIS

*Author of The Crystal Menace,
Across the Abyss, etc.*

THE strange case of Harvey Knowles was a most distressing one to all his friends, and to none of them so distressing as to me. We had been friends all our lives. I think I came nearer to him, understood him even better, than Janice, the wife he adored; we were more on an intellectual level. Don't think I am being unfair to Janice. She is a wonderful woman, quite apart from her good looks, but her brain does not function on scientific or philosophical lines.

Perhaps that was a good thing. Perhaps her care and mundane common sense prolonged his life. For Harvey was an incurable dreamer, speculative, introspective, taking only just enough interest in the everyday world to eat and sleep when he was compelled. Lucky it was that he had a fixed income of sufficient amount. How he

ever got married is an insoluble mystery. It happened when I was away on one of my long holidays, and I knew nothing of it until I was presented to Janice. Harvey himself, and our few mutual acquaintances, were all very vague about it.

To call Harvey a dreamer is to put it mildly. He *lived* in the world of thought. He mopped up history, science and philosophy as a sponge absorbs water, and he was psychic to an intense degree. He was not a spiritualist in the accepted sense; didn't talk about "continuance" or frequent "seances." He went to a few such affairs, taking me with him to one, but seemed to find the phenomena elementary and unsatisfying.

"They dwell too much on the present," he told me, when we had returned. "Now, I want to know about

the future—the future of *this* world, and of our race. Already I have a feeling, old friend, that some day I *shall* know. Call it wishful thinking, if you like, but some day I shall *know*. Just look at this!"

He showed me a few scribbled words on the back of an old envelope.

"I wrote that at the seance—in the dark. Had no idea what I was doing, except that I was thinking about the automatic writing we had just seen. Read it."

There wasn't much of it, but it was queer.

*Untold ages . . . No Moon . . .
Fixed Sun—red Sun . . . Cities of
Refuge . . . Humanity at perfect
flowering . . . Courage—courage!
Wait . . . Be recipient . . . More will
come.*

"Yes! I am waiting," he said, with sudden intensity. "More will come, and I shall learn the future. But my head, my head—will it hold out? Can it bear the strain?"

Of course, I did my best to calm him; told him to keep away from mediums, from any sort of mental excitement; talked about his over-keen imagination, and so forth. But I might as well have saved my breath. He looked at me, nodded, said words of agreement, but his eyes were seeing images of thought, his mind was elsewhere.

That scrap of writing was the final push that sent him over the border-line of normalcy. I had nearly written sanity; but in spite of the doctors, and everybody else, I will not admit that he was mad. Extraordinary, possessed of an idea, if you will, but not mad. His mentality was clear as crystal to the last, I am sure. It was his brain, his physical frame, that could not keep up with the spirit.

He studied all the automatic writing phenomena that he could discover, and while much, of course, he found to be spurious, there was some that even my

Taking a long view of the matter, what do you think of man's chances of making real progress? Even if he survives the perils of his own creation which beset him in this world of the present, can he conquer the forces of Nature which will threaten his very existence in the far future? Some of our readers have suggested that our authors take too pessimistic a view of these things in their stories. But Mr. Wallis, looking millions of years ahead to a time when the Earth itself is in its death-throes, sees man still master of his fate, undaunted and triumphant.

innate scepticism could not dispute. I had to admit, when he pressed me, that there was evidence of persons, when in trance, or even when mentally idle, writing of places and things concerning which they could not possibly have had any prior knowledge. One very ordinary bank clerk, for instance, who was no reader, and had never been out of England, wrote a marvellously concise account of life in Mecca—and wrote it in Arabic, of which he did not know a letter.

THERE is no need to weary you with the details of Harvey's slow decline towards the inevitable catastrophe. I was frequently away from home, and it was after a long ramble in the Pyrenees that I returned to find my friend "at rest." His over-worked brain had given way at last, his over-strained nervous system ceased to function.

"He passed away quietly," said Janice. "He seemed to have found peace. He said he had been told what he wished—been *told*. . . He talked a

lot about some message from the future, and he had filled reams of paper with funny writing. I tried to understand, but it's beyond poor me. I expect you know that, John!"

"I know you've been an angel, Janice," I said.

"He left a will," she went on. "Everything for me, except one packet of manuscript that is marked specially for you. There it is, over there. Are you staying at home long this time, John?"

"I expect I shall be off again soon," I answered, picking up the manuscript. "I'll take this with me. When I come back——"

I left the words unspoken. We looked at each other, and knew what I had left unsaid—why I had so often gone away since Harvey's marriage.

"I hope you will find something in the writing that was worth his life," Janice observed. "It was this that killed him, I know. He sat up every night, hour after hour, scribbling: missed his sleep, missed his meals. I've often see him sitting in this room, his pen moving over the paper, his eyes closed. The only times I ever knew him to get really angry were when we disturbed him on these occasions. What a good life wasted! I did my best for him, but it was no use."

I took the manuscript with me to Scotland, and in my room at the quayside hotel, looking out over the island-studded harbour, read it through again and again. What a document! There has never been one like it before in the history of the world, though there may be others in time to come. Hurriedly written, yet every word clearly legible, it is a story of the future, told by a human being who does not yet exist!

Ridiculous, of course; and so I said, at first. But, on my second reading, remembering my friend's honesty of thought, his scrupulous truthfulness, his utter lack of fanciful imagination, and his inability to compose a coherent

story or readable essay—an inability that was a great affliction for him—I felt forced to believe the incredible fact. I believe it, and will maintain my belief, in spite of all the sneers and smiles of sceptics.

What do we know of Time, after all? What is Time? Who will convince me that the Future is not as real, as actual, as the Past. Harvey himself could not properly explain it. As he wrote in his introduction to the amazing communication:

Dear John—I've done it at last! I have learned what the future of this world will be, and I am content. But I'm not feeling too well physically, and may croak at any moment. I'm leaving Janice all right for money, and I know you'll look after her. Oh, yes; I know!

No doubt she will have told you how I've written this stuff. I never knew what I had put on paper till after the compelling influence faded. To put it plainly, though I'm a poor hand at explanation, a human being who has yet to live some millions of years hence—I mean, is now actually living in the future—has used my brain to make some record of his life and time. Sounds involved, I know; but I am sort of hyper-sensitive, it seems—super-recipient if you understand. . . .

At the time of which this Future man makes me write, the Moon doesn't exist, while the Sun stays fast in one spot in the sky and is a dull orange colour. Yet humanity has survived—that's the great fact. Though the world is dying, humanity persists! Though the Sun will die, humanity will persist!

Now read what I have jotted down at all sorts of odd times, my fingers often stiff with cramp.—HARVEY.

YOU, Harvey Knowles, who are living in the era we know as the Primordial, are the first man to whom our backward-reaching thought has penetrated coherently. Much of our thought has reached your contem-

poraries, even your ancestors, but never clearly. Premonitions, longings, visions, vague hopes and ideals you have received: hence your many stories of angelic visits, your belief in paradise, your conviction of human progress in the future. Your particular mind, however, is so questing, so persistent, so attuned to our calling, that to you has been given the first definite assurance of this future; and to make this easier to understand, I, Astreus, have been deputed to tell of my own life in this far distant age.

I must say at once—and *you* will understand, strange as it may seem—that past and future have not the meaning that your people give to those words. To us, both past and future are eternally existent, as are before and after in space. In the Space-Time continuum which is the real world, there is only *now*. Separated as we are from you by millions of ages, we are yet merely in another part of the great Time Stream, and all parts of the Time Stream co-exist. . . .

In the vast reach of that Stream between you and me, there is much of which I must tell you. Reading your thoughts, as we project our psychic vision back along the tide of Time, we know that many of you despaired of man. The selfishness of your kind, your spasms of terrible warfare, saddened you. You feared that humanity would never rise above your level, you thought it would deteriorate and decline; you even said that *homo sapiens* was doomed to die.

Yet, less than five centuries after you, Harvey Knowles, passed into the unconscious, man was full of hope again—confident hope. Petty national and racial differences were overcome with the formation of a single World State. The problem of production already solved, the new order found it easy to solve the problem of fair distribution. The centuries that followed would have seemed to you the perfection of human happiness, when

progress had reached its zenith—yet each century saw man rise to greater heights of wisdom, greater command over Nature.

There were setbacks, of course. There were two great Ice Ages, twenty thousand years apart, which caused great damage until man himself gained and held control of the seasons. There were grazing comets, and meteoric bombardments; and once the perilously near, but not fatal approach of a wandering, dark star. But after each of these trials, humanity emerged stronger and wiser than before.

Fifty thousand years beyond your age, the lot of the human being was a dream of paradise. Disease had been abolished, harmful plant and insect life had been exterminated; a few minutes of work each day was all that was required of any adult, transit and television were perfected. Anyone could circle the world in a day, hang suspended for hours in the upper air, or pierce the deepest seas at will, and at any moment secure instant communication with any other person on the planet.

Then came space travel, which even in your time was foreseen and desired. What great hopes, what daring ambitions, were centred round that ideal! Looking back, we now feel pity, mingled with admiration, for the first bold adventurers into the void. That madness has passed, for us. We are content to stay on Earth, for we now know that in this Solar System there is no other home for man.

Vessels driven first by fuel rockets, and later by atomic energy, reached Mars and Venus eventually. Venus was found to be hopeless, its atmosphere lacking in oxygen, its surface nine-tenths swampy water. On Mars, after several decades of costly effort, a colony was finally established, but it had only a short life. The water supply of the planet was dwindling rapidly, the air was thin and cold; and because the atmosphere was so thin, the devastating rain of meteorites made life, at times,

unbearable. You may be interested to learn that the native inhabitants of Mars had passed away before our ill-fated colony arrived. . . .

Jupiter, Saturn, Uranus and Neptune were then vast, plastic spheres on which no firm land had been formed, and even now, when they have partly solidified, their gravitation is too great for the human frame to bear. Mercury, of course, is a hard, dry cinder. Pluto and the one still further, outer planet are simply glacial orbs, utterly useless to man.

SO, reluctantly, the dream of colonising the other worlds was abandoned, and humanity settled down to improve its one home. All its energy, all the will-power of the race devoted to that end, it is no wonder that this Earth became, for long ages, veritable Heaven. But, in the Universe, nothing is static, and great changes have altered our environment beyond all imagination.

Coming to the time in which I now live, sending my thoughts back to help and cheer you, how shall I picture it? You would not think life possible at all in this age, much less human life—and human life triumphant, secure, in spite of new and strange perils. For the Sun has ceased to bestow upon us any appreciable warmth, and hangs, a dull-red sphere, seeming rather smaller than it did to you, in one constant position in the sky. And there is no Moon. This will impress upon you how great a length of the Time Stream stretches between us. . . .

The Moon, pulling at the seas, dragged out the Earthly day by tidal friction until it equalled the month. Then the Moon, instead of receding, began to spiral back towards its mother Earth; and at last, at long last, reaching the critical distance at which it must either break up into a ring of satellites such as encircle Saturn, or fall in fragments upon the Earth—it *fell*.

There were earthquakes, volcanic eruptions, huge tidal waves, and enormous destruction, but humanity survived, emerging from that catastrophic ordeal yet strong and wiser than before. Then the solar tides drew out the day still more, driving the Earth ever farther from the Sun, until the day became a year and the Sun remained fixed in one place; and finally, half a million years before me, the Sun sank to a dull-red cinder.

You would have expected the Earth to become a dead, frozen world, but such is not the case. We know, now, that the greater and more important part of the Earth's heat and life came from its own store of radium. No other planet in the System has so much, and the addition of the materials of the Moon, which was even richer in radioactive content, provides for us sufficient warmth and vitality. The temperature has fallen, certainly, but as we can now generate heat by the disruption of atoms and the annihilation of matter, as well as by trapping and using the calorific section of the ever-present cosmic rays, we live in cheerful comfort on this ageing planet, under the dying Sun.

