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HUGO GERNSBACK Editor

"THE MOON DEVILS"
by John Beynon Harris

25¢

VOL. 5, NO. 9 WONDER STORIES APRIL 1934


**Vol. 5, No. 9** **TABLE OF CONTENTS** **April, 1934**



ON THE COVER this month we see the hostile creatures of the moon storming the spaceship from Earth, intent on its destruction. (From "The Moon Devils" by John Beynon Harris.) Cover by Paul.

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VOLUME 5
No. 9

WONDER Stories

APRIL
1934

. . . . Prophetic Fiction is the Mother of Scientific Fact . . . .

HUGO GERNSBACK, *Editor-in-Chief*
CHARLES D. HORNIG, *Managing Editor* FRANK R. PAUL, *Art Editor*
C. P. MASON, *Associate Editor*

# THE SCIENCE FICTION LEAGUE

## *An Announcement*

**By HUGO GERNSBACK**

IT may be said that science fiction, as a popular movement, has finally arrived. While science fiction, as such, is not new (but goes back to Edgar Allan Poe, and even further) the vogue of science fiction has steadily gained new followers in every part of the world. Today, interest in this subject is international in its prevalence; because there is no country where it is not known. In America, there are now actually thousands upon thousands of active fans, who take the movement as seriously as others do music or any other artistic endeavor. Many fans collect science fiction stories, as philatelists collect stamps. Research is being conducted by others to find the titles of the many obscure science fiction stories which have appeared in print, since the beginning.


With such a vast movement, the writer, who has been watching it since he launched his first science fiction magazine in April, 1926, now feels the time is auspicious to coördinate all who are interested in science fiction, into one comprehensive international group. The name of "SCIENCE FICTION LEAGUE" has been adopted as the association's title. It is to be hoped that this new LEAGUE will in due time become the parent organization of innumerable local science fiction clubs throughout the world.

WONDER STORIES will be the printed medium through which the activities of the LEAGUE will be published and discussed from month to month.

It should be noted that this announcement is simply a preliminary one; and that the full details of the entire organization, its by-laws, etc., will be found in the next issue of WONDER STORIES.

The SCIENCE FICTION LEAGUE is a non-commercial membership organization, without dues or fees of any kind. It is purely a literary, scientific organization for the betterment and promotion of scientific literature in all languages. Anyone who is interested in science fiction can become a member of the new LEAGUE. There will be a number of honorary members, whose names will also be published in the next issue of this magazine.

The LEAGUE will not derive any financial profits from any of its members. It will, however, sell at cost, a number of insignia which, it is felt, will enhance, not only the standing of the LEAGUE but the popularity of science fiction as well. These items, to mention only a few, will be lapel buttons bearing the LEAGUE'S identifying device; standard emblematic letterheads for members; emblematic seals to be fastened to stationery; envelopes, etc.

By these means, the founders of the LEAGUE are convinced, the exchange of ideas and information between members will be stimulated, and new members will be gathered into the fold in increasing numbers, as time goes on.

The emblem of the LEAGUE, which has been finally decided upon, is shown on this page.

Watch for complete details in our next issue!


*(Illustration by Paul)*

**Fascinated, I stared at the monster for several seconds.**

# THE LAND OF MIGHTY INSECTS

## BY A. C. STIMSON

**● Lively, absorbing adventure and accurate science are the two most important things in science-fiction. The present story contains plenty of both these necessary qualities, making it a gem in itself.**

**Through reading this story, the reader will learn many facts in myrmecology, entomology, and zoology in general. There is nothing technical in the story, and all science is so diluted with action and adventure that it never becomes boring.**

**We are taken to a hidden land beyond the polar regions where terrible monsters create a kingdom of peril—monsters that we know only as harmless insects.**

● I have just returned from a visit, probably my last, to the bedside of George Tolliver. As I sit here tonight, only twelve hours before embarking upon a voyage into that weird polar world, I have decided to make public, in its entirety, my friend's diary. Fragments of this startling writing has, from time to time, been published; but the reading world of America has only seen such portions that have appealed to the egotistically distorted minds of a few jealous scientists.

Surely, I do not have to refresh the American mind with a history of the ill-fated *Hasard* and her crew of sixty; the loss of these men is still too fresh in the minds of their countrymen. Nor must I dwell upon the malignancies that have been heaped upon the head of the man who recently was found, clinging to the wing of a 'plane, far off the shores of the South Shetlands. Since the scientific world's denial of recognition of this man, the press has played this so-called "Tolliver-hoax" to the best of their sensational ability.

But George Tolliver is very dear to me. As his room-mate in college, his guest thereafter in his palatial villa on the Riviera, and his boon comrade, as secretary during his famous Asiatic wanderings, I learned to know him as few men know another. I knew his loves and hates, his phrases, terms and by-words—his moods and fancies.

Never will I forget my amazement when he told me that he was going to outfit an expedition to the polar regions in an attempt to find more data in regard to living creatures inhabiting those climes. It was equaled only after he had told me that he was transferring his entire estate into my name so that I could act for him in any capacity while he was away.

"You know, Frank," he said, "I haven't any living kinsfolk and it will go to you and little George anyway, after I'm gone —so why not now?" Then with a quick laugh he added, "Oh, I'm coming back all right, and I'll see that you make a straight accounting for every penny. But just in case—"

Little George is my son, aged three, whose small fingers had entwined themselves among the heartstrings of the young bachelor to such an extent that no secret was made of the fact that the boy would inherit the Tolliver millions.

Eight months went by without a message from my friend, and then, on the fifth day of August, 1931, I received a cablegram from Montevideo. It was from George and begged that I spare no time or expense in an effort to come to him.

I immediately took passage for the South American port and there found the man who now lies in the Roosevelt Hospital.

Decidedly, there is, in his appearance, not the slightest semblance to the man I knew. George Tolliver was tall and

straight, with the shoulders of a well-trained athlete, while this man's head droops between two scrawny blades that would not honor the physique of a consumptive schoolgirl. In direct contrast to the deep-brown, laughing eyes of the man I knew, which gleamed beneath a mop of crow-black hair, the wild, maniacal orbs of this poor devil blink and stare through long strands of soft white fur that dots his head as he lies there screaming oaths, praying prayers—now to God Almighty, again to heathen idols—laughing and crying as he frightens or is frightened by hospital attachés.

Truly, I grant you, that this mere vestige of humanity that I have brought home from the cold, brutal polar region does not look like my friend, does not talk, laugh, or cry as did the George Tolliver of my memory. But I say to you that he is George Tolliver. I have read his diary. In it I find the same phrases, terms and by-words that were familiar only to him; I have questioned the boat-captain who found him as he clung frantically but tenaciously to the slight support that buoyed him upon the surface of the cold ocean.

He told me that Tolliver was rational for several minutes after the rescue but could only mumble through chilled lips the short sentences, "Tell Frank to hurry —tell Frank to hurry." That was all.

At the hospital in Montevideo, he was an enigma to the staff. Only the one time did he show signs of sanity and that day he inveigled a nurse to send me the cable. I found him as he is—an imbecile, madly clutching his precious diary to his breast.

With all the speed that his millions could command, I hurried him back to New York and then I began preparations for the rescue-expedition that I shall launch tomorrow.

So widely heralded has been the news of this expedition, that I need not describe my hopes. The sensational sheets of America have done themselves proud in their ridicule of my belief; so proud that every schoolboy must have heard of it.

The scientific world to the contrary, this man is no other than George Tolliver and his diary was written before terror and misery robbed him of his senses. My voyage may fail—the twelve million dollars that I have left in trust for the purpose may be expended without proof having been established as to the veracity of the Tolliver Diary, but I tell you that when those vast, desolate leagues of barren waste are fully conquered by explorers that will follow in his footsteps, when other men return with the same weird tales of the Land of Mighty Insects; when our modern machines of travel are so constructed that a trip to the South Pole will be but another tiresome tourist excursion, then, you scoffers, will the name you deride today and vilify in your scandalous sheets fall into its rightful niche in the archives of glory, and the body of the poor emaciated creature that now suffers the tortures of the damned be resurrected from the lowly grave it soon must fill and placed beneath a monument that will be a Mecca for the learned of the entire world.

Reluctant as I am to fly into the face of so august a body as the Universal Society of Scientists who have been so bitter in their criticisms of my proposed expedition, I shall, nevertheless, publish this document *verbatim*.

And so tonight, in behalf of my afflicted friend, I raise the gauntlet. I shall make public such a narrative that, however it may shock the sense of reality—impinge the teachings of evolution—overthrow the theories of a Darwin—challenge the religion of an egotist—though it may do all these things, I publish it with the firm belief that it ultimately will be accepted as the true chronology of a Columbus; aye, even an Ericson.

### The Diary

● June 22nd — Aboard the dirigible *Research*.

Our take-off from the *Hazard* was made without a slip and we are traveling at the rate of one hundred and ten miles an hour toward the Pole. I chose for my crew Dr. Key, McFarland, Sitton, Whit-

ing, Bunker, Osburn, Flowers, Roark, Morris and of course, the two flyers, Reynolds and Brown. They will pilot the small scout plane that we will use for exploring around our base. I have supplies and ammunition enough to last us for three months, although I do not intend to stay a quarter of that time before returning to the *Hazard*. All advice to the contrary, our little plane is riding beneath us in perfect form, and I am more than glad that I accepted Brown's advice and used his plans for its carriage instead of allowing it to proceed us on its own power; we will save much fuel and have a perfectly tuned engine with which to explore around the base after we have landed the *Research*.

● June 26th.

I shall attempt to describe the wondrous happenings since making my last notations, but hardly know how to proceed.

It all seems so unreal, so fantastic and uncanny!

At two-thirty on the afternoon of the 22nd, McFarland, the pilot, shouted to me that we were approaching a huge mountain range, and on taking a position beside him, I was astounded to perceive the enormity of their height. A hurried consultation with Bunker, whose knowledge of cosmology I highly respect, decided that we should attempt to cross the range and trust to fortune that a suitable landing could be made on the other side. It was this or abandon our exploration, for below us was only a vast desert of barren ice and snow with no place whatsoever to land.

God, how I wish that good old phlegmatic Mac could have prevailed upon us to turn back! He tried hard enough, but our younger blood called for adventure—but not such adventure as was to ensnare our very intellect.

Within a few minutes of our crossing the top of the range, we noticed that it was getting warmer; the snow was disappearing, and as we directed the course of the ship downward, we could see that there was no vestige of snow or ice at the foot of the range. A misty cloud enveloped the horizon to such an extent that, even with my six-power binoculars, I could not pierce its density. As we approached this cloud, its appearance was truly astounding. It hugged the ground and seemed to be actually animated as it billowed up and down. I can hardly describe its appearance, as nothing I know of bears a relative comparison to it; but we knew it to be no ordinary cloud.

Our curiosity soon gave way to frantic amazement, for, as the ship entered the peculiar formation, we were startled to feel the change in temperature.

We were actually hot! So hot, we were, that I ordered the portholes flung open, which order I quickly rescinded as a warm, suffocating, steam-like mass of vapor filled the ship.

"What do you make of it, Mac?" I coughingly inquired of the pilot.

"Damned if I know," he answered. "First time I ever ran into a hot cloud. If we weren't at an altitude of several thousand feet, I'd swear it was a geyser."

His guess, as usual, was correct. For, after reaching a higher altitude, which we immediately did, we discovered that the heat retarded in proportion to the height. Reaching an elevation of eleven thousand feet, we flew through the haze for the matter of about ten minutes in perfect comfort.

As great as our excitement upon entering the cloud, was our frenzied joy and intense happiness upon looking down at the terrain when the ship first broke from the enveloping vapors. Swiftly we nosed down for closer inspection.

Stretched out beneath us was a veritable tropical paradise. Great towering trees, green grasses, pleasant lagoons and winding streams d i s p l a y e d themselves to our wondering eyes. And, as we looked further, we could see that there was no horizon. Instead there was a huge, towering blanket of clouds that circled the several hundred miles of this unbelievable, tropical land, lying within a few scant miles of the Pole itself.

"Well, Mac, old boy," I exclaimed as

soon as my startled senses allowed me speech, "your geyser idea was correct. There's a belt of them around this spot that has kept the temperature at an even tropical degree since the beginning, and we are the first men to breathe its atmosphere."

"Maybe," he replied and then asked if we couldn't moor the ship above a beautiful peninsula that jutted out into one of the many lagoons that dotted this strange country.

"Moor it?" I asked in surprise, "to what?"

He pointed out a gigantic palm tree that towered like a giant sentinel at the point of the peninsula and I was quick to see the possibilities. This was much better than I had anticipated. My primary scheme was to slowly release the gas from the bag until the car was some twenty feet above the ground and then disembark, but the danger from high winds with the dirigible so close to the ground made this scheme a dangerous one, and I was glad to accept the alternative that would allow us to moor the bag at least ten times this height.

The perilous task of mooring was completed without casualty as was the equally dangerous disembarkment, which we accomplished on the following day.

Well knowing that a land so rich in vegetation must rear an animal kingdom in relative proportion, my first orders were to the effect that no man should stray farther than a few hundred feet from the *Research* and my first actions were an attempt to establish a secure retreat upon the ground. So far, the only signs of life that had attracted our attention were small, bat-like creatures that flew high up among the branches of the primeval trees in swarms of thousands.

Several hundred feet back toward the neck of the peninsula stood a clump of gigantic trees equal in height to the sequoias of California but shaped as the coconut palm of Florida.

My idea was to search through this clump and find a tree that had hollowed sufficiently to accommodate the whole of the party; barricade and provision this retreat so that, should the occasion arise, we might withstand the onslaught of an attack by any of the animals that might inhabit this weird country.

With this idea in mind, I asked Sitton, Osburn, Flowers, and Morris to get their high-powered rifles and accompany me on a search. I picked them because each had been highly recommended by the curator as a marksman and they were not strangers to big game hunting, all having hunted through portions of Asia, Africa, and South America.

Sitton, who had guided no less a celebrity than Roosevelt, I appointed guide and admonished him to use every precaution possible to prevent the hazard of our party being surprised by the denizens of the forest. Just what I feared, I am unable to define, but common sense led me to believe that such a primitive forest was certain to contain monstrous creatures.

Silently and alertly we crept through the luxurious flora, Sitton several feet ahead, and I, followed closely by the others. Suddenly our guide stopped and motioned us up. He was closely scanning a saliva-like rope that hung down from the lower branches of one of the huge trees. It was about one-half inch in diameter and seemed to grow from the root of a neighboring tree.

"Careful there, Captain," he warned me as I started to grasp it, "the damn' thing may be alive. There's several more of them over there. If you'll look up in the tree, you'll see that they spread out like a spider's web."

Before I could follow his instructions, I heard a shout from Flowers.

"Holy God, men, come back — come back! Don't stop to look. It's right over your head!"

● Both Sitton and I dashed back, but Osburn stumbled and fell full across two of the devilish tendrils. As he frantically tore at one that seemed to bind his legs, he toppled over into another. I could see that the rope seemed to adhere to his clothes and body as if it were made of a

powerful cement.

"Look out, Captain, you're in one!" But the cry came too late. I was running full tilt and felt my foot jerked from beneath me as if I had been lariated. Regaining my feet was but the matter of a moment; but jerk, pull, and strain as I would, I could not release the entangled member. It was like trying to break a large, soft rubber cord.

I heard a shot and then I saw it!

Once, as a child, I had seen a grotesque monster cartooned in a foreign magazine, depicting a highly imaginative artist's idea of Sin. This horror was wont to visit my dreams in awful nightmares. Night after night would I startle the household with my childish cries of terror.

What I beheld now, not as a dream—unless this fearful past four days of hell is all a dream — but as a fearful, awful reality, was the personification of that cartoon; only raised in terms of horror to the *nth* degree.

Swinging about fifty feet above my head from its spinnerets, was a spider—my God, what a spider! Its cavernous mouth agape divulged the terrible mandibles, spasmodically working against each other with a grinding, crunching sound. The creature was about the size of a full grown cinnamon bear and nearly the same color. Its eight closely knit eyes shone with sparkling luster as they reflected the rays of the sun through the palm leaves, and the continuous movement of its eight four-foot legs were like the threshing of a windmill.

Fascinated, I stared at the monster for several seconds and then realized that that was what one of the men had shot. This realization recalled my senses and I reached for the hunting knife that I carried in my belt.

The web was of about the same consistency as that of the rubber used for auto tubes and it was the work of only an instant to release myself, leaving some two feet of the horrid coil still attached to my foot.

Poor Osburn had not fared so well. During the few seconds' interval of my captivity, in which the attention of both Sitton and Flowers was distracted from his horrible plight, another such monster had silently answered Osburn's tugging of its signal cord by lowering itself and seizing the unfortunate man in its formidable mandibles and was now half-way up on its return to the top of the tree. The inert form of our comrade was held in its deadly embrace closely against the hairy breast of the awesome creature, which used only its back pair of legs to propel itself upward. We saw, with sickening terror, that one leg of the man had been separated from the trunk and, as a torrent of blood sprayed from the wound, the beast paused in its journey to satisfy a hellish thirst.

Gripped in paralytic fear, we breathlessly watched the devilish spectacle; and then, as the spider shifted the body of the man for a more secure hold, we saw Osburn's face!

I shudder now to recall the frightful look of frozen horror that suffused the countenance of Sitton as he stared at the bleeding, twisted face of the man that had been his companion since Roosevelt's Brazilian Exploration.

"Captain, I've got to shoot—he's dead now and the fall won't hurt him and I can't see that damnable spawn of hell get away!"

"Shoot, Sitton. Shoot!" I heard myself shriek. "Shoot before it gets away!"

With the report of the gun again came that same champing and gritting of the mandibles and, as the magazine of the high-powered rifle was emptied into its head, the fearful legs of the beast began to quiver and shake, gradually increasing in momentum until the body of the man was at last detached from their grip and fell crashing to the ground.

"Stand back," I ordered the remainder of the men—Bunker and Roark had come running at the sound of the first shot—as they started toward the mangled remains of their strickened companion. "Be careful in handling the remains of the poor fellow, for if that thing's venom is present in the same proportion to its

size, great care must be taken to keep from touching anything that might have been poisoned!"

As three of us stood guard against the depredation of other spiders that might attack. Sitton and Bunker carefully removed the body and we sorrowfully buried it in the shade of some twenty-foot fern plants that grew at the edge of the lagoon.

### The Caravan of Ants

● Tuesday, June 28th.

Am still unable to believe that I am not in the grip of some horrible nightmare. Everything seems so unreal. Great massive nocturnal creatures make the nights a perfect bedlam of inferno, as they crash and thunder through the primeval territory that spreads itself beneath our only haven of safety throughout this devilish land—I mean the *Research*. For, since the tragic ending of our attempt to establish a ground retreat, we have decided to concentrate all our forces and supplies on board the dirigible.

Mac killed one of a flock of reptilian birds yesterday, and we discovered a tribe of the only animals that we have thus far seen. Stationed at the helm of the dirigible, Mac was scanning the lofty tops of a clump of gigantic palms that grew at a distance of about a thousand feet back from the shore of the mainland opposite us with his binoculars. His startled cry brought me to his side, and as I focused my glass on the spot he indicated, I soon perceived the cause of his amazement.

Crouched in the fork of a towering monarch of the forest, was what, to all appearances, seemed to be a human. Naked it was, and hairless. But, more startling still, it was white — not the flesh-tinted color of the Caucasian, but of a milky hue; and, as it turned so that I could descry its facial features, I saw that it was an albino, even to the pink eyes. Closer scrutiny disclosed any number of these strange creatures clinging to the small branches and wandering along the gigantic limbs of their environ.

Amazedly we watched their actions. Unlike the true monkey-tribe, their movements were the slow, studied actions of the tree-sloth and they seemed to be gathering segments of tree lichens from the bark of the trees, which they deposited in natural pockets that aproned their abdomens.

A careful study of the vicinity failed to divulge any signs of the webs of the gruesome monsters that had so broken the morale of our entire party last Thursday. The huge rope-like webs flash and glisten in the sunlight with such brilliancy that I marvel that we had not noticed them before our tragic adventure of that day. Certainly, it was not without a shiver of horror that any of us can look toward the "Spider Den," as we have labeled that certain moat, and I had to severely reprimand Sitton to succeed in stopping him from wasting valuable ammunition which he was using in his telescopic rifle in an attempt to revenge the loss of his friend by sniping the gruesome monsters. Even, however, though the spiders may not inhabit these other islands of timber, other as ferocious creatures might, and it was with a feeling of great trepidation that I again embarked upon another excursion into this polar-land of monstrosities.

Again choosing Sitton for a guide, I allowed the two aviators and Mac to accompany us. Overriding the anxious pleas of Flowers, I commanded him to stay at the helm and keep a close lookout for anything that might attack us and to be ready at all times to cover our retreat with the machine-gun that we had seen fit to set up on the helm of the *Research*. We felt much safer with this protection, and it was not our intention to get out of sight or range of him.

Carefully skirting "Spider Den" to the right, we meandered around the neck of the peninsula and on to the mainland without any adventures worthy of note. Here we struck a rougher country to traverse. The small, short, scrubby vegetation grew much more rank and we found that we needed to cut a way through the five- or six-foot grasses.

Imagine our amazement when we fairly

stumbled into a well-worn road of a width of thirty or more feet.

"For the love of Pete, Captain," exclaimed Sitton, "look at that. Why didn't we bring a Ford? What a road! Not even a rock or stick on it. I've seen plenty of savage country but never one that had a swell boulevard like this."

"See any tracks?" I asked. But search as we would, we could find no signs of human or vehicular tracks in the soft, white sand—only the tracks of some large, unknown beast. These were innumerable.

"Huh, the damn' tribe is more educated than I thought," again voiced Sitton. "They ride some sort of an eight-legged beast. See?" He pointed out an individual spoor.

At that moment, we heard the tramping of an approaching cavalcade. It was coming from around a bend in the road.

"Quick, men," I cried, "jump into the grass and don't breathe!" As I saw Brown cock his rifle, I added, "For God's sake, don't shoot unless you must! We don't know what we're up against. Can Flowers see us?"

"Yes, sir," hastily answered Brown. "At least, I can see him."

And then the caravan came in sight. I heard a gasp from Brown and saw him crumple to the ground at my side. Well knowing that a movement now meant a certain exposure, I signaled to Whiting to remain inert and did not attempt to lift him and then turned my full attention to the strange procession that was advancing at the rate of about thirty miles an hour.

To first appearances, they seemed a caravan of small, long, black automobiles, so smooth was their gait. But, as they drew abreast, I saw them in their true significance. My theory of the Land of Insects was proven, and with pounding heart and bated breath, I stood a matter of twenty feet from the edge of their line of march and watched these ponderous, immense representatives of our modern ants, parade. Fully six feet in length, they were the exact replica of the large tree-ants that swarm among our oaks at home.

"Don't make a sudden movement, men," I shouted above the thunder of the heavy tread. "They are huge ants, blind, or nearly so, and deaf to anything but ground vibration. Watch out for their antennæ, though, if they stop and begin to investigate. They are directed entirely by that organ!"

About twenty or thirty of this vanguard passed us and then there was a break of several hundred feet in the procession. As the first of the second unit appeared, I was prepared to witness the slave-ants with the baggage of the train, for I knew that the van of the usual ant-foraging party was always the guards and warrior ants, but I was not prepared for the shock that I suffered when I was aware of the material of this baggage.

Dormantly, even sleepily at times, lying between the massive, two-foot mandibles of each of the giant insects, was the lax body of an albino human, if I may so term the creature that represents the race of mankind in this dreadful land. Their grotesque features were those of a deformed imbecile, the same drooped, grinning mouth and wasted, protruding teeth; abnormally large nostrils almost hid from view the tiny close-knit pink eyes and a total lack of hair, even on their heads, makes me hesitate to classify the creature as man. The speed of the column continued unabated for several minutes, and as a sense of security began to surge through my being, one of the monsters slipped from the line of march and stopped immediately in front of the inert form of Brown. I saw at once the cause of its hesitation. Its burden was slipping and it had merely stopped to get a better grip.

All would have been well if the idiotic man-thing had not perceived Brown—but it did. As the ant attempted to renew its hold, this creature aimlessly slipped from its clutch and advanced directly toward the unconscious aviator. The ant flicked its antenna this way and that, and I was horrified to see it touch Brown's face. Then, before we could gather our thoughts together, it quickly snatched him

up and joined the terrible ranks of its fellows.

I was just in time to keep Whiting from firing a random shot into the formidable army. I realized that such an action would gain us nothing and might excite the warrior ants to action, while I equally realized that Brown's unconscious condition might save him. I built these suppositions upon the hopes that the men-creatures in this strange world were to the gigantic ants as the aphids are to the ants of our climate. He would probably be taken to the top of the tree that we had come to investigate and turned loose among the idiotic tribe that we had seen from the *Research*. That he was safe from any harm from such low-developed creatures as these aphidmen, I felt quite confident. The features of the specimen that was now leering into my face substantiated the supposition.

Its curiosity satisfied, it slowly ambled out into the side of the road, and, as Sitton crudely puts it, "flagged a ride!" While I do not think its intelligence is of that high a caliber, it certainly was "picked up" by the first unencumbered slave-ant that passed. I believe that it was merely following the lines of least resistance with no thought whatsoever, purely the instinctiveness that guides it to seek the protection that the mighty insect affords its cattle. In other words, the same situation that the aphid seeks in its relation with our ants. Without this protection, no creature as soft of flesh and shy of mentality as these grotesque progenitors of humanity could possibly survive the onslaughts of so cruel an age.

With the passing of the rearguard of warrior ants, numbering about the same as the vanguard, came the thought of the rescue of our comrade, an intrepid airman and a wonderful student but too imaginative for this trip. I had known that he was sensitive but did not dream that he would faint. Now when he regained consciousness high up in the top of a primeval tree with only the company of these men-creatures and gigantic, if friendly, ants—how would he react?

My plan of rescue was simple. Luckily, he was an airman and well inured to heights. Also, he had done some stunt work in conjunction with Reynolds. We would return to the *Research*, launch the small plane for the first time, and let Reynolds fly over the tree-top with a drop rope and again duplicate their stunt that had caused many sedate old Kansas farmers to ponder on the ways of the younger generation.

Our return was uneventful and we immediately set about launching the plane. Under the capable supervision of Reynolds, it was lowered to the ground and made ready. In the meantime, Mac, from his position at the helm, had persistently kept a steady look-out in the tree for an appearance of Brown, and just as Reynolds was preparing to take off, he shouted that he had found him.

"Does he know the wig-wag system, Reynolds?" I asked.

"You bet he does, Captain. Just wig-wag him to crawl out to the topmost branch of that tree and then tell him what I'm up to and we'll both be back here before you can say Jack Robinson," was the hearty response.

As the doughty little plane roared the defiance of the Mechanical Age to the denizens of this awesome world, I thankfully watched the darker of a numerous band of beings climb higher and higher into the tiptop branches of the giant tree, as Brown received, understood, and obeyed my signals.

I here allow him to tell of his unbelievable captivity of a few short hours among the aphidmen.

### Brown's Narrative

● Captain Tolliver has asked me to write a synopsis of my few hours of captivity among the weird race of "aphidmen."

I have read his description of the beginning of the expedition to the road of the ants, and it is with a heart full of gratitude that I fully realize the debt I owe to his leadership that I am now safely back among my comrades.

I recovered from that inexcusable

weakness and sense of unreality that always follows a faint. The unreality of the situation highly intensified by the illusion —if it were an illusion—of an ethereal vision in form of a beautiful girl bending over me and stroking my head. Her soft, flaxen hair was her only covering and as its strands gently wafted across my face and her large, blue eyes deepened in concern and wonder, I made an effort to rise, but she uttered a low, stifled exclamation and slipped back out of my vision.

Bewildered, I struggled to a sitting position and tried to resurrect my dormant memory, and at last recalled the awful pack of monsters charging down upon us along that dreadful road. With this thought came the realization of my stupid weakness in fainting and I began an attempt to locate myself in relation to the present.

As I staggered to my feet, my amazement was unbounded when my startled eyes advised me of my position. I saw that I was among the branches of a gigantic tree and that the earth was several hundreds of feet below. While I dazedly looked out toward the *Research*, which I could plainly descry across the lagoon, I heard a movement below me. I glanced down and saw one of the aphidmen on a limb directly underneath me. He was complacently pulling a thick, short, moss-like growth from the limb of the tree, and with the same indolent motion of a very old negro cotton-picker, he stored it away in a natural pouch that grew from his stomach, which resembled the pouch of the female marsupials of our familiar world. Wider observation disclosed to me that I was among many of his kind. Every limb of the tree held one or more of these ungodly creatures.

As my brain frantically attempted to unravel the mystery of my sojourn among so weird a people, I had instinctively hidden myself behind a seven-foot leaf. I was horrified to see that my screen had also hidden from my view one of these strange creatures. It was slothfully approaching me from the trunk of the tree and its stupid countenance was set in an idiotic grin of discovery. At least, that was my supposition. I was in error, for the thing passed me so closely that I can yet imagine that I smell the noisome odor that arose from its protruding pouch. It stared with its small pink eyes directly into my face as I crouched back to allow it passage and did not even change its slow, lazy pace in passing. I later was to find that, added to their lack of any intelligence whatsoever, these man-like things are absolutely incapable of any voluntary passion such as surprise, anger, love, or hate. They are mere animated bodies without the instinct of the lower animals or the reasoning powers of mankind. A more ignoble creature cannot be portrayed.

Much relieved by the actions of the aphidman, I now allowed my mind to concentrate on thoughts of escape. To descend by climbing down the side of a tree with the diameter of thirty feet was impossible. Its closely fibered bark was ridged, vertically, as the palm. No vines or tendrils grew to the ground and I found myself pondering upon the outlandish scheme of attempting to build a parachute of the tremendous leaves.

I watched the *Research* until my eyes ached for some answer to the signals I waved with my shirt and at last decided that I was the only remaining living unit of the party that had started from there a few hours previous. The thought that the rest of the men had fallen prey to the terrible ants was now a conclusion that I can well be excused for forming. I knew that if any had survived, they would know my fate and at least communicate with me through signals from the *Research*.

Closer scrutiny of my environment divulged a peculiarly built structure high up in the topmost branches of the tree. This I would investigate, for I could not entirely convert my senses into believing that the girl had been an illusion. She was too finite in my mind and those sweet, tender blue eyes that had met mine in an instantaneous flash, must be real.

Therefore I began a tortuous, hazardous climb upward. My first fear of the

gruesome things in form of man soon gave way to a total disgust, and I avoided them now only to escape from the foul stench that arose from their pouches. Only once did I come in actual contact with one. This occurred as I unexpectedly clambered over a huge limb directly on top of one. Uttering a whining, whistling noise through its nostrils, it lay there beneath me perfectly inert while I disengaged one of my hands from within the cavity of its devilish pouch where I had inadvertently thrust it to sustain my balance. The contents of the pouch seemed to be of a semi-liquid mass of fermenting vegetation.

Disentangling myself from the inanimate limbs of the prostrate companion of my accident was but the matter of seconds, and as I continued to wend my way toward the structure, I could not help but notice the complacent manner with which it resumed its unhurried task of harvesting.

I had not advanced more than a few feet when I was startled by a low, ominous sound coming from beneath me, and upon looking down I was horrified to see the cause.

Great massive monsters—twenty or thirty of the same kind that had paraded the road— were climbing up the tree. Automatically, so it seemed, the aphidmen began a soft low chatter, comparable to the purr of a cat, and scampered, faster than I had as yet seen them move, a welcoming horde, toward their gruesome visitors.

Shrinking back as far out on the limb as I dared, I drew my pistol, and with whirring brain and shaking nerves, fought down the dreadful dizziness that I knew would culminate in a faint if I let it run its course.

When I fully recovered, I gazed upon an awesome spectacle indeed!

● Standing over the prostrate forms of these men-creatures were their gigantic insect-masters calmly stroking the upturned, idiotic faces of their slaves with the five-foot antennæ that grew from their heads. From the motionless form of the aphidmen came the same droning purr that had heralded the approach of the ants. Breathlessly, I watched their behavior and was further amazed to see that the repulsive aphidmen were feeding the monsters some substance which, with their hands, they crammed between the terrible mandibles of their masters. As the proceeding unfolded before my startled eyes, I learned from whence came the food—from the folds of their noisome pouches!

The feeding transpired for the matter of ten or fifteen minutes and then each man was carefully lifted by the mandibles of his master and the awful train departed with its human baggage.

Satisfied now that these beings in shape of men were nothing more or less than ant-cattle and also aware of how I had reached my present location, my thoughts again returned to the fairy-like elf that had momentarily appeared among the branches when I first revived. With this vision in mind, I again resumed my ascent toward the only cover that she might be hiding behind.

It was a long and tortuous climb, but at last I found myself upon the limb that supported the tree-house and about fifty feet from the house itself. But as far as actual entrance to it was concerned, my toilsome climb had gained me nothing, for the limb which held it was only about t' ·.ty inches in diameter and the portion of the limb that intervened between myself and the house had been sheered clean of any small branches that had normally grown from it. The acrobatic feat that needs must be performed to cover this distance was far beyond my power.

With keen delight, I noted the structure of the house, for I felt quite certain that the engineering ability that had erected it had been furnished by an intelligence far superior to that of the aphidmen. It was substantially fixed to the limb by great tendrils of vegetation and so closely thatched with the huge leaves of the tree that I found it impossible to catch a glimpse of the interior. I could easily

discern the outlines of a closed door but could see no windows whatsoever.

Greatly puzzled, I was racking my brain for a method of approach when I suddenly thought of a scheme to find whether or not the place was tenanted. The fruit of the tree was great clusters of large berries about the size of cantaloups but shaped and developed as the guava. I picked one of these and threw it against the side of the hut. There followed, from within, a hurried scuffling noise and the pyramidal top of the roof flew open.

Once again I looked into the beautiful eyes that I had almost allowed my common sense to thrust into oblivion. For an instant she stared down at me with a look of puzzled wonder on her doll-like face. Then, as I beckoned for her to come down to me, the wondering look gave way to a most lovely, child-like smile of understanding and she disappeared beneath the trap door to instantly show herself at the entrance of the lower door.