Picture, then, a dull, dark world, with a calm atmosphere, snow on all high ground, but an even, bearable temperature at lower levels. From these low levels our Cities of Refuge emerge—huge, transparent domes with lofty central towers. Many of the domes, supported on massive columns, span a distance of a hundred of your miles, and from the summits of the central towers spread the radio impulses that collect and redistribute the calorific cosmic rays.

Within these vast domes, and the deep galleries beneath, housed in healthy, germ-free air, live the many millions of our race. In these covered cities we produce, artificially, all the food we need, all the things we require. Knowing how to transmute the elements, we have unlimited materials and exhaustless power at command.

PERHAPS you will imagine that, needing nothing more, our existence must be one long dream of idle contentment, and that presently we shall sink into dull boredom and apathetic decay. It is not so. Never was man so alive, so keen to live, to learn, to *know*. He has, indeed, learned so much that he knows he will never have *done* learning. Existence is so wonderful that its marvels can never be exhausted.

We have given up space voyaging, unwillingly, but finally. The Solar System having no other home suitable for us, one great effort was made to reach the neighbourhood of another star. This attempt was made at a time when man's powers would have seemed veritably god-like to you. The vessel we sent out could travel nearly one hundred thousand miles each second. It was powered and provisioned for fifteen years, which time should have been ample for the journey to Proxima and back; it had an efficient radio, and also an intense light-beam that could be used for signalling if the radio failed at great distance.

What high hopes went with that wonderful vessel! We were in constant communication with the crew for over fifteen years, and at the end of that time, instead of reaching Proxima, the ship was rather less than half-way there. Its machines and controls were working perfectly, and yet, out in interstellar space beyond the Solar System, the speed had fallen alarmingly, inexplicably. Out there, in their metal prison, the daring crew perished.

Another, and yet another effort was made to cross the void, with larger and more powerful vessels, but with no better result. We were forced to recognise the fact that Space, far away from large, gravitational bodies, defies all man's calculations. The last message we received from the third ship, before its messages ceased, was a prayer that we would abandon the vain attempt. We abandoned it, and the more readily

because, just then, some of us began to receive cheering thoughts from the remote future: thoughts that assured us—as I am now assuring you—that man's stay on his native Earth would be very long.

I must now try to tell you something of our life in this far reach of the Time Current, of our hopes, ambitions and perils. Yes, perils; for with the dulling of the Sun, new and unforeseen dangers have arisen. They are dreadful dangers, as terrible as any our ancestors had to face, yet we know they will eventually be overcome. . . .

We have prolonged the span of the individual life to over three hundred of your years, and when the physical frame no longer responds with zest to the business of living, we sink quietly into the unconscious. In that span of time, we can learn much, can profit by rich experience. To us, your mortals of sixty or seventy years seem puny ephemera indeed!

We study the starry sky diligently—it is now always with us—and the failing Sun no less. We think we know how long that red ball will yet glow visibly; and we are even now preparing for the time when we shall be able, by precipitating some of the other planets upon it, to re-invigorate it so that we may experience some of its ancient splendour.

Then it is our project to force our planet nearer and nearer to the Sun, in a lessening spiral, keeping pace with the second cooling of the central orb. And after that—I cannot explain how, to you—we may provision our Earth with heat and force, and cut it adrift in the Milky Way, so that while yet man lives it may come to anchor near a young and vigorous star. But that time will be as far ahead of me as I am from you on the great stream of duration. . . .

I spoke of the new perils that have come upon us; and this brings me to speak more of myself—which, from what I know of you, will interest you

more than mere, impersonal information.

WITH the dimming of the Sun and the concentration of our race in the domed Cities of Refuge, strange and unexpected forms of life came into being on the surface of the world outside. First bred on the dark portion of the Earth, where even the red Sun is never seen, these loathsome forms crept slowly across the globe. Born of the unhealthy blackness, horrid fungus growths sprang up, and new varieties of insects developed from the harmless species we had preserved. Queer shapes, amorphous objects, travelling over the ground like huge snails, were met with everywhere, and some of these began to show signs of low, cunning intelligence—evil, hostile intelligence, from our human point of view; while the touch of the fungi, the slime of the snails, the stings of the insects, became more and more often painfully fatal.

In the earlier years we did, of course, destroy these alien growths by the thousand, but still they persisted; and presently, as it became more difficult to breathe and work in the thin, cold air of the outer world, we kept to our Refuge Cities. We enlarge these cities as we wish, and could build more, but now we keep our numbers at a constant level. So the world outside is now given up to other life—life dreadful and grotesque; and when we venture out of our cities, clad in armour, equipped with safety devices and modern weapons, we experience some of the primitive thrills our remote ancestors felt in the adventurous ages which preceded your own era.

At times, these insidious growths threaten the very foundations of our cities, burrowing under them, and even eating away the metal walls with organic acids. Then, from other cities, we go to the rescue, and clear away the horrible pests with blasts of atomic disintegration. Let me tell you of one

such adventure from which I returned recently. Through the ether came word to us, here in Karloss, our chief city, that our nearest outpost refuge on the dark side of the Earth, Verun, was in danger. It had been attacked by enormous numbers of insect creatures similar to, but larger and more intelligent than, the termites of your day.

Now, though we have not entirely given up air travel, we use it very little at this time. We have little need: with radio and television, anyone can see and talk to any other one of our millions at any moment we desire. And besides, the atmosphere has now become so thin, so weak and *dead*, that enormous power is needed to give a vessel flying speed. Furthermore, the Solar System is now traversing a region of space where meteoric matter is extra-abundant, and this erratic, aerial bombardment has to be reckoned with. Our city domes, I may mention, are made of an extremely strong, artificial element, and can withstand the impact of the heaviest meteors we encounter.

So we walk, mostly, taking our lives in our hands, and thrilling to the resurgence of the ancient emotions. It was with a party of a hundred chosen citizens that I went out into the chill darkness of the outer world. The ground is everywhere so rough, pitted with meteor holes, dotted with volcanic cones, and with huge hummocks from the time of the Moon's crash, that motor transport is practically impossible. Even were we to make roads, the time and trouble would not be worth the effort.

Each man, besides his safety suit and helmet, carried an atomic gun, and a portable matter-disintegrator and consolidator. With this apparatus, we could destroy all life in the ground around a city, and then re-solidify the earth so that it would resist erosion for a long time. And, in addition to these things, each one of us carried a "death tablet." In case one were touched by a noxious snail, a fungus, or an insect's

sting, one would immediately swallow the tablet and cease to be.

For death by the horrid creatures of the dark is the most terrible fate in our age. Our science has not yet found a remedy, or a preventive—they will come; and not one of us would wish the others to see us die in unspeakable agony. Without a death tablet, therefore, no human being will ever step out through the guarded, double doorway of a city—out from safety, comfort and happiness into the dangerous world of alien life. . . .

WE HAD many miles to go, but we carried sufficient energising food and the means of making drinking water at any time, and we set out bravely, cheerfully, singing as we went. Yet we had not been travelling some two hours when we became aware that the alien world had, somehow, got knowledge of our coming: we felt its psychic surge of hatred beating upon our brains. We of this age are more keenly attuned to mental stress, more alive to the mysterious waves set up in the ether by the thoughts of living organisms. In some way which we cannot understand, the whole life of the dark is hostile to man and his works. Man lives, beleaguered in his Cities of Refuge, a garrison of intellect in a world of aimless life. . . .

Presently we came to the Hills of Silent Shapes, which are on the edge of the dark side of the world. These hills I had heard much about, and seen by telescope from the tower of our city; and even seen thus, at a distance, they had struck a chill to my being. Not a chill of fear, for we have outgrown that, but the nearest we of this age can approach that old emotion. The hills are high, with sloping sides of bare, white material, ridged in long terraces. Along these terraces move the Silent Shapes—huge forms that bulk vastly, but seem unsubstantial as shadows.

Though all the world around our

cities is an uproar of sound, of strident, unpleasant, living noise, on these hills broods eternal silence, and this silence seems to us the most evil of all the evil things of the dark. It seems as if here, in these white hills, the enmity of the Cosmos towards man were concentrated, as light is focused in a silent mirror. Yet, to avoid these hills, we should need to have gone many miles to north or south; our direct way lay through a depression in the range. So, each one holding his atomic gun and death tablet in readiness, we marched straight into the silent pass.

So far, all had gone well with us. We had evaded the fungus quagmires, escaped the insects, and slain such of the great snails as barred our progress. We went on rapidly, having no cause for alarm except the chill at our hearts, until we reached the topmost terraced ridge. Were those Silent Shapes nothing but shadows, after all? Were those moving masses we had seen merely the play of the dim twilight that blanketed the world—optical illusions? We soon knew better.

Just as we reached the summit of the pass, a gigantic shape loomed before us, a tenuous, amorphous mass, moving across our way. It was no shadow: it was something living, hostile, though formless, and translucent as a jelly. Swiftly it came, enveloping the first twelve of our company in its soft embrace. We saw the flashes of their atomic guns, saw the streams of electrons tear great holes in the monster—which closed up again as holes in fog or vapour. Then the twelve men swallowed their tablets, and fell in welcome death.

Even as we watched, we saw their bodies disappear, melt away, as they were absorbed into the filmy material of that Silent Shape. We fired our disintegrators at the enemy, but the fierce neutronic blasts had no effect, passing through the huge form as rain-drops through mist. Then the Shape moved on, and we rushed down the

further side of the hill, glad to have escaped.

Now we were on the dark side of the Earth, where the dying Sun is not even seen, and had a long, dry plain to cross. To walk at all, and avoid obstacles, we had now to turn on the powerful lights in our helmets, and our progress became very slow. Strange forms of life, monstrous insects, scaly things that slid or oozed along the ground between the giant fungi, were everywhere. The noise of their living, struggling and fighting drummed balefully in our ears; while across the brilliant, starry sky flashed yet more brilliant streaks of light—the rain of falling meteors.

Nine more of our company ate their death tablets before we reached the city that needed our aid. . . .

WE FOUND Verun in a worse plight than they had told us. The termites had burrowed under the adamant foundations in several places, and with their spumed juices, had almost eaten through a large section of the great city dome. The dwellers were so busy repairing the damage from within that they had few workers to spare to attack the foe from outside; also, they are not so adventurous, so bold, as are we, the people of Karloss. But our coming put courage and vigour into the citizens of Verun, and together we attacked the enemy.

We disintegrated the swarms of termites, pulverising the ground to the depth of half a mile, and then re-consolidated the material. We repaired the damaged dome with a stronger alloy of the artificial element, and knew that Verun would be safe for centuries to come. Then we must return, for to us there is no place in all the world to equal Karloss, the Metropolis of Man. Once more under its great protecting dome, we should breathe freely, happily, content.

We went back by a longer but, as it proved, a more dangerous route. We avoided the Silent Hills, yet it seemed

as if all the anti-human forces of the dark conspired against us. We lost thirty-five of our number before we reached the opened, welcoming gates of Karloss; though, in that running fight, we had destroyed many thousands of our noxious enemies.

It is good to be at home. . . .

Now, it may seem strange to you, Harvey Knowles, that I should take these pains to give you hope and courage for your future when, to us, the world is yet full of perils that we have not overcome. But since those beyond me in the Time Stream—millions of years beyond—have sent their word to me, I know that even the evil creatures spawned of the twilight of a world will be conquered. As one of those gifted with awareness of time past and time to come, I know that man will triumph over cooling Earth and dying Sun, defying the decay of systems and surviving the very galaxies themselves.

You are indeed fortunate, Harvey Knowles, for it may be a thousand years before another mind be found so easily recipient as yours. Those of us whose work it is to try and send back these tidings of good cheer find the mental strain heavy, yet with you it has been easy; has been, indeed, a joy.

It is a great part of the pleasure of my life, here under the gracious dome of Karloss, to send you this message. Your contemporaries, unlike some of those visionaries who lived long before you, whose faith in Heaven was a dim reflex of our backward-reaching thought, were inclined to doubt the future. They feared that man's days were numbered; his whole history, from protoplasm to intellect, but a slowly-kindled, quickly-fading spark. We know better; it is our task, as the Time Stream bears us ever onwards, to pass back some hint, some assurance of our knowledge.