I caught my breath in pure delight as this fairy-like little Eve gracefully balanced herself in the doorway. But my anticipation of her obedience to my pantomimical invitation to join me seemed ill-founded, for the only response to my coaxings was a few softly uttered inarticulate vowels that drifted from her soft, full-blown lips as she puckered them in a vain attempt to transmit her thoughts to me. The utter lack of any sense of embarrassment due to her nudity, fairly decried her natural modesty and as the warm breezes played among the long, flaxen tresses as if assisting them in caressing the soft pink flesh, my thoughts took me back to the heroine of my boyhood dreams —thus, indeed, must that Norse Goddess, the gentle Sif, have appeared to the eyes of mighty Thor upon his return from an excursion into the land of the giants.

After many attempts to induce her to come nearer and when I was beginning to think that my endeavors were to be fruitless, she at last seemed to understand my wishes. With the poise of a trained wire-walker and the natural gracefulness of a dancing Pavlowa, she tripped toward me.

Arriving within a few feet of me, she hesitated an instant, and with childlike innocence studied my face. Seemingly satisfied with what she found, she had started to advance once more when, with a roar, the startling explosions of the plane smote her ears. For the fraction of a second, I had touched her hand, but as the roaring machine advanced, she darted back and now stood halfway to her hut and was directing all her attention to the plane as it circled for height.

Noting a look of fright for the first time to appear on her lovely face, I tried to make her understand that the plane meant her no harm, but all attempts to do so were frustrated as Reynolds gunned the plane down over us. Uttering a trembling little scream of terror, she ran to the entrance of her abode and standing in the security of its doorway, vainly signaled for me to follow suit. Then as the ship flew nearer, she hurriedly slammed the door and I saw her no more.

Elated as I was to see that Reynolds had arranged our old barn-storming stunt —I could see the dangling elastic rope—it was with great reluctancy that I again continued my upward climb. Reaching the topmost branch, I repeated the stunt that had first cemented Reynolds and me together as flying partners, and as I crawled up the patented rope that alone made the feat possible and once more found myself seated in the familiar cockpit, it seemed as though I had awakened from a weird dream—a nightmare—the ending of which had been a glorious vision.

My story of the girl was received with less incredulity than I had anticipated, but, quoting the Captain, we have long since ceased to doubt anything. We are in the land of the impossible.

We use every minute that we can spare in attempts to persuade the girl to answer our signals and I have cudgeled my brain in vain efforts to devise a system by which I can again visit her dwelling. I know of one which, while I shudder to think of it, I know I shall use as a last resource.

Thos. R. Brown.

### Peril Among the Ants

● July 12th

It has been a fortnight since I last recorded any notes in the diary, if I may so term the writings I have thus far set down. For during my present incapacitation, I have re-read the substance and must confess that it sadly lacks the dignity of a scientific instrument—rather does it tend toward the work of a Mandeville.

The climate remains the same; the mercury in the thermometer stands stationary at ninety-four; the sun, as it moves around its tiny orbit almost vertically above us, has not yet been dimmed by the shadow of a cloud. This, in itself, seems strange, as the geyser's steam should logically form above us, but the steady, soft southern breeze carries it northward and out beyond the heavy pall of vapors that surround us. That there is a rainy season is a foregone conclusion based on the prevalency of fresh-water lagoons and the verdant vegetation of this grotesque region.

After Brown's experience among the aphidmen, we kept the plane on the ground and have been very fortunate in that it has fared none the worse for its unprotected exposure. Accompanied by his equally intrepid companion, Reynolds, Brown has proven invaluable as a scout in exploring this wondrous country.

The day following his adventure, I was in conference with Mac, when Brown, flushed with excitement, burst into the office.

"Come out here quick, Captain, there's a squadron of scout-planes headed this way!" he shouted, and darted back toward the lookout position.

Reaching the helm of the ship, I was amazed to see a group of peculiarly shaped ships in the air, whose course seemed to be laid out directly toward us. They were flying low and about a mile toward the north. I quickly ordered Osburn to a position at the machine-gun while the rest of us grabbed our rifles.

The heavy drone of seemingly smooth-running motors was soon heard and we saw them circle for position as they neared us.

"Hell, Capt'n, them t h i n g s ain't planes," shouted Mac. "Don't y'see their wings a'movin' an' their heads an' all?" And to this startling announcement he added, "They're big old bumble-bees—that's what!"

The speed with which the flock was advancing made it very difficult for me to obtain the right focus for my glass, but when at last I did, I was confounded with astonishment.

"You are almost right, Mac," I answered. "Only they are not bees—I wish to Heaven they were—they are much more terrible; they are wasps!"

There were six of them, and as we prepared to meet their attack, they swerved from their course and began to circle the tree of Brown's adventures.

"My God, she'll never make it, Captain! Can't we do something for her? She was out on that top limb trying to answer my signals when I first saw those damned things! See her up there? That's why she was so afraid of the plane!" The agony in Brown's cry and the vehemence in his actions were well in keeping with his behavior since his adventure. He had done nothing but moon out over the gunwhale since his return. Turning an ashen face to Osburn, he pleaded, "Cut loose on them, Osburn, won't you? I know it'll take a lucky shot, but for God's sake, try!"

Osburn turned to me for authority and Brown saw my negative answer as I shook my head. The expenditure of ammunition with such a slim chance of a hit was out of the question.

Turning on me with the ferocity of a wounded beast, he let fly a volley of profanity and all but struck me with the rifle he held. Then, before any of us could stop him, he slipped to the ladder and descended to the ground.

I then realized his intentions and hurriedly ordered Reynolds to accompany him.

The mighty insects were still circling the tree-top as the plane took off. As I

again focused my glasses on them, I saw one swoop down and grasp the highest of the tree-dwellers in its clutches.

It was the girl, and my heart pounded with sympathy for her awful fate. I carefully watched for the cessation of the struggle, but even my powerful glass could not catch the lightning-like thrust of the wicked sting as it injected the paralyzing fluid into her blood stream.

As a youth, I had given some study to and much sympathy for the paralyzed victims that I had dug from within the gruesome chambers of the mud-dauber. That each was conscious of its fate was a fact that I had long since proven, at least to myself. I doubted not that such a fate as lying in this dormant, conscious state until the egg of the captor had hatched and its progeny begun its feast of a paralyzed, though living flesh, was one that this poor girl must suffer.

As the limbs of its victim slowly relaxed, I saw the gigantic wasp carefully fold the inert form in its awful embrace and, holding her with its two pairs of front legs, mount to an altitude of about fifteen hundred feet and then direct its course northward, speeding at the rate of about a hundred and fifty miles an hour.

In the meantime, the plane, with Reynolds at the controls, had sighted its quarry and was following at a distance of several hundred feet.

Not a shot was fired, and by this sign, I knew that Brown had decided to trail the monster to its lair and attempt a rescue . . . .

We were eating our evening meal, some three hours later, when we were interrupted by the sound of the returning plane and rushed to the side of the ship to welcome the fliers.

To our consternation, only one had returned. This was Reynolds. Slowly, he alighted from the plane and joined us.

Incoherently, he summarized the tragic story of the attempted rescue.

After following the wasp and its paralyzed victim a distance of seventy-five miles, they saw it alight and disappear into the entrance to one of six gigantic clay structures that were cemented to the face of a huge cliff. They circled above the top of the cliff until the huge insect emerged and winged its way southward. The plane was landed on top of the plateau and the two men peered stealthily over its edge at the nest that was a matter of thirty yards below them. Brown, over-riding the anxious objections of his companion, conceived a heroic idea of rescue. The elastic rope which had before been used in his escape from the tree was thrown over the face of the cliff and Reynolds breathlessly watched his friend lower himself to the awful dungeon that imprisoned the girl. This feat accomplished, he entered the fearful abode and instantly reappeared with a look of triumph on his face.

"She's alive, all right, old fellow," he called to Reynolds. "Make ready with the rope as soon as I get her safely tied to it. I'll fix the knot in the rope before bringing her out of the den."

But as he bent over the rope, a shadow swooped across the face of the cliff, and before a warning could be heeded, a mighty insect, burdened with the inert body of a monstrous spider, swept into the entrance of its home and Brown was all but precipitated from his precarious position by the tremendous current of air that the gigantic wings of the wasp created. Regaining his balance, he attempted to flatten himself against the side of the structure as the head of the wasp again appeared at the opening.

For an instant, it seemed to Reynolds as though the action might prove a safeguard, for the wasp slowly moved out of its door and stood motionless on the opposite side from where Brown crouched. Then it arranged its toilet in exact duplication of a cat washing its face, after which, for five nerve-racking minutes, it seemingly fell into a brief doze.

● Awakening from this *siesta*, it obeyed the instinct of all wasps and began a tour of inspection of its premises. As it began to slowly move around the structure in the direction of Brown, Reynolds

realized that his friend was lost unless he intervened.

But this realization came too late, for, simultaneously with the report of both pistols, the attack was launched. Reynolds could not definitely tell how many shots were fired by Brown before he received the awful injection of paralyzing fluid, but he was emphatic in his assertions that he had wounded the massive insect twice before the drowsy voice of his comrade forbade him to continue his fire.

"Don't shoot, old fellow," he was commanded. "Go back to the ship and bring the Captain. He knows what Dr. Key—" but the voice trailed off into the thick, inarticulate murmur of a very sleepy man.

As Reynolds finished his recital of the tragic incident, I recalled a short conversation that I had had with Brown in regard to insects and remembered that he had been very interested in the copy of Fabre's "Hunting Wasp" which I had seen fit to select as a portion of the small library on board the *Hazard*. I also recalled that Dr. Key was a party to the conversation and offered the suggestion that the paralyzed victim of the wasps might be resuscitated if the fluid with which he were injected could be withdrawn from his system.

A hurried conference with the doctor corroborated my memory and it was with a confused sense of elation, well mingled with anxiety, that I climbed into the cockpit of the plane and gave Reynolds his final instructions.

My plan of rescue was simple, that is, if these gigantic creatures ran true to form. From my youthful observations of the mud-dauber, I knew much of their habits and gathered from Reynolds' reports that it was about ready to begin the work of sealing up its home and to temporarily abandon its activities as a food-provider and enter the profession of a mason. Also, I knew that they had a one-track mind and, while assuming the duties of a mason, their instinct as a food-provider was dormant, for I had seen many mud-daubers pass opportunity after opportunity to seize a spider when the building instinct was foremost in its mind.

Reynolds' information that already many other victims were harbored in the ghastly chamber that contained our comrade, led me to believe that the owner was about ready to change its occupation and begin to seal the entrance to this chamber. Therefore, we would wait until we saw it enter with its first load of masonry before attempting to accomplish our purpose. In that state, we would be perfectly safe from the attacks of that special insect, even though we entered its home while it was working there. However, we needs must keep a sharp lookout for fear that a neighboring tenant might pounce upon us.

We circled over the plateau for several minutes and then I signaled to Reynolds to land the plane several hundred feet from the brink of the precipice. My chief worry, that we might be attacked in the air, had proven unfounded. We had passed so closely to two of the mighty insects that, I had first thought, only the remarkable airmanship of the pilot had prevented a conflict, but another collision had been diverted only because of the quick maneuvering on the part of the wasp. Reynolds, at the time, was devoting his attention to the instrument-board. I now felt confident that the habits of these ponderous progenitors of our common mud-daubers were the same as those that Fabre gave a lifelong study to.

Basing my entire hopes on the knowledge of the habits of the wasp of my youthful acquaintance, I planned to invade the very home of its monstrous ancestors. This sounds much more heroic than that which I knew the situation to be. That the insects were perfectly unconscious of any unusual happenings in or around their homes while they were building, I well knew. Had I not released captive spiders from an unfinished prison while the owner was after material and watched the returned jailer complacently seal the empty chamber? I had no reason to believe that these monstrous forefathers of theirs would behave differently.

My only danger, as I saw it, was that I should be observed by an empty-handed neighbor whose larder was not filled, before I had had time to enter the nest that contained Brown.

Since I had loaded the light Lewis machine-gun with the explosive type of cartridge, I felt fairly confident of their ability to disable even so hardy a creature. I had given Reynolds instructions to open fire on any neighboring insect that might come within range. We hurriedly set up the gun on the brink of the cliff and I began my descent along the rope.

Inexperienced as I was in the art of rope-climbing, my anxiety that no wasp attack me during the progress of the climb, entirely eliminated from my mind the fear of a fall. After I had completed three-fourths of the perilous journey and was feeling a sense of unusual security, my ears picked up the heavy drone of an approaching monster.

Suddenly it appeared and I was horrified to note that it was unencumbered with either the material of a mason or the spoils of a successful hunter. As it veered from its course toward another of the structures and headed directly toward me, I realized that I had been sighted and screamed to Reynolds to open fire.

● The sharp staccato rattle of the machine-gun was drowned by the heavy explosions of the bullets as they found contact with the monstrous insect, and then I found myself hurtling downward with more than half of the broken portion of the rope tightly clutched in my hands.

The fall was a short one, only a matter of ten or twelve feet, and I scrambled to my feet and watched the wounded insect fall past me in a series of clumsy, gyrating circles and land on the ground several hundred feet below in exact duplication of a 'plane that had been shot out of control.

But now my dilemma, as to my return to the plateau, dawned upon me. That a fragment of the exploding bullet had severed the rope, I was satisfied. A simple solution to the problem seemed evident. It was to have Reynolds fly back to the *Research* and obtain another rope, but before he could return, the awful owner of the structure might well have the opportunity to seal the entrance to its mighty nursery. Inside the nest, I knew that I was secure from attacks by other monsters as well as from the owner. It was a mason now and not interested in anything but its present vocation and the sanctity of the home was an emblem under which all neighboring insects of this species lived. But I must not allow myself to be sealed alive in its fearful chambers. I might, however, be able to tear out the fresh plaster while the jailer was off getting more material. With this in mind, I resolved to lose no time in fitting my scheme to action.

All these ideas flitted through my mind in the fraction of a minute, for I realized that my unprotected position as I stood atop this huge nest would soon invite another attack from some other errant insect.

Calling out to Reynolds my desire, I hastily slipped through the two-foot entrance and slid down to the floor of this gigantic mud-dauber's nest. My descent was abruptly halted three or four feet forward by the huge mass of some soft hairy substance. I cried out in terror as my flashlight penetrated the gloom.

I was tightly wedged between the back leg and abdomen of a two-hundred-pound spider!

Almost instantly, my knife was hacking at the gruesome leg which I soon severed and threw upon the floor where the massive member shook and quivered spasmodically.

As I crouched in the center of the chamber recuperating from my struggle, I hastily reconnoitered the farthest corners of the prison with my flashlight. The enclosure was twenty feet or more long and about ten feet wide. The arched roof was only some five feet high at its peak and great clods of clay hung down from its rugged surface in direct contrast to the smooth outer surface of the building.

I counted five huge spiders and two

aphidmen before my light directed its rays upon the form of my comrade. He was lying spread-eagle fashion upon his back, the ghastly white egg of the wasp affixed to his bosom. As I gently passed my hand before his opened eyes, I was overjoyed to note the light of recognition in them which was followed by a barely perceptible smile.

"Do you hear me, old fellow?" I asked. "If you do, close your eyes."

Instantly the lids closed for a moment and opened again.

"Wink once for 'yes' and twice for 'no'," I told him.

"In any pain?"

A quick negative.

"Hungry or thirsty?"

Another negative.

"That's fine," I said. "Keep up the old spirit and Dr. Key will try out his scheme as soon as we get out of here. I'll look up the girl now and come back and tell you how she's getting along."

I found her a few feet beyond him and lying in the same posture. Her lovely eyes flashed a welcome to me as I bent above her. How I wished that I could conceive some method by which to comfort her in the same manner that I had consoled Brown. I will not attempt to describe this enchanting creature—I am not so gifted. But as I brushed back the cascade of golden hair that swept across the lovely countenance and looked into her fawn-like eyes, I heard myself using soft, soothing baby-talk—the only gibberishness that I can recall uttering to anyone except the mother of my childhood.

As this consciousness dawned upon me, I was startled to hear a roar announcing the return of the wasp, and suddenly, the small doorway was shadowed by its immense body. The terrific sound of its buzzing as it applied itself to its task was so thunderously loud that it sounded as though a combined company of ten thousand steel-riveting machines had assembled.

For fifteen minutes, the bedlam continued unabated only for intervals of a few seconds, and I anxiously watched the mechanic as it added layer after layer of cement upon the edges of the door.

As this, our only passageway from so fearful a living-tomb, gradually shrunk, I realized that two more excursions at the most by the insect-mason would completely shut us in.

● Using every effort that my brain could muster, I sought for some scheme to outwit so dreadful a fate. To drag Brown and the girl out on top of the nest and await the rescue-party would only invite attacks from other insects, but to remain inert and suffer ourselves to be thus sealed in so gruesome a chamber was unthinkable. That the entrance would be positively closed before help from the *Research* could possibly return was a foregone conclusion, and the material used by the wasp in the construction of its home was reinforced with its natural cement to such strength that it could favorably compare to our strongest concrete. So, no hope could be envisioned for a rescue even if our comrades arrived soon after we were entombed.

With the mighty sound of the wasp's take-off, there flashed into my mind a peculiarity of the behavior of these insects that I had often noted as a boy.

Never, during my many experiments, had I been able to induce a neighboring mud-dauber to touch a spider that had already been the paralyzed victim of a kinsman. Time after time had I robbed a nest of its victims and placed the inert spider directly in the path of an unsuccessful hunter. The results were always identical—a quick investigation always ended as the egg of the rightful owner was discovered and my offer was hurriedly rejected, the disappointed hunter continuing his search for fair game. Surely, these terrible progenitors of my boyhood subjects would react accordingly. Therefore, I felt that the emblem of security which both Brown and the girl wore on their chest would protect them from further molestation.

But what of myself? That was the rub. As I helplessly pondered for a way out,

I was aimlessly flashing my light around the premises. As it flashed across the room and settled upon the crouched form of one of the spiders, my attention fixed on the egg attached to its abdomen and I was quick to see the possibilities.

As I cut the egg from its body, I noted that the spider had spewed forth a pool of web beneath itself, which discovery led me to form a drastic resolution.

With feverish haste, I fastened with a portion of dried web, an aphidman to the back of this spider, hoisted the two out of the door, and dropped them over the side. I had first assured myself that the other end of the web was firmly sealed to the floor of the structure.

Breathlessly, I watched their descent. I felt quite confident that, alone, the spider would enact the same scene which I had directed many of its modern descendants to play; that is, it would, even though bodily paralyzed, use its spinnet, which I knew to be functioning normally, and gradually lower itself to the ground below. But I was by no means sure that the liquid would harden into a web so strong that it would sustain the added weight of the passenger that I had burdened the spider with.

For the first few feet, their drop was a sheer fall and my heart was at the bursting point as the web grew tense. Everything depended upon this test—not only my life, but the great joy of returning to the outer world and proclaiming to modern man that I had discovered a land that predated all geological theories.

### Escape from the Tomb

● My plan worked!

Joyously I watched the retardation of this natural elevator, and as it stopped and then slowly descended until it gently came to rest at the foot of the precipice, I shouted the good news to Brown.

I quickly outlined to him my experiment and received his permission to subject him to like treatment. His descent was consummated without a hitch, although my heart skipped a beat as a neighboring insect launched itself out of a near-by nest and flew so close to the web that I feared that the wind thus created would dash my comrade against the cliff.

My attention was then directed toward the girl.

Owing to a natural bashfulness in regard to ladies in general, I have always been known as a "woman hater." It is a misnomer—I do not hate, I fear. But in this instance, I felt as though I had had the safety of a very sweet child placed in my charge, and to fulfill that behest, I would have risked all the dangers of Hell itself.

Tenderly I lifted her and tried, with soothing intonation, to calm the abject look of pitiful fear that gleamed from her tear-filled eyes as I bound her to the gruesome creature. I believe the inflection of my voice instilled an intuitive sense of confidence within her and I am quite sure that she realized that I was anxious for her comfort when I placed my jacket and outer-shirt between her tender body and that of the hairy monster upon which she lay.

Using the interval between past visits of the insect-owner of our abode as a criterion by which to judge the time of its expected return, I hesitated to start this precious burden on her perilous journey until immediately after it had once more visited us—this for fear that in its work, it might sever the web while she was in transit.

I had not long to wait. Again the mighty roar announced the approach of the wasp and, for the last time, I underwent the harrowing experience of watching, amid that fearful din, the gigantic mason ply its trade.

After its departure, I lost no time in completing the preparation for the girl's descent. As I hauled the huge spider atop the sill of the door and balanced it there, its lovely cargo's great blue eyes fluttered closed. Little rivulets of tears coursed down her exquisite cheeks, and as I dried them, I realized their significance —she had fainted.

"Thank God for that," I breathed, "she'll not have to undergo the awfulness

of a conscious descent; that will help some."

I then tilted the carrier over the side and watched it gently float downward and at last come to rest at the side of Brown's mount.

Much relieved at the outcome of my rescue of the others, I now turned my attention to self-preservation. This was a much harder task. I selected the larger of the two remaining spiders—weighing only a matter of a hundred and fifty pounds at the most—and lodged it on the sill. Where, in previous cases, I had used dried web with which to tie the passengers, I now needs must use fresh web for myself. I could not bind myself as securely with the dried article as I had the others, but the strong adhesive power of newly spun web would aid tremendously. Therefore, I dragged the remaining spider back and forth over the floor of the nest until I had caused it to spin a sufficient amount of web for my purpose. Cutting this into suitable lengths, I plastered it across my body in the same manner as one would use adhesive tape with which to bind a bandage. I then crawled upon the back of my dreadful mount and, assuming a "spread-eagle" posture, cemented the loose ends of the web to the bristling hairs that covered its body. Upon my breast I attached the gruesome egg—my passport, if challenged by a neighboring wasp. After testing all of the things that bound me, with my hands—which, of course, I had left free—I shoved off.

Down! Down! Down! My God, would that dizzy, gyrating fall never cease? After a seeming illimitable time, I felt my fall checked, but the terrible spinning around and around of my vehicle continued unabated for some time. With the relaxation of this incessant motion came the nauseating feeling of sea-sickness which I relieved in the usual manner, after which I again became cognizant of my perilous position and of surrounding conditions.

None too soon! For I felt myself slipping. Luckily, I had had the forethought to fasten myself in such a position that my feet were turned toward the head of the spider. I knew that its position in descending was always head foremost and had taken advantage of this knowledge; thus my descent was made in an upright posture. But now, due to the drying of the glutinous substance that constituted the web that sustained me, the bonds were gradually giving way and I had slipped down to such a position that only the fact that my feet rested on the protuberance that juts out over the eyes of the spider prevented me from slipping past its head and precipitating down—a sheer fall of two hundred or more feet.

Frantically burying my hands in the softer hairs that covered the abdomen of the spider, I clung against its noisome back as tightly as a parasite and anxiously watched the rugged sides of the cliff slowly slip upward as my unusual mount continued to spin its web.

Realizing now, that if all went well, I could easily retain my grip until we landed, I indeed felt relieved; but at this instant, I heard the heavy drone of an approaching wasp. My first thought was of my safety-badge, the wasp-egg which I had glued to my breast. I felt for it and was horrified to find that it had become detached from my undershirt and was missing. True, the spider carried one also, but my hopes were shattered along this line by the realization that my body hid it from view. Helplessly, I glanced toward the ground—still seventy to a hundred feet to descend before a safe landing could be made.

● And then the huge wasp arrived. The tremendous air-current it created all but dislodged me as it circled on a tour of investigation, and I felt its antenna brush my body. My last hope fled as I saw its fearful mandibles. They were empty, and I knew that I had no mason to deal with here. The only chance that I could possibly have was that it would continue to circle in wide arches until my descent was accomplished, in which event I might possibly hide myself in the gigantic grasses

that grew at the foot of the cliff. This circling I knew to be instinctive to an attacking wasp.

Its flight carried it several hundred feet from me as it circled, and I subconsciously began to calculate the speed with which my elevator was descending—only about twenty feet a minute, I decided. If the wasp would circle twice more, I had a fighting chance.

Again it swooped down upon me. For an instant, the awful mandibles seemed to threaten an attack and I buried my face between my clinched hands in the foul-smelling hair of the spider, but not before I had seen that dreadful head at a distance of a few inches from my face. The large, grotesque eyes of the wasp as they shone in the sunlight above the horrible, bristling jaws, seemed to be the very personification of all the horrors of Hell combined, and I shudder now as I recall them.

But it departed again without actually touching me or the spider.

Withdrawing my face from the stinking cover, I looked downward.

Good God! My vehicle had stopped! A good fifty feet separated me from the terrain. Recalling youthful experiments, I realized that the terrific buffeting—caused by the wasp's approach—had awakened in the spider the instinctive habit of "freezing." It might stay in this condition until we were both the victim of the mighty insect that was now threatening us.

As this startling development unfolded, I resigned myself to circumstances and prepared to leap to my death rather than undergo the horrible torture that now must be the fate of poor Brown and the girl. It took only a matter of seconds to loosen the only thongs that still bound me, which I did with the stiffened fingers of my left hand, tightly gripping with my other hand, the hairs that had so far sustained me.

I was just relaxing that grip preparatory to launching myself into a dive that would have ended in certain destruction when—

*Rat-tat-tat—rat-tat-at-at-at.*

The glorious music of a machine-gun!

Frantically, I regained my precarious perch and struggled again to make secure my position. Wedging myself between two of the legs of my mount and its body, I grasped two others with my hands and turned to watch the fight, an aerial battle between a man-made machine and an awful monstrosity conceived by nature.

The fight was not of long duration, for as Reynolds circled above the creature, Mac literally tore it to pieces with explosive-type shells and I elatedly watched the limp body crash to the earth.

The excitement of the duel had quite distracted my attention from my own perilous position, and now turning my thoughts in that direction, I was delighted to see that my careful steed was again in transit.

● A few minutes later, I was bending over Brown, unharnessing him, after which I propped him in such position that he might see the girl as I released the webs that bound her to her loathsome savior. As I gently lifted her in my arms and placed her beside him, I spoke.

"Well, old fellow, we made it. Did you hear or see Reynolds and Mac do their stuff? They've landed the ship a few hundred feet back of us and I see them running towards us now."

He seemed to want to say something and kept glancing from me to the girl.

At last I understood.

As casually as circumstances would permit, I dressed the young lady using his shirt and mine as accessories. When I again turned to him, I was surprised to see a tear trickle down his cheek.

"What's the matter, something hurting you?" I inquired.

"No," he winked.

"Want to tell me something?"

A quick affirmative.

"About yourself?"

"No."

"The girl?"

"Yes," his eyes exclaimed.

"Well," I laughed, "since you can't tell me, suppose I try to anticipate you, old

fellow; you love her and want it strictly understood by all of us that she's yours. That it?"

Another eager affirmative.

"Listen, Brown," I spoke hurriedly because Reynolds and Mac were nearing us, "you have risked entirely too much for this girl to allow me to do other than this: I shall personally be responsible to you for her well-being in regard to molestation from any of the men of our party. Not that I think there is a necessity for this guarantee—I tried to pick all gentlemen for our crew—but because I appreciate your anxiety in your present condition. During your inertia, which I sincerely believe will soon be relieved by Dr. Keys, she shall not be separated from you for a second. But—" I paused here to try to pick my words, "when you are both normal, I cannot promise you an unrivaled field. Understand? The girl must be considered as the property of no one, any more so than if she were a girl of our own land."

My voice had ended in a bit more feeling than I had anticipated, but to my firm inquiry, "Does that suit you?" I was delighted to receive an emphatic "Yes."

Hurriedly acknowledging the warm congratulations of our rescuers, I directed my attention to a homeward return. There were five of us—entirely too many for our small scout plane. Of course, the two invalids should go first with Reynolds while Mac and I would find a good hiding place and await the return of the ship.

With this in mind, I ordered Reynolds and Mac to carry the other two to the plane while I sought for a safe retreat in which to hide with Mac during our wait.

As Mac lifted the girl in his arms, I heard him utter a startled exclamation.

"Look at this, Captain, there's three or four ticks as big as walnuts hanging on her arm."

A quick investigation proved the vermin to be giant parasites of the louse variety which had buried their heads—as large as an ordinary buckshot—in the tender upper portion of the girl's arm to such an extent that I was afraid to exert the force that would be capable of removing them.

"Better let them alone," I said, "that's another job for Dr. Keys; they are parasites that have deserted the spiders for more delicate food and I suppose that Brown has also a few on him."

As for myself, I knew that I was not a host to the disgusting creatures—I I should have felt them at work, otherwise.

Turning my attention to more serious duties, I walked in the direction of a clump of gigantic thistles that raised their brilliantly colored flowers fifteen or twenty feet into the air. Carefully approaching this cover, I made a hasty examination and decided that this would be a good place for us to wait the return of Reynolds. Not only was it a good hiding place, but huge honey bees swarmed among the towering flowers and I well knew that the carnivorous insects thoroughly respected the bees' domain.

After seeing that Brown and his companion were as comfortably situated as the circumstances would allow—Mac had placed them both in the tiny rear seat of the plane—I adjusted the girl's posture so that they could at least comfort each other by glances and shouted a "Godspeed" to them as the ship took off.

### A Horrible Death

● Picking up my rifle, I led Mac to a position beneath the thistles where we sat and watched the great insects at work. The buzzing and roaring was terrific, its monotony broken only by sudden crashes among the leaves as a bee would light upon and bend over the ponderous flowers. Great petals fell beside us and at one time a weakened hundred-pound flower thundered to the ground.

The relaxation of the horrors of the previous few hours advised me that I was very thirsty, and after a few minutes' rest, I asked Mac to accompany me to a depression that I could discern appearing a few hundred feet deeper in the thistle-jungle.

As we approached this, I was amazed to note its symmetrical structure. A perfect circle it was, about ninety feet in circumference and twenty feet deep. Dug in soft, sifting sand, its side-walls converged to a point as the bottom was reached and the whole formed an inverted pyramid of treacherous, sifting sand.

Disappointed at finding no water, I turned my attention to the surrounding vicinity. Around the edges of this huge sandy *maelström* were untold numbers of dead ants, their bodies shriveled as though the juices had been pumped from them, leaving, as remains, only the empty shell of the normal creature.

Mac had strayed off a few hundred feet and in my present state of meditation, his absence had passed unheeded. But my study was rudely interrupted as I heard a shout from him quickly followed by the rapid staccato of his repeating rifle, and he madly rushed out of a small clump of foliage,

"God help us now, Captain," he panted, "there's the biggest snake I've ever seen in those bushes, and it's got legs. Let's get into a tree or— Look out! Here he comes!"

Following his gesture with my eyes, I perceived the tall grasses and thistles waving with an undulating movement as the unseen terror weaved in and out among them. With a hypnotic feeling, I stood rooted in my footsteps until its wicked head broke from cover.

As it hesitated in the fringe of the growth, I overcame my inertia and leaped for a swinging tendril that climbed into the topmost branches of the thistle forest. Not daring to look back for fear of losing my balance as I clambered along this lifeline, I frantically worked myself to the top of the huge flower.

I have no means of knowing the actual lapse of time that transpired before I found myself on this comparatively safe perch, but I do not think that it could have lasted more than a few minutes. However, these few minutes had been filled with hours of tragic fear. I had heard the smashing and breaking of the vegetation as the demoniacal thing thrashed out of its retreat; had heard a hoarse, maddened cry from my companion, whom I was helpless to aid, which ended in a smothered prayer.

Stretching myself out on my stomach, I stealthily peered over the side of the flower on which I lay and looked downward into this theater of dreadfulness from which I had escaped. Search as I would, I could see no vestige of Mac or the monster that had caused our panic. It was needless to call, for the tremendous buzzing of the working bees would defeat any chance of my hearing an answer.

Suddenly, as I directed my gaze toward the peculiar pit, a geyser of sand was projected skyward and I caught a glimpse of a massive head disappearing into the vortex of the hole.

I then realized the significance of the pit. It was the home of the ant-lion—a juice-sucking insect that preys on any unfortunate insect that is so hapless as to fall into its snare. Because of the semi-blindness of the ants, these are its most common victims, but the monster will refuse no living thing that it is strong enough to overcome. Digging its pit in loose sand by the simple mechanical means of gradually rotating its comparatively heavy body in spirals, it sinks a hole to the desired depth. Covering itself with sand it patiently awaits the approach of its prey. Since the sides of the pit are formed of very loose, fine sand, all that is necessary for the springing of the trap is the mere approach of the victim to its crumbling edge. Once within the confines of the trap, there is no hope. For as the victim attempts to climb out, the sand systematically gives way beneath its weight, and the more effort made, the deeper it falls. Occasionally it will fall only a portion of the distance and remain inert along the side, wherewith the ant-lion launches a systematic barrage of sand at the ill-fated creature, that soon brings it tumbling down into its clutches. The body of the prey is then sucked dry of all its blood or juice and the remain-

ing shell is hurled out over the edge of the pit.

As this fearful intelligence flashed through my mind, the awful thought occurred to me that my companion might be the target of the barrage that was now being laid down. In his frantic haste of attempting to escape the snake-like monster of the thicket, he must have fallen into the mouth of this hell-hole.

So it was! A close scrutiny of the sloping side of the trap divulged, to my horrified gaze, a portion of the familiar brown shirt that Mac had worn. Scarcely discernible, almost covered as he was by the sand being hurled at him, Mac was desperately clinging to the shifting sidewall. Each attempt to climb was rewarded with a fresh shower of sand, hurled upward in choking volumes by the huge ant-lion. He was about midway between the bottom and the top when I first saw him, but every new attack brought him a few feet downward and I could plainly see that, without miraculous intervention, his fate was sealed—that in a few minutes, he would fall into the dreadful maw of the insect.

Helplessly, I watched the man's losing struggle. Then as deluge after deluge of sand at last brought him within reach of the creature, I closed my eyes to shut out the appalling horror.

● And then he screamed!

Into that cry seemed to echo all of the miseries of Hell itself. Not one, but four agonized shrieks tore through the fearful din of buzzing bees and smote my numbed brain.

With the vibration of the last smothered cry still quivering in my pounding ears, I underwent my first attack of laughing-hysteria. As the first fit of uncontrollable laughter brushed back the dry sobs that were constricting my throat, I retained sense enough to creep back from the edge and throw my weakened body face downward into the center of the huge flower that sustained me.

I can remember no more of my sojourn among the thistle-heads. How I descended, where I found my gun, or what mad impulse directed me to run aimlessly around the devilish crater, firing volley after volley into its fearful vortex are questions that I can never answer. Only do I know that my first rational thought thereafter was voiced to Reynolds in a plea for more water.

He had returned, and hearing my furious firing, had hastened to reinforce us, only to find poor old Mac a torn, bleeding corpse lying in the bottom of the fearful hell-hole, tightly gripped in the jaws of the gigantic insect—itself dead from innumerable wounds—and me a laughing maniac madly charging around the crater venting my rage in pouring volley after volley of rifle bullets into the body of the monster.

A word or two from him had recalled to me my normal senses and within a few minutes I was again myself.

By using long tendrils of vegetation as ropes, we lassoed the huge insect and dragged it out of its lair with the mangled remains of our companion still in its awful grip.

As tenderly as circumstances would permit, the huge, four-foot pincers of the monster were forced open wide enough to allow the man's body to be extracted, and while Reynolds dug a shallow grave in the loose sands, I examined the ponderous form of the mighty creature that sprawled at my feet.

The texture of its skin was extremely tough—as thick as an alligator's but much more pliant—and its body seemed to have grown in segments linked together as the rattles of our rattlesnake. From its proportionately small head there protruded two gigantic pincers. These terrible weapons were as long as the entire balance of the creature and were armed with strong horn-like teeth on the inner sides which allowed a victim, once caught in their deadly embrace, no chance whatever for escape. Weighing about two hundred pounds, its general appearance was that of a monstrous wood-tick.

Shuddering with horror, I turned from

it and assisted Reynolds in his sorrowful task which we soon completed. After that, we hurriedly collected our guns and silently slipped through the tall grasses toward the 'plane.

I had told Reynolds of the snake-like creature that had first startled us and we had kept anxiously alert for its reappearance. Where it had gone and what occurrence had intervened to cause its departure were questions that I could not answer. Certainly it was not motivated by fear, for in this weird world of mighty insects, as in the insect-world of our own land, fear is an unknown sense. That it was a giant species of our modern centipede, I felt quite sure. True, I had only glimpsed its fearful head, but poor old Mac's hasty description was enough to allow me to realize its significance, and using as a criterion the vicious behavior of its modern descendants, I knew that in it we had a monster well worth our best efforts to avoid.

As we passed the massive bodies of the spiders at the foot of the cliff, my thoughts arose in thankfulness toward them for their unconscious aid, and with a true feeling of pity, I advanced with the intention of mercifully dispatching them with my rifle. But my solicitude was needless. Approaching within a few hundred feet of their location, I was amazed to see a horde of ants devouring our gallant steeds.

We paused. Then, to observe the carnage better, we clambered high upon a shoulder of the cliff above them. From this position, we could easily perceive the spectacle in all its savagery. Perhaps savagery is not the proper word, for I must admit that there was no evidence of quarreling or of selfishness among the insects as they fed. As one finished its repast, it would then cut off a huge portion and proceed to carry it back toward the rear of the marching files of advancing insects, food for those at home.

Heedless of any danger in our position of fancied security, we were intent upon the scene below until some unknown source of information caused me to look upward.

There, with antennæ waving and mandibles champing, was the centipede! It had retired into a cleft in the rocks above us and we had probably aroused it by our ascent. Now it was standing motionless regarding us with its large sombre eyes. I could see the foremost half of its tremendous body rise and fall with its breathing while the rest of its huge coils were still confined within the recesses of the chamber from which it had partially emerged.

Gasping a warning to Reynolds, I turned sharply about to begin a hasty retreat, but in so doing, my hand dislodged a boulder which came crashing down upon my left foot, pinning it to the narrow ledge upon which we rested.

● The pain was excruciating. As I labored to extricate myself, I all but forgot the terrible menace that threatened us above. Reynolds was quick to note this, but his frantic efforts to move the stone were fruitless. He heroically stood beside me, begging for instructions. A numbness stole up my leg, mercifully allaying, for the time being, the intense pain, which pause allowed my mind to gropingly attempt to reason a method of escape.

Without aid, I knew that I must surely fall a prey to the demoniacal insect that now paused, a distance of only two hundred feet above me. Poor Mac had proven that a rifle was futile in repelling it, and from whence should I expect assistance in this grotesque land of monstrosities? Even though I provoked a quarrel between this gigantic centipede and another denizen of the community, I should only prove to be the spoils of the victor.

But hold!—there, immediately below us was an army of the only monsters among which we could safely mingle—the ants!

Could I but provoke them and then draw them up the cliff to vent their rage upon the centipede, our chances of escape from their captivity—should they capture us—would be a game well worth

playing. Again recalling youthful experiments while prying into the secrets of insect life, I remembered having watched an ant release an aphid from just such a situation as I now found myself in. The care and general tender aspect with which it had released its domestic from the weight of a fallen twig which I had placed upon the aphid, had always remained fresh in my mind. I remembered, also, that the ants would rush madly to attack the cause of any disturbance that interfered with their well-being.

Therefore, I ordered Reynolds to loosen as many of the largest boulders as he could and guide them so that they would fall into the midst of those ferocious monsters to whom I anticipated binding myself.

With startling suddenness, the first stone fell among them. Each and every ant raised its mighty head and faced the source of bombardment. Then, as rock followed rock, the fearful great-headed warrior-ants charged, while the workers frantically began to move the remaining portions of their food to a safer location.

Coincidently, the centipede chose the same time in which to launch its attack upon us, or it might have been stimulated by the hurried movements of Reynolds as he loosened the boulders.

With baited breath, I watched the race. Not so with Reynolds. Realizing my helplessness, he actually advanced toward the fearful monster and poured shot after shot into its invulnerable body.

He could not have been more than fifteen or twenty feet distant from its wicked head when he was knocked aside by the first of the charging army of ants. I feared for his life as the gigantic insect trampled over his fallen body, but he soon regained his feet and ran out of the pathway of the mighty reserves and hurried back to crouch beside me.

I noticed, through a tear in his shirt, a rather nasty cut on his arm.

"Hurt anywhere?" I inquired.

"Not much, Cap," he answered, cupping the wound with his hand, "but can you imagine a kick like that coming from a doggone fool ant? Why, it just don't make sense; I don't care if we are seeing it with our own eyes, it can't be so!"

Then we watched the battle. What a fight it was! Twenty or thirty monstrous ants were in a death-struggle with an eighty-five foot centipede!

The uproar was deafening as the reserves rushed in. At no time did the victory seem in a balance—the advantage was greatly with the ants. True, the unfortunate individual that had upset Reynolds was immediately crushed between the massive jaws of the centipede, within a few seconds after it had courageously flung itself upon the worm. The severed bodies of two other ants which meandered in a series of circles around the combatants, told a drastic tale of heroic sacrifice, but the ponderous worm was practically being torn to bits. Huge pieces of flesh were ripped from all portions of its body—great quivering legs, still responding to muscular-reaction, lay kicking on the battlefield and raised a pall of dust over the vicinity in exact replica of the smoke that hovers over a field upon which we reasoning animals of God's creation see fit to settle our disputes.

Soon, however, we noticed less excitement among the ants; we noticed that the centipede's writhing and twisting was diminishing and that its jaws seemed paralyzed. The ants then teamed themselves into two factions, one of which ranged itself at the head of the victim and the other at its tail. In this manner they played a tragic game of "tug-o'-war." As huge segments of flesh gave way, each warrior relinquished its booty to a worker-ant—several of which had complacently stood by and waited for the end of the fight—and entered upon a careful arrangement of its toilet.

● With the arrival of the workers, I knew that it would now be only a matter of time before we would be discovered. Already a few were hurrying here and there in search of booty.

"Reynolds, we are in a mighty bad way," I said. "We will probably be cap-

tured in a few minutes. Don't attempt to run or fight back; it will be useless. These are the burrowing kind of ants and quite different from the tree-ants that captured Brown, but their habits with their cattle are the same. We shall likely be taken underground, God knows how far. Hold on to your gun, by all means, but don't use it against these ants. If I am taken first, you may have an opportunity to slip by and get to the plane. Don't hesitate to do so on my account. An army could not be of service now, let alone one man."

I had hardly finished before an ant rushed up and stopped in front of us. Quite serenely, it seemed, did it let its antennæ wave out toward us.

Reynolds, pale as death, cowered down beside me and I actually heard the pounding of his heart—or was it mine? I do not know, but when the monster reached forward and grasped me with its mandibles in an attempt to lift me, I realized that the numbness that had blessed my leg had departed and the dreadful pains that shot through my ankle and lower leg caused me to cry out in agony.

I do not believe that my voice was responsible in the least for the ant's subsequent behavior; I think that the unusual weight advised it that I was trapped. However that may be, it released its hold about my shoulders and backed a few feet from me. Then again, its rope-like antennæ came into play. Cautiously it felt around my body until the trouble was located. Wherewith, using the same style of clumsy tenderness that a show elephant uses in the handling of its trainer, the huge insect gently manœuvered its immense body to a position that allowed it to pull the rock aside without further injury to myself.

Distinct recollection of the next few minutes fails me—the release of my crushed foot allowed normal blood-circulation and as the seemingly fiery fluid poured back into the tortured flesh, the pain nearly obliterated rational thought—but I have a hazy remembrance of being gently lifted, of hearing my comrade's shouted farewell die in his throat as he himself felt the awful embrace of another of the monsters, of noting the smoothness of transit of my insect-captor as it wended its speedy course downward, and then I lapsed into a merciful, unnatural slumber.

I awakened to find myself sitting in the cockpit of the plane with Reynolds earnestly supplicating me to return to consciousness; between gasps, he frantically strove to prime the engine with the propeller.

"For God's sake, Cap, come alive!" he cried, and as I feebly answered his imperative command, he shouted, "Contact, quick!—and gun 'er for all she's worth; I'll grab a wing and crawl in!"

Still groggy and dizzy, I obeyed, and as the sudden explosions of the motor rent the air, I saw two gigantic ants, our erstwhile masters, lift their massive heads and start toward us. Thus brought back to my senses, I gunned the plane to its full capacity, and as it started forward, the insects leaped to the attack.

"Speed! Cap, by Heaven, speed," cried Reynolds as he jumped for a footing on the wing. His effort was faultless and as I saw his head appear above the fuselage beside me, I breathed an encouraging welcome and prepared for a take-off.

With amazing swiftness, one of the insects had darted in pursuit, and now, as our ship left the ground, it overtook us and plucked my comrade from his perch. Above the heavy roar of the engine, I heard Reynolds' smothered cry, but I was powerless to aid him.

Suffering agonies of the condemned, I commandeered my mangled foot to normal duty and after gaining a safe height, I banked and wheeled above the tragic spot and within a few seconds I had him located.

● As I racked my brain for some possible means of a rescue, I was horrified to see his captor join the homeward-bound train that was speeding along the insect road. I fully realized that now a rescue was a matter of impossibility, but I could not refrain from a few useless attempts.

I tried everything; I flew low—so low

that I all but crashed into the fearful army —I fired explosive-type bullets into the van in a vain effort to disorganize their lines in order that Reynolds' master might be cut off from its kind. To no avail did I do this. I should have known that these mighty insects would be immune from the thought of fear. I even conceived the idea of shooting into the abdomen of the captor but was quick to strangle the thought. In its dying throes, my comrade would be crushed between the awful mandibles!

At last I accepted the inevitable; a rescue was impossible. Nosing the ship upward, I took a course along the train of marching ants until I was over an enormous hill. Here, with military precision, each unit of the vast army disappeared into the huge crater that yawned beneath me. Loath to believe but that some unthought-of chance might still intervene and allow me to assist my friend, I could not abandon him while he still remained above ground. Therefore, I hovered in low circles until his captor swung around the hill. Hastily I climbed for altitude and then did a nose-dive directly toward the colony. The gesture was no more than a salute of farewell, and as I righted the ship—a matter of a hundred feet above him—I knew that Reynolds understood its intention, for I saw him feebly wave his arm toward me in acknowledgment as he was carried into the dreadful vortex that was to imprison him.

Choking back the sobs that welled to my throat, I banked and headed toward the *Research.*

As the dark outline of the *Research* separated itself from the lighter background of the towering blanket of geyser-steam, I became aware that all was not well with the dirigible. Instead of floating in a natural even-keeled position, the bag was pitched at a forty-five degree angle, stern foremost, toward the earth. All that was keeping it from dropping to the ground was the hawser which held its nose to the mooring-tree. That a great amount of the precious gas had escaped was evident, and a few minutes of anxious watching showed me that the leak was still active. I had feared such a catastrophe, but this fear had been greatly allayed by my faith in the ingenuity of staunch old Mac. Now, without him, we were indeed in dire peril.

My hope that the members of the party had apprehended their situation in time to salvage the greater portion of our goods was realized when I had shortened the intervening distance to an extent that allowed me to get a clear focus with the glass. I could see them busily engaged in transporting important articles from the huge craft to a cache well out of danger of the anticipated fall of the balloon.

Landing the ship a few hundred feet from a small mountain of the supplies already salvaged, I taxied close and hobbled to a seat beside it. So frantically busy in their attempts to save our equipment were the staunch crew, that the absence of Reynolds and Mac went by unnoticed. I was so badly crippled that it took heroic effort to drag myself a few paces, and as I heavily deposited my worn body upon a sack of meal, I thought it not at all unseemly that Brown should come running forward burdened with a hundred pound sack of sugar. Dropping this at my side, he cordially greeted me and then hastened back for another load.

I was amazed, however, and brought back to reality when, with a delightful little purr of gladness, Eve let tumble an armful of baggage and with surprisingly clear understanding, knelt down and sought to relieve my crushed foot of its blood-soaked sock. I almost forgot the pain as I recalled our parting of a few hours before and compared this vivacious, lively fairy with the poor, helpless, inanimated creature that I had so gently deposited upon the seat of the plane.

Voicing her solicitude for my condition in soft, inarticulate murmurs, she tenderly uncovered the wounded foot. Then, as its vicious swollen condition disclosed itself, she gave a startled cry and turned and ran from me as would a frightened child. I misjudged her, for immediately I saw her hurry to where the old doctor was laboring, and with the perversity of a play-

ful but very determined pup, she pulled and tugged at him until he followed her to my side.

● "Thank God, Doctor," I said, "I see that your theory for the resurrection of the victims of the wasps' venom has proven practical. It was a wonderfully quick recovery—almost unbelievable!"

"Yes," he replied as he examined my foot, "unbelievable is the word. I was wrong, however, in thinking that the wasps use a venom—my force-pump failed, but I have discovered not only the method of resurrection, but, much more important than that to the field of medical science, I have learned the secret of these highly developed insect-surgeons. With the knowledge of this natural anæsthesia, I shall revolutionize all known methods of the science of anæsthetic administration."

"Then Fabre was wrong?" I breathlessly inquired.

"No! He was right—we misinterpreted his meaning," was the reply.

"He mentions a paralyzing fluid—"

"But speaks more often of nerve-centers; it's not in the blood, my boy, but in the nerves. We'll go into that later; at present, you've a lot more important things to think of. Your foot is in bad shape—very bad shape—and we will have to be very careful that it doesn't become infected."

With that, he commandeered Brown and together they carried me to some bedding. The doctor immediately began preparations for an operation. I was ordered to strip to the waist and as I wonderingly complied, the doctor told me that I was in for a very complete surprise but that I was not to be alarmed at any unusual feeling. I felt his fingers fumbling along my spine. Suddenly, an intense shock—electrical in feeling—jarred through my system and I fell back upon my couch, mentally alert but physically helpless.

I shall always recall the pleasant, soothing sensation of repose I felt surge through my system. My brain was clear—so clear that I remember having wished that the great Frenchman were there to see his prophesy fulfilled. At last man was at par with the insects in the art of suspending life and I was the first patient. Also, it would prove that he was correct in his allegations that the victims of the wasps' operations were absolutely unconscious as to pain, even while serving as living food for the grub of the insect-physician.

As Dr. Keys attended the setting of the small broken bones, he kept me interested with a continuous flow of conversation. I felt not the slightest pain; even the abhorrent nausea that had been present more or less since the accident, had entirely vanished.

In a surprisingly short time, the foot was dressed and I once more felt that indescribable sensation as the doctor again disturbed the nerve centers at the base of my brain and I was once more in control of my body.

A comfortable lounge was arranged for me within the hollow of a tree which was chosen as our future residence, and under the gentle touch of the hand of Eve, I fell into a peaceful slumber.

I awakened several hours later and was surprised to see the change that the men had made in our newly tenanted quarters. The great roomy hollow had been fitted into living-quarters for the whole party and the men were busily engaged in building a barricade at the entrance.

I am practically an invalid and Dr. Keys tells me that it will be several weeks before I can be up and around. With the *Research* a wreck and gasoline running rather low, I must now think of our return to the *Hazard*.

### The Mystery of the Girl's Origin

● July 15th.

The *Research* gently drifted to earth but we are fortunate in having saved almost all our essential articles before the men were forced to abandon the craft. Just what caused the calamity, we are not quite sure. We suspect that the vast drove of small reptilian-birds that continuously flocked atop the huge bag, despite our ef-

forts to discourage them, was the cause. As previously noted, Mac had killed several, but these I neglected to examine because of the many other more important matters that intervened, but now, as a convalescent, I am finding it very wearisome to interest myself as I lay upon my bed and impatiently await the mending of my foot. Therefore, I asked that one of these birds be killed and brought to me for examination.

It weighed four and one-half pounds and was shaped, except for its head, as the ordinary bat. It had the same long, leatherlike wings and short, rounded tail. Its head was exactly that of a miniature alligator and the mouth was lined with razor-like teeth. Its forked tongue, linked with two sharp fangs that grew from the front of its upper jaw, immediately suggested a poison-sac but investigation disclosed no signs of the latter. That these two long front fangs were easily capable of tearing into the covering of the balloon, I felt quite sure, and I am satisfied that these birds were indeed the cause of our misfortune.

I say that it is wearisome for me to indolently spend these precious days upon my bed or hobbling around the premises of the great hollow, but it would be absolutely unbearable were it not for Eve.

She, with the natural wild grace of a woodland deer, the beauty of an envisioned goddess, and the soft child-like innocence of a three-year-old baby-girl, has entwined her brown little fingers around the hearts of us all and endeared herself to each and every one of us in her sweet, eager endeavors to please. Dr. Keys is very fond of her and it is quite ludicrous to see the dignified old scholar attempt to teach this child of the primitive the strict conventionalities of his New England ancestors. He has announced her as his adopted daughter and declares that he will legalize this intention upon our return to civilization. Her spontaneous affection, shared impartially by all of us, makes his self-appointed task rather perplexing.

Brown, of course, is still desperately in love with her but, wonderful fellow that he is, behaves himself with such self-control that I believe I am the only person who suspects his feelings. While for myself, I dream dreams, but I am not so young that I cannot see the futility of them.

My natural anxiety to teach her to talk was enhanced to no small degree by my desire to solve the mystery surrounding her existence in this devilish land. Quick to learn, probably because of no other language known to her, she now speaks and understands remarkably well. But I have learned practically nothing of her antecedents. She knows absolutely nothing of beings resembling her other than the aphid-people, and with all that a rather vivid imagination allows me, I can not force my senses to accept the fact that she is a freakish offspring of that detestable race.

Her first recollections are of the tree in which Brown found her; of crawling around among its branches and hiding from the fearful wasps and terrible ants. She subsisted entirely upon its fruits alone and slept between its great forks until natural reason compelled her to build the tiny retreat high among its topmost branches. Knowing no other method of life, she suffered not at all from loneliness or for companionship. As for the aphid-folk, she abhors them for no logical reason whatever. She accepts her present mode of living as a paradise and is tireless in her efforts to persuade us to tell her of the civilization from which we came.

Is she the last of a vanished race? Can her people still be within the radius of this weird country and have escaped our notice, or is there a race so hardy that they have pierced the impenetrable barrier that surrounds this tropical land and departed into the vast icy outside world? Reluctantly, I must brush aside all these theories as impossibilities.

We have covered every foot of habitable territory and discovered neither ruins of a vanished race nor signs of a present one and no opening in the towering geyser-wall.

There is but one scientific answer and I

scorn it . . . . that she is an offspring of the most degenerate race of mankind. In other words, Darwin's connecting link! No, a thousand times no! Seeing this dainty sprite laughingly flitting among us, watching her quick responsiveness to teaching and noting each and every gesture of brilliant intelligence surge through her being and then comparing so sweet a creature to any one of these repulsive animals who are minus instinct and entirely devoid of rationality, fairly screams aloud the profanity of such a thought. A single generation could not so evolve. Rather could I fall back upon the silly theory of a special creation, childish though such an idea has always appeared to me.

● July 19th.

On the morning of the 16th, my foot being now entirely well, I decided that we must begin preparations for our return trip. With this in mind, I told Brown that I would accompany him on his usual morning excursion over the ant-hill in search of poor Reynolds and that we would prepare for the first load to go to the *Hazard* on the following morning.

"What if we don't find Reynolds today?" he asked. "You don't mean that you intend to abandon him in this damnable land, do you?"

"Sorry, Brown, old fellow, but you've flown over that territory without seeing a sign of him, each morning since his capture, and it is absolutely impossible to go down after him. What's left for us to do?"

"God knows, Captain, but I can't leave this infernal country knowing that Ren is locked up in that hell-hole. If he were dead or—"

I stopped the boy. His intense imagination was again lashing his soul beyond endurance. Silently we took our places in the plane, Brown at the controls. Soaring downward over the awful chasm that imprisoned Reynolds, we vainly searched the parapet of the opening for the sight of a burdened insect and then traversed several ant-roads to their terminus, to no avail. Almost sullenly, Brown obeyed my shouted command and we headed homeward.

Arriving here, I ordered the completion of our departure plans hurried and casually strolled in the direction that I had seen Eve take a moment previously. The path led around a clump of giant grasses well out of vision of the rest of the party.

As I sat down upon the ground beside her, I was amazed to see that she was crying.

I questioned her, and listlessly toying with the string that fastened her trouser-leg, she answered in that intriguing baby-talk lingo so strange and yet so sweetly natural.

"Doctor and Brown don't like Eve any more," she sobbed, "they scolded an' scolded me somethin' horrid," plaintively adding, "an' Eve thought it was nice, too."

"Well, Little Lady, if you thought a scolding was nice, why the sorrow?" Indignantly she brushed back the tears and flared out at me.

"Oh, stop it, stop it!" she cried. "You know that I didn't go to say that I liked being scolded. I liked what they scolded me for doin'."

Here was a mystery—to be scolded by both Brown and the gentle old doctor—no wonder she felt heartbroken.

"What did you do?" I asked in surprise, but my surprise was ten-fold intensified by her following actions.

Studying my countenance a second, a quizzical expression flashed across her face as she was apparently inspired with an experimental idea.

"This!" she spoke imperatively, and before I realized her intentions, I found her lovely arms around my neck and her sweet, warm lips pressed firmly to mine.

While I was still confounded with a mingled sensation of acute happiness and general amazement, I heard a hoarse, harsh cry behind me and turned to find myself confronted by Dr. Keys and Brown.

The doctor spoke.

"I was looking for you, Captain. I wanted advice, but I now see that you are indeed familiar with the situation." In-

tense anger tinged with a note of genuine amazement marked his tone as he continued. "I am fully aware, sir, that my self-imposed relationship to the young lady can in no manner be construed as binding, but I fully believe that I can rely upon the rest of the party to see to it that you observe hereafter the laws you yourself decreed in regard to——"

He was interrupted.

"You don't have to depend upon the other men," shouted Brown, "I'm going to make it my business!"

Then, like a flash, he leaped at me.

Stunned by the invectiveness of the charges—incapable of thought or action by the rapidity of the quick-moving events, I had remained half-kneeling, half-sitting at Eve's feet.

My incoherent defense was smashed back into my mouth with the impact of the first blow. I heard Eve's scream, the doctor's excited exclamation, and then, as I dazedly regained my feet, I saw Brown reach for his revolver.

"'V' it, Brown; you don't understand—" I began.

"Captain or no Captain," he cut in, "if I hang for it—"

A thunderous blast roared in my ears and the earth was blotted out as a smothering blackness enveloped the surroundings . . . .

I came to with the tender smile of Eve beaming down upon me. Desperately I cudgelled my brain to duty. Then, as the ignominy of my last conscious hours gradually crept into my memory, I attempted to sit up.

Dr. Keys gently pushed me back and soothingly told me to be quiet; that I had had a narrow escape but everything would be all right in a few minutes. My head felt as large as a warrior ant's and I reached up with my hand to caress it. Instead, I felt bandages. Answering my inquiring look, the doctor spoke.

"Well, my boy," and I was glad to see that the old-time friendliness tinged his tone, "Brown is a poor shot—a very poor shot. His bullet merely creased your skull and but for a rather bad headache, which I suppose you have, you are perfectly fit."

"But," I managed, "you don't understand! I mean about—"

"Yes I do, boy; I understand everything now. If you will just relax a bit, I'll tell you the whole story. That's it; lie on that side and you'll be easier." Turning to Eve he remarked, "Run along, dear, and let me tell the Captain what a remarkable little student of literature our—"

"Oh, Captain," she began, great drops of tears trembling on the edges of her long eyelashes, "Eve is so sorry that—"

"Now, now, sweetheart, the Captain doesn't blame you," admonished the old man. "Just run along, but remember what I said about remaining within the tree."

● As she reluctantly backed into her small partitioned bedroom, he turned again to me.

"It began this morning. Just after you and Brown took flight, Eve teased me to go with her for a walk. I had a great many things to do, so, as a diversion, I gave her that highly illustrated copy of Shakespeare you brought along. Forgetting the incident entirely, I continued with my work until shortly before you returned. Suddenly I was interrupted by the little minx in a startling manner. She tripped across the room and, flinging her arms around my neck, showered me with kisses.

"My foolish old mind reached out for an explanation as to whom she owed this newly acquired wisdom of affection. Certainly, I thought, someone must have taught the lass or, otherwise, she would be as innocently ignorant of this method of salutation as an unborn babe, and if she were not stopped, her security would not be worth a penny.

"As these thoughts rushed through my mind, I did an extremely foolish thing. I soundly scolded her before questioning her and she ran out of the tree before I could stop her.

"As I gather it, she must have run smack into the arms of Brown and subjected him to a sample of her learning. He reacted the same as I and came storming into the tree to enlighten me as to her

promiscuousness. Of course, I had long since known that he was head over heels in love with her and also, my boy, I have noticed that you are rather hard hit."

His kindly old eyes studied my face for a second and I could feel a tell-tale rush of blood flush my cheeks as I realized that my emotions had not been buried as deeply as I had hoped. Apparently ignoring my confusion, he continued.

"You'll have to excuse an old man's impetuosity, but since Brown's actions so thoroughly proved his innocence, I jumped at the conclusion that you—"

"But, Doctor," I began, as a harrowing thought flashed through my mind, "I swear it was not I! If not you or Brown—why, some of the crew—Good God!" I leaped from the bed, "Bunker—Flowers—Whiting. It doesn't seem possible, but—"

"Steady, boy, steady. You're all wrong. That's the trouble now; we've all jumped at conclusions. Lie back on the bed and let me finish."

Shakily, I complied.

"Where was I?—oh, yes—I was talking to Brown. Well, reluctantly, we formed the same opinion and went in search of you. You must admit that circumstances damned you.

"After Brown was disarmed, we carried you in here, but he, frantic with the thought of murder upon his hands, rushed away toward the supply-dump. When Flowers and Bunker attempted to approach him, he took refuge behind the gasoline tanks and swore that he would kill the first man that came after him. I then dispatched Eve with the news that you were not badly hurt but he believed that we were using her as a decoy.

"The man's mad, mad as a hatter and is in entire control of our guns and ammunition, except the few rounds of rifle-bullets and three guns we have stored in the tree. I think that, perhaps, this brain-storm of his may run its course in a few hours, but at present, he is dangerous—very dangerous."

The doctor paused and seemed to have finished, but startling as was the tone of his narrative, he had not yet given me an explanation of Eve's peculiar behavior.

"The kiss, doctor, you say—" I began.

"Oh yes, the kiss," he returned. "Well, as to that, we all have a perfect alibi. See here." He handed me the volume of Shakespeare opened at the frontispiece. As I perceived the result of a highly amorous artist's conception of the Balcony Scene, I readily acknowledged that the picture was responsible for Eve's presumptions.

Since Eve's effort to pacify the madman, Dr. Keys had seen fit to order the balance of the men into the tree and barricade the entrance. Peering from behind the huge timbers, they were silently keeping sharp watch on Brown's action, and now they whispered to me that he was approaching the tree, gun in hand.

### The Madman

● Cautioning the party to be silent, I noiselessly slipped to the door and awaited his arrival. As his shadow slipped along the narrow cracks between the timbers and came to a halt in front of me, I called to him.

"Brown, old fellow," I said, "are you feeling better?"

With the cry of a wounded beast, he started back. His glazed, maniacal eyes quivered a second as they met mine, and then, shrieking aloud his agony, he rushed back to the dump.

"What can we do, Doctor?" I asked as he stepped beside me. "This can't go on. We must do something. Every minute outside is fraught with peril; suppose a centipede or wasp were to attack him in his helpless state?"

"And it's sure death if we attempt to capture him," came the slow response.

I felt a light touch on my shoulder. It was Eve.

"Please, Captain," she pleaded, "why are you so bad to Brown?"

Poor child! What could she understand about a deranged mind?

My answer was lost in the blast of a tremendous explosion.

"The ammunition dump!" shouted Sitton frantically tearing at the barricade.

Unbarring the entrance, we rushed out into the open.

We saw Brown, a firebrand in his hand, racing madly toward the plane.

For an instant, I was frozen with horror. His intentions could not be misconstrued and if successful, we would be marooned in this awful land forever!

Sitton was beside me and I saw that he carried his rifle.

"Quick, Sitton, shoot!" I ordered.

The order was obeyed instantly and not a second too soon, for as the man staggered, recovered for a breath-taking moment and then fell prone, the firebrand was within ten feet of the ship.

With all my strength, I sprinted to the spot but was not the first to arrive. Like a winged Valkyrie, Eve flew by me and threw herself upon the breast of the prostrate body. Convulsive sobs told of her grief as she showered kisses, natural love-tokens now, upon the silent, ashen face and voiced her sorrow into the unconscious ear of her lover.

I placed my hand upon her head in silent consolation but my touch awakened a fury. Springing to her feet, she launched into an attack so undreamed of that its very suddenness unnerved me to the extent that I did not even attempt the natural defense of raising an arm to ward off the blows.

The storm abated as quickly as it was launched and with blood trickling down my face from tiny wounds left by her sharp little nails, I found myself holding my pathetic assailant in my arms—a faint, limp burden of loveliness.

Relinquishing the precious weight into the arms of Flowers, I ordered him to take her to Dr. Keys and then I turned to Sitton.

"Too bad, Sitton, but it was his life only or his and ours combined."

"Yes, sir," he answered, "but I don't see how it killed him. Here's where I hit him. I didn't see no use in shootin' to kill, so I just busted him in the leg." He showed me a small blue hole in the calf of Brown's leg.

With a prayer of hope, I knelt down beside the body, and then began to whoop for the doctor. The man lived!

Dr. Keys soon calmed our fears.

"Just what he needed," he said. "The shock will probably bring him to his senses when he recovers from the faint."

While the doctor busied himself with the care of the patient, I joined the others at the remains of the ammunition dump. Owing to the excitement of the past few minutes, the tremendous seriousness of the crazed act of the man had not dawned upon me, but now it struck me with force. All our ammunition, with the exception of four cases of explosive-type rifle cartridges and three cases of pistol-loads which I had seen fit to have stored in the tree, was gone. This loss was trifling, compared to another.

Our reserve supply of gasoline was entirely wiped out!

As the awful intelligence flashed into my mind, I rushed back to the plane. If Brown had filled its tank this morning, we still had a fighting chance.

I should not have doubted it. He was a pilot. The tank was more than three-quarters full which meant, with normal flying conditions, a stripped plane could make it to the *Hazard*.

Brown had recovered consciousness when I returned to the tree and I was happy to see that the normal light of reason gleamed from his eyes as I approached his bed. Dr. Keys was talking, and from the sentence I heard, I gathered that he was just finishing an explanation. Eve stood by with an enchanting look of puzzled confusion written upon her face.

" . . . . and so she learned about men from him, Shakespeare—not Kipling, my boy." And, with a twinkle in his old eyes as he noted my approach, he added; "or Captain Tolliver, either."

Grasping my proffered hand, the boy chokingly attempted to voice his contrition, but the doctor cut in.

"Oh, the Captain understands. But what neither of us can quite conceive is

your inexplicable abhorrence of Eve's advances." Then, turning to Eve, who was vainly trying to follow the trend of so enigmatic a conversation, he spoke.

"Keep those damp cloths around the wound, young lady, and kiss him all you want to. He may raise Cain, but he's helplessly wounded. Come on, Captain."

Brown's face was a puzzle, but without awaiting an answer from either of the two, the old man took my arm and guided me toward the entrance of the tree.

Silently, each deep in his own thoughts, we walked to the lagoon.

The certain knowledge that I had lost my heart to this child of mystery suddenly smote my senses and left them reeling as I realized that she was Brown's. Dr. Keys, great old man that he was, seemed to sense my misery.

"Sorry, Tolliver, mighty sorry," he said, "but I saw it from the first." I thanked him and then asked that he leave me for a few minutes. As he ambled back toward camp, I sat beside the beautiful crystal-like waters of the lagoon and allowed my thoughts to drift into dreams of what-might-have-been.

At last I threw myself back into reality and returned to camp. I found that the rest of the party had retired and I attempted to follow suit, but sleep would not visit my complexed mind. I arose to complete this—the last writing that I shall pen from this fearful, time-forgotten land of terror.

### A Sad Return

● July 20th.