Great is Man: great is his destiny. He will overcome all enemies, all the forces of Nature. He will conquer and people the Milky Way, and dominate the Cosmos. He will yet. . . .

AND here the writing on the last page of that amazing manuscript trailed off in a wandering stroke of the pen. What are we to think of that story, written, as we know, when Harvey Knowles was ignorant of what he was doing, as he sat with closed eyes?

For myself, I must accept the story. I can do nothing else. I cannot find any other explanation than this—that Harvey Knowles wrote down what a human being living in the distant future

wished him to write. I am forced to believe that the whole course of Time, like the expanse of space, is an everlasting Existence; that our conceptions of Past and Future are due to the limitations of our thinking powers. I am convinced, and that conviction cheers me in the darkest hours.

Though I say very little of this to Janice. She simply would not understand. What does it matter? She is the best little wife in all the world, and that is enough for me.

AND STILL WE GO ON . . .

Keeping a magazine going is an exceedingly difficult business these days, and we have to consider ourselves fortunate that we have been able to continue *TALES OF WONDER* over four issues since the war began. Indeed, considering the increasingly adverse conditions which have forced the suspension of so many publications, we must confess to a genuine and pleasurable surprise at having been able to survive for so long. We can, however, attribute our salvation to the continued interest and support of our loyal band of readers, who have responded to our appeals for them to make sure of obtaining their favourite magazine by placing an order for it with their newsagent; and for this we are grateful to them.

As the difficulties which beset us increase, it is all the more important that all our followers should help us to surmount them by ensuring that their newsagent has a standing order for the regular delivery of *TALES OF WONDER*—and, if they can, to persuade their friends who are interested in science fiction to place a regular order, too. For unless we can be certain that a ready sale awaits it, we cannot take the risk of producing another, and yet another, issue, even if we are able to contend with the restrictions placed upon us in regard to supplies of paper.

Our next (Autumn, 1940) number is due next September, but so uncertain is the position that we cannot say definitely if it will appear: we can only *hope* that it will, and that our readers will help us to work what has become a veritable oracle by ordering their copies *NOW*, without delay. Then, if all the other factors are still in our favour, we can be reasonably sure of presenting you with another interesting issue of *TALES OF WONDER*, whose function of entertaining and exercising the imagination is more than ever necessary at this time.

THE EDITOR.

He Created Life, But He Could Not Destroy It . . . And His Own Life Was Forfeit Before Earth Was Rid Of A Monstrous Menace



THE SYNTHETIC ENTITY

By S. P. MEEK

Author of The Mentality Machine, The Ray of Madness, etc.

AUTHOR'S NOTE

The first part of this narrative was reconstructed from the notes and diary of the late Erasmus Van Hooten, Ph.D., which are now in my possession. The latter part of the story was told to me by Dr. Chang Yen Tong, of the University of Pekin (to whom I am also indebted for the notes and diary above-mentioned), in compliance with the last request of Dr. Van Hooten that his story be given to the world. Dr. Chang has read the completed manuscript, and he states that it contains no inaccuracies of fact, so far as his knowledge goes; but he assumes no responsibility for the accuracy of the motives imputed to Dr. Van Hooten for concealing the fact of his momentous discovery from the world for so many years.

Shanghai, February 3rd, 1950.

CHAPTER I

THE DREADFUL CREATION

ERASMUS VAN HOOTEN readjusted his microscope with meticulous care, but with hands that trembled despite all his efforts to remain

calm. He gazed through the instrument, then raised his head, great beads of sweat standing out on his high forehead.

"God in Heaven!" he muttered.

Once more he bent his head and applied his eye to the instrument. He sat back in his chair, suddenly weak with emotion.

"It lives," he said, in a strangled voice. "Success at last—success, after ten long years!" His strong hands, with their tapering fingers, trembled so that he could not control them. For a few moments everything seemed to swim before him, the laboratory tables and pieces of delicate apparatus describing weird circles and figure-eights before his gaze.

"It lives," he muttered again to himself. "God in Heaven, *it lives!*"

His voice rose almost to a shriek on the last words. Then he recovered his composure with a superhuman effort, and forced himself to retain some of his usual attitude of detached calm.

"I must not get excited," he told himself sternly. "It may be a mistake, an optical illusion."

But there was good reason for his emotion. Where, a few days before,

there had been under his microscope merely a pinch of soot, a few drops of distilled water, and traces of other inorganic, lifeless materials, now there was exhibited to his astounded gaze, actual living tissue! Mere pin-points of matter, they were; simple, amoeba-like cells—but they were *alive*. Erasmus Van Hooten, after ten years of slow, patient effort, had succeeded in synthesising life.

Having regained control of himself, he rubbed his eyes and looked again through the microscope. His scepticism vanished at what he saw. There was no doubt that his first observation had been correct. The cells were living, growing; absorbing nourishment, digesting it, and increasing in size. As he gazed, cells were dividing to form new ones.

His head swam, and a black pall, flecked with brilliant spots of dancing light, passed for a moment before his eyes. He had become inured to years of disappointment, but for a moment it seemed that success would prove fatal. The spell passed. Van Hooten was galvanised into sudden activity.

"They must not die, now!" he cried.

With hands that still trembled, he picked up a bottle of synthesised protein solution, which he had prepared long before. He took a drop of it on the end of a needle and applied it to the microscope slide, then looked again. The activity had increased. Evidently, the rate of growth of the cellular material depended upon the available supply of nourishment.

So interested was Van Hooten in watching the growth of his creation, and seeing that the tiny cells were properly and abundantly fed, that all thought of nourishment and rest for himself vanished from his mind. For forty-eight hours he remained in his laboratory, his eyes glued to the lens of his microscope. Gradually the tiny bits of tissue grew, until they approached one another on the slide. They touched and, to Van Hooten's great amazement, the various

Will man ever succeed in creating life in the laboratory? Many recent experiments in this direction have produced some remarkable results, which may lead to an affirmative answer to the question in the future. Though the results of a successful attempt to produce living tissue by synthetic means, as depicted in this story, are not very pleasant; and the author seems to suggest that it will be necessary to find a way to control the growth of artificial life-forms as well as merely producing them, in case they should prove too successful . . .

bits grew together, until there was but one solid mass of tissue, roughly globular in shape, on the slide.

Then tired Nature asserted herself. Van Hooten knew that he could go on no longer. His red-rimmed eyes could not see, nor his hands, trembling from weariness, perform. With an effort, he picked up the precious morsel of tissue and slipped it into a tube of sterile protein solution. Hardly had he completed his task than his eyes closed. He managed to grope his way to a couch in the ante-room, and fell on to it, to lie in a stupor of sleep for twenty hours.

He awoke ravenously hungry, but his first thought was for his tissue. It was still living, and growing regularly, though slowly. He tore himself away from the laboratory long enough to get a meal, then threw himself again on the couch for another six hours of sleep. He awoke in a more rational condition.

"I have done it," he said to himself, as he studied the steadily growing tissue through his instrument, "but no one will believe it. They will say that my materials or my apparatus were not sterile, were not devoid of life when I

began. I must repeat the experiment, not once, but many times, before I tell anyone of it. Also, I must study the substance and find out all I can about it. I must have such proof as will silence all scoffers before I announce it to the world."

Poor Van Hooten! Little did he realise, then, the dramatic circumstances in which the announcement would finally be made.

Luckily, he was in a position to do as he wished. A discovery of commercial importance had made him a rich man, ten years before, and he had promptly resigned a professor's chair in Columbia University and devoted his life to chemical research, following the will-o'-the-wisp of synthetic life. A bachelor, he had no domestic ties to interfere with the long hours he spent in his small, but completely equipped, laboratory. He threw himself heart and soul into his work.

Time and again he repeated his experiment, always with the same result. His method was positive. Each bit of tissue he created was added to the first mass, increasing its size. He learned many things about his creation. His first observation, that the rate of growth was dependent upon the supply of nourishment, was verified by subsequent experiments. By starving the mass, the rate of growth could be retarded, made very slow. By supplying an abundance of readily assimilable protein, the tissue could be forced to a maximum rate of growth of ten per cent of its diameter in a week, doubling its diameter and increasing in mass eight-fold in about two months.

"Now I can safely experiment," he said, when the mass had grown to the size of a pea, "and learn more about its characteristics. There is no danger of my supply failing; I can repeat my experiment at will."

He took a sharp knife and delicately detached a portion of the mass of tissue.

This he placed in a sterile protein solution.

"Doubtless the cut-off portion will die," he murmured, "and possibly the whole mass will cease to live, yet the experiment is a vital one. We shall see—we shall see."

His fears were unfounded. Both portions of the tissue thrived and grew. When he placed them in contiguity, they joined together again into one ball of flesh, the scar of union disappearing in a few days. The cells would feed upon almost anything. Synthetic protein was replaced by natural protein, by carbohydrates and fats, and still the tissue continued to grow. Even inorganic materials would be absorbed, and a certain amount assimilated, the rest cast aside.

The mass grew until it was as large as an egg. Still Van Hooten could not bring himself to announce his discovery. Naturally shy, perhaps he feared the jeers with which such an announcement would be greeted. More probably, the joy of such a secret knowledge, the fact of being the first to create life, was a pleasure which his nature, possessed by a pronounced inferiority complex, could not forego.

One day, as he was watching the steady growth of the mass, a luckless fly lighted upon it. Van Hooten started to brush it away, then leaned forward, unable to believe his own eyes. The surface of the tissue globule was sinking, as though the insect's tiny weight were forcing it down. It sank slowly, until the fly was in a pocket; and with a sudden movement, the pocket closed. The fly was a prisoner. Fascinated, Van Hooten watched the process go on. The fly was gradually absorbed into the mass, leaving only a slightly darkened area which faded out in two days.

"It can feed on living tissue," he decided. "This opens a new avenue of experimentation."

He tried the thing with larger insects, with bits of animal and vegetable matter. They were all readily absorbed.

The thing was omnivorous. His experiments took months; and all the while, the mass grew steadily larger. Van Hooten even thought that he could detect signs of incipient organs forming. At least, it was evident that all the cells were not identical, as they had been at first, but were differentiating between themselves. And still the mass grew. . . .

IT HAD grown to be a foot in diameter before its creator realised its true nature. One day, while working with the mass, he carelessly rested his hand on its surface, which sank beneath the weight. When he went to withdraw his hand, there was a sudden movement, and in an instant it was caught, imprisoned in the mass.

He strove to free himself of the thing, but it held him in a death-grip. He placed his other hand against it to exert more pressure, but the immediate sinking of the surface warned him. He withdrew his free hand hastily, just in time to save it from being caught in another pocket. Suddenly, a fierce, burning pain ran up his arm. He stared into the semi-transparent mass, and saw blood oozing from his hand into it.

He lifted the sphere of flesh and swung his arm, but still he could not release himself. Then his eye fell on a heavy knife, and in a few moments he had hacked out a gobbet of tissue, in the midst of which was his skinned hand. It was but a matter of seconds for him to slice off the material, until he had left only a thin layer which he could peel off his hand. He tossed the detached portions back on to the parent mass, to which they soon attached themselves.

His crippled hand kept him from the laboratory for a week. When he re-entered it, he stopped aghast at the growth which had taken place. Measurements soon told him that the increase was normal, but now that he realised the malignant nature of the thing, it looked huge. He was thoroughly frightened by it.

"What will the end be?" he cried, as he stared at the steadily growing mass. "In time, it will be as large as a house, and will catch and absorb all life that comes near it." His brain reeled at the awful possibilities. "I must destroy it, before . . ."

Then he stubbornly put down his incipient panic, and set his mind to considering the means of destruction.

"Cutting it up will do no good," he mused. "The thing has no brain, no nervous system. It is simply flesh, vibrant with life. I cannot starve it, for I have found portions able to lie dormant for months, then resume growth when nourishment was furnished. I must poison it."