With sorrowing heart and conscience-stricken mind, I again turn to my diary. As I sit here, alone in a wilderness of lapping waters, I seem to see that courageous little band of comrades clustered about the lagoon as they strain their eyes and cup their ears for sight or sound of my return.

It is four o'clock and I had expected to be back at two. Instead, I am preparing to go in the opposite direction—to abandon them, only temporarily I hope, while I fly toward civilization. All our schemes and hopes for a quick return are shattered and a rescue from the dreadful fate of several months of survival within that awful land—soon to be smothered in total darkness—rests upon the slim chance I have of making contact with the outside world. These chances are almost *nil*, but the chance that the diary may be found is worth the act. I shall place it in a sealed bottle and tie it with a cotton string around my body. Thus, should I not be rescued, the salt water will soon separate the bottle from my body and it will be free to float upon the surface of the ocean.

I have drawn a chart to guide a rescue-party to this unbelievable land and am enclosing it along with a letter to Frank Rice in the same receptacle. In it I have given him instructions to pay ten thousand dollars to the finder of this bottle upon its delivery into his hands. For fear that the letter may go astray, I am hereby authorizing him, as the executor of my estate, to use the entire fortune, if necessary, for the purpose of instituting expeditions of rescue.*

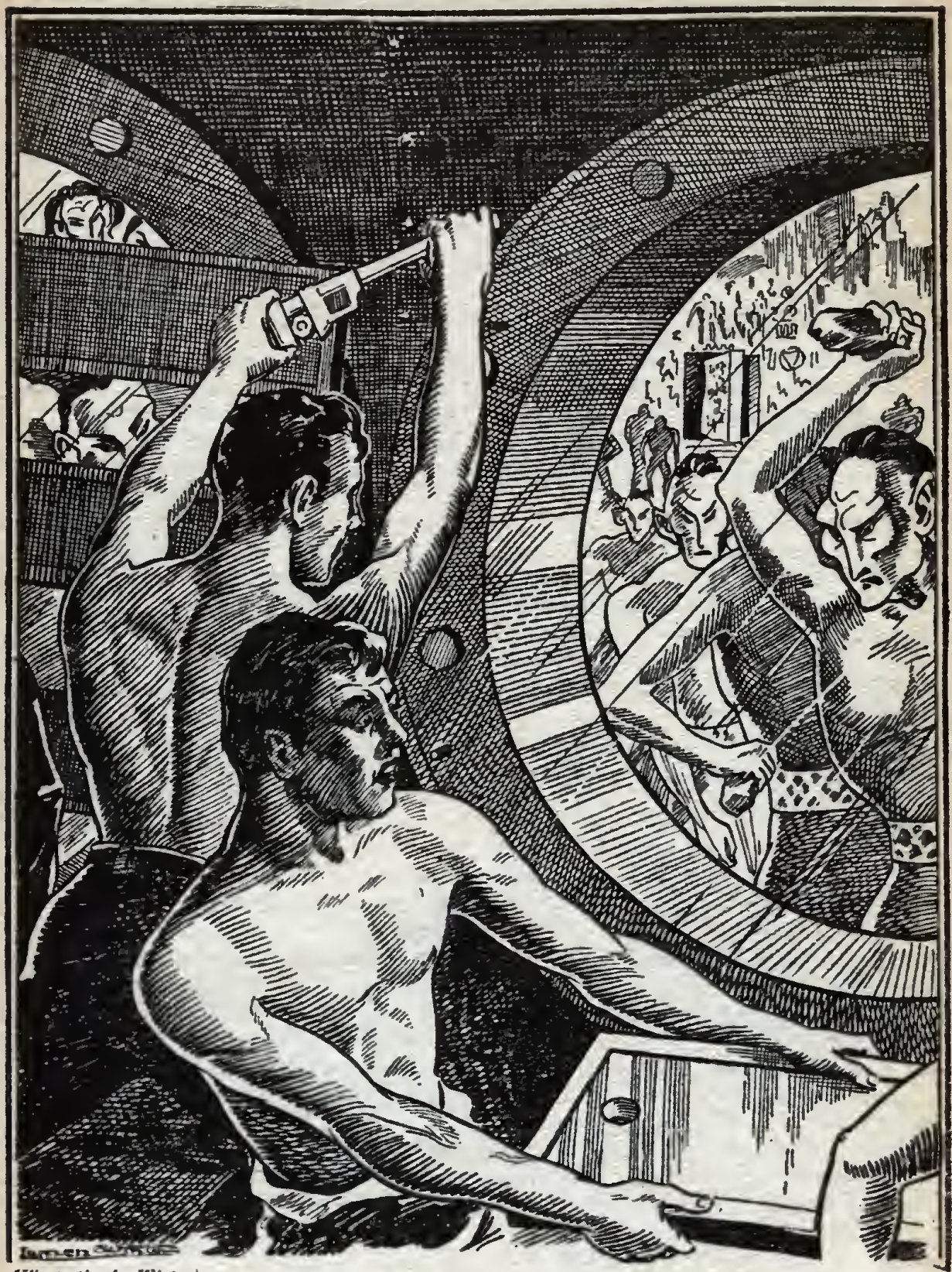
I arose later than usual this morning, having taken the major part of my rest period in completing my notes, and as I collected my flying clothes, the crew checked over the plane. They announced it ready while I was having my farewell cup of coffee with Eve, Brown, and the doctor.

Never shall I forget the anxious expressions in the eyes of the little forlorn group of heroes as they bade me "happy landing" or the tender kiss that Eve pressed upon my lips at parting. Their brave little gestures of encouragement to me could not hide the fact that theirs would be the agony if I failed. Mine would be a quick, sudden death, a matter of just a few seconds of anticipation, but to them fell the fearful strain of waiting—watching—hoping until one by one they succumbed to the horrors of the dread land.

Following the course laid out by my

*I do not know what happened to this letter—I have never seen it.—FRANK RICE.

*(Continued on page 1043)*



*(Illustration by Winter)*

**As fast as we made one spot safe, another was attacked.**

# THE MOON DEVILS

## By JOHN BEYNON HARRIS

**● You have read of suspended animation in many stories, and in this one it is used in working out a plot filled with thrilling action and perilous adventure.**

**Scientists agree that the moon is now a dead world. But who can say that it was not peopled in its early days when it was young and mature while the earth was yet a boiling sphere of hot liquid? The moon, being a smaller globe than the earth, would naturally cool sooner and die sooner. Our earth will ultimately become as our satellite is today.**

● The secretary of the Lunar Archeological Society approached his employer with a nervous diffidence. His method of stating his business was, to put it mildly, indirect. The president was a man who hated circumlocution. He became testy.

"Come on, man. What's the trouble? Out with it."

Still the secretary hesitated, then, with a sudden decision, thrust a packet of papers clumsily towards his chief.

"These came this morning, sir. I thought you ought to know. They're a bit —er—peculiar."

"All right. I'll look at 'em."

The secretary departed with some relief and the president turned back to his interrupted work. Half an hour later, he remembered the pile of papers and took up the covering letter which lay on top. A name standing out amid the type caught his eye. He stiffened, stared at it, and began to read more carefully. The heading was a Liverpool address, and the date a fortnight old.

"Dear Sir," it began. "On the sixteenth of June last, the S. S. *Turkoman,* to which I was medical officer, rescued a man at a point not far from the Solomon Islands. He was found drifting in a native canoe and, judging from his condition, had been in it for some days. The results of such exposure were aggravated by the serious ill-treatment he had received in the form of severe cuts and wounds. At first it appeared to be impossible to save him, but his body eventually responded to treatment though his mind still wandered. He was a man of considerable education and gave his name as Stephen Dawcott. Upon arrival here I placed him in a mental home. During the next four months I was absent, and when I returned, it was to find that he had made good his escape. The authorities were mystified and handed to me the enclosed manuscript which he had left behind. They saw it as the raving of a madman, but to me it seems a matter requiring a less facile explanation. I await your reply with interest."

The signature was "John Haddon," and to it were appended the letters, "M. D."

The president frowned as he set aside the letter and took up the manuscript. There had been a Stephen Dawcott, an anthropologist of some note, aboard the *Scintilla.* But the *Scintilla* was lost. From the day she had left the flying field on her maiden trip to the moon, nearly a year ago, not a word had been heard from her. She had roared from Earth into mysterious non-existence. But Stephen Dawcott had been aboard her—he was sure of that. He and others of the Lunar Archeological Society had seen Dawcott's among the faces at the windows before the *Scintilla* took off. And now the man was reported as picked up in Melanesia, of

all unlikely places. The president's frown deepened as he began to read the manuscript:

* * *

. . . . The *Scintilla* behaved in an exemplary manner on her outward journey. She justified the high hopes of her designers by the smooth swiftness with which she leapt out from Earth. Captain Toft was delighted with her performance and swore that there could be no sweeter ship to handle in all the ether. Those of us who had taken part in earlier space-flights agreed unreservedly. The new Danielson acceleration compensators had proven their worth and ridded space-flying forevermore of the starting strain and its unpleasant effects. In design, furnishing, and facilities for carrying such fragile relics as we might find, the *Scintilla* was a credit to the Lunar Archeological Society who had built and so lavishly equipped her. The perfect start, followed by the peaceful smoothness of our voyage could have raised no apprehensions in the most psychic soul. Indeed, what possible cause could there be for apprehension? The silver globe before us was worn out, arid and still with the supreme stillness of death. No ship cruising above that gutted shell of a world had seen sign of as much life as lies in a blade of grass. Even the crater of Linne, which had been suspected of harboring the last vestiges of life, had been found as barren as the rest.

"Dead," I murmured as we gazed out of the living-cabin windows at the withered satellite. "All the 'fitful fevers' done and gone; a whole world mummified and at rest."

● But I did not know Luna then, I did not know to the full that desperation with which life strives and clings . . . .

We made first for the North-East Quadrant and sank to a gentle landing on the glittering, metallic dust which makes the crater of Aristarchus the brightest spot on the face of the moon. This was to be a preliminary trip. Our object was to survey the ground for future operations rather than make them ourselves. A number of sites were to be examined and reported upon with a view to deciding which would be the most profitable to excavate. Aristarchus held little of interest for us save the almost obliterated remains of a small settlement upon the northern side. The details of our trip are of little interest here, so I merely record that we moved next, unprofitably, to the Mare Crisium and thence across the equator to Tycho. Next, Clavius, greatest of all the craters, provided quantities of material and showed indisputably that a great civilization had once flourished in what is now only a vast bowl of sand and rock, a hundred and forty miles in diameter. Thus we came at last to the Mare Serenitatis, the Sea of Serenity . . . .

Who named this immense oval plain? I cannot remember, but I do know that he saw it only through a telescope, two hundred and thirty-nine thousand miles away. He did not see it as we did—a huge sterile stretch, grey-floored and gloomy. Had he been able to stand upon one of the tortured mountains at its brink and look out across that somber desolation of sand, he would have called it not the Sea of Serenity, but the Sea of Foreboding . . . .

We sailed slowly across to the North-West. Every member of the expedition was at the windows scanning the featureless floor for any sign the ancient Lunarians might have left. Until now we had felt no uneasiness. All the moon is bare, but the harshness of its vistas had not played upon our nerves; it was only what we had expected and could scarcely affect us, but now the monotony of this great dry sea bed seemed to impress us all in greater or lesser degree. Unromantic scientists though we were, we felt a misgiving which none of us was willing to put into words.

And then, less than twenty miles from the far side of the sea, the steady throbbing of our rockets was interrupted. The firing tubes began to stutter uncertainly. I was with Captain Toft when the chief engineer rang through and reported that it would be necessary to descend for repairs. The hasty glance which Toft gave

through the control dome windows told me that he had conceived the same distaste for the locality as had the rest of us. He decided swiftly to make for the cliffs now looming ahead at the sea's edge. There could be no better landing surface than the level, grey sand beneath us, but he preferred to stop near its confines. With some anxiety, he inquired the extent of the failure, but was told that this could not be ascertained while in flight. The *Scintilla* continued to forge lamely ahead, gradually sinking. She took the sand at length some two hundred yards from those high perpendicular cliffs which once had stood like the ramparts of giants against a beating sea.

The Captain left the dome to interview the engineer, and I made my way to the central saloon. A deal of chatter greeted me as I opened the door. My colleagues were peering excitedly at the cliffs; all signs of their depression had vanished. Robson, the leader of the scientific side of the expedition, drew me forward and thrust a pair of field glasses into my hands.

"Look at those cliffs, man. Just look at them."

I focused eagerly. The sand in the immediate foreground was dotted with rocks of all sizes which had fallen from the heights, and beyond them was a line of darkness which hid the cliff-face in deep shadow. The meager, reflected light was just enough to show regular markings of some kind. I fancied that I could make out the carved figure of a man.

"Wait a minute," cried Robson as he turned and dashed from the room.

A moment later, a searchlight was playing a flood of brilliance onto a scene which caused us to gasp incredulously. The surface of the granite-like rock to the height of some seventy or eighty feet was covered with carvings in high relief—an involved, ingenious ordering of the figures of men, animals, and conventional forms. The first astonished silence was succeeded by a babel of excited talk. Everyone spoke at once, and no one listened. And no wonder; compared to this revelation, our earlier discoveries dwindled to mere nothings. It seemed that we might have found the lunar Book of the Dead carved upon this mighty stone page.

## CHAPTER II

### Frozen Corpses of the Moon

● Robson came back and started to tow me in the direction of the space-suit lockers. He continued to babble excitedly as he lifted the clumsy garments from their hooks. The suits were essential, for though contrary to expectation, it had been found that some air still existed upon the moon, and in the deepest craters was almost breathable during the lunar day. Yet the rarity of such as lingered in the beds of the vanished seas compelled artificial aid.

As we left the ship and drew near the cliffs, I think that there was no doubt in any of our minds that the design was a picture-writing of some kind. The irregular repetition of certain glyphs practically established the fact. None of us, of course, could yet attempt any translation, but the photographers were already arranging their cameras to provide a record for more leisured study. I watched them work with an untraceable sense of uneasiness creeping over me. I have said before, and I repeat, that although I am a hard-headed scientist, I was nevertheless aware of a distinctly unscientific misgiving . . . .

The rest were too enthusiastic, too occupied with pointing out details and symbols which might, or might not, be analogous with similar symbols on earth, to share my anxiety. And I did not mention it—it was too irrational, illogical.

It was Robson who made the great find. He had gone close up to the cliff and was examining a floridly incised square of the surface. Presently his cry sounded in all our receivers:

"A door," he said. "There's a door in the cliff."

We crowded up to him and found that the square was bordered all around by a narrow crack. Millennia ago, when there had been a wind upon the moon, the grey

sand had drifted up at the foot, but it took only a few moments' scratching to lay bare the threshold of the stone panel. Already, at the ruins in Clavius, we had established that the lunar practice had been to swing a door upon a central pivot so that it turned sidewise through ninety degrees, leaving a passage to either side. Accordingly, Robson flung himself upon one side and pushed. Finding it immovable, he transferred his strength to the other. It moved back an inch or so and then stuck. Spurred on, he brought every ounce of his strength to bear, and slowly the great rock door which would have defied the efforts of three men on Earth, swung around. Without hesitation, he switched on the light at his belt and walked in. We followed him for ten yards; then he stopped.

"Another door," he complained irritably. "They certainly meant to preserve whatever's inside. Let's have some more light on this."

The second door was plainer than the outer and the only sign on it was a deep-graven circle. As I looked at that circle, my premonitions intensified. The circle—the world-wide sign of infinity, eternity—could it be possible that here, on Luna . . . ? I almost called upon the others to stop, but realized in time how weakly my warning would fall before their exploring zest.

"It's sealed," some one discovered. He pointed to a dozen or more blobs of black, shiny composition fixed across the jambs. On each of these, too, was impressed the sign of the circle.

To the non-anthropologist, it may seem strange that I should have attached an Earthly importance to the sign of the circle here on the moon. But it is, with the possible exception of the cross, the earliest and most widely used of symbols. It was significant of man's will to immortality in all parts of the globe from far back in prehistory, and it remains significant still.

It had dominated the lives of many races, and now here it was again—on the moon!

I stood unhappily aside and watched the rest break the seals. But the door still refused to yield, even to the efforts of five men. They drew their knives and fell to scraping out a tight-plugged paste around the edges. They tried again, but still the stone square stood adamant. Robson suggested a small charge of explosive.

"The door has no value," he pointed out. "There's no carving on it except the circle."

The rest agreed after a momentary hesitation. Ten minutes later, the face of the door was cracked across and a crowbar was levering the fragments apart. The barrier soon succumbed and we scrambled over the ruins to arrive in a large hewn room. Here and there, black openings in the walls suggested corridors to further rooms, but we gave them little attention at present, for our interest was centered in a scatter of long boxes lying on the floor. They were made of some grey metal which reflected the rays of our lamps only dully. One, close by the door, had suffered from the explosion. The lid was loosened and lay awry. Through the space it had opened, there hung a human hand.

● Robson laid hold of the battered edge and wrenched the lid clean away. As his eyes fell on the contents, he started back in surprise. We hurried to his side and stared down in astonishment — men of Earth looking for the first time upon a man of the moon!

He was perfectly preserved, and we, poor fools, wondered at the artistry which had been able so to conserve an unshrouded corpse that after thousands—perhaps millions—of years, it could have appeared to have lived but yesterday. Not one of us guessed the truth about that body. We were sufficiently conceited to believe that no race could have surpassed us in any branch of knowledge. We looked down upon that moon-man, noting his almost unbelievable chest development; remarking his brown pigmentation and the Mongolian slant of his eyes; observing that he was a little shorter than the shortest of us and telling one another that he was brachycephalic; classifying

him. If anyone of us happened to notice that the lips were drawn back in a smile, he did not mention it—of what interest to a scientist is a dead man's smile . . . ?

● When we returned to the *Scintilla* for rest and replenishment of our oxygen supplies, Captain Toft greeted us with the information that the wear in our firing tubes was more extensive than had been suspected. It would take, he thought, nearly twenty-four hours to effect the replacements. The delay irritated him, for he had meant to follow daylight around the moon to the invisible side. The present situation would cause night to overtake us, for the flaring sun was already not far from the horizon and the dark line of the two weeks long Lunar night was crawling towards us, a bare twelve hours away. But we did not share his anxiety to be off. Indeed, we welcomed the delay, for it gave us some time for investigation. Night or day would not matter to us in the rock vault.

A dozen specimen coffins were loaded aboard the *Scintilla* after we had opened them to assure ourselves that they contained the bodies of six men and six women. With these safely stowed away, we felt at liberty to examine the vault more thoroughly.

There was little to repay detailed investigation of the place itself. No carving or decoration graced the interior, but we found that it and the subsidiary chambers contained a surprising quantity of coffins —altogether, more than four hundred of them. Each one, when opened, revealed a puzzling device whose purpose we could not guess. As the lid was raised on its hinges, two secondary occurrences took place. At the first loosening of the catches, something inside dropped with a musical tinkle. Investigation revealed the fragments of a small glass globe, smashed to pieces. Then the actual pushing up of the lid thrust, by means of an ingenious arrangement of levers, a slender hollow glass spike deep into the corpse's flank. This was automatically withdrawn as the lid passed the perpendicular. Robson and I examined the device curiously, but could make nothing of it.

"I guess it's something to do with preservation," he suggested vaguely, and turned his attention to the other contents.

## CHAPTER III

### From Out of the Past

● Many of the coffins enclosed not only trinkets and trappings upon the still forms, but also sheets of withered writing material covered with a quasi-pictorial script. This obviously must be collected, but since prolonged work in space-suits is inadvisable, we came to an arrangement of shifts. My turn came some six hours before sunset, and my companions were Jay Royden and Walter Greg, good men both.

We were not unduly depressed when we left the *Scintilla's* lock. My own earlier misgivings had all but disappeared under the cheering influence of the others, and if I thought at all, as we made for the vault entrance, it was of the good luck which had caused the *Scintilla* to have her misadventure here. But for that, we might never have seen the rock carvings.

The three of us were soon scrambling once more into the hewn tomb. For an hour or more we worked quietly. Necklaces, bangles, daggers, and rings which would soon be proudly shown in the museums of Earth were methodically stripped from their owners' still forms. The Lunarians, it seemed, did not know clothes as we do. What little they wore was not for covering, but for ornament in the way of worked belts, intricate breast plates and the like. Very soon our miscellaneous collection began to form a sizable pile, and I decided that it would be more convenient to remove it from the chamber where we were working to a spot nearer the main entrance. Two journeys were necessary, and as I made the second, I came upon a sight which brought me up with a jerk.

One of the coffins by my way lay open and the inmate's hand rested on the edge.

I stared in shocked horror. It had not lain so during my previous journey. I hurried past with a thumping, painful heart. I dropped my burden with the other plunder and turned to scan the vault with the awful intensity of growing panic. My ears strained to listen, though I was cut off from all external sounds. Something seemed to flicker just beyond the rays of my lamp. I jerked stiffly towards it, but the light showed nothing amiss. I turned on, scouring the place with my lamp. Nothing . . . . Nothing . . . .

Then I looked back to the first corner. My arms fell weakly; my heart hammered in panic.

A corpse sat upright in its coffin.

I must have cried out, for I heard Walter's voice in my receiver.

"What is it?" he was calling anxiously.

"Come here, quick," was all I could manage.

The urgency in my voice started them without further question. I stood with my back to the main entrance and turned my light on the passage-mouth from which they must emerge. Something moved again outside the circle of light, but I dared not throw the rays upon it. The two grotesque space-suit-clad figures came hurrying into sight.

As they saw me, Walter demanded again: "What is it?"

I did not answer him; instead I shouted: "Look out!" A dimly seen shape was moving in the shadow behind them.

Walter snatched at his knife and made to turn, but swift as he was, he was too late. A naked brown arm came snaking over his shoulder. Its elbow crooked under the front of his helmet and dragged his head back. Another brown hand shot groping for his knife. And even as Jay turned to help, another pair of brown arms came twining about him and I had a glimpse of a slant-eyed face leering beyond. The hand which sought Walter's knife tore it from his grasp. I could hear him grunt as he struggled to keep it. Then clearly through the microphone came a tearing as the knife ripped the space-suit and the following whistle of exhaling air. Walter gave one choking cry . . . .

The whole affair had been too sudden for me to give any help. Before I could take more than a step, came a second tearing sound and I knew that Jay, too, was past help. I stopped suddenly—no use to go on. Then I saw that the corpse which had caused my fright was no longer sitting—he was climbing out of his coffin, his face leering towards me . . . .

I turned and sprang for the open, racing for my life across the sea bottom.

* * *

● They didn't believe it. Already I had shown signs of queer behavior, and now I was babbling fantastic nonsense. Dead men coming to life! Dead men fighting the living! Obviously my brain was turned. The doctor attempted to soothe me. Robson vainly attempted to reach Walter and Jay on the radio. There was an odd expression on his face when he turned back to look at me.

"Can't raise them," he said. "Something's certainly wrong. Do you think—?" He broke off and nodded suggestively towards me.

The rest looked serious. They did not put their thoughts into words, but they were plain enough on their faces. Three men alone—and one of them a madman!

Two volunteered to go out and search. The rest began to help them into their space-suits. I begged and besought them not to go, but they only cursed me for getting in their way. Others dragged me back and held me penned in a corner.

"Good God, you fools," I raged at them, "wouldn't they have called you if I'd run amuck like you think? Can't you see that I'm telling you the truth? If you go over there, they'll get you, you fools, you bloody fools! They'll get you!"

Nobody gave me a scrap of attention. The men were clad and their helmets affixed. As they left the airlock, Robson switched on the radio to keep in communication. My anger passed as I helplessly watched them trudge towards the search-lit cliff face. Nothing I could do would

save them now. We saw them pause by the open stone door and heard their voices in the speaker as they settled who should take the lead. Then they disappeared. For a few seconds there was nothing but the sound of breathing. Suddenly a voice with a tinge of nervousness spoke.

"What was that? Something moved."

"Nothing," answered the other. For our benefit he added: "We are just climbing over the remains of the second door—now we're in the vault. There's—God, what's that?" His voice was suddenly shrill—and then it broke. "Quick, out of this, quick man—back, for heaven's sake!"

After that it was a jumble—hard breathing mingled with odd phrases. "— dozens of 'em." "—got him." "Keep together." Then: "Look out, he's got a knife!" Horror-stricken, we heard the sound of stout cloth ripped asunder, — gasping cries. After that, all was silent. . .

* * *

My companions turned shamefaced, wondering eyes upon me. Their eyes were full of uneasy fears. Robson murmured something which might have been an apology. He begged for the whole story. I told him as calmly as I could all that I knew. He found it meager.

"Have you any theories?" he demanded.

I had been thinking, but I hesitated. "It's rather a fantastic theory," I admitted.

"Of course it is. The whole thing's fantastic. Let's have it."

"You remember what happened when we opened the coffins? A globe of something dropped and smashed. Then, too, there were those glass needles . . . . There must have been a purpose behind them."

Robson looked hard at me. "You mean that the needles might have been some kind of hypodermic?"

"Something of the sort," I nodded.

"And that they revived what we thought were corpses?"

"There were the glass globes, too," I reminded him.

"But it's ridiculous, preposterous. After thousands of years . . . . There might be a possibility of suspended animation for a short time, but this . . . ."

"Why should it be impossible for an indefinite length of time? The fact that we don't know how to do it doesn't prove its impossibility. Those coffins were airtight; they may have been full of preserving gas, for all we know. We couldn't notice that while we were wearing space-suits."

"But—"

"Oh, all right," I said. "I'm only offering a theory. Can you think of a better one?"

Robson turned to contemplate the cliff.

"But why?" he murmured. "Why?"

"Why do men put up memorials?" I asked. "It's a habit, an instinct to perpetuate. I should say these people had just the same instinct. Their world was dying; the race was dying. Perhaps they thought that it was only a phase and that the moon would become fertile once more. Anyway, on the face of it, it looks as though they decided to take a chance and try to save some of their race for whatever future there might be."

"But how can they live?" asked someone. "There's hardly any air."

"But remember the enormous lung capacity," suggested Robson.

## CHAPTER IV

### The Return to Oblivion

● With the suggestion of a rational explanation, the fears of the party grew less intense. Some of the more adventurous even volunteered to undertake a further investigation. They could go prepared and well armed. Robson vetoed the idea at once. He pointed out that there were over four hundred of the Lunarians ready to over-run them faster than they could fire.

"But we don't mean them any harm."

"Nor did the others, but they got theirs. It doesn't seem to have occurred to you that they must have food. There was nothing to eat in the vault."

We looked at one another. This implica-

tion of the immediate capture of our men had not struck us before. It did so now, unpleasantly.

* * *

Robson summoned Captain Toft. This was a danger which concerned the whole ship, not merely our scientific group.

The Captain's incredulity was easily beaten down by our massed conviction. He was all for action and rescue until he realized that the space-suits had been slit and that the men were past all help. Robson pressed for the immediate removal of the *Scintilla* from the Mare Serenitatis to a less dangerous resting place in some crater, but Toft shook his head.

"The engines are down for repairs. Even by forcing work to the limit, it'll take another ten hours." Our faces looked anxious enough to make him add: "I'll do my best, gentlemen, you may depend on that, but I can't promise a minute less than ten hours."

Robson thought for a while. At last he spoke.

"We must keep them penned up as long as we can. I want two men to go outside and take rifles. Every man or woman who tries to get out of that vault must be shot."

Two volunteers were immediately forthcoming. They hurried into space-suits, and were on their way to the lock when a shout from a watcher at the window stopped them.

"Too late," he called. "They're out."

A knot of a dozen or more moon-men had just emerged. They halted a few paces from the cliff and stood on the grey sand, shielding their eyes with their hands from the glare of our searchlight, and looking about them. Now that they were erect, their differences from Earthmen appeared more pronounced. The large ears developed for catching sounds in the thin air seemed to dwarf their heads, and the huge bulging chests were so disproportionate as to render all the limbs skinny and spindly by contrast. They looked bewildered by the barrenness of the world they now faced. Not only did it fail to fulfil their expectations, but it was obviously different from their last view of it. One man raised his arm and pointed to a distinctively distorted crag as though it were a recognizable landmark. The rest nodded and let their eyes wander, searching for other familiar sights. More of their kind came out of the vault and joined them. After a short conference, they seemed to reach a decision and the whole group turned towards the *Scintilla*.

The doctor, standing next to me, was watching them with close attention.

"They're not doing too well," he murmured. "Even those great lungs are laboring a bit. The atmosphere must have been a great deal denser when they went in. I wonder just how long ago—"

Robson's voice cut him short. He was addressing the two in space-suits.

"They mean mischief. You two get up into the control dome and take your rifles. We'll evacuate the dome and then you can open the windows and pick them off, if necessary."

The two men left the room and we heard them clattering up the metal ladders. Robson was right. The moon-men and women did mean mischief. It was in their gleaming eyes and bared teeth as they approached. They had resumed the trappings that we had pilfered. Each wore the broad worked belt of Luna, and about their necks and ankles glittered metal bangles. Black hair, held back from their faces by ornate circlets, depended in a lank mane upon their shoulders and down their backs. One man, slightly taller than the rest, appeared to be the leader. As they drew close, he turned to incite the rest. A moment later, a volley of rocks and stones clattered futilely against the *Scintilla's* metal sides.

● We took heart. The primitive simplicity of such an attack encouraged us. Half a minute later, two moon-men dropped inert. Our men in the dome had gone into action. The attackers, by now a hundred strong, were thrown into momentary confusion. But the wavering was brief, and in a few seconds, they were running towards us. They had seen in a flash that once beneath the ship's overhanging sides,

they would be safe from the marksmen above.

A well placed rock put the searchlight out of action and plunged the cliff face into intense shadow. It became impossible for the riflemen to pick off the reinforcements which would pour from the tomb. They would be all but invisible until the line of sunlight was reached — and that line was crawling slowly closer to us with the sinking of the sun. Another searchlight was switched on, but it, too, was swiftly obscured. The main body of the attackers was now out of view from our windows, though a large number of stragglers continued to dart from the shadow towards the ship. Of these, a number fell to the guns, but a larger number won through unharmed.

From down the corridor came the sudden clanging of an attack upon our outer door. We looked at one another and smiled. There was precious little to be feared from that direction. Nor were the moon-men long in realizing that the steel would defy their utmost efforts. In a very short time, they came clustering around the window, hungrily gloating and excitedly jostling one another as they peered in.

The leader picked up a prodigious rock which could not have been stirred by one man on Earth. He flung it with a mighty heave against the fused pane. The pane was unharmed, but Robson looked serious.

"I don't know how much of that sort of thing it will stand," he said doubtfully. "If they try two or three of those rocks simultaneously—?"

The same idea had occurred to the moon-men. We saw them collecting the largest rocks they could handle. There was a leering look of triumph on the face of the leader as he regarded us through his slant eyes. Robson rushed back and opened the door.

"Quick, out of this," he shouted.

We left in a headlong rush, and as the last of us came through, we heard the crash of the shattered window. The door snapped to behind us automatically as the air pressure fell.

Within a couple of minutes, a furious battering began towards the stern. Half a dozen of us raced down the ship. As we clattered through the engine room, the chief engineer looked up, spanner in hand. He was working all he knew. The grime on his face was trickled with sweat and his hair lay damp and flat.

"Clamp on the emergency plates," he called as we passed.

There had been no time in the main cabin to fix the heavy steel plates across the windows, but now we seized them from their racks and set to with a will. No sooner was a plate fixed over one porthole than the moon-men turned their attack to another, and we had to rush that also to cover with an emergency plate.

In the middle of our activity came word that the men in the control dome were abandoning their position. The place was becoming untenable on account of the bombardment of rocks, for while the rocks could be thrown on a trajectory which kept the throwers concealed, the riflemen must have direct vision before their shots could be effective.

For what seemed several hours, we lived in a nightmare of rushes from point to point. As fast as we made one spot safe, another was attacked. Then, at last, when we were weary to the point of exhaustion, we became aware that the frenzy was lessening. The batterings grew fewer and feebler until at length they stopped altogether. We waited, puzzled. It was almost an hour before we cautiously removed an emergency plate and peered out. Only then did we understand the abrupt cessation of hostilities.

The sun had set and the sea bed shimmered coldly in the pale green-blue Earthlight. Of the moon-men, only a few still, crumpled forms were to be seen.

"They've gone," I said. "But why?"

Robson pointed towards the cliff, and I saw that the stone door was now closed.

"The cold," he explained. "Right now it's colder out there than anything you've ever known. In a little while, it will be so

cold that what little air there is left will freeze solid."

"And the moon-men?"

"It means the end of them. Even in their vaults, the air will freeze—though they'll freeze first."

"Poor devils," I said. "To wait all those thousands of years just for this—to freeze to death."

I had an unhappy vision of the last luckless moon-men and women huddled together in their lightless tomb, waiting without hope for the creeping coldness of death. Robson's voice broke my mood.

"All hands on the job," he said briskly. "We've got to get ship-shape again. Captain Toft, what are your orders, sir?"

## CHAPTER V

### The Twelve Coffins

● It was decided that we would make for Earth. The morale of the *Scintilla's* company was too shaken to undertake the exploration of Luna's hidden side on our present trip. Since little or no calculation was necessary, Toft waited only until the engines were repaired before he headed straight for the great pale disc of Terra. The ground fell away and we looked for the last time on that misnamed Sea of Serenity. A few scattered brown figures were visible in the Earthlight—they seemed like a sad symbol of the littleness of that passing phase of worlds which we call life.

With that final glimpse, those of us not on duty turned away and sought our cabins for overdue rest.

I slept long. It was all of twelve hours before I reopened my cabin door. My way down the passage led me past the chief engineer's room and I hesitated outside his door, wondering whether to take him along for breakfast or whether to let him have his sleep out. My hand was on the knob when the door opened abruptly and in the doorway stood a woman—a moon-woman! I stood frozen with the shock, staring at her. She returned the stare, white teeth and dark eyes glinting. She crouched slightly, becoming the more grotesque and horrifying. Her right hand slid forward and I saw that it held a knife which was red with blood. I lunged to grip her wrist, but she was too swift. With a twist and a cry, she had passed me and was away up the corridor. I hesitated and then turned into the engineer's cabin.