It took him only a short time to improvise a giant hypodermic syringe from a piece of glass tubing, and with this apparatus he injected a quart of potassium cyanide solution into the tissue. He left the syringe in place and went to bed, fully expecting to find the mass dead when he awoke. But instead, the next morning, not only was the thing still alive; it had drawn the apparatus into itself and absorbed the rubber parts. It thrived on cyanide! Nor were other poisons more effective. After pouring gallons of the deadliest toxins into it, the only result was that it still grew steadily.

"What a fool I have been to waste my time!" he cried, when he found that phenol merely accelerated the growth. "I have been merely supplying it with food. I must attack it from the outside. It is tissue, and tissue will not withstand heat. I will burn it."

His laboratory was a detached, concrete building which he had erected specially for the purpose. He carried firewood into the place and heaped it about the malignant mass, which now reposed in the centre of the room. He soaked the wood with kerosene and lighted it, then backed away from the inferno of flame. When he entered the room again, hours later, he found a

black, charred mass where his tissue had been.

The ebon mass was iron-hard. Under blows from a chisel, hard carbon particles flaked off, revealing only more carbon deeper. Van Hooten wiped his brow in relief; he suddenly felt years younger. The menace was gone.

CHAPTER II

THE VANISHING SHIPS

HIS jubilation lasted but a few hours. At the end of that time, the carbon shell had cracked open in a dozen seams, revealing that it was less than half an inch thick. Through the cracks he could see the flesh, still living and still growing. He sank down, his head in a whirl. His last resource was exhausted.

He stood for a few minutes in a daze, then shook his head, a look of determination on his face.

"Nothing is greater than its creator!" he cried. "There *must* be a solution."

His mind worked furiously; but, in the end, he came back to the same sickening conclusion which had assailed him when he first found that fire was ineffective. The thing was indestructible, eternal; it could not be cut up, poisoned, burned or starved. He was at his wit's end when, suddenly, inspiration visited him. He hastened from the laboratory and returned in a few minutes, leading a stray dog.

"Can it be digested?" he asked himself, as he cut off a portion of the flesh and offered it to the hungry mongrel. The dog sniffed, then turned from the proffered food in disgust. Van Hooten groaned; but he was not yet defeated.

"Dogs are not omnivorous," he said to himself, "but there are other things that are. Fish will eat almost anything."

He left the laboratory again, to return with a bowl of goldfish. He

minced up a bit of the tissue and dropped it into the bowl. To his joy, the fish gobbled it down with avidity.

"Now, will they digest it . . . or will it digest them?" he muttered.

There was only one way to solve the problem; to wait and watch. He watched anxiously; and meanwhile the mass grew larger, day by day.

In a month, he breathed freely again. The fish had thrived on the bits of tissue he fed to them daily. A way to destroy the thing he had created was open to him at last. There were not enough goldfish in the world to digest the daily increase of the mass, which now threatened to crowd him out of the laboratory; but there was the ocean, densely populated with hungry creatures who would tear his creation to bits and devour it. To be sure, some of them might be captured and absorbed by the thing, but the balance would be in favour of the denizens of the deep. . . .

Van Hooten blessed the fact that he was rich. His plan was an expensive one, but that factor need not enter into his calculations. The main thing was speed—to toss the steadily growing thing into the sea before it got too large to handle. In two weeks, a swarm of mechanics, sworn to secrecy, had built a cage in the laboratory large enough to hold the mass. It was made of solid steel, and equipped with huge wheels. When the tissue had been forced into the cage by means of hydraulic jacks, the open side was closed in, and the thing was ready for its last, long journey.

Workmen tore out one wall of the laboratory. That night, three huge trucks backed up to the gap. They were fastened, in tandem, to a ring in the cage. At the signal, they started forward. The cage jolted out through the gap and started towards Brooklyn, where a chartered cargo tramp waited with steam up. As soon as the cage was hoisted on board, the ship began to move.

For six days it steamed due east, the mass still growing daily. It was fifteen feet in diameter, when the ship's captain pricked on his chart a position mid-way between Europe and America.

"This is the place!" cried Van Hooten. "Drop it overboard."

The ship's propeller ceased to revolve. The donkey-engine snorted, and slowly lifted the steel cage from the deck; it swung it out over the water. Mechanics swarmed up, and started to remove the bottom. As two of the heavy bars fell away under their manipulation, the thing oozed out through the gap, and fell. With a resounding splash, it landed in the ocean. For an instant it floated, then sank beneath the waves.

Van Hooten dropped on his knees, while a prayer of thankfulness rose from his heart. More cheerful than he had been for many months, he gave the order which turned the ship's head back towards Brooklyn.

ONCE back on land, Van Hooten rebuilt his laboratory and plunged into other experiments. The insight into the nature of life which his former experiments had given him, stood him in good stead. He turned his attention to the microscopic entities which take such an appalling toll of human life, and at length became one of the world's greatest authorities on disease germs and serums. He even made some progress towards defeating the greatest menace of all, carcinoma,* but this work he hated. The malignant, giant cells reminded him too strongly of what he strove to forget, the fearful life he had created years before.

He thought of that experiment only occasionally, and then with a silent prayer of thankfulness that he had found a way to destroy the menace. Years ago, it had been swallowed up in the sea, to be food for the teeming life which inhabited the waters. Twenty years had passed since he had dropped the mass of tissue overboard in mid-

Atlantic. Long ago, its destruction had been complete. That experiment, he thought, was a closed chapter.

And all the while, unknown to anyone, in the depths of the sea, the mass grew steadily larger. When Van Hooten had dropped it, the inhabitants of the ocean had not been loath to feed upon it. They attacked it voraciously, glutting their ravenous appetites; and for a time, the issue hung in the balance. Once in a while, a fish would be caught and absorbed, and countless animalculæ and quantities of seaweed went to nourish it, until at last the tide turned definitely. The daily growth became more than the consumption by the fish.

Then, slowly, the mass increased in size; and as it grew, it adapted itself to its new surroundings. Now, only the largest fish could approach it without being caught and going to feed its insatiable appetite. Far down in the ocean depths, it grew larger and more malignant, until its size was such that it filled the ocean from the floor almost to the surface; and only then did humanity become aware of the menace which lurked in the waters.

Probably, the *Monsoon* was the first to see it. At least, she was the first of the long series of ships which disappeared in the Atlantic without trace. She sailed from Liverpool for New York. She was spoken twice in the next three days; then she dropped out of man's ken. There was no storm to account for her loss, and no wreckage was ever found. She simply vanished.

The nine days' wonder which her disappearance caused had not died down before a second ship, the *Nokomis*, disappeared. Aside from the fact that she sailed east, instead of west, the circumstances were quite similar. She was spoken along the North Atlantic track for a matter of five days; then she was gone. The Press of two continents waxed eloquent, and demanded solution of the mystery. Navy vessels were started on a patrol of the North Atlantic track, but they found nothing.

* Cancer.

Eight more ships vanished before the *Lodantic* radioed frantically for help. A dozen warships answered her call. They found her making full steam for New York, under the charge of a badly-shaken captain and crew. The story they told would have been incredible had it not been verified by every one of the six hundred passengers the vessel carried.

She was four days out of Liverpool, proceeding along the North Atlantic track towards New York, when there came a sudden jangling of bells from the interior of the ship. The engines ceased their throbbing for an instant, then started up in reverse. The *Lodantic* shivered throughout her length, and the riven water swirled about her stern as her twin screws strove to arrest the forward motion. The startled passengers sprang to their feet and ran around uncertainly. The shrill cry of a child sounded from the port rail.

"Daddy, look, quick! There's a million fishes out here!"

A dozen of the passengers joined her at the rail. They saw that the sea was literally alive with sharks—hundreds of them. They swarmed about the ship, and for as far as the eye could see; they milled about in the water in a long fringe of movement extending to the north and to the south. They were in a state of ceaseless activity, now charging forward and turning on their backs as if to strike, now retreating at express speed. It was evident that they were feeding on something below the surface of the water.

A sudden cry of amazement came from the passengers. Three hundred yards ahead of the *Lodantic*, a strange, grey mass rose slowly above the surface of the water. It was a dull, opaque grey, so dark as to be almost black where the sun struck it. It rose slowly, then ceased its movement when it was a few feet above the surface; but it extended for miles. Only on the far horizon could be seen a line where waves broke against it, as against a beach.

At the edge swarmed the sharks, feeding ceaselessly on its substance.

"In Heaven's name, what is it?" cried a passenger.

NO ONE could answer the question, least of all Captain Eames, who emerged from his cabin and hastened to the bridge.

"What's the trouble, Mister Blake?" he demanded of the first officer. Blake pointed towards the phenomenon ahead.

"I can't tell you, sir. I've never seen anything like it. It has some resemblance to a huge jelly-fish, but who ever heard of a jelly-fish ten miles across? It's something alive, to judge by the action of those fish."

Captain Eames took a glass from his subordinate's hand, and studied the strange object. It showed an irregular surface, raised a few feet above the ocean level, rough, and marked with white lines and splotches like the scars of old wounds. It lay, without movement, less than fifty yards from the bow of the *Lodantic*, whose reversed engines had brought her to rest.

"It's a new one on me," he confessed. "It must be some form of marine life which hasn't been catalogued yet. I suppose we ought to take a closer look at it."

"If you think it's safe, sir."

"Oh, it looks safe enough, Blake. The sharks are the main danger, and they won't attack a boat. Would you like to row up to it?"

"Yes, sir; I wouldn't mind, if we can spare the time."

"We aren't carrying mails, and we're half a day ahead of schedule. Go ahead; it won't delay us long."

The first officer turned, and gave a crisp order. There was a flurry of movement on the boat deck, and No. 2 lifeboat, the largest on the *Lodantic*, was swung out on her davits. With Blake in the stern, and manned by a crew of a dozen seamen, she was pushed off.

Blake watched the sharks anxiously,

but the huge fish paid no attention to the boat. There was more interesting game ahead. The lifeboat pulled up towards the mass, until the bow nearly touched it. It was of a thicker consistency than Blake had thought when he examined it through the glass. Close at hand, it did not resemble the tenuous body of a jelly-fish except for the fact that its skin was thin and semi-transparent. Deep in its depths could be seen dark, nebular blotches.

"Closer, men," cried Blake. The boat moved forward. Blake swung hard on the tiller, and turned the boat broadside to the strange object. It drifted slowly in until it rested against it. Blake leaned over the gunwale and touched the skin.

The mass gave slightly under the pressure of his hand. Blake grasped at it. He caught hold of it easily enough, but when he pulled, it did not give as he had expected; instead, the portion which he had gripped began to retract into the mass. Blake maintained his hold, and pulled with all his strength. The boat was forced hard against the side of the object. A way opened, and the boat drifted into the mass until it lay in a little lane. Blake released his grip and tried to draw back his hand.

A cry of alarm broke from his lips. His hand had been drawn down into a long pocket which had opened in the flesh. When he relaxed his grip and went to draw back his hand, the pocket closed like a flash. His arm was imprisoned in a grip which he could not dislodge.

"The thing's caught my arm," he cried. "Help me, one of you!"

CHAPTER III

THE ENVELOPING MONSTER

THE nearest seaman grasped at his superior's shoulder, and strove to pull him free. Blake tugged with him for a moment. Then a

scream of pain broke from his lips.

"Pull!" he cried. "The damned thing is chewing my arm off!"

He gave vent to continual cries of pain, as others of the seamen added their strength to his; but their efforts were futile. The flesh which held Blake's hand began to sink, forming another long pocket. The men still pulled, but their strength was as nothing to the might opposing them. Further and further over the edge of the boat went Blake, until at length he was drawn right out of the craft, and only the grip of the seamen on his legs kept him from dropping into the menacing pocket which had opened to receive him.