One look at him was enough — that moon-devil must have slashed and slashed . . . .

For a moment I stood irresolute. The engineer's fate might well have been mine —and I was not safe now. I ran into the corridor; the rest must be warned.

At the threshold of the living cabin I checked in horror. Five still forms lay on the floor, each of them horribly mutilated. I recoiled and fled to the control dome, hoping desperately. My fears were not vain. Just in the entrance, I stumbled over the bodies of two officers. Beside a third figure crouched a moon-woman. At my entrance, she arose and whirled towards me; I could see that the man at her feet was Toft, alive, but bound and helpless. She faced me like some terrifying Medusa, stepping catlike, a knife in either hand. I backed and grasped a chair intending to use it as a weapon—I had forgotten that all furniture on the ship must be fixed. She gave a cry, semi-human and chilling. A door on the far side of the dome opened suddenly to reveal a group of the grotesque moon-men and women. It was more than I could stand; I fled, bolting the door behind me.

* * *

For the next twelve hours, I remained locked in my cabin. There was plenty of time to review our folly. How could we, even in our excitement, have overlooked the possibility of menace from those twelve coffins that we had taken aboard? And not only had we taken them aboard, but we had even opened them to assure ourselves of their contents. Surely, some of us should have foreseen the danger! Either Robson or myself ought to have fastened down the lids, or, better still, have jettisoned them upon the moon. And in the middle of my self-blame, it came to

me that this was not the end. They must have taken the ship completely by surprise and murdered every man they had found except Toft—they would make him show them how to work the ship, or else force him to guide the *Scintilla* back to Earth himself. The moon-people had planned thousands of years ago their bid for survival, and it had not yet failed. A dozen of the Lunarians might yet be let loose upon Earth.

I was unarmed, for all the weapons were kept in a cupboard off the main living-cabin. I would have to get there before I could avenge my comrades and wipe out the moon-folk. I crept to the door and listened. One hasty glance up and down the corridor assured me that it was empty, and I made stealthily in the direction of the bows. I reached the main cabin undetected, and slipped inside. Averting my eyes from the shambles on the floor, I sought the armory cupboard.

Its steel door was locked . . . .

● Footsteps rang on the floor beyond the opposite door. In a flash, I was across the room and back by the way I had entered—weaponless, and perhaps the only survivor unless they had permitted Toft still to live. What could I do? I could think of nothing but that I must live and carry my warning. And to live, I must have food.

By devious ways I gained the storeroom and piled the necessities of life into an empty case. I had lugged it half-way back to my cabin when misfortune overtook me. Rounding a corner, I came face to face with a moon-man. His surprise was greater than mine—I got in a good drive to the chin while he still stared. He went down with a cry which was half shout and half groan. It was not loud, but it served to alarm his fellows. There came a din of feet pounding down the corridor behind me. Leaving my case of food, I jumped over the prostrate man and fled.

Running and sliding on the metal floors, I made for the only safe place I knew; my cabin. The clatter of pursuing feet grew louder, spurring me on. Turning at last into the final alley, I found my way blocked. But I was desperate, and there was only one thing to do. I put my head down and charged like a bull at the four brown figures before me.

There was a brief whirling nightmare of kicking and hammering, and then somehow I broke out of that mêlée and gained my cabin. With a final effort, I slammed the door in my pursuers' faces. My chest and face were bloody and lacerated. I remember pulling free a moon-man's dagger which lodged in my left shoulder; and after that—nothing . . . .

* * *

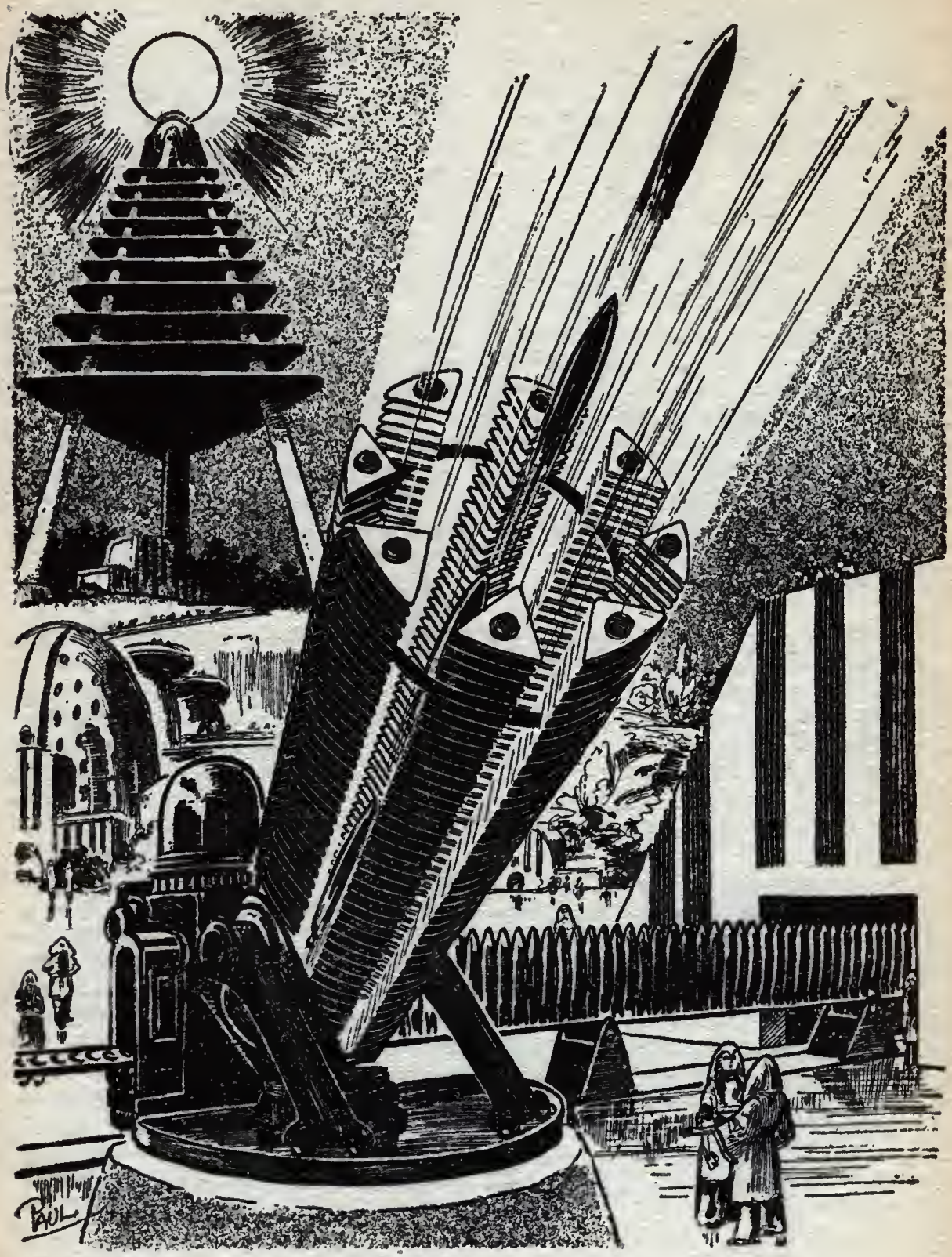
The jolt of a rough landing finally roused me from my sleep or coma. With an excruciating effort, I raised my stiff body to look through the small porthole. Outside was a stretch of white sand and beyond it a line of frothing breakers glistening in the sunlight. Somehow, the moon-men had brought the *Scintilla* back to Earth. I was a sick man and it took me a long time to move. When at length I managed to stagger down the passage, it was to find the entrance wide open and the ship deserted. Somewhere in the green forest which fringed the beach, the moon-folk were prowling and hunting.

I made my difficult way to the fuel store, and close to the tanks I lit a slow fuse—at least, there would be no *Scintilla* as a safe base for the moon-devils' operations. Then as fast as I could, I made my way along the shore. A few days later, I found a long-neglected canoe. I repaired it the best I could and paddled it out to sea.

● The President of the Lunar Archeological Society frowned. He pulled his ear reflectively, and shook his head slowly. He turned the bunch of papers over and, still frowning, began to read them again.

Preposterous, of course, but — well, there *had* been a Stephen Dawcott, and he *had* sailed on the *Scintilla*. . . .

THE END




*(Illustration by Paul)*

**"We have already given you our reasons for believing that inhabitants of the planet Venus are at the bottom of all this—"**

# THE MENACE FROM SPACE

## By JOHN EDWARDS

**● One does not have to read science fiction to realize that we, on our tiny speck of a world, are utterly helpless in the face of cosmic occurrences. Suppose the earth should some day blithely roll into a poisonous gas nebula. We could not prevent it. We could not protect ourselves from it. We can only take what comes. This may seem a rather pessimistic or fatalistic viewpoint, but it is the truth, and no one can deny that. How could a race of creatures that cannot even control their own weather expect to thwart cosmic forces? It cannot be done.**

**This tale is realistically presented, and we know you will enjoy every word of it, as the various threads of the plot gradually associate themselves with each other. Here is science, mystery, human nature, common sense, and extravagant fantasy.**

● Alexander Morrison, D.Sc., F.R.A.S., etc., snorted angrily and tossed the paper which he had been reading onto the table beside him. In the armchair at the opposite side of the fireplace, James Haskell, Morrison's assistant and co-partner, looked up inquiringly from his book, smiling slightly as he noted the other's heavy frown.

"I gave Bradbury credit for more sense!" growled Morrison, speaking in his usual rapid manner when excited. "He's allowed himself to be drawn into that confounded controversy over the debilitated soil and the declining crops. Why can't these agriculturists use what brains they possess? Did you ever meet Bradbury?" he concluded abruptly.

Haskell shook his head. "I think not. What's he like?"

"Oh, er—short and broad, thin on top, high-colored, long-headed, and rather short-sighted. Agricultural scientist, botanist; about forty-five, looks less." Morrison paused, then returned to his topic. "One of the few men I thought had real brains in this benighted age. I suppose you've read all about this matter?"—his companion nodded—"Well, as you'll have grasped, the farmers have been blaming the scientists for the too extensive use of nitrates and nitrites as fertilizers and attribute the present—er—deadness, we'll call it, of the earth's soil to that. Usual short-sighted ignorance, I suppose. The scientists, whom Bradbury has now joined, blame it on the total lack of fallow land, although they admit that the terrific increase in population of the world does not enable the farmers to give any parts of the soil a 'rest.' The crops are barely large enough as it is."

"And what has friend Bradbury to say about it?" asked the younger man.

"His theory is that the successive cycles of crops are not varied enough to give the soil a chance to recuperate. We have now reached a stage where the continuous crops are taking more out of the soil than any form of manure—natural or artificial—is putting into it. He describes the soil, for the benefit of the lay mind, as growing more and more exhausted each year, with the result that the harvests are diminishing as the years pass; this despite the fact that there is a steadily increasing area of the Earth's surface coming under cultivation. God alone knows what would happen if there was ever a famine!"

"It seems as though the world is slowly, but steadily heading for a great famine," said Haskell, "and that we may expect this within a few years. Chemical science is not in my line, nor yours; but for my life, I can't see why our chemists haven't made more progress in the preparation of synthetic foods." He glanced at the clock on

the far wall of the library, and rising, stretched himself. "Nine o'clock, doctor. I'm away to the photo-room to see how those prints are coming. See you later."

"I'll be in the observatory from now on," said Morrison, as he too rose, and hammered out his heavy pipe into the grate. "I'm curious about that strange haze we saw last night in the Hercules region. The photographs may reveal something that we missed. Looks to me like a new nebula—or one not in the catalogs, at any rate . . . . Damn these agriculturists!" he added rather irrelevantly. "They're taking me off my own problems!"

The two astronomers left the library and went about their respective occupations, temporarily forgetting the approaching world crisis in the absorbing nature of their work.

● Alexander Morrison was at this time a private astronomer of middle age, tall and rather stooping in appearance, with graying hair and an irascible temperament. He surveyed the Solar System and nearer earthly affairs through a pair of large horn-rimmed spectacles with terrific lenses. This may have accounted for the somewhat distorted view he held of mankind and its doings, as evidenced by his fierce, periodic outbursts in a certain journal of progress, which he occasionally favored with his attentions. A queer man, said his critics, with a clever mind for things scientific, but in controversy the disposition of a devil, and intolerant when opposed. His observational work was fully appreciated by those whom it concerned, but the man himself was feared for his vitriolic pen and his impatience with those who could not follow his sometimes rather obscure reasoning. Solar astronomy was his special sphere of investigation, and on the flat roof of his lonely house, in the wilder parts of the Northumbrian moors, was perched his extremely modern observatory.

James Haskell, the older man's contemporary, was a thin, keen-looking man of medium height, with black hair and a colorless complexion—quite the reverse of Morrison's high-colored, rather florid features. The younger man, thirty-two years of age, was a Master of Science and an expert in astronomical photography. He resided permanently with Morrison, both being bachelors, and was the only human being to whom that eccentric creature had ever been known to defer on any subject, and to whom Morrison ever revealed the better side of his nature.

Later that same night, this ill-assorted couple were poring over the result of Haskell's work in the photo-room—two prints, one a spectrograph, the other a telescopic photograph of that section of the heavens occupied by the brilliant star Vega (of the Lyra group) and a portion of the Hercules constellation. For some time the two astronomers had been studying the obscure problem of star-drift, and its involution of the Solar System.

"This," said Morrison, tapping the photograph, "should have been a first-class photograph of Vega, considering the conditions under which it was taken; yet here in the foreground is a vague blur, which indicates . . . ." he paused, looking at Haskell.

"Very little at present," the latter finished, "It *suggests* a new or unknown nebula—but it might simply be faulty photography! This spectrograph of Vega shows nothing unusual. If there is anything there at all, then it is too faint to affect the spectroscope in any appreciable manner."

"There is something there," insisted Morrison. "This hazy mass appeared two nights ago; it is still there—and it is larger already! What is more, I hope to gather some information tonight. For two solid hours I have been watching—not Vega, but that tiny comet which entered the system last night. Heaven knows where *it* comes from—I can trace it in no catalog. Another stray visitor, I suppose, and a very minute one. However, what does matter is the fact that this comet is rapidly nearing that hazy patch in the sky. When it passes either beyond this patch, or between it and us, we might find something out."

"Then if you're sticking to the observational telescope, I'll look after the spectrometer." Haskell commenced his preparations, adjusting the huge telescope, to which the instrument was attached, toward the Hercules region. Fortunately, they were favored with a fairly clear atmosphere on that early September evening in 1943—the night which was to be a landmark in the lives of these lonely men.

● The result of that momentous observation appeared in a somewhat hilarious press a week later, accompanied by the usual mis-statements and exaggerations, and such headlines as: "ANOTHER FORECAST OF DOOM"; "ARE YOU READY FOR THE END?"; "DR. MORRISON'S STARTLING PREDICTION!"; etc. A certain newspaper, which seemed to indicate the general attitude of the press, brought forth the following effusion:

"THE END OF THE WORLD?
Dramatic Forecast From an Observatory

"Two English scientists, Dr. A. Morrison and Mr. J. Haskell, have startled the scientific world with an article in this month's *Progress*. According to their account of observations made on the night of September 2-3, there lies ahead of us in space, an immense cloud of some unknown gas. This is either being overtaken by our Solar System (which scientists tell us is moving in the direction of the star Vega at a rate of about eleven miles every second) or is rapidly approaching our sun and planets, being drawn towards us by the gravitational pull of the sun. Dr. Morrison estimates that this mass of gas is of sufficient extent to completely envelop our sun and the minor planets, extending at least as far as the orbit of Mars. He gives no figures for his deductions, but says that the Earth may expect to enter the gas around the end of October. It is possible that the bulk of this gas will be drawn into the sun, but this eminent scientist is assuming that the atmosphere of each planet will absorb a great volume of the gas. As the strange cloud is of a 'heavy' nature, he believes that it is certain to reach the surface of the earth, and should it be poisonous to human life, the result can be imagined.

"The presence of this gas-cloud was first noticed by the passage of a very small comet through it; a stray visitor to our Solar System from space. The two scientists are continuing their observation of that part of space, but our representative was unable to extract further information from them. Other scientists and astronomers, when consulted, refused to make any comments upon the matter at present, and the two mentioned seem to be the only ones who saw the passing of the comet through the gas.

"As this is the *third* forecast of doom for the world during the past two years, we may be forgiven for venturing to cast some doubt upon the rather startling conclusions drawn by Messrs. Alexander Morrison and Haskell; despite their reputation in the world of science. Meanwhile we await further news from the Northumbrian observatory."

The above condensed selection was perhaps the most lucid exposition of the more technical article in *Progress*, but it certainly annoyed Morrison.

"A choice piece of journalistic effort!" he stormed to Haskell, jabbing his long forefinger at the offending newspaper. "We gave *Progress* a few facts, ventured obviously tentative conclusions, and there's the result! Pah! I begin to realize why Bradbury could hold back no longer from that other infernal business in the press." He paused and glowered at Masson, the manservant, who entered the dining-room at that moment to lay more newspapers before his employer. "Take those damned things away, Masson! Burn them—and if a single pressman crosses my threshold, I'll fire you . . . . d'you hear?"

Masson mutely inclined his head in assent. After fifteen years' service he knew his employer too well to worry about such threats. He glanced at Haskell, who was grinning broadly, then picked up the papers and retreated quietly.

● Haskell attempted to calm the troubled waters. "The radio transmitter will be ready tonight, doctor. I wonder what the press would say if they knew of the ultra-short-wave messages we've been receiving lately? Unfortunately, the messages continue to grow fainter each night now—barely headphone strength."

Morrison sipped at his coffee and grunted. "Your transmitter is too late, I'm afraid. Venus has overhauled and passed us now. She was at inferior conjunction* a few days ago, and is now racing ahead. The fading of the radio signals strengthens my first assumption that they came from that planet. Confound it! We seem to miss everything by a fraction, and gain little ground at all. Now, if we could only interpret those signals . . . ."

The two men were talking over their after-dinner coffee. The radio transmitter to which Haskell had referred was to have been the complement of an ultra-short-wave radio receiver which he had originated many months previously; radio development being a side line of his in his spare moments. This receiver, operating upon a hitherto unused wave-length of millimeters only, had been built more as a curiosity than with any particular aim.

Long before Morrison's discovery of the mysterious gas which he felt sure lay ahead of the Earth, Haskell had been receiving strange signals upon a wave length of 200 mm. For many weeks, he was unable to guess at any possible source of the signals, or to make anything intelligible out of them. When the two men discussed the matter at great length, it was found that the signals or messages were gradually increasing in strength as the planet Venus approached the Earth. When Venus was at her nearest for that year (i. e., inferior conjunction) the radio messages were loudest, though never at any time were they any stronger than headphone power. Meanwhile, Haskell had built the transmitter in order to attempt some reply to the unintelligible signals, if only to indicate to the senders that their messages could be heard on the Earth.

"I suppose that Venus *is* the only possible source we could assume for the signals?" remarked Haskell, after a long silence.

"It's the only *probable* starting-point." barked his companion, evidently still ruffled. "The next nearest planet is Mars, but that will not be in opposition* for at least three months yet. Venus is the nearest planet in the whole system at this moment, even though she is now receding—as are your radio signals. There seems no other possible conclusion. There is not even a single asteroid nearer to us than Venus. Apart from that, you know *my* theories on the possible habitation of that planet, which I consider much better adapted for life as we know it than is a barren sphere like the ever-popular Mars."

"Assuming that these signals come from Venus then: You said the other night, doctor, that you feel convinced that these strange combinations of dots and dashes—as we take them to be—are intended as a warning of some kind. Were you thinking then of the Green Gas?"

Morrison nodded. "Decidedly. You saw for yourself that some kind of message was insistently repeated; the same grouping of signals every time; the same intervals; the repeated call sign; then the same message over and over again. I wish to heaven I could interpret them. If the Venusians knew of this Green Gas before we even suspected it, and are attempting to tell us something, then it must be of the utmost importance to us. Is it a warning? Are they trying to help us to guard against some unknown danger? Or is it simply an attempt to establish radio communication with Earth? All those questions must be answered soon—and we two seem to be the only ones on the right track!"

Haskell shrugged his slight shoulders. "We can only do our best. I'm as much a fatalist as you are, so far as the future of this planet is concerned. Well, I'll go up

*When Venus passes between Earth and Sun. This occurs roughly every nineteen months.

*Opposition—when the Sun, the Earth, and Mars are in a direct line, and in that order. This occurs when the Earth overtakes and passes Mars in their race around the Sun.

and see what can be done with the new transmitter tonight, though I expect little."

He arose and left Morrison to his pipe and varied reflections, and made his way upstairs to the top of the house. On the topmost landing of all, he opened a locked door, and stepped out onto the flat roof of the building. Close by was the great circular observatory, which occupied fully half of the available space. Adjoining it was the smaller rectangular building which contained the photography-room, a lavatory, and a small room containing a single bed—for use during long night watches. At the other end of the long roof-top stood a small stone hut, which housed the radio apparatus, as isolated as they had been able to make it. Towards this, Haskell made his way over the dark roof with the aid of an electric torch.

● There was no moon, and the light of the myriads of stars, far above, scarcely affected the intense blackness covering the rolling moorland, which stretched for many miles on all sides of the house. The latter stood on high ground, and during the daytime a splendid view of the surrounding country was obtainable from the roof. Morrison's nearest neighbors were a few scattered farmsteads, each several miles away.

While the younger man sat in his stone hut, patiently transmitting powerful signals in all the known codes of Earth, into the unknown depths of space, Morrison still sat alone in his dining room, thinking, wondering . . . . trying to piece together the fragments of their joint discoveries into a comprehensive whole. They knew so much, and yet how very little it seemed! How on earth would it all end?

## CHAPTER II

### The Strange "Meteors"

● It was a wearying, yet absorbing task that Haskell had set for himself in the radio hut. For the hundredth time, he jotted down on a scribbling-block the now very faint signals which were just audible in the headphones. Series of dots and what he took to be dashes came through at set intervals with great deliberation, but no sign whatever of a human voice. So it had been for many nights previous to this—but now he had at hand some means of attempting a reply.

During one of the intervals, he steadily transmitted a message in the Morse Code on the same wave-length of 200 mm.

One code's as good as any other in this case, he thought to himself. It's obviously impossible for us or any other planetarians elsewhere to hope to decipher each other's language or code. It will at least show that there are humans down here who can receive their signals.

While waiting the five or six minutes which must pass before his message (if received) could be answered from Venus in her position at that time, he once again studied the symbols he had received so often. Suddenly there buzzed in his ears the faint continuous note which the transmitter somewhere in space always used as a call-sign. This time the message which followed resolved itself into a totally different combination of dots and dashes upon the pad under his hand.

Later, Haskell repeated his message, and after the interval necessary for the signals to bridge the great gulf between the two planets, the new message was repeated. After this had happened several times, he discovered to his surprise that the time was nearly two o'clock in the morning. Atmospheric noises were now becoming very prevalent, and the incoming signals much harder to detect. With a sigh, he covered up the apparatus—which no radio enthusiast would have recognized as radio instruments, so different were they from the orthodox tube-sets of that time—and left the hut.

The electric lights were glowing in the observatory across the roof-top, showing that Morrison was still at work there. Haskell paused awhile to gaze around at the starry sky above. A single meteor glowed rather dully for a few seconds high in the northwest, and he glanced up at its passage with some indifference, for they were frequent visitors at that time

of the year. Then, something about the red streak held his attention. For one thing, it was traveling much slower than such celestial visitors usually did, and remained visible for a longer time. Then, curving downwards, it burst suddenly into a yellow flash several miles above, and vanished completely. A few seconds later, while the young astronomer still stood staring, a dull thud, like a muffled explosion, reached his ears.

"Strange!" he muttered. That was merely a beginning, however, for during the next few minutes, the meteor, if meteor it had been, was followed by many more, all acting in the same manner. Soon the dully glowing streaks were striking the upper atmosphere in such numbers that Haskell gave up any idea of attempting to count them. He turned quickly towards the observatory, to find that Morrison was already coming across to meet him, his path illumined by the flood of light from the open door of the building.

"This is a queer business, doctor."

"More than queer—it's uncanny. Never saw the like of it in my thirty years of astronomy." Morrison paused to gaze around the heavens at the ever-increasing celestial display. The red streaks of light, which had commenced in the northwest sky, were now shooting downwards from all points, at the rate of probably hundreds per minute. The two watchers on that lonely roof noticed that none of the streaming objects appeared to reach the Earth, all exploding upon reaching a certain point of red-heat, while still high in the atmosphere. The whole affair was accompanied by the same dull thuds as that which heralded the first of the missiles—not the rending, tearing sounds of great explosions, but indescribable muffled "thumps."

For some minutes, the two men stood watching in wonder, then Morrison said abruptly: "Come along inside, Haskell. I had forgotten that you haven't seen these things through the telescope. They're certainly not meteors, and heaven knows where they come from. We're getting our share of mysteries, this year of grace."

● After a few minutes at the direct-observation telescope, Haskell turned to find his partner standing watching him with a grim smile upon his florid countenance. With a puzzled expression, Haskell moved across to the reflecting telescope which they used for solar observation. After studying the thirty-inch silvered glass mirror of that great instrument for a few minutes, he apparently received confirmation of what he had seen in the smaller telescope, for he turned in amazement to Morrison.

"Well?" asked the older man.

"It—it seems incredible, but the nearest of those things seems to be fish-shaped—or torpedo-shaped, and of tremendous size! They glow redly as they enter the Earth's atmosphere, due to friction I suppose; seem to reach a moderate red-heat, burst with a flash, and vanish!"

"Exactly; and what does that tell you?"

"Missiles from distant space, at any rate. Some type of interplanetary rocket, I should say, from what the glass shows. Might even be visitors from an alien world, but . . . . "

"But if they should be space-travelers, they will never reach the surface alive by entering the atmosphere at that speed," finished Morrison. He sat down in the high seat near the eyepiece of the massive reflector, from where he could keep an eye on the mirror.

"Sit down," he said abruptly. "I want to talk to you. Assuming that these—missiles are carrying creatures from another planet, I would jump to the conclusion that they come from the same source as your radio signals, *but*—you say that the signals can scarcely be heard any more. Now if, say, the Venusians were behind those mysterious messages—which may be an attempt to inform us of the coming of these—er—rockets—surely, these same missiles would also carry an ultra-short-wave transmitter for use as they approached this planet."

"So I would expect," agreed Haskell with furrowed brows. "Yet the signals were scarcely audible half an hour ago, and there was only one change in their

form after I had sent out a message in Morse several times. I tried the whole range of the set—from ten millimeters to one meter wave-length, but received nothing else. Not knowing the sender's code, I am still as far as ever from decoding the messages."

There was a short silence while Morrison glanced once more into the eyepiece. The mirror still showed numerous streaks against the background of stars, while from outside the silent observatory came the muffled thuds of far-off explosions.

"There is another point," resumed Morrison. "One would expect a space-traveler or travelers in one, or perhaps two projectiles; scarcely more. There must be hundreds of these things arriving every minute, and apparently all over the globe. Either this has been meant as an aerial invasion, or these rockets contain no living creatures of any kind!"

"Then what on earth are they, and why could they have been sent here?" demanded Haskell. He arose and strode to the nearest window, one of four in the lower walls of the circular building. The aerial display was still in progress, though abating a little by this time.

Morrison gave his familiar grunt. "If we knew that, we might solve quite a few problems that are on my mind just now! With everything that has happened lately, the tricks of Nature and mankind are enough to drive one stark mad! There's this gas-cloud, for instance."

"Made any progress with that tonight?"

"No—confound it! As you know, the Vega spectrum shows the presence of an unknown element, which I might have taken as being in Vega's composition, had it not been of such colossal volume. It appears to consist of a fairly dense gas, yet not dense enough to deflect the light from Vega or the other stars in that region."

"I take it that you're quite satisfied in believing that this gas is not one of the known ninety elements?"

"Yes. It does not even seem to be composed of those two missing elements from the atomic list—numbers 85 and 87. That leaves us with the inference that this gas is a new and unrecognized form of a *known* element—if we stick to the theory that there cannot possibly be more than ninety-two types of atom."

"Did you measure the size of the mass tonight?"

"For at least the sixth time I have checked my previous estimate by the interferometer method, only to convince myself that our first deduction was correct. The mass has a diameter, if one may call it that (or extent, if you wish), equal to that of the star Antares. As we agreed earlier, it will, upon entering the Solar System, extend over the Martian orbit."

"Then in our present relative positions, Venus will enter this gas first, and with the exception of perhaps some of the asteroids—ourselves next, and I suppose Mars, Mercury, and the sun itself will follow immediately afterwards?"

"Something like that order. The major planets are well out of its way at present. Only one thing is certain; this gas is not inflammable. The passage of that stray comet through it proved that—otherwise we should have been treated to one of the greatest celestial displays this earth has ever seen! It is a 'dead' gas of a dull greenish hue, and appears to deepen in color as it approaches. It is now beginning to reflect our sun's rays as it draws nearer. Take a look through the small telescope there—but I'm afraid the conditions are growing bad now."

● After a long survey through the instrument, Haskell was able to detect, far beyond the now occasional red streaks in the heavens, the faintest possible blur. This covered an apparent area which included both the Lyra and Hercules constellations.

"Jove! There's a tremendous increase since last night! Did Greenwich send any message today?"

"Merely asked me to keep in touch with them. They 'phoned a few hours ago. They now agree with my report, but seem to think that the sun will settle matters satisfactorily for us. In any event, there

is no proof that the gas is of a poisonous nature, and they see no purpose in scaring the public unnecessarily. There's already been too much of that in the past with comets and stray asteroids. Despite their attitude, I gather that they are decidedly uneasy at being unable to learn what this mass is, or to discover its origin."

"I wonder what tonight's little display will teach them," observed Haskell. "The missiles have practically ceased now."—He glanced at his watch—"Nearly thirty minutes have passed since the first arrived. There must have been some excitement on the other side of the earth just now, with these things dropping across the sky in daylight—if they got them there, that is."

"I think they would. I feel convinced somehow that this business is not confined to one part of the Earth—it is on too magnificent a scale for that. We'll hear all about it on the radio tomorrow, and of course the press will be as hysterical as usual about it." Morrison looked out of a window. "The missiles have stopped altogether now, and there's a mass of cloud coming up. We can do nothing further tonight, so let's get some sleep, if that's possible! We'll get out early after dawn and see if there is anything to be found on the moors."

It was past three a. m. when the two scientists finally descended to their separate bedrooms, but while the younger man fell asleep from sheer weariness, Morrison tossed restlessly in the darkness, his too-active mind conuring up dreadful pictures of the near future . . . . he had slept too little lately.

## CHAPTER III

### The Yellow Dust

James Haskell, after four hours of refreshing sleep, descended to the dining room soon after seven a. m., to learn from Masson that his contemporary had been downstairs fully half an hour, and was now in the grounds surrounding the house.

"Scarcely touched his breakfast, Mr. Haskell," said the man-of-all-work gloomily, as he prepared to withdraw. "Mrs. Reay will be annoyed again. She's been goin' on somethin' awful lately about his feedin'—" (Mrs. Reay was Morrison's cook and very capable housekeeper) "—and takes it out o' me . . . . The doctor wants to see you outside as soon as you're finished."

Later, the young man found Morrison standing with his hands clasped behind his broad back, and peering up into the sky through his large spectacles. He was on the higher ground at the back of the house, which was built on the sloping moor side.

"Good morning, doctor. You don't seem to have slept well."

"I haven't!" growled Morrison. "Don't remember sleeping well for weeks! . . . . What do you make of that above us?" And he indicated the whole heavens above with a sweep of the hand.

Haskell directed his keen gaze upwards. On first stepping out-of-doors he had accepted the sky at a glance as being covered by the usual leaden mass of clouds, a feature of these late September mornings. Now, however, he could see that the whole sky was covered with a yellowish haze, which drifted lazily along far beneath the cloud-filled background, the latter showing, at times, through gaps in the haze. This yellow "fog" reached to the horizon in all directions, and the lower edge of it was but a few hundred feet above their heads, standing, as they were, on fairly high ground.

"Looks like a good sample of a London fog," observed Haskell, "but we never get fogs of that color here."

"We certainly do not! We get early morning mist at ground level—but not descending out of the heavens like this. Besides, the local conditions are all against mist this morning. Come, man, out with it! You know as well as I where this comes from."

Haskell grinned broadly. "Do I? Well then; it seems only natural to assume that this stuff is the result of last night's affair. Those missiles we watched must have

been of very large size, and have carried enormous quantities of this yellow dust, (as it seems to be). As this dust appears to be very light in weight, and the rockets burst several miles up, it will take some hours before this reaches the ground."

Morrison nodded. "It will settle here very soon now, as we stand high above sea-level. The question is, what has it been sent for? It seems to be dropping too quickly to be a gas. I think it might be advisable to get inside before it drops on *us*. I want to hear the radio report of last night's happenings, anyway."

The nine a. m. radio news bulletin later informed them that the aerial visitation overnight seemed to have been world wide, as reports were coming in from all quarters of the globe. Morrison telephoned Greenwich Observatory, giving them his report on the previous night's observation, and mentioning the descending yellow "dust." He found that he was not the first to report the yellow cloud, as both land and ship radio stations were busy on the same subject.

Before ringing off, Greenwich rather startled him by commenting on the fact that they had just reached the conclusion of their investigations into the approaching mass of gas—the Green Gas, as the two men referred to it between themselves.

"Recent observations," said the voice over the telephone, "indicate that the speed of approach has increased beyond your expectations, Dr. Morrison. Your first deductions, as reported to us three weeks ago, we now find to have underestimated the increase in speed as this mass nears our sun. Apparently, the gas is much heavier than we thought. You should receive our letter today giving full particulars. Please check and report immediately. Good morning!"

"More work for us tonight!" commented Morrison, as he laid down the instrument. "Meanwhile, we can attend to this other matter. The post won't be here till noon, anyhow."

"It certainly looks as though we'll be busy a few days this week . . . . This dust is nearly down now. I'll run up to the housetop and try to get a sample—if it is settling there yet." And Haskell bounded up the main stairway, impatient to examine the strange substance.