Still the steady pull continued. The men were hauled to the edge of the boat, and nearly over the gunwales. Then, suddenly, the end came. With startling abruptness, the yawning pocket closed over the struggling man, until only his feet projected above the leathery surface. Before the frightened gaze of the boat's crew, the feet sank until they disappeared. Where Blake had been was now merely a dark splotch under the surface, dimly visible through the semi-transparent skin.

"Gawd!" cried one of the men in awe. "It's swallowed 'im!" A shout of alarm from one of his companions answered him.

"The bloody thing's arter us, too! Pull, mytes, or we're goners!"

The reason for the alarm was obvious. The boat had been hauled, by the pull on Blake's arm, into a sort of bay which had opened before it. Flesh rose on three sides of them. Now, the mass was slowly but surely closing in behind them, until there was only a path of water leading to the *Lodantic* barely wide enough for their boat to pass through. With cries of dismay, the crew grasped their oars.

But they were too late. Already there was no water into which their oar-blades could dip. On all sides, the dull, lifeless-looking flesh was touching the boat.

They thrust out their oars, and strove to push it back. The oars sank readily into pockets which opened before them and when the men tried to withdraw them, the pockets closed with incredible rapidity, imprisoning the oars in a grip which their combined efforts could not dislodge.

"My Gawd, look!" came a wail from the seaman who had first given the alarm.

The mass was rising slowly. Even as they turned to meet the menace, it began to flow slowly over the boat's gunwales. With the few oars which were not held fast, the seamen hammered at the oncoming wave of flesh. Their blows fell futilely. They cut through the soft flesh to the wood of the gunwales, but the wounds did not affect the relentless onward flow of the flesh. A few pocket knives appeared, but they were as useless as the oars against the steady movement.

One of the men attacked the mass with his bare hands. For a moment, it looked as though he might be successful, for the thing gave way before his attack; but he did not notice that it was drawing his hands into one of the fatal pockets which had engulfed Blake. In another moment, the pocket closed and he was screaming helplessly, held by both hands in a death grip.

The path to the ship had now completely closed behind the lifeboat. On all sides rose the hideous flesh. The men fought and screamed, but all to no avail. Steadily the mass rolled on, until it towered above them; there was a sudden movement, and it closed over their heads.

THE *Lodantic* had not been idle. As the mass began to close around the doomed boat, Captain Eames had barked sharp orders. The twin screws began to revolve, slowly at first, and then, as the ship gained headway, at full speed. Straight towards the mass of flesh, Captain Eames hurled the bulk of his six-thousand-ton steel ship.

There was a jar as the prow of the *Lodantic* struck the mass. For fifty yards it ploughed its way forward before it came to a stop, its propellers churning the water uselessly. The imprisoned lifeboat was but a few yards from the side of the ship when it sank out of sight.

"Look out, Captain!" cried the second officer. "We'll be caught, too, in a minute!"

Captain Eames' face paled, as he looked over the side. The mass of flesh was creeping slowly up the sides of the *Lodantic*. At the same time, it was spreading out towards the stern of the ship.

"Full speed astern!" he bellowed.

The engine-room telegraph moved swiftly under the manipulation of the second officer. The huge engines paused for an instant, then began throbbing in reverse; but for all their strength, the *Lodantic* did not move. Steadily the mass flowed on towards the stern of the ship. Inspiration suddenly visited Captain Eames.

"Stop the engines!" he ordered, huskily.

The huge engines stopped with a jar. Captain Eames stepped to the engine-room telephone.

"MacArdle," he said, in a shaking voice, "something has us caught here. Stand by your engines. When I give the word, let me have every ounce of steam you can raise. In reverse, mind!"

He turned from the telephone, and looked again over the side. The flesh had not risen far on the sides of the ship; but, slowly and surely, it still moved towards the stern as though determined to surround it. The Captain watched as it flowed around, until it joined with no sign of a break. The *Lodantic* was securely caught.

"Now, MacArdle!" cried Captain Eames.

The fabric of the ship shook as the two huge screws revolved with the full power of the engines behind them. As they whirled, huge chunks of flesh were

torn from the mass and cast up into the air, to fall back with a splash into the water. There was a heaving movement over the whole surface of the mass. Momentarily, the grip on the ship was relaxed.

Soon, the powerful propellers bit the water, and the *Lodantic* moved backwards. The mass closed again, but it was too late: the ship had retreated so far that the closing flesh caught only the sloping prow. It held on with a death grip; but, an inch at a time, the *Lodantic* won free, and with a sudden movement, shot clear into the open water.

She backed for a mile before Captain Eames dared to change her course. Then, at his command, the engines began a forward movement, and the *Lodantic* swung round in a wide circle until her stern was towards the mass. The waves still broke over it, and then—it was gone. As they gazed, the sea was broken up in swirling whirlpools. Gradually they subsided, and nothing marred the serenity of the water's surface.

"In God's name, what was it?" came in awed tones from the second officer. Captain Eames turned towards him.

"Ask God what it was," he said solemnly. "I have sailed the seas for thirty years, and have seen nothing like it. Take charge of the bridge. I am going to the wireless house to report to the ships of the naval patrol."

WHEN the *Lodantic's* story was published, the first reaction of the world was a gust of laughter.

The public suspected a gigantic hoax, some new advertising scheme. But, gradually, their attitude changed. It was manifestly impossible that the whole crew and passenger list of the *Lodantic* could connive at such a sell without someone giving it away. As the fact dawned upon the public consciousness that a dozen members of the crew had lost their lives, the laughter died down and the Press began to clamour for action, quick to seize on the obvious

explanation of the loss of the *Monsoon*, the *Nokomis*, and the other missing ships. The aroused governments of the United States and Great Britain acted in concert, and their navies patrolled the North Atlantic.

But, of all the world, only Erasmus Van Hooten knew what it was that the *Lodantic* had seen. He had not at first connected the loss of the ships with the mass of growing tissue which he had thrown into the Atlantic, two decades before, but when he read the description given by passengers on the *Lodantic*, he realised what it must be. For a whole day he was stunned, his mind unable to grasp the situation; then his brain began to function again. His first coherent thought was to tell everyone who would listen, but either his essential shyness, which had made him conceal the fact of his discovery from the world for a generation, or a sober fear of the consequences of a late revelation, held him back.

His mind revolved in circles, for a while. He had tried, years before, every method which his ingenuity could devise to destroy the mass of flesh—and had failed. He could think of no further experiments he could make. Obviously, the only thing to do was to seek help. That night, a hundred carefully worded telegrams and cables went out from his laboratory in New York. The next day, a hundred of the world's greatest scientists read the messages, and wondered what Van Hooten had up his sleeve this time.

It is a tribute to the magic of his name that sixty-two of them dropped their work and hastened to New York to attend the conference which he had called for ten days later. And, that same morning, the Press of the world carried a new story; one that surpassed in horror even the story of the *Lodantic*.

H.M.S. *Invincible* had been ploughing along on her course, keeping in touch with the other vessels of the patrol by wireless. On the horizon could be discerned smudges of smoke where other

ships steamed, seeking the new menace to navigation. Only a few miles to the south, the U.S.S. *Albatross* was proceeding towards her station to relieve the *Petrel*, who had been on patrol for a week. The *Albatross* had exchanged messages, a few minutes before, with the *Invincible*, each reporting that no sign of the thing which they sought had been seen.

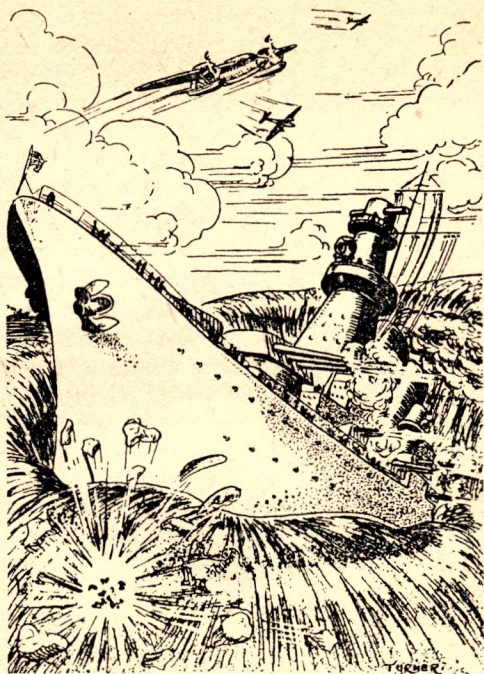
With a sudden shock, the *Invincible's* forward motion ceased. Her twin screws still laboured, but they had a different note, as though they were revolving in a medium denser than water. In an instant, the ship seethed with excitement. Bugles blew, summoning the crew to battle stations; officers scurried to their posts, the commander and the executive officer hastening to the bridge. In a few moments, the cause of the stoppage became evident. All about them, a dull-grey, opaque mass like wet leather rose slightly above the surface of the sea. The *Invincible* was caught fast in the middle of the object she had been seeking.

FOR a moment, confusion reigned; then the stern discipline of the British Navy asserted itself. The crew stood at battle stations, ready for commands; but the commander was in a quandary. None of his guns could be depressed enough to fire into the mass; nor did he dare to toss depth-charges over the rail, lest the resulting detonation close to the side of the ship should crush in her shell. A solution came quickly to his trained mind, however.

The radio buzzed as word of their predicament was flashed to the *Albatross* and other ships of the patrol. There was a roar of starting motors, and the four planes which the *Invincible* carried were catapulted into the air, their racks filled with bombs. They climbed to a suitable elevation, then launched their deadly missiles down towards the bulk.

Bomb after bomb struck, burst, and tore huge craters in the grey flesh, but

the holes filled in rapidly. A tremor ran through the whole mass, shaking the vessel held firmly in a tenacious grip. But still the edges of grey stole slowly but steadily up the *Invincible's* sides, making ready to engulf her. The portion about the ship began to sink, drawing her into a huge pocket of flesh. Down she sank, until the gun-deck was below the surface of the main mass.



Then it was that the fifteen-inch guns of the *Invincible* came to bear; and they began to roar, sending tons of steel-clad explosive into the enveloping monster. The bursting shells tore huge holes in the mass, but nothing stopped the steady sinking of the ship. As a last resort, depth-charges were tossed over the rail, to explode on the surface of the flesh and tear more great holes in it. All was useless. Deeper and deeper into the pocket sank the doomed ship.

Radio messages to the planes ordered them to keep clear and join the *Albatross*. They flew away, their bomb-racks empty. The last message from the ill-fated ship was to the *Albatross*. It read:

"Sinking rapidly. Depth-charges and gunfire have no effect. Please continue attack from outside. Carry on."

Hardly had the message been received than the mass of flesh closed over the *Invincible* with a sudden motion, and the British Navy was left to mourn one of her finest battleships. The vast, grey object sank slowly beneath the waves, carrying the vessel with it.

As long as there was anything at which to fire, the *Albatross* held her ground. Her six-inch guns grew hot from the speed with which they were served, but their effect was naught. The twelve torpedoes which she carried were launched against the menace. They detonated, throwing fountains of rended flesh high in the air; but nothing stopped the steady sinking of the *Invincible*. When the British ship had disappeared, the *Albatross* turned and fled at her best speed, while above her winged the four planes of the *Invincible*, seeking another ship with the tackle to lift them on to her decks.

CHAPTER IV

THE SACRIFICE

THE assembled scientists were discussing the latest horror when Erasmus Van Hooten entered the hall in which they were gathered. He greeted them shyly, then mounted a platform at one end of the hall and began to speak, slowly and haltingly at first, then with more vigour as he forgot his embarrassment and warmed to his subject.

"Gentlemen," he said. "I know that all of you are discussing the loss of the *Invincible* and the new menace which threatens oceanic travel. It is to consider means of combating this thing I have called you together. Before we can make plans, it is essential that we understand fully just what it is we are to fight. I, alone of all the world, know that; I alone am responsible for this

thing that is making the seas unsafe. It is an object of my own creating."