Within a few minutes, he was back again, carrying a small glass beaker containing a sample of straw-colored substance. The two men adjourned to the big laboratory on the first floor, there to see what the microscope would reveal.

● At eleven o'clock the same morning, Dr. Francis Bradbury received an urgent telephone call from his old friend Morrison, requesting his immediate presence at the latter's home. The brief reason given for the hasty summons sent the well-known botanist tearing across the twenty miles or so of wild country which separated their two residences. He found some difficulty in driving his small automobile over the rough moorland roads, as the descending mantle of yellow dust made visibility poor. The strange dust drove against his windshield, and collected all over the car.

Before noon, he had presented himself in Morrison's laboratory, where he learned what was required of him.

"This stuff is beyond me," said his host, "and comes within your province, I think. You'll find anything you need here. I must attend to another matter just now. You had better come with me, Haskell."

Leaving Bradbury at the microscope, the two astronomers betook themselves to the library, there to discuss the points raised by the newly arrived letter from Greenwich.

"That seems serious enough," said Morrison, handing the long letter to his companion. "You'll remember that we reckoned to enter this Green Gas cloud near the end of October—a month hence. Greenwich, apparently, has better instruments than ours. Also, they had better conditions in the early hours this morning."

Haskell perused the missive in silence, then looked up with a startled face. "The fifth of October—that means ten days!

We must have underestimated the mass of the cloud."

"Evidently. They seem convinced that their new development of the spectroscope is more accurate than ours. According to them, the gas and sun are approaching each other at a speed of nearly one thousand miles every second, and speed is increasing! Last night it was barely one thousand million miles from the sun—I agree with that figure, but seem to have slipped up on the speed. Today it will be in the region of Saturn's orbit, but he is far out of it, when considered in the line of our motion through space. Jupiter will also miss the gas. If the sky is clear tonight, that mass will be much nearer, and should occupy a very large stretch of the heavens."

While Morrison talked, Haskell was figuring upon the back of the letter. Presently he paused. "If it's nearing a thousand miles per second now, and will increase its speed, then it may arrive in less than that time, as we are relatively a little in advance of the sun already. Certainly, Venus gets it first."

Morrison paced the room, pausing occasionally to glance out of a window at the yellowish haze without. Finally, he picked up the letter and pocketed it, remarking: "We must hope for good weather conditions tonight . . . . Meanwhile, we'll push on with our artificial atmosphere pumping plant layout. Apparently, we'll need it much sooner than we expected!"

The apparatus to which he referred was in process of completion, and two air-pumps were already installed for the purpose of concentrating highly compressed supplies of both nitrogen and oxygen in special tanks prepared for the purpose. The two gases were to be produced in Morrison's laboratory, and stored in their respective tanks a few days previous to the expected enveloping of the Earth in the Green Gas.

● When the observatory doors and windows, and the aperture in the revolving doomed roof were closed, the building became air-tight. It was the intention of the two men to "hibernate" there during the time that the strange gas of space permeated the Earth's atmosphere, retaining consciousness by means of the supply of combined nitrogen and oxygen. They could store enough artificial atmosphere to last two weeks, but it was expected that the Green Gas would possibly have dissipated before that time—if it was not too dense; in which event they would simply have to take their chance with the rest of the creatures of Earth.

During the late afternoon of the same day, Bradbury joined the two astronomers in the photographic room, where they were fixing up the connections to the two gas-tanks which were stored there.

"As you surmised," said the botanist, "and I confirmed at lunch time, this yellow dust is composed of innumerable tiny seeds. My past few hours' examination of the samples you obtained give me no cause to doubt that conclusion, but I am no nearer discovering what species of plant they may have come from."

Morrison grunted, "Never for one moment expected you would! It's in keeping with all the other recent happenings. A greenish gas in space—what is it? No one knows. Will it kill us? Same answer. One thing is certain—we'll hit it! Then strange meteoric missiles from God knows where; followed by a universal shower of seeds—probably from these same missiles."

"Are you certain of that?" asked Bradbury. "When those rockets, or whatever they were, exploded, why were these seeds not destroyed completely?"

"Just a minute." Morrison laid down the small pipe-spanner he had been tinkering with, wiped his hands on a cloth, and moved through the near-by door into the observatory. "Come here, you two, there's more light here. Tell me what you think of this."

Haskell left his work and joined Bradbury in looking over Morrison's shoulder as the latter sketched something on a piece of paper.

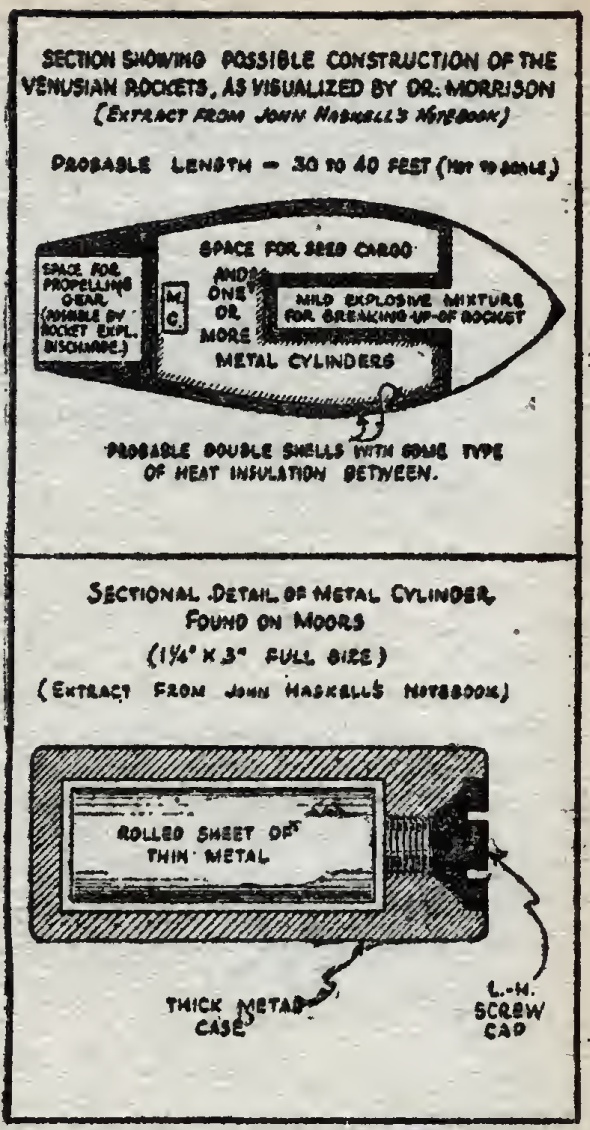
"I have been considering that point of yours in an abstract way all today, Brad-

bury—ever since we found those seeds. This sketch represents my idea of the construction of those rockets, from what we glimpsed in the telescope last night. A rocket designed like that could explode, and deposit its contents over the earth without destroying them."

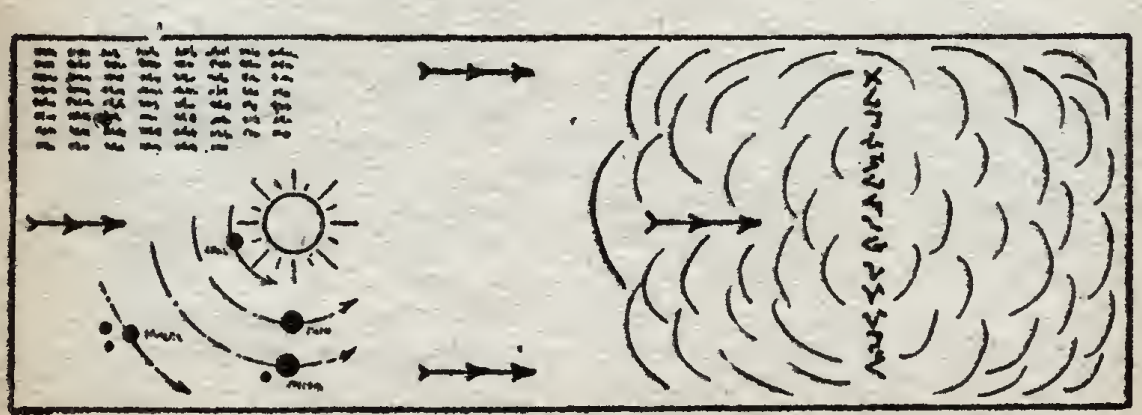
The rough sketch showed a torpedo-like body, the pointed nose of which rammed full of some explosive—as Morrison's sprawling printing indicated. He had drawn a narrow tube of explosive mixture down the center of the missile, for nearly half its length. On all sides and immediately behind this tube he had written "seeds." The stern of the rocket was indicated as being reserved for the motive power which had driven the rocket from its native planet.

"Why do you show a double shell around the seed 'cargo' yet not around the explosive nose?" asked Bradbury, after a look at the sketch.

"Because I think these things were packed with a mild explosive which was intended to ignite when the shell of the rocket reached a fairly high temperature through atmospheric friction. The seeds would need to be protected by a double shell, because their chief danger of destruction lay in the heating of the rocket




REPRODUCTION OF THE METAL CHART IN THE CYLINDER
(TAKEN FROM HASKELL'S NOTEBOOK)
(8" X 24" FULL SIZE)



shell. When the rocket exploded, the seed compartments would split into sufficient pieces to release the cargo of millions of seeds, without destroying them."

"Well, it sounds fairly plausible to me," said Bradbury, "and the fact that these seeds have reached the earth's surface as seeds and not dust, shows that the whole matter has been carefully thought out by the senders of these things, whoever they are."

"We have already given you our reasons for believing that inhabitants of the planet Venus are at the bottom of all this," said Haskell. "The main point is, what is it all about? My contemporary here is nearly out of his head through trying to figure it out nights, instead of sleeping!"

Morrison snorted. "Rubbish! Take no notice of him, Bradbury .... I don't expect you will ever discover much from those seeds, but there is one way we can try. I still have that powerful ultra-violet ray apparatus downstairs. Plant a number of those seeds in a box of soil, give them a few days under the artificial sunlight, and we might discover something."

"That's the very thing!" cried Bradbury. "I'll plant them right away."

"Good. We'll join you later, after we are finished with these infernal tanks. Ask Masson to get you a box of good soil from the gardener .... and I think it would be as well if you could stay with us for a time. I know you'll be anxious to see the results of the forced growth. Masson can run over in your car and get your baggage for you."

"That's all right. I brought a few necessities with me, as I thought you would need me for a time .... you can't do without the botanists, Morrison!" And the short, broad figure of the agricultural expert disappeared down the stairs before the astronomer could think of a scathing retort.

"Bradbury's all right in his own line," growled Morrison, "but he does get conceited at times! Let's get those beastly connections finished, for the love of heaven!"

## CHAPTER IV

### The Cryptic Message

● On the two days which followed the world-shower of straw-colored seeds—the twenty-sixth and twenty-seventh of September, 1943—heavy rains were experienced throughout the world, as the three scientists heard from Morrison's radio receiver. In their own vicinity, the moors were drenched by heavy downpours, and these, falling on the layer of yellow seeds which seemed to cover all open spaces, resulted in a mess which made walking difficult. The weather was so bad that the men were unable to take their daily long tramp over the moors for exercise, and Morrison tended to become even more irritable than usual. Haskell was thankful for the more cheerful companionship of the little botanist during that trying time, when not engaged in the preparations for their expected time of trial in the observatory.

Bradbury became excited when, on the second day, under the persuasion of the ultra-violet rays, the tiny seeds produced a growth of dark-red moss—or so he named it, for want of a better description. Every few hours he was in and out of the spare room where the experiment was being conducted. Meanwhile, the other two had been busy in the laboratory and observatory, storing their supplies of nitrogen and oxygen. At nights, there was little to be observed through the cloud-laden sky—the chief cause of Morrison's growing irritation. No fresh news had yet come from Greenwich, which was not surprising under the circumstances. It was agreed that Bradbury must share the incarceration of the two astronomers in the days to come, when the Earth rolled into the Green Gas.

The press and radio news indicated that there was some growing uneasiness abroad concerning the approach of the enormous gas cloud from space. Morrison had flatly declined to see reporters or give any information—he'd had enough of public ridicule, he said. Other scientists, for other reasons, did not care to commit

themselves too far. As one authority observed, the gas might not reach the earth's surface; if it did, and proved poisonous, what could be done about it? It was impossible to think of supplying the earth's millions with masks. There was nothing to be done, or that *could* be done, but to wait resignedly for the outcome.

Meantime, other scientists throughout the world were making preparations, like Morrison, for the worst, and hoped for the best. The meteorologists tended to ascribe the excessive and widespread rainfall to the "breaking-up" of the higher atmosphere through the numerous explosions of the strange missiles on the night of the twenty-fourth and twenty-fifth.

"Those terrific rains have served one purpose," said Dr. Bradbury to the other two on the evening of the twenty-seventh. "The seed swarm has been carried into the soil much earlier than I expected."

Morrison gave a sour smile. "If the whole earth is to be covered with a quick-growing red moss such as your little box now holds, I think your agricultural problems will be solved for you wranglers! Though not to your liking, I'm thinking!"

Bradbury shrugged his heavy shoulders. "There's certainly going to be trouble when that stuff gets a hold .... but what on earth can be the idea of it all? Thank heaven this year's harvests are all in! Seems to be a fast-growing weed of some type unknown to us. I expect it's already above ground in the tropics—and a few days will see it flourishing in the temperate zones!"

● "Listen—a visitor!" murmured Haskell, holding up his hand. The three men were in the library at the front of the house—heavy footsteps could be heard outside, followed by a hearty ring at the doorbell. A few minutes later, Masson entered the room.

"Farmer Dale wants to speak to you, sir," he said. "Says he's something to show you."

"To show me, eh? Bring him in."

There was the sound of heavy work at the mud-scraper and on the doormat without; then entered the massive person of Dale, a typical North-country farmer of uncertain age and with a shrewd, weather-beaten face surmounting his rough clothes.

"G'd-evening, gentlemen." He knew all three from previous meetings. "My shepherd brought this thing to me in late afternoon, and seein' what happened t'other night, I thought you'd be likely interested, bein' men o' science. 'Tain't no use to me, and I didn't fancy to open it—might be an explosive thing, though 'tis strange enough."

He produced a bundle of rough sackcloth from under his arm, and unrolled it carefully, his audience of three watching him curiously. From the rough covering, he handed Morrison a bright metal cylinder, about a foot long and four or five inches in diameter. The shining surface was slightly tarnished in places from exposure, and an irregular crack extended its full length, while at one end were several scratches and a heavy dent.

"By Jove!—it's astonishingly light material!" cried the scientist, balancing the object on his hand. "Where was this found, Mr. Dale?"

"Johnson, my shepherd, picked it up near the stone dyke at the bottom o' Twenty-Acre Field. Seems to ha' hit the stone-work mighty hard."

"Well, thanks very much for your trouble in bringing it over to us. We'll have to see next how to get inside it, as it seems hollow enough. Care to wait and see us open it—if we can?"

"I'll admit I'm curious-like a bit—but I must see t' a heap o' things 'fore bedtime. I'll drop along in some time and hear all about it—if it don't go blowing you t' pieces!"

Haskell accompanied the big farmer to the door, asking him his opinion about the forecasted gas-cloud.

Dale jerked his shoulders indifferently. "What's to happen, will happen, Mr. Haskell, and we mortals can do little enough about it. So why worry? I hear as there's hundreds 'most livin' i' the churches just now, though what good that'll do 'em, I

can't see; 'specially when some o' them ha'n't seen inside o' one for years! Next 'll be suicides, like the days o' the Great Comet!"

Haskell laughed as he shook hands with the farmer. "Another fatalist, I see! Well, Mr. Dale, let us hope that it won't come to that. Call in again, soon. Good-night!"

● Nearly an hour later, the three scientists succeeded in removing the end of the metal cylinder. The delay was caused by the deep dent in the "cap," and this latter proved to be a solid piece of metal with a tapered neck, at the narrow end of which was a left-handed screw. At first glance they thought the cylinder empty, but a closer inspection revealed that there was an inner cylinder of some very thin metal. Withdrawing this, they were surprised to find that it was a rolled-up sheet of a thin, dark metal strange to them. Spreading this out with some difficulty, and holding it down with heavy paper weights, they proceeded to examine a variety of inscriptions with which it was covered.

"Seems to have been rolled up some time, to judge from the spring in it," observed Haskell.

Morrison nodded. "That is not surprising, if it comes from the place I surmise."

Bradbury, who had temporarily forgotten even his beloved red moss in this new development, looked at him inquiringly, but Morrison was concentrating upon the sheet of inscriptions. This was about eight inches wide, and had unrolled to a length of two feet or so. Near the left-hand edge as they looked at it was inscribed a disc which, from the multitude of rays emanating from it, might be taken to represent the sun. Very close to this was a tiny circle, while three slightly larger discs were shown at varying distances of a few inches. Extending across the full width of the right-hand end of the sheet, was a series of curved scratches upon which was super-imposed a vertical arrangement of strange letters. A similar series of vertical characters in several columns, and of smaller size, occupied the top left corner. Similar printing, if such it was, labeled each small disc.

Over all, on the left, right, top, and bottom of this strange "chart" were four great symbols which could be taken for nothing else but a variation of arrowheads, indicating direction.

There was a dead silence for several minutes in the library, while each man formed his own conclusions about the queer chart before them. Then Morrison heaved a great sigh as he stood back from the table.

"There," he said impressively, "you have a universal cryptogram—yet it is one which can be interpreted by any intelligent creature on any planet in the Solar System! The printing we cannot interpret straight away—but that matters little. The sketch is self-explanatory; that is, to anyone endowed with average intelligence!"

Bradbury snorted at this final piece of sarcasm, though his gray eyes twinkled. "You mean, doctor, that it is obvious to an astronomer, don't you? I quite see, of course, that this—er—cryptogram is in part a plan view of the inner planets of the Solar System. That, however, does not tell me where this thing comes from, nor can I make anything of those weird scratches to the right side. Sure you've got it the right way up?"

"As we cannot read the characters," said Morrison slowly and deliberately, as to a child, "the drawing can be read in any position, and it doesn't matter which way it is looked at. What you refer to as 'weird scratches' is meant to represent clouds of rolling smoke . . . . or gas; in this case, the Green Gas which I forecast weeks ago!" He thumped the table with a heavy fist.—"This confirms my worst fears! The gas *is* poisonous! Else why do these Venusians—and damned clever people they must be—go to all this trouble to warn us against it?"

"That is so," murmured Haskell, as if speaking to himself. "The discs represent the planets Mercury, Venus, Earth and Mars, all in their relative positions of some weeks back. At that time, Venus was at inferior conjunction, and nearest to us

. . . . You think that this cylinder was carried by the same rockets which carried the seeds here?"

"Certainly," asserted Morrison, picking up the empty case. "This has not been exposed to the air very long, or it would be black. I feel sure that the rockets were dispatched from Venus two weeks ago—when they found no reply to those radio messages. She was the only planet near enough to attempt such a thing, and evidently they knew all about the gas long before we did. Also, they appear to know more about us than we do about them . . . . There are probably scores of these cylinders scattered about the Earth somewhere."

Bradbury nodded. "Then where do the seeds, or rather the moss, come into this remarkable business?"

Morrison frowned. "That," he confessed, "leaves me wondering. This sketch or etching is not to scale—it is purely intended to be diagrammatic, so it gives no clue to the time when we may expect to enter the gas cloud. These 'arrowheads' indicate, I presume, the direction of the Solar System's motion through space, with the Green Gas lying in our path. The major planets are not shown, and that seems to indicate that the Venusians consider the gas to be already within the limits of our system. It seems obvious to conclude that the red moss has been sent to help us—but how?"

"Is it not possible," suggested the botanist, "that this growth may drink in the Green Gas when it arrives, in the same manner that our earthly vegetation absorbs carbon dioxide—another gas which is poisonous to animal life?"

Morrison started, but Haskell shook his head. "There is that possibility," he said, "but you forget that it would take time, and a poison gas would kill us off in a few minutes. We should all be annihilated by the time the moss had done its work—if that is the intention of its originators."

"When I last examined the moss," observed Bradbury, "there had appeared some small buds, so I expect it to flower soon. Maybe we'll learn something then. I'll watch it tonight while you two are up in the 'conning-tower.' Did you realize that this moss is growing everywhere where there is the slightest hold for it? You've seen how it is covering the moors, but do you know that it is actually growing up the walls of buildings and floating in great beds on the surface of the seas?"

The two astronomers shook their heads. "We have been too busy these last two days to read or listen to the details of its growth," admitted Morrison.

"Well, whatever else it may be, it is an extraordinarily tenacious weed. I rather think that there will be fresh news of it from the tropics tomorrow."

"Possibly," said Morrison absently. He had reverted to the sheet of metal again, and was pondering the printed symbols cut in its surface. "I feel sure that if we could only decipher this message, we should have the key to the whole of this moss affair . . . . However, there are other things just as important to be done. I'll get in touch with Greenwich right away. Haskell, you had better ring up the Newcastle branch of the International Press when I'm finished, and get them to send a man along. I suppose it's our duty to publish these latest developments—even though we may be ignored or ridiculed once more."

"Changed his attitude," commented Bradbury, as Morrison left the room. "Now I'll get along and see how the box of moss is progressing. Lord knows how this will all end."

"Much more of this will give the doctor a nervous breakdown—he's sleeping very badly—and we don't want that at this critical time," said Haskell, following the botanist into the hall, where Morrison was already using the telephone—and damning the delay he was experiencing in the process.

## CHAPTER V

### The Red Moss Flowers

● The result of the pressman's visit to Dr. Morrison's lonely house was very evident in the newspapers of the twenty-eighth of September—the day after the

finding of the metal cylinder. Morrison had come forth from his reticent mood of the past few weeks, and gone to the other extreme. He had drawn up a statement, with the help of Haskell, outlining all that had happened since he had first become aware of the existence of the Green Gas. This had been given to the press for publication on condition that it was not in any way altered—Morrison having made the most horrible threats, in his usual manner, to the pressman concerning any contravention of his instructions.

A brief supporting declaration from the Greenwich Observatory, followed later by confirmation from the main observatories of both the Old and New Worlds; the finding of several cylinders, each containing the same etching on a metal sheet, throughout the world; and the spreading of the mushroom growth of the very persistent red moss as a result of the seed shower;—all these indisputable facts confounded the previous skeptics. The broadcasting companies spread far and wide a brief commentary upon the expected crisis, and emphasized Morrison's opinion that the red moss should not be destroyed—yet.

There followed the usual signs of panic which have always accompanied such predictions. A hitherto indifferent and material-minded mass of people throughout the world suddenly evinced deeply religious tendencies, and not a few unbalanced individuals anticipated the advent of the Green Gas by committing suicide. From being a highly ridiculed prophet of Doom, Morrison, as the first discoverer of the coming menace, was hailed as the earth's "greatest scientist" — and an imaginative section of the press went so far as to suggest that he had found some means to combat the Gas on a world-wide scale.

The many rumors and counter-rumors floating about left the trio on the Northumbrian moors unmoved, for no pressmen were admitted after the issuing of the formal statement. On the morning of the twenty-eighth, there occurred an incident which threw much needed light upon the subject of the moss-growth.

The previous night had been cloudy after the cessation of the torrential rains, and useless for astronomical purposes in the north, but a message from Greenwich on the telephone stated that observation during a short bright interval in the south had revealed that the Green Gas was even much nearer than they had expected. A new estimate had been made of its position in relation to the Earth, and there was a strong possibility that the Earth would enter the great mass *within two days.*

Morrison, who received the message, went in search of his two companions to tell them the startling news. Entering the room where the box of red moss lay, he was astonished to find Dr. Bradbury lying in an unconscious condition across the table beside the box. The moss in the latter was now covered with blooms of an intense crimson hue, and a faint aroma affected his nostrils.

The startled astronomer paused on the threshold, then as he gazed into the room, the ever-increasing scent tickled his nostrils, and he sneezed suddenly. That undoubtedly saved him from the fate which had overtaken Bradbury, and at the same time, he acted on a sudden idea. Holding his handkerchief over his nose, and holding back his breath as much as possible, he strode across the room and switched off the "sunray" lamp. Next, he dragged the stocky form of the helpless botanist out into the passage, and closed the door of the room. Shouting loudly for Haskell, he lifted Bradbury into the near-by dining-room.

● In a few seconds, both Haskell and Masson appeared in the doorway in a hurry.

"Here, you two! See what's wrong with him. I'm going away to look into this business. Try artificial respiration!"

Leaving the two astonished men to revive the senseless Bradbury, Morrison rushed out of the room and upstairs into the laboratory. There he hurriedly donned an oxygen mask and breathing apparatus,

then selected a cage containing a live rabbit from a number standing on a bench. With this, he hastened down to the spare room again, closing and locking the door behind him.

He dumped the cage and its frightened occupant on the table beside the box of moss and its crimson flowers, and waited for the result. It was not long coming, for in less than a minute, the rabbit's delicate nose quivered; it pawed at its face with its forelegs, sneezed twice, then quietly lay down in the bottom of the cage and appeared to go to sleep.

Satisfied, the astronomer crossed to the two windows and opened them wide, next placing the box of crimson blossom on one of the ledges, there to dissipate the mysterious vapor which was emanating from it. Picking up the cage, he left the room, locking the door after him.

Haskell was waiting for him in the passage, and helped him to remove the oxygen apparatus.

"How is Bradbury?"

"Still unconscious. Thought he was dead at first, but now it seems more like some form of suspended animation. We put him to bed in his room."

"I'll see him—but I'll change first. Smell anything?"

"Yes — a faint something-or-other. What is it?"

"The result of the moss flowering—it's throwing off a vapor of some kind, and that did for Bradbury—and this!" He held up the cage in his hand, with the unconscious rabbit stretched out at full length inside. "These clothes are tainted with the stuff, so I'd better change. Take these things into the lab, will you?"

The two men mounted to the first floor, Morrison telling the other of the Greenwich message on the way.

After lying in a death-like trance for over seven hours, Bradbury slowly recovered consciousness, and shortly afterwards was apparently none the worse for his experience.

"You say that you found me just after nine o'clock this morning?" he said, when sitting up later. "Then I wasn't senseless for very long. I thought I detected a strange scent as I entered the room, and sure enough, the moss was in full bloom. I remember bending over it to have a closer look at the bright flowering, then I must have drifted off without feeling anything more."

"Pity you didn't get a good full dose," remarked Morrison brutally, "and then I should know just how long we may expect to be immersed in the Green Gas when it comes!"

The other two looked at him in surprise.

"Meaning—?" asked Haskell.

"That we now have the reason for the rockets, the seeds, and the moss! It is quite obvious that when this moss flowers throughout the world, it is going to give off large volumes of this strange vapor or gas. You see how it has affected Bradbury. He's none the worse for it now. All humans, all animal life in fact will probably succumb to it—for a time. I consider that we have to thank the Venusians for the finest of anæsthetics—possibly the *only* protection against the Green Gas!"

"Good Lord!" cried Haskell. "That seems to be the only reason it could have been sent! These Venusians must be infernally clever creatures—years ahead of us. They have no doubt sent those marvelous rockets to Mars and Mercury, too—if any creatures exist there."

"It is evident to me that they know more about the life in our Solar System than we do," said Morrison soberly. "Also, they must know the true nature of this approaching gas. This moss of theirs is beyond even friend Bradbury's experience! I am wondering how long that rabbit will take to recover—it took a much larger dose than our friend here."

"Are you going to publish this new development, Morrison?" asked Bradbury.

"Seeking more notoriety, eh?" observed Morrison with some sarcasm, and paused. "Well . . . . I don't know yet. We'll see later about that—I want to hear tonight's radio bulletin first."

"I rather fancy that it should be interesting," agreed Bradbury, "as this moss

will be blooming in the tropics by this time, and if this mild weather continues up here, we'll soon get results, also."

"There *should* be results everywhere, not later than tomorrow night," said Morrison grimly. "Otherwise it will be too late! Greenwich anticipates that the Gas will be penetrating our atmosphere about that time. It is to be hoped that the Venusians made better estimates or had better instruments than ourselves! This has all but caught us unawares. Luckily we have the observatory prepared for a spell there, and we shall not need the anæsthetic properties of the moss-vapor."

● As they had anticipated, that evening's radio news was vivid enough to satisfy the most avid sensation-seekers. The later arrival of the papers confirmed the announcer's remarks. All communications with towns and cities in the tropical and sub-tropical regions had ceased, and could not be re-established. Certain fertile regions in both the north and south temperate zones had simply dropped out of the world-system of communication without the slightest warning. Ocean liners in these zones ceased to report progress; people could not be induced to attend their various occupations—this trouble had started some days before—and to crown all, in those places where the night sky could be seen, there was a vast greenish haze visible which seemed to occupy the entire universe. The three scientists had seen this latter for themselves when darkness fell that evening.

"We are now on the fringe of it all," observed Morrison, when the broadcast ceased—there was to be no concert that anxious night, only occasional reports as news arrived. "The outer part of this mass will not be dense enough to penetrate our lower atmosphere, or we should not be alive now—but the main body of it certainly will later, possibly tomorrow. I satisfied myself about that long ago."

"It is a good thing that the moss-gas is acting so rapidly," commented Bradbury. "It will be a rather near thing in some parts of the Earth . . . . aren't you going to tell the broadcasting people about the moss-gas?"

"I fail to see that it matters much now. It might stop a few fools from committing suicide—but the world is better off without such people," said Morrison callously. "Think what a surprize they will get when this is all over, and they awake again—if they ever do! We three must sleep in the observatory tonight in watches, so that we are not caught off guard by the Gas. Everything is ready. You two go up now. I'll have a chat with the household staff, and join you later."

## CHAPTER VI

### The World Sleeps

● After an uneventful night in the observatory, the three scientists awoke to a cloudless sky and a fine mild morning—the first for several days. Instead of the usual blue vault above, however, the heavens had taken on a greenish glare, which deepened as the day advanced. The sun's bright orb was dimmed to a watery-looking green, and the peculiar light in which everything was bathed resembled a partial solar eclipse—except for the strange coloring. On the moors around Morrison's house lay a deadly silence like the ominous calm before a thunderstorm.

The moorland birds sat huddled upon their nests in mute expectation of they knew not what. Sheep and cattle huddled in groups in the poor shelter of the low stone dykes which divided the miles of rolling moors into rough fields. The great masses of purple heather, now in full bloom, were rapidly becoming sprinkled with crimson patches as the tenacious moss from another planet commenced to flower.

All this, Morrison and his two companions watched from the housetop throughout the morning. There was an interruption when Farmer Dale and some of his scattered neighbors called, in great state of mind, for advice upon the disposition of their animals during the coming ordeal. Morrison managed to calm their fears a little by telling them of the moss-vapor and its probable effect, and advising

them to leave the sheep and cattle outdoors. He advised them to hasten back to their homes with all speed, ere the moss was all in full bloom, if they didn't want to be knocked insensible in the open. They departed hastily at that, with complexions rather greener than the peculiar daylight warranted.

Straggling radio reports showed that the moss throughout the country was already flowering in sufficient quantities to make its vapor visible. It was described as a vague, gray mist, and was being mistaken by the general public for the expected onset of Green Gas. One by one, the various broadcasting stations throughout the world ceased transmitting, as if some unseen blight were steadily sweeping north and south from the equatorial regions. No morning papers were delivered at Morrison's house, showing that the northern towns were already affected.

All was now prepared on the roof-top for their expected confinement, and the three men were never far from the observatory buildings. Morrison had warned his staff what to expect, and by repeated assurances had persuaded Masson, Mrs. Reay, and the gardener to keep to their rooms, and not in any way resist the effects of the moss-vapor. A store of foodstuffs and fruit had been secured in a small portable refrigerator in the small sleeping-room adjoining the observatory. In addition to the two tanks of nitrogen and oxygen for the air supply, were three masks with small oxygen cylinders. These would be useful, should they need to venture into the open later.

Atmosphere gauges hung on the walls for the testing of the air within and outside the building. The small lobby which usually gave access to the roof-top had been converted into an air-lock, to which an electrically controlled pump in the lab downstairs was connected, to draw off any gas which leaked in from outside. This same pump had connections to the observatory for the withdrawal of exhausted air. Ingenious devices on the air-supply tanks and the exhaust pump were intended to balance the atmosphere correctly within the few rooms of this upper building, being automatic in action.

Morrison had always been independent of electrical supply firms, having long ago installed his own house generating plant, with an enormous reserve store of accumulator capacity. Thus as the lighting of town after town failed, and the supply firms shut off their power on the rapid approach of the general stagnation, the astronomer retained his private source of power. Finally, Morrison brought two cages upstairs, one containing the still-unconscious rabbit, and the other a live one. These were stored in the dimmer light of the photographic room, for the telescopes and their mountings left little room in the observatory for anything else.

● As the day passed, the color of the atmosphere grew gradually to a darker green, and Morrison's two companions saw him several times glance anxiously across the moors at the spreading crimson flowers amongst the heather. About three o'clock, it was Haskell's keen eyes that first detected what seemed to be a faint ground mist spreading over the fields all around. Bradbury was with him at the time, and he, being a non-smoker, soon afterwards scented the delicate aroma of the moss-vapor. They shouted for Morrison, who was just ascending the last flight of stairs to the roof.

A few minutes later, they were installed in the observatory room, with all outside doors and windows closed and airtight.

"Pipe out, Haskell!" said Morrison rather breathlessly. "We must forego smoking from now on, until this affair is over. We cannot afford to foul the artificial air, as we don't know exactly how long we are in here for."

"It's well under way now," said Bradbury from the window.

There was no doubt about that. A very thin white "mist" could be seen drifting on the slight breeze, and in the distance nearly every animal within sight was settling down on the ground as for a sleep. At Dale's farm, two miles away, tiny figures could be seen running excitedly about

for a time. Some of these dropped in their tracks, while others dragged them indoors. A few horses were flinging their heads about nervously and stamping around ere they, too, suddenly lay down in sprawling shapes on the grass. Within half an hour after its appearance, the grayish-white gas from the moss-growth had done its work on the moors, for not a single animal or human could be seen moving anywhere.