There was a murmur of astonishment at his words. Van Hooten flushed hotly, then went on as the murmur died down. He described in detail the attempts he had made to kill the menace years before, and in hesitating tones, he told of its origin. When he had ended, there was a moment of stunned silence, then a ripple of laughter, quickly hushed. The scientists looked at one another, pity and astonishment on their faces. Van Hooten smiled wryly.

"I realise that you must think me mad," he said. "I wish that I were, and that all this were a fevered dream, but unfortunately, I am as sane as any of you. I did not expect to be believed without proof, so proof is ready. In the next room are the materials and apparatus for my synthesis. Before your eyes, I will create life; such life as is to-day living and growing in the Atlantic. If you will come with me, I will repeat my regrettable experiment."

They followed him, wonderingly, into the laboratory. At his request, several of them tested his apparatus and materials to make sure they were sterile, devoid of life. Then, before their eyes, Van Hooten began to work. An hour later, he straightened up, and beckoned the nearest man to the microscope. One after another, the sixty-two scientists peered through the instrument, then stepped away, amazement struggling with belief in their faces. Through the lens they had seen living, growing cells.

"You see, gentlemen," said Van Hooten, wearily. "I can create life; but what I have created, I cannot destroy. That is your task. I will ask that some of you stay here and help me repeat this synthesis, until we have enough tissue created to give each of you a sample with which to experiment. These samples you can take home with you, and try to find a means of destroying. I need not tell you that it is highly advisable that no word of this be allowed to reach the public."

But, despite Van Hooten's warning, someone talked. In twenty-four hours, the Press had a garbled account. In order to make clear the situation, Van Hooten was forced to grant an interview in which he told all of the story. Public excitement rose to fever heat; and in sixty laboratories throughout the world, eminent scientists worked furiously, seeking ways to destroy the steadily growing bits of tissue which Van Hooten had created. In his own laboratory, Van Hooten himself laboured night and day, aided by two of the scientists who had answered his call—Dr. Chang Yen Tong, of Peking, and Dr. Albert Gustafson, of Copenhagen. Old friends of Van Hooten, they had accepted his invitation to perform their experiments in his splendidly equipped laboratory.

Days passed, weeks, and months, and still the reports from the laboratories were the same. There were many ways found to destroy the small bits of flesh with which they were experimenting, but no method which was applicable to a mass of it miles in diameter. And still the menace in the North Atlantic continued to grow. . . .

For a time, it remained comparatively immobile on the North Atlantic track. Shipping was routed far to the south, but when victims to feed its insatiable appetite became few, the thing began to move. It appeared on the South Atlantic track, and wrought havoc, still impervious to the gunfire which the patrolling naval vessels poured into it whenever it appeared above the surface of the water to drag another victim into its maw.

THEN, one day, horror swept New York City. The thing was moving, slowly but resistlessly, towards the harbour. It advanced clear up to the shore. For a time, it rested there, after dragging down all the shipping in the harbour; then it began to roll up on to Staten Island. Artillery, hurried from every army post in the

United States, poured unavailing fire into it, while bombers showered it with the largest bombs. But the wounds made healed swiftly, and the mass advanced inexorably.

As a last resort, army engineers buried tons of explosive in its path. When the mass rolled over the buried mines, they were detonated, and as the huge masses of explosive tore the front of the advancing flesh to ribbons, it ceased to move forward. Bombing planes then dropped four thousand-pound bombs on to the mass, with terrible disruptive effect; and at last the thing began to retreat, sluggishly, reluctantly, towards the sea. New York was saved.

Paens of thanksgiving rose to the heavens, especially when the thing retreated still further. In two days, the leathery mass had left the harbour and was going seawards. It stopped, however, a few miles off-shore, effectively blocking the harbour and stopping the commerce of New York.

It was the same day that the thing started to retreat that Dr. Chang, working in Van Hooten's laboratory, got the first glimmering idea of a method which might prove successful against it. He straightway summoned Van Hooten and Anderson, and the three worked almost day and night for a fortnight. Then, from New York, went out messages which called the six greatest pathologists of the country to the laboratory. When they had assembled, Dr. Chang announced his momentous discovery.

"For many years, as you know," he said, "I have been studying the various forms of carcinoma. Dr. Van Hooten and I have worked along similar lines, often corresponding and meeting to compare results. Unfortunately, we have as yet found no remedy for this malign condition, but we have learned a great deal about it. One of the first things which attracted my attention was the great resemblance between the cells created by Dr. Van Hooten's syn-

thesis and those developed in malignant carcinoma. But although similar in appearance and habits, and taking the same strains, there the resemblance between the two ends. Van Hooten's cells do not react to the gamma radiation of radium or to the X-ray, as do carcinoma cells, and there are other great differences which I need not detail.

"Two axioms of cell life are that no cell can live in a medium of its own excreta, and that similar cells developed from one another are highly antagonistic. This opened two possible lines of experimentation for me. The first was impossible to apply, although the principle was one which would have been successful. I turned to the second, and met with failure after failure; yet, in the end, I have been successful. While ordinary carcinomas are powerless against Van Hooten's cells—in fact, the carcinoma cells are simply absorbed and digested—I have managed to develop a new type of carcinoma of greater malignancy and potency than any hitherto known, by a simple modification of the carcinoma germ which I isolated three years ago. Once started, this new condition will completely envelop a human body in two hours."

A concerted gasp of horror went up from the listening doctors. Such a thing might easily be worse than the menace the world faced. The Oriental smiled slightly, and went on in a calm voice.

"Luckily, such a cell formation is artificial and very impermanent, except under certain conditions. It is singularly permanent in Van Hooten's cells, and travels through them faster than through human tissue, as I have demonstrated to my satisfaction. To make a successful inoculation with the disease, the solution must be fresh. Deprived of tissue on which to feed, the germs will die in a few minutes. Weak salt water—in fact, sea water—will kill it, in the absence of tissue, in a few seconds; but in the presence of the correct type of food, sea water and even more powerful solutions are powerless.

Hence, the only thing necessary to do is to inoculate the mass outside New York harbour with the germs of my new type of carcinoma. In a short time, the whole mass will be destroyed, and the germs themselves, deprived of food, will be almost instantly killed by the sea water."

A CHEER greeted this statement, and a buzz of excited conversation broke out as the six pathologists immediately began to discuss means of accomplishing the feat. But Dr. Chang held up his hand for silence.

"There are difficulties, gentlemen," he said, "but not insurmountable ones. To start with, I have not been able to inoculate any lower animal with this new disease. Only living human tissue, either attached to or recently severed from a living person, is affected. We must give this new disease to a human being, then cause him to be absorbed by the mass within two hours, or our work is useless."

There was a moment of stunned silence, which was broken by Dr. Baldwin, of Johns Hopkins.

"That should be possible," he suggested. "Some condemned criminal could be used. . . ."

"Impossible," replied Dr. Chang. "Were this China in the days of the Empire, such a solution would be practicable and easy, but your Constitution prohibits 'cruel and unusual punishments.' The victim must be a volunteer."

"One could be found," suggested Dr. Baldwin.

"Will you volunteer, Doctor?" asked Chang bluntly. The rubicund face of the pathologist paled. Chang laughed mirthlessly.

"You need not answer," he said. "You will not volunteer; nor will I . . . nor will anyone else. We must seek other means. Many men would volunteer for death—swift sudden death, but not *that* death. Nor do I blame them. Our only solution that I can see is to

kidnap a man, woman or child—it matters not which—inoculate the victim, and feed it to the menace. Has anyone a better idea?"

There was a chorus of protest at the Oriental's suggestion. Chang listened in inscrutable silence, until the murmur died down.

"That is the method I propose, gentlemen," he said quietly. "When you find a better one, I will listen; but before you seek for volunteers, search your hearts and answer truthfully whether you think you will find one."

"If not a single volunteer can be found, the race of men deserves to die," retorted Dr. Wilson, of Leland Stanford, hotly.

"Let he who is without sin among you . . . " smiled Chang. "I take it, then, that *you* volunteer, Dr. Wilson? Ah! I hardly thought so. Surely, it is not too much for us to select one victim for sacrifice that the race may live. Remember that the mass is growing daily. In time, it will fill the entire ocean, then overflow the land. All life except it will cease, and then it will die from starvation. One life must be sacrificed, if the rest are to be saved."

There was a subdued murmur of assent from his listeners.

"Then you consent to my plan of kidnapping?" continued Chang.

There was a hesitant chorus of agreement.

"And you will all of you assist me in abducting the victim and in carrying out the sacrifice?"

A long interval of complete silence followed. Chang's voice was bitter when he spoke again.

"Brave men," he exclaimed, "benefactors of the human race, allow me to congratulate you! Don't worry; I'm not going to ask a single one of you to risk his standing by acting contrary to your law, your sacred law which you flout and break daily in innumerable ways. A volunteer was found before you were ever called to meet here. I volunteered myself, but another had a greater

claim, and to him I renounced the honour, for honour it is. Dr. Erasmus Van Hooten will gladly give his life, one of the most valuable in the world, to kill the menace which his transcendental genius created. Dr. Van Hooten, I salute you!"

He bowed low before the pale-faced scientist. A burst of applause broke out, but died swiftly as Chang swept the room with his inscrutable gaze.

"Our plans are laid," he went on. "A chartered plane awaits us at Mineola, and the inoculating serums are now being prepared in the laboratory. We will be ready to start in a few minutes. I wish you to come along as witnesses, nothing more. I will handle the serums, so that you will not be exposed in the slightest degree."

As he spoke, a white-clad assistant entered the room with a sealed ampule of colourless liquid. Chang took it from him, and held it up.

"Here is death, the most horrible death imaginable," he said solemnly; "and here is life—life for the world, through sacrifice."

IN SILENCE, the six men followed Van Hooten and Chang out of the laboratory. Two cars took them to Mineola, where a big transport plane awaited them. When they had entered, the plane roared off over the waters of the Atlantic.

In a few minutes, the grey, leathery mass was below them. They flew straight east until the far limit of its surface was seen, some thirty miles further. Then the plane headed back westwards, while Van Hooten stripped off his clothing. With sure hands that did not tremble, Chang snapped off the end of the ampule and drew its contents up into a hypodermic syringe.

"Are you steadfast, Erasmus?" he asked in a low voice, in which, despite his apparent calm, an undertone of affection and sorrow could be detected.

"I am ready, Chang. Do your part."

"And may the gods of old reward you," said Chang fervently, as he drove the death-laden needle deep into Van Hooten's back, then into his arms and legs.

Soon, Van Hooten was writhing in anguish, although no sounds of pain came from his tight-clenched jaws. The others watched him, silently.

"It is time, Erasmus," said Chang quietly. "Life will leave you in a few minutes."

Van Hooten nodded. "Good-bye, gentlemen," he said, smiling, his lifelong shyness burned away by the searing fire of his pain. "I am glad to be able to destroy the menace I created, by my death, and I hope that my experience will be a lesson to all those dabbling in things beyond their ken. Chang, my friend, promise me one thing. See that the true story of this affair is given to the world in time. Not now, but later, when the first feeling of resentment has gone. Will you?"

"I promise, Erasmus," said Chang softly.

Van Hooten opened the door of the cabin. He glanced down. The plane had turned back, and was now over the centre of the mass. With a shudder, he leaped out. The watching men saw his body hurtle through the air and strike the wet, leathery mass a hundred feet below. For an instant it lay there, then it was engulfed by a quick movement of the mass.

For half an hour the plane circled

idly around, while the men awaited developments. Suddenly, there was a change in the surface below them. Huge billows of flesh rose, then sank back. Wave-like undulations ran back and forth across it. Great pockets opened, then closed again. At last, a pocket opened at the place where Van Hooten's body had disappeared, and from the interior of the monster was spewed out a mass of corruption which rose like a fountain in the air, then fell back on to the surface. The mass writhed again, then sank suddenly beneath the waves. The plane turned and made its way back to the landing field.

The final chapter can be written simply by quoting from the log-book of the U.S.S. *Concord* under the date of January 9th, 1948, six months after Van Hooten's sacrifice.