Morrison drew a deep breath. "The most remarkable stuff I've ever seen or heard of! Painless, anæsthetic, and harmless! Swift in action, too." He laid down the powerful binoculars through which he had been scanning the countryside. "Well, my friends, we are perhaps one of a few groups like ourselves who will retain consciousness through this gas business. I could pick up no near-by radio stations an hour ago."

"How about Greenwich?" asked Bradbury.

"I was speaking to them a short while ago. Old Hardcastle and his crony, Nevins, are the only two down there who have seen fit to take the same precautions as ourselves. I was expected to keep in touch with them by 'phone, but the damned telephone company has cut off all connections everywhere before giving up the ghost."

"How about radio?"

"We haven't a transmitter prepared," pointed out Haskell, "and I doubt whether the Greenwich people have either. Things moved altogether too suddenly towards the end, for us to do any more than we have done."

"I brought that cylinder up here," said Morrison, "as you said you wanted to sketch it for your notebook. You'll have plenty of spare time up here in which to bring your notes up to date!"

"Good. They're a bit behind just now. I want a copy of the metal chart, too—and a hypothetical idea from you again about the possible construction of the Venusian rockets."

"A record like that should be interesting in the future—that is, if there *is* any future for us!" commented Bradbury, who was wandering around the circular room, examining the various instruments. "What's the idea of the little fancy gadgets, Morrison?"

"Those 'gadgets,' as you call them, are merely tiny valves for the controlling of the output of nitrogen and oxygen upon which we will have to live for many hours to come. The two tanks are on the other side of that wall. Those automatic valves simply pass the two gases in the correct proportions—roughly seventy-nine per cent of nitrogen to twenty-one of oxygen. When the air reaches normal atmospheric pressure, the valves shut down for a time —until your heavy breathing, Bradbury, so affects the density that the pump downstairs has to draw off your foul exhalings! Then the valves automatically commence to function again, and—"

"All right, all right!" cried the botanist feebly, waving his hands, to stop the flow of explanation he had drawn upon himself. "I'll take your word for it all!"

Morrison smiled grimly. "There's one important thing to remember. There must be no absent-minded wandering through the outer doors without a gas mask—or without operating the air-lock properly! *We* have inhaled no moss-vapor as protection against the gas of space when it reaches this level."

Bradbury groaned in mock despair. "And I have to exist here with two ruthless scientists! No fresh air, no plant-life —oh, what did you do with the box of moss?"

"It is on the roof outside for examination whenever you feel so inclined—but remember your mask! And don't go bringing the moss back with you, or we'll be in no state to observe anything!"

"I'm wondering how long this moss-vapor will hang about," remarked Haskell, after a pause. "I suppose that the Green Gas may be expected to reach ground level some time tonight, and then what will happen?"

"Well," said Morrison, "it is much denser than the gray stuff, and it may simply press it down to the ground again. On

the other hand, the Venusians may intend their gas to mix with the Green Gas, with the idea of minimizing its deadly effect on animal life. We are by no means out of the wood yet. The presence of the moss-gas may nullify the other stuff—but *how on earth is our atmosphere to be cleared of it all later?"*

● Haskell and the botanist stared at the speaker in acute consternation. "Jove! That certainly hadn't occurred to me!" muttered Bradbury in dismay.

"It just dawned on me a few hours ago," growled Morrison, his voice growing irritable again. "If it isn't one confounded thing, it's another! The pressure of our atmosphere will prevent this poisonous gas from escaping again into space—and it will take the ground a deuce of a long time to absorb much of it. I wonder how Venus is dealing with that question?"

"Perhaps they are sending something else along later," suggested Bradbury hopefully.

"Pah! . . . . Venus is far ahead of us now, and I doubt if they could send anything which would come within the range of our gravitational attraction. In our present positions, the sun would draw anything into it before it got far from Venus. No; the Venusians have done as much for us as possible—I feel sure of that."

After a long silence in which each man turned over the new problem in his mind, Morrison said: "We must take watches tonight, as only one can sleep in the little room at a time. We'll have four-hour spells, I think, and Bradbury had better take the first rest at ten. I'll follow at two, then Haskell. It is advisable, in any event, to have two of us watching in here for any hitch in the working of the exhaust pump, and for any unexpected developments outside . . . . I'm afraid time alone will solve the problem—and let us hope that it will not be a long time! Anything may happen from now onwards."

That first long day dragged slowly to a close without further incident, and after a short meal for which they all lacked appetite, Bradbury retired, leaving the other two seated in the observatory. Haskell busied himself with his diary-notebook, stealing a glance now and again at the older man, who was staring with unseeing eyes at one of the windows, his thoughts far removed from his immediate surroundings.

## CHAPTER VII

### The Development of the Red Moss

● Morrison and Bradbury were on watch the following morning when dawn broke—and a peculiar dawn it was. Sometime during the dark hours, the heavy Green Gas had at last penetrated the atmosphere to the surface of the earth, and a dull green glow in the east was the first indication that the sun had risen. Of the gray moss-vapor, there was no sign whatever, and nothing could be seen beyond the observatory windows but an immense extent of dull green on all sides. A steady breeze seemed to be blowing outside, from the manner in which the gas swirled about the building, but this made little impression on the dense volumes.

"Jupiter!" exclaimed Morrison, "But this is even denser than I had expected! The sun's rays cannot reach the surface at all—that's why it is so cold in here today, I suppose. Like being down in a diving-bell, isn't it?"

"Does look like the depths of the sea," agreed the botanist, "but a wee bit lighter, fortunately. I'm wondering if the moss-gas can really be a protection against this stuff."

"Well, to be exact, that Venusian stuff is no protection in itself—but only in the trance-like condition it produces when inhaled. I mean that it engenders a state of suspended animation — not simply unconsciousness, as that would not prevent the inhaling of the Green Gas. The very slight dose which you received practically stopped your breathing . . . . and to all appearances, that rabbit in the next room is dead."

Bradbury nodded his understanding, and continued to gaze rather abstractedly out of the nearest window. After a long pause he asked: "How do you think this will affect the Earth's vegetation?"

"As I know as much as yourself as to the nature of the gas," said Morrison drily, "I cannot even hazard a guess as yet. I'll take the hand-pump and a container outside now and collect a sample for analysis. You might bring out those two cages from the photo-room, will you?"

As he donned an oxygen helmet, the astronomer glanced at the atmosphere gauge which registered the state of the outside air, and noted the fact that pressure was steadily rising. A few minutes later the two men were out on the open roof, finding it impossible to see more than a few feet ahead. Morrison used his small hand-pump until he had compressed a portion of the gas into a steel cylinder, then joined the botanist in watching the caged rabbits. The conscious animal jumped restlessly about for a time with twitching nostrils, then lay panting for breath in the bottom of its cage. Finally, it rolled over on its side with staring eyes and lay motionless. The other small creature, still under the influence of the moss-vapor, remained stretched out without moving a muscle, and with eyes closed.

Turning about, Morrison found that Bradbury had moved over to the box of moss, and was closely examining it. The crimson blossom had withered completely in the past few hours, but the reddish moss continued to flourish, and seemed even to have increased in height a little. Bradbury seemed inclined to carry the box back with him, but his companion shook his head vigorously. Shrugging his shoulders, the botanist turned and picked up the two cages, and they returned through the air-lock into the observatory, feeling rather than seeing their way.

● "I think it is advisable to leave the moss outside just now," said Morrison later, when they had discarded their uncomfortable breathing apparatus. "It is no doubt harmless now, but by leaving it to the tender mercies of the Green Gas, we may learn something."

He opened the cages and lifted out the two animals onto a bench. A brief examination of the creature which had collapsed under the new gas showed that its legs were already stiffening.

"There's no doubt about the deadly nature of this gas," he observed quietly. "This little brute is quite dead. This other shows no change whatever: still pliable, and no sign of *rigor mortis*. No sign of recovery yet, either. It will be fully forty-eight hours since I gave him that dose of the moss-vapor."

"If it does recover later, I suppose that we may believe that the gray vapor's protective qualities will also extend to humans?"

"As I said before, that seems to be the sole reason for the sending of the moss seeds to this planet; time alone will show us how long the effects of the vapor will last, and how long this confounded green stuff is going to hang about—if we live to see it!" concluded the astronomer grimly.

He picked up the cylinder containing the sample of Green Gas, and made for the photographic room, which was also a small laboratory. "I've some gear in here for analytical purposes, and I might learn something from this. Keep a look-out, and watch for any change. You can throw out that dead animal. I've no further use for it—I'm no dissectionist."

Protectively masked, Morrison spent several hours with his analysis, but made little progress in placing the strange gas. He found Haskell and Bradbury eating a brief meal when he returned to the main room.

"I suppose I'd better eat something," he said wearily, as he joined them. "No, I cannot make much of the gas. My apparatus is too out-of-date for this job, and analytical chemistry is not in my line. Some far-off upheaval in space must have left this queer gas lying about, until our sun attracted it."

"I've been trying the ordinary radio receiver," remarked Haskell, "but there's not a squeak on any wave-length — not even a ship."

"I'd have been very much surprized if there was," Morrison grunted, between mouthfuls, "seeing that the moss apparently flourished on the sea as well. Damned queer stuff, when one has time to pause and think of it!"

"Notice how it still seemed to be growing, despite the Green Gas?" asked Bradbury.

"Yes—that's why I call it queer. It's more than that—it's incredible! If it is going to thrive under these conditions, I hate to think of the trouble that you agriculturists are going to have in the near future—always assuming, of course, that this planet rolls safely out of this mess!"

● That last day of September dragged wearily by, devoid of further incident, with the observatory still enshrouded by the whirling green fog. The first two days of October saw no change in the situation, and with the long waiting hours, the older astronomer's irritability returned. This time his impatience also affected his two companions. The dim green daylight made it necessary to keep the electric lights burning most of the time, except for a while at midday, and the lack of real, natural fresh air began to affect even Haskell's normal imperturbability and Bradbury's natural good-humor.

It was perhaps fortunate for the nerves of all three, when on the third day of their confinement, Bradbury discovered a rapid change in the nature of the red moss in the box outside. This was their only guide to the development of the moss elsewhere, as the single door leading downstairs had been locked and sealed to protect the roof building from the Green Gas, which no doubt had penetrated into the house below by this time. They would be prisoners on the roof until the gas disappeared.

During the afternoon, the little botanist sallied forth to make his daily examination, and was astonished to find that the original red moss was dying off, but that from it had sprung a number of slender plants of similar color. These were over fifteen inches in height when Bradbury first saw them, and before darkness fell on the same day, had increased by several inches.

Later, while the three men were speculating on this new development, Morrison found that the heavy pressure outside was decreasing slightly, according to the atmosphere gauges. Acting on a sudden inspiration, Bradbury thrust on a mask and hurried outside again. He returned in a few seconds carrying in his hand a single stem of the new growth. Followed by the other two, he hastened into the small laboratory, where he whipped off his mask.

Cutting off a short length of the plant, he handed it to Morrison. "Stick that in a retort after crushing it, and trap the vapor. I'm going to have a look in the microscope."

Quickly, Morrison crushed the piece of red stem and placed the resulting sticky mess in a glass retort, connecting the outlet to a small cylinder. A few minutes' heating with a tiny electric heater, and the retort was filled with a faint green vapor, which passed along the tubes into the cylinder prepared for it. Meantime, Bradbury was examining a thin cross-section of the stem in the microscope.

"The gas given off by the plant was composed mainly, not of water-vapor (though that was present, of course) but of a weaker variety of the Green Gas, complicated somewhat by the presence of other vaporized elements which would be more familiar to you, Bradbury, than to me," said Morrison an hour or so later.

Bradbury nodded. "That agrees with the cellular construction I observed in the lens. The cellular formation of the old red moss is still present in a minor degree, but the majority of the cells are of an entirely new order to me. That confirms my suspicion that the change in form of the original moss growth is entirely due to the rapid absorption of the Green Gas by this plant! It's astounding!"

● "It is almost incredible. These Venusians must have some definite knowledge of the Green Gas, or have encountered it before, perhaps. Perhaps they can produce it themselves. A specimen of this moss-plant should give you something to study, Bradbury!"

The botanist shook his head. "I am afraid I won't get a chance for that," he said regretfully, "as the moss is already dying off—and I very much fear that the new plants will also die off when the Green Gas is exhausted—if that is the reason for its growing here at all."

"Well, thank God that there at last seems to be a quick outlet for this poisonous stuff! That seems to solve our last and worst problem—unless these plants *should* stay on afterwards. In that event, this weedy growth is going to cause still more trouble for people in your line."

Bradbury looked troubled. "That isn't worrying me much. I rather fancy that the chief trouble will be the effect that the absorption of this gas will have upon the soil. It may not do any damage, but it is just as likely to intensify our old question of the exhaustion of the soil's fertility."

"Time to worry about that when the question arises," said the astronomer. "There ought to be some difference in the outlook when daylight arrives." He looked at the gauge registering the outside pressure. "There's still a slackening of the pressure. This may be our last night in this prison, thank God!"

Bradbury ventured to challenge the last statement, and in a few minutes the two older men were involved in a fierce discussion, while Haskell looked on in silent amusement.

As Bradbury had forecast, Morrison's prediction proved to be rather too optimistic. The following day, visibility was scarcely any better, despite the steady dropping of the pressure gauges, showing that the Green Gas was thinning out gradually. The long, slender stems of the new plants outside, with their fern-like fronds of copper hue, reached a height of over two feet. This seemed to be their maximum growth, as no increase could be detected after midday.

Late in the afternoon, the rabbit upon which Morrison had experimented with the moss-vapor stirred for the first time. With returning consciousness of its surroundings, the small creature lay for several hours blinking through the wire front of the cage. Then at last, it bestirred itself sufficiently to begin gnawing the woodwork.

"Five and a half days of suspended animation," commented Morrison, "and the poor brute seems hungry. Better give it some fruit—and lettuce, if there's any left in the refrigerator, Haskell. It had about a day's start of anything else on the globe, and probably inhaled less of the vapor than most. I suppose we'll need to wait a few days yet before there's any sign of recovery anywhere."

The next and fifth day of their imprisonment saw a decided change for the better outside. Gaps appeared in the seething volumes of gas without, allowing glimpses of the deserted countryside. The gardens below were covered by the copper-colored growth, and with the binoculars, they could see that the moors were in a similar state. Sheep and cattle still lay where they had fallen before the onset of the gas, which by this time was rapidly thinning to a light green mist. Towards night, the poisonous mist was being swept about by a strong wind, and heavy showers of rain commenced to fall. Atmospheric pressure fell to nearly normal, and some of the gloom of the past few harassing days departed from the interior of the lonely observatory.

"The end is in sight at last," said Morrison thankfully, "and a better finish than it might have been! Just think what a scoop this business will be for a resuscitated press! Thank Heaven I'm not a journalist!"

● On the evening of the sixth day of the duration of the Green Gas, Haskell succeeded in hearing distant radio telephony transmissions from stations in the tropics.

By this time, the outside atmosphere seemed clear, but after taking a sample of the air, Morrison deemed it advisable to remain in the observatory for yet another night. Throughout that night, the number of radio stations transmitting gradually increased in number, as if an unseen wave of energy was slowly spreading from both sides of the equator. The ether became steadily congested on all wave-lengths, as ships and land stations interchanged reports, the main tone of these being expressions of surprize at the outcome of the gas visitation.

None of the three scientists entertained an idea of sleep that night, as the medley of messages in all languages issued from the loud-speaker, showing the awakening of the astonished world after its long sleep. Soon after dawn, steps were heard on the stairs within the house, and some one knocked upon the sealed door.

"Are you all right, sir?" came the man servant's anxious voice through the panels.

"All quite well here, Masson," shouted Morrison. "How are the others?"

"They're coming to fairly well. Mrs. Reay's a bit tired-like."

"Good. We'll be down as soon as we can get this door unsealed. I want you to take Doctor Bradbury's automobile to the nearest town and see what can be raised in the way of supplies. There will be nothing fit to eat in the house, so you'll need to leave a large order—I don't suppose you can get very much as yet."

Masson could be heard murmuring something faintly, then departing downstairs again. While Haskell and Bradbury tackled the inner door, Morrison shut off his artificial atmosphere supply, and flung wide both doors of the air-lock, letting in a rush of fresh, cool morning air.

"Thank God for a sight of the sun again!" he cried, as he stood in the open doorway watching the rising of that luminary, and inhaling deeply of the now untainted air.

Later, all the doors opened and the air circulating freely once more, Bradbury's first thought was for his box of plants outside. If he had hoped to obtain a decent specimen, he was disappointed, for the long, slender stems were already drooping from lack of the peculiar gas upon which they had thrived. He collected these, however, and betook himself down to the main laboratory for an examination. The others scarcely saw him again all that day.

Morrison spent the day in long telephonic talks with the scientist Hardcastle at Greenwich, comparing notes; and in writing long letters to other scientific acquaintances. Haskell was busy with his notebook, which was to become famous as the only detailed and extensive record of events before and during the Earth's entry into the Green Gas. The small household staff had their hands full in picking up the broken threads of their normal life again, and later in fending off the horde of revived pressmen which descended upon the house.

● Naturally, after such a disruption of world affairs, many days passed before the normal conditions once more prevailed. The press, of course, made the most of such a heaven-sent opportunity for several weeks, and the huge tracts of quickly withering copper-colored plants were the subject of much speculation. It was discovered that throughout the whole of the civilized population of the globe, not more than a few hundred people had succumbed to the deadly Green Gas—and then only because these unfortunates had happened to live in the older parts of big cities, where the red moss had not grown in sufficient quantities for its vapor to make an effect.

What actually happened in the regions of perpetual snow and ice was never known, for in these sparsely populated lands the red moss had never grown. The polar animals and nomad Esquimaux simply vanished forever from their haunts, and were never again seen by any expeditions to those icy regions.

Similarly, within varying periods of a few days, the copper gas-inhaling plants

vanished from the earth's surface entirely. Their work done, instead of rotting in the usual manner, they slowly crumbled to dust, and this was either dispersed by the winds or driven into the earth by rains.

Two weeks after the event, Morrison and his two companions, after an obstinate silence towards the press' inquiries, at last published their complete report, which was supported in part by the Greenwich observations during the crisis. For the first time, the astonished world began to realize the magnitude of the efforts taken by the unknown inhabitants of Venus to save the life within the Solar System.

The usual conferences were held in various countries; the usual platitudes were spoken, and the outcome was the usual one of such conferences. There the whole matter might have dropped, but for a strange sequel, totally unexpected, but none the less welcome.

● A few months afterwards, the agriculturists received a series of pleasant surprises as crop after crop of cereals and fruit all over the cultivated globe far exceeded the maximum harvests of the previous years. The farmers and scientists had been hammering away at each other again on the old question of the waning soil, and the sudden fertility of almost exhausted areas left them stupefied—for a time. It was not until numerous analyses of different surface- and sub-soils had been made in various districts, that the truth slowly dawned.

Doctor Bradbury was one of the first to glimpse the cause of the change, and a brief analysis of the local soil sent him hastening to Morrison's home.

"I cannot say whether the Venusian plant itself, or some strange constituent of the Green Gas, is to be accredited with the new power in the soil," he said to the two scientists. "Perhaps it's a combination of the two. The fact remains that a strange element has been introduced into the earth during or since last winter. Its effect you already know about from the papers."

Morrison nodded. "In view of what happened to the copper plants, I should say that the gas is at the bottom of it. It would enter the soil via those plants, undergoing a chemical change in the process, I suppose. The plants simply fell to dust, didn't they?"

"Yes—but their roots probably rotted in the ground, and there was a terrific number of them everywhere. The chief point is that the increased fertility exists in the soil on *cultivated land only*—not on the moors, for instance. That seems to me to indicate that this new element has in some fashion combined with our artificial fertilizers. If our chemists are any good at all, they ought to be able to reproduce the resultant fertilizer in the laboratory—and I guess that will solve the old problem at last!"

"Then we are indebted to the Venusians for this further development, in all probability," commented Morrison, "though I very much doubt if they foresaw such a result. The introduction of any new and unknown element is bound to have queer results on any planet. Now that your little problem of the devitalized soil seems solved for you, perhaps you'll keep out of the press after this!" he finished rudely.

"Take no notice of that, Dr. Bradbury!" cried Haskell, "He'll be launching an appeal in the papers himself soon!"

"Oh! Indeed—and what kind of appeal, may I ask?" Morrison grunted.

"Funds are required for the speedy erection of a super-power radio station, on the ultra-short wave of two hundred millimeters, based upon the apparatus used by those two brilliant investigators, Morrison and Haskell," he quoted sarcastically. "As the planet Venus, to which we are indebted for our continued existence here, will approach within twenty-five million miles during April, nineteen hundred and forty-five, the least we can do is to attempt to get in touch with the Venusians again. Their reception of our messages, whether they understand them or not, will at least show

them that the inhabitants of Earth have survived the visit of the Green Gas—thanks to their intervention!"

"Good," said the botanist. "Considering the multitude of noble resolutions which were passed last year at the world conferences, there should be a good response to such an appeal."

"Well, we'll see. Public memory—and gratitude—is short lived. We have eight months in which to do it, and our plans are all prepared. I hope that the Venusians may have gone a step farther by this time, and will be able to visit us in person in a space-ship based upon the seed-carrying rockets . . . . but it is to be hoped, for their sakes, that they enter the earth's atmosphere at a reasonable rate the next time, or they'll reach the surface as cinders!"

THE END

## ROCKET DOES 500 MILES

### Goddard, of Clark, Says Stratosphere Machine Works in Test

*By the Associated Press.*

WORCESTER, Mass., Jan. 30—A rocket capable of travelling more than 500 miles an hour after penetrating the stratosphere fifty to sixty miles above the earth's surface is being completed by Professor Robert H. Goddard in his laboratory at Clark University.

He declined to estimate the maximum speed attainable by the rocket, but said that any aircraft propelled by it would "literally become a projectile." A 500-mile-an-hour speed was attained during experiments with models in New Mexico, he said.

*From the New York World-Telegram, January 30, 1934.*

# THE END OF THE UNIVERSE

## By MILTON KALETSKY

● Karem reclined in silence. His handsome countenance showed no evidence of his almost immeasurable age, but only a vast sadness, an inexpressible sorrow, and rightly so, for of all the living creatures that once thronged innumerable worlds, this man alone remained. In all the universe, there was no other life than his, in all of space no other material body beyond the small interstellar vehicle within which reposed this ultimate being.

* * *

When in the seventeenth millennium A. D. the human race, despite itself, really became civilized, the subsequent rapid advances in the sciences were crowned by the attainment of a goal aspired to since the dawn of reason: an elixir of life was discovered. All who partook of it acquired virtual immortality, only violence being capable of destroying them. Thus human beings became like unto gods.

With no need to labor, automatic machines performing all tasks, and with little prospect of death, the people of the earth progressed as never before. Interplanetary exploration and settlement followed as a direct result of the rapid growth of population. Overcrowding of the solar system caused many to migrate to distant stars in search of new inhabitable worlds. Through the whole universe spread the human race, as æons passed, alien creatures being absorbed or annihilated.

As time went on, the increase in population slowed, ceased; no longer were there any unoccupied regions to be found within any of the billions of galaxies.

Further lustrums slipped by. The curse of their immortality descended. Boredom, invisible, intangible, inescapable, settled like a pall. In vain, every person spent millennia studying every branch of knowledge, reading every line of print available again and again, travelling from one end of space to the other, exploring every one of the unnumbered planets of the universe. When all this was done, the same unending succession of years lay before them. Forever and ever they would have to live, doing nothing, for they had done everything there was to do unto satiety. Every person had seen all, done all, knew all. Nothing but endless monotony, listless wandering about in desultory search of something interesting, s o m e t h i n g to brighten the dull sameness, was to be their future lot. Attempts to provide occupation by substituting human labor for mechanical failed; no one would work after trillions of years of idle pleasure-seeking. The human mind was stagnant, its creativeness was exanimate.

They knew all there was to know, except the secret of death. This thought tempted several, unable to bear the interminable procession of tiresome years, to seek death by violence. Then others and still others similarly brought their cloying lives to an end. Like a wave, the mania swept across the universe and in its wake came dissolution.

Billions perished unwillingly when whole worlds were destroyed by those who desired death. Star after star, with its attendant satellites, burst in a brilliant coruscation and disappeared into nothingness. At the height of the suicidal frenzy, whole galaxies were wiped out by those who loosed uncontrollable forces; the death-seekers seemed to vie with one another in the violence of their methods of self-destruction; each who blasted himself to atoms carried untold millions with him. And when the mania wore itself out, halting the cataclysmic destruction, the

shattered remnant of humanity found itself in a dying universe.

The end would eventually have come anyway for the death of the universe was inevitable.* But the havoc just wrought hastened the fall of the final curtain upon the tragi-comedy of human life. Of all the stars that had lighted the heavens, a paltry few, old and cool, survived.

But not for long. One by one these stars dimmed and were consumed by the power-producing machines. Alas for humanity, it could not prevent its now meager store of energy from constantly diminishing by radiating away as heat and light.

Gradually the reduced population gathered closer together as world after world was fed to the rapacious machines. At last, one lone world remained alone in an empty universe. Once more a wave of suicides carried off billions. These, however, were cold, deliberate suicides, suicides of those who could no longer watch the slow decrease of this last world and finally sought release from the immortality they had once so avidly desired.

Time went on inexorably. Nothing remained but the space-ship. One by one, the last few, sunk beyond hope of recovery in despair and hopelessness, shook off for a moment the lethargy of centuries and slipped quietly into the machines. For a while, after each, the lights glowed more brightly, the temperature rose a little until naught remained of him save a minute heap of ashes. Then it was time for another to sacrifice himself, that the others might live a little longer.

Now they were all gone, all but Karem. As the last of his erstwhile companions had stepped fearlessly into dissolution, Karem experienced a powerful urge to follow at once, but suppressed it; he had work to do.

Quickly he constructed a timing device, connecting it to the atomic-power machine. Five minutes after he consigned himself to the latter, the entire space-ship would vanish in a refulgent coruscation that no eye would ever perceive. The light of this vast explosion would speed off on its journey around the universe, steadily reddening, losing energy, and at length would fade away to naught.

Karem shuddered as his roving eyes passed over the ports of the space vehicle. Without were no longer the cheerful points of light, the once-familiar constellations, the vague smudges that were far-off galaxies. All had disappeared and in their place was blackness, a blackness that was more than mere darkness, absolute absence of visual sensation, plenary, unmitigated. In every direction there was only dead radiation, its energy dissipated into the universal nothingness. Unbroken emptiness, utterly complete vacuity surrounded the last man and his space-ship.

Karem stirred and rose. Further to linger here, solitary and desolate, he could not. Sighing, he picked up a tattered, ancient volume he had found long before in a deserted library—the Holy Bible. "Strange," he murmured, glancing at its first page, "that in the beginning the universe was void, and at the end also."

He slipped between the coils of the machine and joined his predecessors in death.

THE END

*The stars are incessantly pouring forth their matter in the form of electromagnetic vibrations. It has been demonstrated by LeMaitre that, as these waves travel across space, their wave-length increases. By quantum theory, increased wavelength is coincident with lessened energy. It is upon this fact that Eddington, Jeans, and Shapley base their contention that the universe is running down, i.e., that the quantity of energy contained within the universe is steadily decreasing. When it approaches zero, the universe will be completely void.

*(Illustration by Winter)*

**The peacemakers burst through the door and the heavy gas billowed up to meet them. There were strangled curses; men coughing. Through the fog, some fought their way out again.**

# THE LAST PLANET

## By R. F. STARZL

● From his vantage point on the roof of the Mercurian university administration building, Jay Val looked uneasily over the high stone walls at the dark, threatening city of Sandos, planetary capital of Mercury. It was the last refuge of the human race, once proud masters of the entire solar system.

That had been over a million years ago. Long since had all of the other planets been abandoned to cold and darkness, and a few hundred thousand survivors now lived on Mercury, huddled as close as possible to the blackened ruin of the sun. That light- and life-giving star was almost a cinder, though it still radiated a little heat.

Jay Val looked up through the gigantic vitrine bowl that covered the entire group of university buildings. Tidal action had long ago stopped the little planet's axial rotation, so that now the sun seemed always to hang directly overhead at Sandos. It was almost invisible, in the velvet black firmament pricked by millions of stars, revealed more by reflected light on its own dense atmosphere than by infrequent dim ruddy lines that revealed a crack in the solidifying surface. The sun, in its old age, was nearing death, its seemingly inexhaustible energies almost expended. The prodigal destruction of its own substance had come to the inevitable end, and in its ruin it was involving a dependent family of planets.

The young man, usually so sanguine, could not escape a feeling of melancholy as he contemplated the end of this star's glorious career. He did not at first notice the girl who had ascended to the roof, and who now stood beside him, gazing over the parapet.

**● Our sun has already passed its middle age—it is slowly but surely dying. Don't let that worry you, however, as it is still good for several millions of years. A star, in its full vigor of maturity, is white—ours is yellow, and will some day turn red, then a duller red, and finally, as our author puts it, it will become "a blackened cinder." In all probability, this will not be such a calamity for the human race as it may seem at first, for by that time, we shall have conquered space, and will possibly be able to escape from our dying sun to make our home upon a planet of a younger star.**

**If there were but one interstellar ship in existence at the time, with available space for but a few hundred of the human race, and many were forced to remain in this solar system to die with the sun, what would be the consequences? How could the chosen few be selected? Our author answers these questions in an action-filled tale of the last men in the solar system.**

Even in the dim light, it would have been obvious that they belonged to the specialized social order known as the "technies," the technical experts, the brain workers, who had for centuries prolonged human life in the face of steadily growing natural hazards. Both were slim, of medium stature, Jan a few inches taller. Both wore synthetite blouses, knee breeches, with leggings. The man's hair was covered by a round skullcap of woven metal, but the girl's hair was uncovered. It fitted her head like a burnished bronze shield, fastened low at the neck. Both were rather pallid; pigmentation had become unnecessary to the race.

Jay suddenly became aware of the girl.

"Idar!" he said softly. His voice was low, restrained. "I have been saying farewell to our sun. Though we must leave

it, it seems like deserting a faithful friend when he at last becomes old."

Idar smiled. "The old sun was dying before you were born. Tell me, Jay, is there any sign of attack?"

"The city is quiet. Curtes and his Peacemakers seem to have established some kind of order. Idar, I don't like Curtes! That man is an anachronism, an unreliable, treacherous savage! When I see him with his sword and knobbed club, I almost believe one of our museum constructions has come to life."

"Nevertheless, Jay," said the girl, with a trace of coquetry, "Curtes is not to be despised. He may be a savage—a throwback, as so many of the people have become since the sun failed—but he's a magnificent savage. None but he could control the crew of murderers we've hired to protect us."

The young technie said nothing, for the girl was right. Since the planning of the *Ventura,* all catalyte, the potent agent required to activate ray tubes, atomic motors and space rocket disintegrators, had been segregated, making modern weapons, which all depended on catalyte, utterly useless. A premium had thus been placed on brute strength and cunning—discounting the superior mental development of the specialized technie race. But it had been necessary to insure the success of the most colossal adventure in history. The *Ventura* would not be used merely to span interplanetary space—that was an old story—but the enormously greater distances of interstellar space.

Jay looked up at their objective. Out there—about a light year away, was a yellow star—Ridan. The electrotelescope had shown it to be one of those rare astronomical monstrosities—a sun with a family of planets. One of those planets had been spectroscopically explored and found to be capable of supporting human life. The scientific resources of the entire race had been commandeered to build the *Ventura.* This enormous vessel was now housed in the great university inclosure, ready to crash through the vitrine dome and out of the solar system when Ridan should again be in the proper relative position.

"Idar!" Jay said softly, moving closer to the girl. "You are old enough now to take a mate. I love you, Idar. Come to me! It may take ten years for the *Ventura* to reach Ridan, to settle on New Earth. How much faster the time would be passed if you were my wife!"

The girl let him take her hand, but did not yield further.

"I like you," she confessed. "But you lack something, Jay. I think I must be a reversion to the primitive too. I wish you were more like—like—Curtes! He—he," —she groped for an unfamiliar word— "he thrills me! His strength—his destructiveness!"

Jay did not show his hurt. He asked whimsically:

"And am I lacking all manly attraction?"

"No, Jay. You know I don't mean that. Didn't I see you win the prize for swordsmanship over all the technies? And no one is more skilled with the quarterstaff. But—don't you see—mere games! You risked nothing but a prize! You have never killed any one in battle! I can't help it, Jay! It sounds barbarous—but . . . ."

"I see," Jay said quietly. At this moment they were interrupted by a welcomed diversion.

A man was climbing up the narrow, winding stairway, preceded by the clumping of his clumsy feet. Arriving on the roof, he advanced to the two standing at the parapet. A tiny absorption flash in Idar's hand illuminated him brightly.

"Kiro!" the girl exclaimed. "And have you saved us again?" she added with gentle sarcasm.

Kiro was a gigantic "mug," as the peasant race had come to be called. His shambling gait and ungainly motions, as well as his great size made him vaguely reminiscent of an emaciated, good-natured bear. His red face was wreathed in adoring smiles for Idar, and his round, innocent eyes blinked at the light. He swallowed before speaking.

"Lucky you are to have me, little Idar! But for me, the mob would have attacked Curtes and his cut-throats, just now. But when they saw me, they kept their distance! If Curtes wasn't jealous of me, he would make me one of his captains."

● He threw out his great chest so that the frogs of his tunic strained against the fabric, beaming upon the girl.

"What a braggart you are, Kiro!" Idar chided. "Yet, I would hate, if I were a man, to dispute the way with you!"

"Indeed, it were foolish—sheer suicide!" the giant asserted earnestly. "See this sword?" He pulled the enormously heavy blade from its scabbard, feinted, and split an imaginary enemy from crown to pelvis. "Is it not neatly done, Mister Val?"

"It would finish him," Jay conceded drily, "if he didn't step aside and slice off your head."

"Too long have I swung a shovel, Mister Val. The sword is my tool henceforth and forever. If Curtes himself—if three men . . . ."

At that moment another man was heard coming up, and Idar flashed her light on the stairhead.

"Curtes!" she exclaimed.