"Steaming east on North Atlantic track. At 9.05 a.m., at about latitude 40° 10' N, longitude 52° 41' W, a mass of dark-grey matter, estimated at fifty yards in diameter, appeared off the starboard bow. The mass gave off a vile odour, like that of rotten meat. It was shredding at the edges and rapidly decreasing in size. Ship lay by to watch the phenomenon. The mass slowly disintegrated until, at 3.16 p.m., it was less than twenty feet in diameter. Remainder sunk slowly, shredding off fetid matter rapidly. It is thought to be the last remains of the huge body of Van Hooten's cells which so disturbed oceanic travel last year."

"CITY OF SINGING FLAME"—No. 10's BEST STORY

According to Readers' Reactions, the order of popularity of the stories and features in our last issue was as follows:—

1. City of Singing Flame (Clark Ashton Smith).
2. The Man from Earth (John B. Harris).
3. Worlds to Barter (John Beynon).
4. Missionaries of Mars (Stanton A. Coblentz).
5. The Lunar Missile (Couetts Brisbane).
6. War in the Future.—*Search for Ideas*.
7. Readers' Reactions.

THE WORLD OF TO-MORROW—*continued from page 5*

The country, set free by rational city planning and the disappearance of surface transport, will be available for recreation and for those wishing solitude. A small part of the land may be used for agriculture; but food, which will differ from ours only in better cooking and variety, will be produced by chemical synthesis. All transport will be through the air, or above it: rockets will be used at first, but be superseded by more efficient, if less spectacular, methods of propulsion.

The development of atomic power (already almost upon us), will give man almost complete control over Nature, put space-travel on an economic basis, and open up the Solar System and the nearer stars for exploitation. The resultant tremendous widening of man's horizons will be the greatest single factor in civilisation, inaugurating a new and mightier Renaissance whose ultimate end is utterly beyond our farthest vision.

Whatever the organisation of the social system, working hours will be reduced to vanishing point: the machine will have set man free from the curse of Adam, and if he uses his leisure wisely, he can build a new Eden. Art and sport will discover new means of expression; music will be revolutionised by electronics, the visual arts by such means as fluorescence and polarised light.

And man himself? Physically, he will have altered little, save for the better. He will be taller than us, and a great deal healthier, both physically and mentally. His life will be longer and infinitely more varied: he can go from world to world as he pleases, enjoy pleasures no earlier age could have imagined. And before him lies a future unclouded by any fear of danger, stretching unbroken until the death of the stars, still thousands of millions of millions of years ahead.

THE world of 5000 A.D. is visualised by Mr. Fears, who takes us on a trip to see its gigantic cities

towering miles into the stratosphere, their overhead roads piled to a height of twenty storeys. Along these roads flash bullet-shaped cars, at a terrific speed, driven and controlled by power transmitted from a distance. Their occupants wear suits of fine-spun quartz which allow the beneficial ultra-violet rays of the artificial lights to reach the body.

The next thing we notice is the large number of metal automatons, which do all the necessary work, attending to the vast number of other machines and effecting any repairs. All manual labour is done by these robots, which are directed by their masters from a control-desk; for although science has advanced to an astounding degree, in this machine-mad world, they still need a human mind to make them function.

We enter one of the buildings, and first see the atomic power-plant, which is of very small dimensions: seven pounds of calcium is sufficient to supply the whole building with power for twenty years. Then a high-speed lift flashes us to the top of the building, where clouds are unknown and the Sun is always shining. Every room is equipped with radio and television; and in some of them there is, in addition, a box-like arrangement which provides the residents with any food they require. There is a similar apparatus elsewhere in the building, where the food is dissolved into pure energy and transmitted to the receivers, which recombine it in its original form.

By this time, Mr. Fears believes, man's methods of dealing out death and destruction will have become so dreadful that, even had he not learned the futility of war, he would not dare to attempt such madness. By now, too, all the planets will have been colonised, great cities established on Mars and Venus, and a flourishing commerce between the worlds.

READERS' REACTIONS

Readers are invited to write to the Editor stating their opinions, frankly and concisely, on the merits of each issue of TALES OF WONDER, or upon any subject arising out of its contents. Address your letters to TALES OF WONDER, The Windmill Press, Kingswood, Surrey. If a personal reply is desired, a stamped, addressed envelope should be enclosed.

MR. SMITH'S STYLE

TALES OF WONDER No. 10 was not bad; though, when I first laid my eyes on it, I thought it was "Fairy Tales" or something. The colours of the cover painting were the only thing nice about it. Turner evidently didn't like Roberts' impression of the Hall of Flame, for he drew a different one of it inside the magazine. I note that everyone in "Readers' Reactions," in this issue, wants a better cover and interior illustrations—me, too!

Now for the stories. It is rather hard to put them in order of merit, but I think John B. Harris comes first with "The Man from Earth"; then, possibly, Clark Ashton Smith's "City of Singing Flame." I had wondered what it was that I did not like about Smith, and I've discovered now that it's his style: it's too ornate. I don't know how many words there were in this story of which I didn't know the meaning. But I dare say flowery language was necessary for such a story.

"Missionaries of Mars," by Stanton A. Coblenz, as you admit, was not very original; nevertheless, quite entertaining. John Beynon's "Worlds to Barter" helped to fill up the magazine, and last comes Coutts Brisbane's "The Lunar Missile." When *will* you cease printing this hackneyed type of story, and all stories by this author? I'll bet it's voted the worst story in the issue.

When are you going to give us another *original* and unusual story, like Temple's "The Smile of the Sphinx" or Hall's "The Man Who Lived Backwards"? You might also give us a smattering of humour in some of the stories. And I don't like you printing two stories by the same author in one issue—John Beynon and John B. Harris are the same person, aren't they? (*They are; but he is our best-liked author.*)
—EDITOR.)

The cover of your previous issue was a mess! Chase Caney away. Thanks, however, for putting the artist's (?) name on the contents page. The only bad story was Coutts Brisbane's "The Planet Wrecker," which was as hackneyed as they make them. I thoroughly enjoyed "The Red Dust," which was just as good as "The Mad Planet." "The Invisible City," by Clark Ashton Smith, was quite good, too; and if it wasn't for the lack of originality in Stanton A. Coblenz's "Men Without Shadows," it would have been the best story in the issue. These three stories are rated equal.

It's all right having a competition occasionally, but I don't like having *Search for Ideas* every quarter. If any of your readers have good ideas, let them write them into a story or, if they aren't good writers, pass them on to your authors. Oh! I almost forgot. Keep Bennett and his ants out of the magazine.

I close with my signature sentence: I want more Eric Frank Russell, more

frequent publication, and better illustrations.—EDWIN MACDONALD, 25, Dochfour Drive, Inverness.

(We are sorry you don't approve of our Search for Ideas—and you are the only reader, apparently, who doesn't. We think our authors are quite able to produce their own ideas; and our readers seem to have welcomed the opportunity we have afforded them to disseminate their thoughts in this way, without need of literary talent.—EDITOR.)

THE DINGTONS AND THE WOTS

I HAVE been a reader of American science fiction for some years, and before that, gloried in Wells and Verne; so I am very glad indeed to see a British magazine on these lines—with improvements. I think the best story you have published, so far, is "The Mad Planet." It is written in good English, has fine nature descriptions, and exhibits a splendid knowledge of insect life, besides a vivid imagination.

There have been so many good stories that I shall not refer to them singly, but I do wish to protest against "The Venus Adventure," which spoiled a good idea in the telling. The Dingtons have been away from Earth for eight hundred years, yet are as well acquainted with Earthly matters as though they had left our planet yesterday, use the same idiom, know all about the latest inventions, and so on.

Moreover, why should the grotesque Wots be descended from a Puritan? Is it a Puritan trait to go about in the nude, breed promiscuously, practise cannibalism, and so on? If the respectable Dingtons had descended from the Puritan, there might have been more sense in the story.

Now, a few suggestions: I have always thought more use could be made of ancient myths in these tales of wonder. What about a series featuring a hero of the Siegfried, Thor, or King Arthur

type? The weird atmosphere of those far-off days, with its monsters and giants, would be at least as fantastic as a planetary or end-of-Time story. Suggest it to one of your authors, will you?

I like humour in fantastic stories; but don't follow the example of some American magazines by filling your pages with vampire women. They are merely disgusting.—JULIUS HERMAN, Ph.D., 16, Le Rhone Mansions, Regent Road, Sea Point, Cape Town.

(We doubt if a story based upon myth could be classified as science fiction, which should have some basis in established fact. What do other readers think? We certainly have no intention of entertaining lady vampires in our pages. With regard to your criticism of "The Venus Adventure," the author, John Beynon, writes in reply:

Why should Mr. Herman assume that old Watson was a Puritan? He seemed to me a mentally unbalanced tub-thumper who gathered around him a crowd of people mostly suffering from the same kinds of delusions and obsessions—hence the Wots. The Dingtons, on the other hand, were descended from reasonable people who had only temporarily been carried away by Watson's oratory.

We regret we have not been able to accommodate your letter before now.—
EDITOR.

AUTHORS, PLEASE NOTE !

I THINK your ninth issue was one of the best, in spite of slightly curtailed contents. "The Red Dust," by Murray Leinster, was quite a good story of its type, though one criticism I level at this author is his lack of light and shade. I do not mean that there are no exciting incidents, or anything like that, but his writing is always on an even plane. I feel that, sometimes, he writes rather from necessity than conviction.

"The Invisible City" was an original yarn, seeming to indicate an influence of Merritt; very readable, and fairly convincing. I liked "The Planet Wrecker," too, though I prefer Coutts Brisbane when he is in a more humorous mood. However, this is a very good contribution to the explorations-of-Mars stories. I'm not sure that, so far as authors are concerned, it wouldn't be a bad idea to take note that Mr. Brisbane has now destroyed this planet.

"Men Without Shadows" was the best in the issue; also, the best story by this author that I have read. Apart from a few feeble moments, it has a bite and snap to it which I like, and contains some genuine satire. "The Insect Threat" was an orthodox article on this subject, and its variations are legion.

Now for my reactions to No. 10. In the first place, let me say how pleased I am that there *was* a No. 10 at all, and hope that paper rationing will not put paid to further numbers. Your selection of stories in this issue was pleasantly varied, but for some reason I found that certain of them did not altogether "register."

The best was "City of Singing Flame." Clark Ashton Smith always writes in English, at least, and his stories have a soothing quality which is very refreshing after some of the more strident efforts. Second, I place Coblentz's little tale: this author's earlier work is of finer quality than his present-day stuff. Third, Coutts Brisbane's "The Lunar Missile." To me, Brisbane's writing always has an original touch, even if his plots are nothing to write home about.

And now, a bone to pick. I don't think it fair to put two stories in one issue by the same author (John B. Harris and John Beynon are one and the same, I believe?), particularly when neither are very enthralling nor seem to represent this excellent writer in his happiest vein. I place "Worlds to Barter" fourth on the list, and "The Man from Earth" last. As for the feature, "War in the Future," I consider

this subject to be ill-timed, to say the least of it. Haven't we got enough on our hands at present? "The World of To-morrow" is much more interesting as a subject for speculation.

The cover caught the eye without wrenching it out of its socket, and was much better than that of the previous issue, which was pretty bad, especially the lower half!—JOHN C. CRAIG, 167, Stafford Road, Caterham, Surrey.

(We thought our Search for Ideas on "War in the Future" most appropriate at the present time. We used two stories by the same author in our last issue because we did not have another story available, at the moment, which was suitable for our purpose, and our readers have demonstrated that they cannot have too much of this writer's work.—EDITOR.)

PRAISE FOR TURNER

I AM glad to see that the reduction in the number of pages of TALES OF WONDER has had no effect on the quality of the contents of the sole surviving British science fiction magazine, the stories in the ninth issue all being fine. "The Red Dust" was top of the issue; Murray Leinster's description of the world of insects is very vivid and colourful.

I think "The Invisible City" ranks next in order; Clark Ashton Smith always tells an excellent story. Coutts Brisbane did a much better job in "The Planet Wrecker" than in "The Big Cloud," in No. 7. Stanton A. Coblentz must needs go to the bottom, though his satirical "Men Without Shadows" was by no means bad.

Smith's "City of Singing Flame," in No. 10, was much better than "The Invisible City." John Beynon's "Worlds to Barter" was a time-travel story with a different plot, and should more firmly establish that author's place as your most popular contributor. "The Man from Earth": just the kind of inter-

planetary yarn I like. Brisbane's story was more acceptable than his two previous tales in your magazine, but "Missionaries of Mars" was a re-hash of a plot that has whiskers on it—Coblentz can do better than that, witness "The Planet of Youth."

Now, to the question of art-work. Can't say I liked the cover of No. 9, but that of the latest issue is great. Roberts can produce cover paintings that look real, but are more scientific than the attempts of your other artists. By the way, could Turner paint a cover? He is doing well on the inside illustrations. His work is comparable with that of Paul and Finlay; he did some very good work for Leinster's two stories. Please let him have at least two full pages in each issue.

Three peevish: You still only publish quarterly—eight issues a year would be welcomed. You have left the number and date off the spine; and you still have that lurid red-and-yellow strip along the bottom of the cover.—D. J. DOUGHTY, 31, Bexwell Road, Downham Market, Norfolk.

(As you will see, we have hearkened to the many pleas for a cover by Turner, who, after some of the criticisms he has received, is gratified to hear that as many readers admire his work as dislike it. We wish we could give him more space, but it is very precious these days.—EDITOR.)

THE BEST AND THE WORST

A RECENT issue of TALES OF WONDER was the first magazine of this kind that I had seen, and I could hardly have wished for a better shilling's worth. I have since obtained every issue, and am eagerly awaiting No. 11. I was rather disappointed by the decreased size, and as yours is the only British magazine of science fiction, I hope you will soon revert to full-size and, if necessary, raise the price.

Like the majority of your readers, I

select John Beynon as my favourite author; though I liked Coblentz's story, "The Planet of Youth," as much as any of Beynon's. In the first issue, I considered "Invaders from the Atom" one of the best, and the ridiculous "The Prr-r-eet" and "The Perfect Creature" about the two worst tales you have published! "Sleepers of Mars" is another of the best you have given us, though it had a poor ending.

In No. 4, "The Menace of Space" was an excellent story; but I did *not* like "The Mad Planet," and the cover of No. 6 was not one that would have attracted me. In No. 7, the only strikingly good story was "The Venus Adventure," and "The Comet Doom," in No. 8, represented the best the author could do with a poor idea. Both the cover and stories of No. 9 were the worst you have produced so far: "The Red Dust," in my opinion, could only interest those who study insects!

The latest issue was, however, a great improvement, "The City of Singing Flame" being very good, as also was "Worlds to Barter." "Missionaries of Mars" was fair, but much better than the same author's "Men Without Shadows," in the previous issue. All the articles have been good, with the possible exception of "The Insect Threat." *Search for Ideas* is also interesting.

I enjoy "Readers' Reactions," but one of the best items so far included was the Book Review, and I only wish it would appear in every issue. I should like one thing more: better interior illustrations. With best wishes for the future.—J. A. BANCROFT WILSON, Park House, Paignton, South Devon.

(We are glad to have introduced yet another reader to science fiction, and to know that you are so enthusiastic about TALES OF WONDER. The paper position will, however, prevent us from reverting to our normal size for the duration of the war. Thank you for letting us have your Reactions.—EDITOR.)

THE INSECT MENACE

WE SCOTS have a proverb to the effect that "guid gear gangs in sma' bulk." Its application to the shrunken TALES OF WONDER is obvious, although the cover design of your ninth issue was so poorly executed as to make me fear otherwise. Of the "guid gear" in this number, Murray Leinster's "The Red Dust" was by far the best, though still inferior to that unforgettable epic, "The Mad Planet." It was overweighted with descriptive writing, and inclined to repeat itself in places.

It was not the sort of sequel I expected. From certain hints dropped in the earlier story, I had hoped for some account of the wonderful civilisation that would blossom when Burl and his kind were no longer even memories. Such a tale could still be written, and would be a complete story in itself, unlike "The Red Dust," which is a mere tailpiece to "The Mad Planet"—but, let me hasten to add, a most exciting and enjoyable tailpiece, in spite of its defects.

Next in order came "The Invisible City," a typical extravaganza in the Smith manner, with atmospheric effects produced by the liberal use of a rich, and sometimes archaic, vocabulary. As a tale, certainly of wonder, but not of super-science, it still rates high in my estimation; and I regret that it did not inspire your cover artist to paint anything more imaginative than the sort of scene that appears on nearly every cheap adventure story magazine.

Running a good third, we had Alfred Gordon Bennett's gloomy confirmation of the lurid picture painted in "The Mad Planet" and its sequel. But, in spite of this gifted author's first-hand knowledge of his subject, I cannot help feeling that he has let his imagination run away with him. In the first place, it is by no means certain that the Sun will behave, even in the distant future, as he says it will; and, in the second

place, even supposing that it does, it seems to me highly improbable that the earth will pass through another Carboniferous period as a result.

Add to these considerations the notorious inadaptiveness of the ants, whose rigid totalitarian society has not altered in the slightest since man first began to study them, and you have most of my reasons for discounting the insect menace. But unreal and fantastically remote dangers, if entertainingly dealt with, as they are here, provide an excellent antidote to the perils of the moment, which are only too genuine and immediate.

Lastly, we had Coblentz's timely satire, an amusing and thought-provoking piece of work, and Coutts Brisbane's "The Planet Wrecker," which might have been more credible if the hero had confined himself to interplanetary travel instead of trying his hand at interplanetary destruction as well. As regards the "Men Without Shadows," I am optimistic enough to believe that, if they made their appearance just now, the masses would be quite content to resign themselves to their pacific rule.

The cover of your latest issue is, in my opinion, the most striking you have yet put out; it breathes the air of pure fantasy and captures the spirit of Smith's haunting tale. Lettering, choice of colours, draughtsmanship—all were excellent. As for the stories, I am inclined to put Harris's "The Man from Earth" first, with "Worlds to Barter" a good second. The former is amongst the best short fantasies I have ever read, and its tragic ending moved me profoundly.

"Worlds to Barter" is hampered by the essential absurdities of its strange theme. For instance, if the people of the twenty-second century were transported to the world of the five thousand and twenty-second century, how did it come to pass that their own descendants were the inhabitants of that world? But it is a gripping, well-constructed

tale for all that, and no more implausible than most Time stories.

Next in order comes "City of Singing Flame," which every now and then achieved real beauty, only to slide back into the mass of pedantic verbosity. "Missionaries of Mars" was a good, average Coblentz satire; but I doubt if beings as advanced as the Martians would throw up their hands in horror at the habits of a backward race like ourselves. Still less would they be foolish enough to suppose that they could civilise us by compulsion. Even we are coming to realise that primitive peoples should be left alone to work out their own salvation, and surely this principle would be observed by Mr. Coblentz's marvellous Martians—and his Saturnians, too!—OSMOND ROBB, 107, Montgomery Street, Edinburgh.

(Reader Robb's commentaries on the contents of our magazine have almost become one of its regular features, and we do not begrudge the space we give to them, since we believe other readers find them just as interesting as we do.—EDITOR.)

POTTED OPINIONS

I HAVE nothing to say about issue No. 9," writes JOHN M. LUKENS, 18, Ellerdale Road, Hampstead, "beyond the fact that I lost a lot of sleep last week, reading into the early hours of the morning, completely oblivious to everything but the absorbing stories—in particular, 'The Red Dust,' by Murray Leinster." He suggests that readers should bind their copies of "this excellent magazine," in order to preserve them for years to come: then, "as we look back on Tomorrow, watch the performing bacilli at the circus, and take our monthly season ticket to Mars, we can say to our grandchildren: 'We knew all about these things way back in the thirties—look at these magazines!'"

L. BANKS, 15, Graham Street, Swindon, Wilts, sends "a few brick-bats and

bouquets" in respect of the last issue, asks for more stories with a biological basis, and inquires why John Russell Fearn has disappeared from our pages—"a story by him would be very welcome." He declares that TALES OF WONDER "stands up very well against the best of the American magazines, except in the matter of illustrations," and gives us a big "thank you" for "keeping the British flag flying in spite of the war."

T. CHAPMAN, "Arundel," Frog Grove Lane, Guildford, Surrey, describes our magazine as "a very good piece of work. The format is just as it should be; the contents better than average throughout, with occasional flashes of brilliance." Though he feels it lacks the "oomph" of our American contemporaries, he adds: "Still, that's nothing to go by." He does not attempt to criticise any of our stories, but suggests we might substitute one long story for two of our "shorts".

BOB TUCKER, P.O. Box 260, Bloomington, Illinois, U.S.A., sends us an expression of appreciation and thanks for Clark Ashton Smith's "City of Singing Flame," and says of our covers: "They are refreshingly different from anything we have here. It is a change and a relief to find a cover that does not have two or three naked ladies bottled up in glass jars, or in which some guy in uniform is blasting away at some monster." Turner's illustrations, he thinks, are "infinitely superior to those of several of the magazines here, carrying new or unknown artists."

DENIS H. CREEGAN, 87, Ardington Road, Northampton, enjoyed "Worlds to Barter" most of all, in our last issue. "John Beynon," he declares, "has an inimitable way of softening the unemotional exactitudes of science with just sufficient flavouring of the joys and sorrows of human emotions." He found "City of Singing Flame's" unusual theme spoilt by the writer's "resort to super-fantasy," and wants us to keep this out of our magazine.

AUTHORS' CORNER

Planets and Dimensions

By CLARK ASHTON SMITH

IN WRITING fantastic science tales, two themes have attracted me more than others, and have seemed to offer the amplest possibilities and the deepest stimulus to imagination: the interplanetary and the inter-dimensional themes. Among those of my stories that can be classed, more or less accurately, as science fiction, the majority have dealt either with worlds remote in space, or worlds hidden from human perception by their different vibratory rate or atomic composition.

I am glad that my tale of life on Venus, "World of Horror," found favour with many readers of *TALES OF WONDER*. I hope to return presently to this type of story, which, though exploited by so many authors, is still rich in unsounded potentialities. Indeed, there are no limits to their development except those of the writer's imagination. Here, however, lies the difficulty, since it is impossible for one to conceive forms and conditions of life, matter and energy that are wholly diverse from all terrestrial states and forms.

And yet, when one considers the fantastic variations of life on this one tiny planet, there seems little reason to presuppose that life on other worlds will necessarily repeat, or even resemble, the types known to us. In future ages, when space-transit has become a reality, our wildest fictions may seem feeble and commonplace beside the fantasies of Nature itself that explorers will discover on alien globes.

Among my several inter-dimensional stories, I think "City of Singing Flame" is the best. I owe its inspiration to several camping sojourns amid the high Sierras, at a spot within easy walking distance of the Crater Ridge described by Angarth and Hastane. The Ridge is a wild, eerie place, differing wholly in its geology and general aspect from the surrounding region, exactly as pictured in the story. It impressed my imagination profoundly, suggesting almost at first sight the contiguity of some unknown, invisible world to which it might afford the mundane approach and entrance. And, since I have never explored the whole of its area, I am not altogether sure that the worn, broken column-ends found by the story's narrators do not really exist somewhere among the curiously shaped and characterized stones that lie in such strange abundance there!

All fantasy apart, however, it seems to me that the theory of interlocking worlds is one that might be offered and defended. We know nothing of the ranges of vibration, the forms of matter and energy, that may lie beyond the testing of our most delicate instruments. Spheres and beings whose atomic structure removes them from all detection may float through or beside the Earth, no less oblivious of our existence than we of theirs. Transit between planes of space, though filled with obvious material difficulties, is at least more readily comprehensible than time-travelling.

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