He was eye-filling, this magnificent, swashbuckling rascal. Over six feet tall, dressed in a blue tunic and shorts that revealed muscular legs, ruddy now with the sting of the frost outside the campus inclosure. At his belt hung a formidable club; beside it the scabbard holding a short, broad sword. He swept a broad-brimmed hat of soft, metallic weave from his head, releasing a cascade of dark, curly hair.

"My reward!" he declared, his voice vibrant, powerful. "A dull round among these stupid, cowardly cattle—then all is compensated when I greet the most beautiful woman in the solar system—or what's left of it!"

A slow flush mounted to Idar's pallid face. Jay watched, saw in the reflected light of her flash, and recognized her emotions. So did Curtes, but the fighting man was too wise in the ways of women to press advantage.

"There is little danger from the mob, Mister Val," he reported. "They mill about and threaten, but when we come, they melt away."

"The fools!" Jay exclaimed sadly. "It is more for their sake than for ours that we built the *Ventura*. We could survive for many centuries on Mercury; they could not. We will transport them all to Ridan's new planet, but they must wait till we have built a larger, faster ship. The *Ventura* will hold only four hundred. All the technies must go; their work lies on New Earth. There are only fifty other places—"

"And those," Curtes interrupted with a scornful laugh, "are reserved for the money masters—the lawgivers!"

"They'll be a dead load," Jay admitted. "Evolution added nothing but acquisitiveness to their race. But we have agreed to take them."

"You should take me," Kiro intruded, "to protect you!"

"What!" Curtes whirled, saw his henchman for the first time. "How dare you come up here?" he roared. The short sword leaped out. Kiro saw it, fear of death in his eyes. He tugged at his own weapon, whirled it at his commander's head. But Curtes deflected the blade upward, and with a snap of his steel-spring wrist, brought the flat of his blade against the side of the giant's head. Kiro fell, stunned, but after a moment managed to get up and stagger away, while Curtes laughed.

"Neatly disposed," Jay remarked. "But if that clown had thrust, instead of swung, you could hardly have unsheathed your blade in time."

For the first time, the animosity between these dissimilar men came to the surface.

"Swords are swords, and test tubes are not swords!" Curtes said with poorly concealed anger. "I appreciate your suggestion, Mister Val. Would you like to make a test with actual blades?"

"I have no time for brawling," Jay replied coldly. "To-morrow is the day for

the launching. I confess—strangely—that I would be pleased to take you to the armory and teach you scientific swordsmanship, but—"

"I understand," Curtes declared ironically—"but no useful purpose would be served. Spoken like a technie!" He took Idar's arm and led her a few steps to the parapet.

"Have you no words for one whose thoughts will follow you through space?"

Idar strangled a sob. Then she faced Curtes squarely, her eyes misty and mysterious in the faint light from the brooding city.

"I will not report this affair to the manager," she said firmly, "but you must go now. You are interfering with important work."

Curtes gave her a long look, his handsome, reckless face frozen.

"I am going—now."

When she was alone with Jay, Idar declared tragically:

"There! When he challenged you, why didn't you meet him in the armory? I could have loved you for it!"

"But for what reason? Curtes is strong; he is reckless. I might have been compelled to kill him, and we need his services!"

Idar's answer was to burst into tears and she went below. Jay, looking after her, whistled softly.

"I wonder," he murmured. "Does she think I was *afraid?*"

But his own problems and perplexities were soon to be driven out of his mind by the threat of disaster that imperiled the human race's last chance of survival.

## CHAPTER II

### The Revolt of the Technies

Jay's work in preparation for the abandonment was done. He was one of the engineers who had designed and built the electronic motors, the largest ever known, which were to propel the *Ventura*. Thus he had leisure to observe the busy preparations for the voyage. Climbing down from the tower, he found the inclosure swarming with activity. Long actinic lights bathed everything in their glare, revealing the pleasing green of grass, shrubbery and other plant life, still artificially preserved and sheltered here. Countless metal cylinders, filled with concentrated foods, fabrics, raw and manufactured materials of all kinds, were being hauled by silent electric trucks in a never-ending stream over the loading planks of the great vessel whose smooth metal sides towered aloft to be lost in comparative shadows. Those of the university buildings that had windows were ablaze at every opening. Through the myriad stimulating sounds filtered the excited hum of many voices, nervous laughter.

Jay made the rounds of all the barred gates. At each one, two Peacemakers stood, sword and club hanging carelessly at belt, gazing indolently over the busy scene. Outside, the mobs might be forming and dispersing. These professional fighting men were unmoved. Watching them, Jay felt a certain admiration for these men who lived by the sword, crude and inept as he considered them, when judged by the fine, scientific accuracy of technie fencing technique.

Presently, he heard his code number called over the annunciators, and he hurried to the office of the manager, the head technie who had been the president of the university—who was now the official in charge of the manifold activities of the abandonment.

Manager Elson sat behind his desk in the clean-cut, sparsely furnished cubicle he used for an office. His thin, patrician features were drawn with fatigue. He was over sixty years old then, and his responsibility weighed heavily upon him.

"Val," he said without preliminaries, "we are having trouble with the financial-legal clique. They want us to give up all reservations, taking only the technies needed to man the ship."

Jay smiled contemptuously.

"To make room for still more of the parasites?"

"Yes," Elson said wearily, "we made a mistake when we admitted that the trip

could be made with fair safety. At first they were willing enough for us to make the experimental trip."

"And what answer did you give them?"

"I asked for a little time. I want you to project yourself with me."

He arose and led the way to a little door which opened into a large room fitted out as a laboratory. In one corner was a square booth with photoelectric cells spaced about three feet apart. It was a well-known device—the telestereo—which permitted the transmission of apparently solid bodies. An optical and auditory illusion. The bodies would not leave the transmitting booth.

"The Master Capital board is now in session," Elson remarked as he selected a numbered button. "I will rely on your judgment when you have heard them."

With the click of the button, the technies seemed to be instantaneously transported to a long, luxuriously furnished room. Looking down where his own feet would be, Jay saw merely the deep-piled rug on the floor. But he knew that to the dozen or so men who sat at the massive, gleaming table, they were solid-appearing images. Elson, too, was invisible to Jay, but he could hear the old man's voice.

A dozen pairs of eyes focused on them, and Jay steadily returned the regard of these beings of the Master Palace, who were hardly ever seen by either technies or the common races. Here were the representatives of a small group of wealthy people who had at one time owned the entire solar system, only to lose it, a planet at a time, to the steadily encroaching cold of outer space. Now a few hundred of them lived in a massive concrete and beryllium palace on a slight elevation in the middle of Sandos. Their stronghold had no windows—no way of access except through thick metal plugs like the doors of a treasure vault. Here they lived, warm and safe from the harshness of climate and the attacks of a despoiled citizenry.

Yet, as Jay looked at them, he thought he detected an air of uneasiness beneath their autocratic, domineering bearing, and he realized, with something like a shock, that these masters of the last inhabitable planet were afraid to let the technies go away and leave them alone.

As the technies appeared, a scantily clad beauty arose from the chair arm on which she had been sitting, and swept regally into an adjoining chamber. An individual, who was obviously the chairman, arose and faced the images of the technies. He was rather below medium height, generously padded with solid fat, bald of head, with cold, gray eyes. He held a pair of bow-framed glasses between thumb and forefinger, and as he prepared to speak, he adjusted them on his nose. His long, loose gray garment proclaimed him a director of the legislative-judicial committee.

"We have summoned you," he began austerely, "to inform you of our decision that will compel a change in your plans. Our stockholders have decided that they will make the first trip to Ridan's new planet."

All of the well-fed, predatory faces leaned forward to note the technies' reactions.

"Who," Elson retorted, "will man the ship?"

"By your own report," the chairman returned, "it will take only fifty men to run the ship. That leaves three hundred and fifty passenger spaces. There are a few more of us, but we can put up with discomforts if need be."

His colleagues nodded approvingly.

"You realize," Elson asked coldly, "that this means marooning the rest of the human race? Fifty technies, arrived on the new planet, could not build a new city with homes and factories, and build machinery for mining a new supply of catalyte. That means we could never return to Mercury to take off the other technies and a half million people still living in this unhappy city. Nor could those remaining here do anything for themselves, for we will be taking the entire remaining supply of catalyte."

The directors gave bland imitations of

distress. Inherited traits made a few of them conciliatory.

"How do you expect to support yourselves?" Jay put in, brutally driving at their selfishness. "Much must be done to make you comfortable."

"Our report," one of the directors declared smugly, "is to the effect that the equatorial climate is very mild—much as it was on Earth at the beginning of the Atomic Age—around 2,000 A. D."

● Jay struggled with the unfamiliar emotion of anger—unfamiliar, because he had lived a life of cloistered, scientific abstraction. The new emotion was heady, robbed him of the faculty for faultless thinking, but it exhilarated him.

"And what," he asked loudly, in such a harsh voice that it sounded strange in his own ears, "of the thousands of human beings out there?" he swept his arm to indicate the surrounding city, the cold, dark, cheerless city of Sandos. "What about them?"

"Oh," drawled a lean, hawk-faced financier with deep-set, smoldering eyes, and rabbit teeth, "to hell with those people!"

"And I say—" Elson was angry, too—"to hell with you!"

Consternation, unbelief, sheer wonder, froze the council of masters. There was a moment's silence, broken by audible gasps. Then voices clamored for recognition.

"Silence!" The chairman's smooth, fat face was mottled.

"You forget," he roared, "we furnished the credits for building the *Ventura*. We now elect to exercise our option calling for immediate payment—two billion units! We'll have a bailiff with an attachment out in fifteen minutes!"

Gone was the smugness, the sense of security. Jay realized with a deep sense of pride that only the technie, Elson, was still master of himself. He thrilled to the stern, precise timbre of his voice, as a lull in the conversation permitted the manager to speak.

"It had to come. I'm glad it came now. Long have we realized the undesirability of taking any of you into the new world. Parasites! But we were bound by our agreement. Now you have broken that. It is war! And none of you shall ever leave Mercury!"

One of the directors jerked open a drawer, snatched out a beautifully ornamented ray-tube. Jay realized with horror that the masters had not obeyed their own government edict. They had neglected to turn in their weapons containing a supply of the precious catalyte. The master swung the slender tube toward the technies, and from its muzzle leaped a fanned violet flame.

"Undank, you fool!" shouted the chairman, striking the weapon down. "Do you realize it's a telestereo?"

Jay heard Manager Elson laugh softly, and in the next instant the hall of wealth faded out and they were again back in the university laboratory.

But the manager's amusement quickly faded.

"We were foolhardy," he said soberly. "It would have been wiser to temporize. They will not even bother with legal subterfuge now. And with their modern weapons, they will have a tremendous advantage.

"We can withdraw catalyte from our storage cartridges, enough to put a few tubes of our own into commission."

"Can't spare it. We need every grain."

"If they arm the government guards, we will be unable to resist them."

"I doubt that they have catalyte enough. Probably they reserved only a few tubes—the hoarding instinct at work. But the bulk of their supply has been turned in. Selfish reasons made them wish for the success of the *Ventura*."

When they again stepped upon the campus under the vaulted vitrine dome, they learned that the Peacemakers had just repulsed another attack by the hungry mobs that forever prowled the streets. Some hint of the clash between the technies and the legal-financial group had leaked out, and these hopeless people flung away their lives cheaply in the hope that,

in some way, some of them might, perhaps, win immediate passage to the new planet. The stalwart Peacemakers at the gates were wiping red stains from their swords.

Jay and Elson approached the nearest of these.

"What happened out there just now?"

The man grinned, crossing hairy arms.

"A bailiff from the masters' court, Mister Elson. Perhaps with a writ for one of our stout crew. We have small love for bailiffs—and we heard of your little affair with them. So we threw this one out. It pleased the mob to pull him into several little pieces," he concluded with an amused grin.

"Where is Curtes?" Jay asked.

"He is outside with a handful of men. The mob was breaking down the warehouses across the street, trying to build a tower to get over the wall."

"Open the door for us. We wish to see."

● The soldier complied indifferently, and the technies stepped into the thin, outer cold. The temperature was well below zero, but the human race had adapted itself to low temperatures. Outside the wall, the light was relatively weak. A few vacuum tubes at long intervals threw ragged shadows along the rough walls. The Peacemakers had cleared the streets of rioters, and were now standing about indolently.

A few minutes later, a sullen red glare bloomed somewhere over the tops of the ugly, angular houses. The Peacemakers watched this, at first with little interest, then with feverish intentness. As they listened, there came to them a sullen, murmuring sound, like the leaden beat of waves on an ice-crusted shore of Venus, and there became apparent a drift of people toward the fire. There were no aircraft, due to the lack of power, but from the nearer streets and alleys came the clatter of running feet.

The red glare rose still higher, and a man's shout broke the spell:

"The Treasury is burning!"

Loot! Loot! The city responded to the lure with mad, primitive abandon. None paused to consider that treasure would soon be utterly worthless on moribund Mercury.

"Look!" Jay snapped. "The Peacemakers are deserting! Stop! Curtes, this is a ruse!"

But Curtes himself was running past, his waving sword overhead. He was laughing, as mad as the rest.

"The masters have done this!" Elson groaned. "They have fired the Treasury, knowing what these fools would do."

They found the gates ajar. The inside watchmen, too, had caught the contagion.

"They'll be coming soon. Will you warn our people, Mister Elson? I'll get a few of our best gymnasium men to watch these gates. It'll be five hours before Ridan is in the right position for our placement. Could we risk a flight now?"

"Too dangerous. It will be safer to fight."

To fight! Jay smiled bleakly as he made his way to the armory. He selected a short, keen blade of manganese beryllium alloy. His friends were selecting weapons, balancing lithe, well-knit but rather slender bodies as they rehearsed the scientifically correct positions in engagement, parry, and lunge. They showed no excitement, going about their business methodically, as though they were about to enter a class contest. But this time, Jay thought grimly, the object was not a demonstration of skill but the dealing of death! He tried to picture the fight in the street that was soon to follow. His breath quickened. He realized, with a wry, inward grin, that he was becoming more like Curtes! At that moment, he saw Idar standing among a group of girls in the armory doorway. Her eyes sought his, and he saluted gaily.

"Watch me, Idar. Soon you will see me kill a man, perhaps many!"

She came to him quickly, said, breathlessly:

"Be careful! Oh, I wish I hadn't said what I did! It was silly, romantic. I can't let you risk yourself!"

"You forget, Idar," Jay said quietly, concealing a surge of happiness, "I am the best swordsman in the university. And Curtes has deserted."

Her fingers, deceptively slender and strong, gripped his hand.

"Kiss me before you go!"

He kissed her, there, amid scores of others. But they were hardly noticed. The place had become thronged with girls. Faced for the first time with imminent, personal danger, a million years of emotional control slipped away.

But the sweetness and wonder of it was cut short. A cry reverberated down the corridors:

"The assault has begun!"

## CHAPTER III

### Curtes' Prisoner

● And so the cold blackened sun witnessed a spectacle that harkened back to its youth. At the apex of slow-growing civilization, the culmination of æons of material and scientific advancement, men were again fighting with weapons little better than the crude spears of primitive savages. Strange and deadly weapons had the world known. Bows and arrows had supplanted swords, had in turn been replaced by guns firing chemically propelled leaden pellets. And these, in turn, had gone into oblivion before the immensely more deadly ray weapons. And these, to complete the cycle, were useless without catalyte. So men trained in the transcendent sciences issued out of the gates with blades with which to hack other men's bodies. Over it all, the glow of the burning Treasury streamed silently, the funeral pyre of a dying civilization.

The palace guards, large, truculent men, came on methodically. They wore armor of small, flexible, overlapping plates, with conical helmets that had protective extensions over the backs of their necks. They carried long, heavy swords with which they were wont to drive through all opposition, all defensive armor.

The technies, with no protection whatever, except their blades with which they parried blows with nice precision, proved unexpected stern opposition. Occasionally, a hurtling sword would strike down through such a defense, stretch a slender, pallid body on the ground to be trampled in blood and dust. But the skill, the fine coördination of the technies began to tell. Again and again their fine blades struck home through tiny crevices in armor, inflicting slight cuts that were so shrewdly placed as fatally to slash veins and arteries.

Both sides went into the battle silently, but as the soldiers saw that an easy victory was to be denied them, they came on with redoubled fury. At the same time, reinforcements came on the run. With a pang, Jay saw another of his companions go down.

"Quick! Fling this into the middle of them!" Elson, trembling with excitement, was holding out a metal cylinder four inches in diameter and eight inches long.

"A chemical bomb. Throw it among the soldiers."

"But—but—it will level the whole city!"

"Throw it, I tell you! This is not an atomic bomb. It's a relatively harmless one—the kind used by primitive people. I used up our entire supply of medical nitroglycerine to make it. Throw, I say!"

Jay took the cylinder gingerly, hope tempered by doubt. He carried it outside the gate, where he saw that the technies were in desperate straits. He hurled the bomb into the thick of the attackers who were massing for the final rush. As the cylinder lobbed through the air, he shouted:

"Down, technies, down! For your lives!" Then it seemed as if the world had exploded, and blackness flooded out all life for Jay Val.

● For what seemed long hours, he struggled toward consciousness. When at last his eyes opened and he was able to look around, he had a blinding headache, and it took some effort to realize that he was lying on a cot in a small, bare

room. A light tube that was only faintly emanating, lighted the room dimly.

Jay sat up painfully and, as he did so, saw the gigantic Kiro squatting disconsolately before the locked door.

"Kiro—what happened?"

"I don't know exactly, Mister Val, except that when the Treasury burned, all of us rushed over there to get some of the loot. But it's all buried under the ruins," he added sadly.

"Yes, that was foolish, Kiro. While you were gone, the palace guards attacked us. And they would have beaten us, too, if it hadn't been for a chemical bomb. Why am I in this room?"

"Well, Mister Val, you see—you're a prisoner!"

Jay's hand went to his side. His sword was gone. He staggered to his feet, burning with anger.

"Somebody will pay for this! Move aside!"

But Kiro stood up, placing his big body before the door.

"You must stay here, Mister Val. Curtes' order."

On his crude features was a strange intermingling of respect and determination. His hand rested nervously on the hilt of his heavy sword.

"But this is mutiny! What has happened to the other technies?"

"All are prisoners. When Curtes came back, he drove off what was left of the guards. The technies suspected nothing. They were easily overcome."

"Where is Idar?"

A look of acute distress rewarded this question.

"Curtes has her in the *Ventura*. He promised me he would not harm her."

Jay groaned. He had an impulse to throw himself upon this stupid giant, kill him and search for the traitor. But instead, he grappled for control of his dizzy brain, at last evolving calmness and a desperate plan.

"Kiro," he demanded, fixing him with the intensity of his glare, "do you approve of that? You admire Idar, don't you?"

"Yes," Kiro said simply. "I would die for her! But—"

"But," Jay went on relentlessly, "you let Curtes take her! You—the mighty fighter!"

"I can't help it," Kiro mumbled miserably. "I could kill three men like Curtes at one time, but when he looks at me—"

"Never mind that!" Jay snapped. "Let me out of this—I'll take care of Curtes!"

But Kiro was stubborn.

"You worthless braggart! You miserable coward!" Jay heaped insults upon him, pleaded, but in vain. Without a weapon, he would have no chance to overpower the guard. At last, disgusted, he threw himself down on the cot and feigned sleep. He estimated that only three hours remained before the ship must be launched, or it would be necessary to wait until Mercury had made another revolution around the sun.

The technie's active brain was not as supine as his body. As he lay there, he pretended to rest, and in a few moments approached Kiro again. But where he had been belligerent before, he now seemed filled with discouragement.

"I can't rest," he declared despondently. "Have you any merclite?"

"Sure I have!" Kiro said, pleased to be able at last to meet a request by this young man whom he liked. He fished in the pocket of his tunic and brought out several cubes of merclite—an intoxicating chewing gum. He slipped one into his own cavernous mouth, handed one to Jay.

"Thanks!" Jay acknowledged pleasantly. "Where are all the other technies kept?"

"They are locked in this building."

"And what building is this?"

"It's the one where the power is made."

## CHAPTER IV

### Aboard the "Ventura"

● Jay's heart leaped for joy. The university administration building, in the basement of which the generators were located, was at the extreme west end of the campus, as far away from the towering

bulk of the *Ventura* as possible. It was logical that Curtes should choose this for a prison. The walls had no windows. It was practically airtight—an ideal prison.

Jay yawned luxuriously, lounging against the door-frame. The effect was contagious. Kiro yawned too. Jay yawned again. His hand strayed innocently to the short, heavy club hooked to the big man's belt. Slender fingers closed over the handle, and before he knew what was happening, Kiro sank to the floor, stunned by his own club.

Jay dragged the body to his cot. He was exceptionally strong, with the power that is based more on nervous intensity than on muscular development. He took Kiro's soft, broad-brimmed hat and placed it on his own head. It was the only part of the big man's apparel that would fit. He also took the sword, although it was too heavy for him to use with facility.

Fortune favored him. The lock on the door was broken. This was no doubt the reason for detailing a guard to watch him. And as he cautiously crept into the corridor, he found it deserted.

Jay crept stealthily past office doors. On the other side, he knew, there were other technies. But any sound might bring instant discovery.

Jay decided that the prisoners must be on the top floor of this enormous four-story structure. This would be a help in the plan he had thought of. But first he must go down to those generators. He did not dare use one of the automatic elevators, but instead took the cramped spiral safety stairway. The flexible metal emitted alarming and previously unnoticed creaks, but he reached the ground level without interruption. It would now be necessary to cross a broad corridor and descend to the basement.

Jay paused and listened. Through the narrow metal door he could hear voices, loud, unrestrained. Two Peacemakers, left to guard the only entrance to the building, were quarreling.

"What does Curtes care?" one said. "He is not concerned with these women, since he has already selected the fairest for himself."

"Nevertheless, content yourself a little longer. What's the matter with the women you've been trailing with. No shortage . . . ."

"These are different." The man's words were indistinct—he had been chewing too much merclite. "That little blue-eyed one who bit me on the finger—that's the one I want!"

"Patience!" admonished the more sober of the two. "Didn't Curtes promise you a free hand as soon as the ship has left? And he with it? Just now he needs the help of these technies, and he can't get that help if you trouble their women. Women! You hog! Can't you think of anything but women?"

"What else is there to think of?"

"You might think of going to Ridan with Curtes, as I am. But you'd rather wallow here. Not that I hate women! I've selected one or two for myself—in due time—not before. Adventure—a new world—can you imagine that, you hog?"

As the indolent quarrel went on, Jay carefully pushed open the door a little, holding Kiro's cumbersome sword ready. The Peacemakers were squatting on the floor, their backs to him. One was tall, powerful, resembling Curtes in general appearance. The other was gross, unclean. The latter had one of the light technie swords stuck in his belt, in addition to his own weapon.

Very quietly, Jay pushed the door open. If he could reach the basement door, bolt it from the side . . . .

It was not to be that easy. Some sixth sense warned the sober watchman. Jay saw his head turn—his eyes widen. Without hesitation, with the strength of both arms, Jay sent the great sword, point foremost, through hairy throat.

With lightning-like rapidity, the technie now jerked the light sword out of the other guard's belt. He had no time to strike—only to dash for the door. It was open. Jay was inside, had the door barred, and was down the basement steps in the space of a few heartbeats. Upstairs there

was a hoarse bawling. They would be closing in like a swarm of Venus hornets in a few minutes.

● The university power plant was of the type which had come into general use after the growing scarcity of catalyte had made atomic destruction impracticable. Exactly the opposite process was here employed—namely the integration of elements from basic hydrogen. This process was carried on in enormously heavy spheres of polished metal with very thick walls, and the "ashes" of the process were silicon and iron. These great spheres crowded the room, along with tanks of hydrogen produced by hydrolysis, and a long switchboard which controlled all the university circuits.

But Jay was not interested in merely throwing the university group into darkness. He searched a storeroom adjacent to the power plant, found several barrels of sodium chloride. Feverishly, he shoveled this salt into an enormous vat that was collecting dust in the chemical room, dragged a hose from its reel and let the water run in. Then he busied himself with fashioning crude electrodes, which he connected to the switchboard with heavy cables.

Before throwing the switch, he listened. He heard shouting above, followed by thunderous hammering on the door.

"Pound away!" he grinned, and threw a switch.

There was one more thing to do. Sprinting to a box containing an emergency gas mask, he broke the glass and slipped the helmet over his head. Then he sat down to wait.

The pounding was becoming more vigorous. The stout metal door could not stand it much longer.

The great vat had become a seething caldron, and greenish vapors started to roll over the edges, to settle on the ground, building up, stratum upon stratum, until it reached the ceiling. The light tubes glowed a yellow-green through the gas, which was a very old weapon of war indeed—chlorine.

The Peacemakers burst through the door, and the heavy gas billowed up to meet them. There were strangled curses, men coughing. Through the fog, some fought their way out again.

Jay was grateful for the extreme specialization that had placed all technical knowledge in the hands of a few. So long had a tottering civilization depended on the technics that not one of Curtes' fighting men even recognized the gas. Inadvertently they had put their prisoners in a place of safety. It would be a long time before any of the heavy chlorine reached the top floor, so high up, and hermetically sealed. Instead, it was now pouring out of the open door, upon the campus, advancing slowly, inexorably, as that phenomenon that had been unseen by a human being for hundreds of thousands of years —an ocean tide.

Dark figures lay upon the ground, writhing in the grass. Peacemakers, these, physically powerful, strangled by invisible fingers that clutched at their throats. Jay paused at the door, peering through his helmet. In a moist flood, the gas poured over him and past him.

More of the Peacemakers came on the run, swords drawn. But this was an enemy they could not fight. Some went down; others turned and ran. Jay followed, the light, keen sword unsheathed. But, faster than he could run, rolled the green flood, washed up against buildings, against the outer walls, throwing vagrant wisps, like spume, toward the glistening dome high overhead.

Jay rounded a corner, so that he could see the *Ventura*, her base brightly illuminated, her nose shrouded in shadows. The beckoning yellow light of Ridan glowed beside and beyond the dead, mist-enshrouded corpse of the sun. Soon, in less than an hour, the ship was to be launched. Now, Curtes was in possession. And in there, somewhere in that shining hull, was Idar!

Scarcely had the gas reached the ship, when men started to run out. These were all Peacemakers, and with stark panic, Jay remembered that automatic fans were

sucking in air and distributing it all over the ship. The atmospheric regenerators were not used except in space. He began to run, though the gas mask hindered breathing.

"She will be killed!" he gasped, running for the gangway. While there were space-suits in the lockers, effective protection against any kind of gas, Jay and Elson were the only ones to know the lock combination. And Idar was in there!

One of the solenoid lifts was down, and into this Jay plunged, throwing the magnetic switch far over. The little shell was sucked into the vortex with sickening acceleration, slowed to a stop as quickly, and Jay stepped out on the platform just below the navigating room. Glancing out of a port, he saw the gas blanket below, filming the grotesquely sprawled bodies of dead men. But even here was a haze of gas, sucked to this height by the fans.

He heard a slight whirring. For a second, he puzzled over it. Then came recognition, and with it a great thankfulness. It was the sound of the emergency regenerator in the navigating room overhead. That meant that Idar was safe! She had locked herself in, turned off the ventilator louvers, and turned on the little emergency air conditioner.

Jay scrambled up the short metal ladder, pounded with the hilt of his sword on the overhead trap.

"Open! This is Jay! Unlock the door!" The mask muffled his words.

But the hatch flew upward, and Jay scrambled through, kicking the metal leaves shut and tearing off his mask. He looked around him. Idar was there. She was even more pallid than usual, only the pink glow of blood under her skin asserting her great vitality. Idar! More lovely, more desirable than she had ever seemed before. Her burnished hair was disarrayed, falling in bronze ripples over her shoulder. A sleeve of her blouse was ripped, revealing a patch of dazzling white skin. Her eyes, as they fell on the technie, were wide.

But what made Jay grasp his sword more firmly was the sight of Curtes, reckless, flushed with victory and power. He was sitting on the little raised metal platform about which were grouped the controlling instruments of the *Ventura*, and one sinewy hand was holding Idar firmly by the wrist.

In one swift glance, Jay took this in. His eyes, passing on, saw Kiro lying on the floor at the base of the platform. The big, bragging lout was a shocking sight. His face was a bleeding pulp. His large, innocent eyes were swollen almost shut, and his coarse, unruly hair was clotted with blood.

## CHAPTER V

### The Triumph of the Technies

● Curtes laughed with savage amusement.

"Curious what the sight of a woman can do, eh? See what it did to Kiro. Such a great trusting innocent that he let a puny technie bat him over the head! The greatest mouth-fighter; the biggest eater and drinker; the loudest talker, and the first to dodge a real battle. But he loses his heart to a pretty and fragile piece of protoplasm—is that the right word? —and what does he do?" Curtes theatrically portrayed amazement. "He came up here just as I nearly had this interesting little woman convinced, and attacked *me!*"

"Please! Please! Oh, Jay, why did you come?"

"I came," Jay said levelly, "to kill Curtes."

The chief of the Peacemakers laughed again.

"As it affected this great ox, so it did the human test tube, eh! Well, my little man, it would amuse me to split you with my sword. But, as you remarked not so long ago, 'It would serve no useful purpose.' As a matter of fact, I need you. I have taken over the *Ventura*. You shall navigate her. And to show that I am not unreasonable, you may take along as many of your group as can be accommodated after my friends have been berthed."

Jay did not answer.

"Idar, of course, belongs to me. But do not despair. If the voyage takes ten years, I will probably restore her to you. In making up our passenger list, it'll be women and children first—especially pretty girl children that will be well grown in ten years." Curtes laughed insolently.

The girl spoke for the second time.

"Go back, Jay, while you can. Get help. Never mind what happens to me. The *Ventura* must leave with a full crew if the rest of the world is to be saved."

"But—but you?"

"Never mind me!" Idar's voice was vibrant with some inner throb of courage. "Go quickly. I'm not afraid of being a sacrifice."

Curtes' rich, ruthless voice intervened.

"I know what's on your mind, Val. Lock me into space if I'm not surprised by your mettle! If you were a man's size, you'd be a real man! But listen—don't come at me with that little toy! If you try it, *she'll* pay!"

Sweat stood on Jay's forehead. He almost hurled himself upon the seated, mocking figure, to clash his blade with that held so ready to hand by his enemy. But he forced back that impulse. Too much was at stake.

"Curtes!" He forced himself to speak calmly, to smile with amusement he did not feel. "Your men are dead, or driven out by the gas. How do you expect to carry on your insane plans? Go now. We will not interfere, but what do you propose?"

Curtes laughed. "Gas? Let me show you a trick I just learned from Idar." He fumbled at the controls, found the quadrant he was looking for, jerked a lever.

The ship trembled. There was a dull, booming sound, and through the ports came a blinding, electric glare. Then, as Curtes jerked the lever back, there came darkness and silence.

"Look out!" Curtes commanded.

Jay backed away, until he could peer out through one of the ports. He knew what to expect. Curtes had started a retarding rocket in the nose of the ship. The great blast had blown the vast vitrine canopy of the university group into space. Fresh air had been sucked into the inclosure, sweeping it clear of gas. The frigid outside air was followed by straggling groups of Peacemakers who had sought safety outside the walls.

"Not a bad thought," Jay grinned sardonically. "But I still refuse to help you."

"Not if I kill you?"

"Not if you could kill me."

"And her?"

"She has given you her answer."

"If he doesn't kill me," Idar declared defiantly, "he will never draw a safe breath!"

"Pluto!" Curtes swore. "Never would I have credited technies with spines like that! Yet there is another way. Val, you know where your friends are? They're on the top floor of that building a quarter of a mile away. Now I want you to note the direction of that maneuvering rocket. See it? Note that it points directly at that building? And just about level with the top floor?

"Now then, what would happen if I should turn on that rocket for about thirty seconds?"

"One thing that would happen"—Jay grinned mirthlessly—"is that you'd blow the building about halfway around Mercury. Another thing—and it's quite important to you if you intend to get to the new planet: the reaction would tip this ship over on its side, and you could never launch it."

Curtes looked at the technie for a moment in thoughtful silence. He was not a little baffled by his contact with a member of the class that he had always viewed with good-natured contempt, although until this insurrection he had been careful to conceal his true opinions. Physical courage was something he could appreciate, but in bodies such as these, so frail, compared to his own tremendous thews, it was more than puzzling. Curtes knew, in a general way, that natural selection had created in the technies a race of unusual brain power. He did not realize that the same process connoted an unusual

nervous organization, and reflexes unusually fast, and that such a man could be really dangerous.

● Curtes had no time to philosophize. His plans had gone well so far, but his position was still desperate. His jaws tightened, and his words were freighted with menace.

"You have brought it upon this woman! Now watch, technie. If you change your mind, speak fast, for bones snap quickly!"

His powerful hand jerked Idar's wrist closer, and with the other he seized her forearm. Slowly he applied a twisting pressure. The girl moaned slightly.

"Stop! I'll do it!"

But as that agonized cry left Jay's throat, he saw vaguely, through hate-dimmed eyes, something that looked like a great, gaunt bear heave itself up from the floor and hurl itself at Curtes. Idar was thrown to one side, against a curved section of the wall, with stunning force. Jay had a confused impression of Kiro's shaggy ferocity, of the gory personification of destruction.

But Curtes, with a single, pivoting movement, left his seat. The long, heavy sword came up, down again. There was a heart-stopping, chunking sound; then Curtes wiped his blade on the lifeless body that had housed, in the final test, a valorous heart.

"One surprise after another!" Curtes remarked, sneering thinly. "What is life after all? After millions of years, many generations, that fine brain of yours, Val, has grown a great distance away from the level of poor Kiro. And yet, in the space of a few minutes, and just because of a woman, the two are going to be fixed on the blade of my sword!"

Jay advanced steadily. Gone, now, was all anger, all beclouding fury. With the perfect coördination of nerve and muscle so necessary in delicate scientific maneuvers, with the nice balance of a fine machine, the slight young scientist came toward the veteran of many fatal battles. The light, glittering blade seemed inconsequential, childish. Curtes waited with disdainful confidence, his deadly weapon gripped in powerful fingers. And still Jay came forward.

It happened quickly. Without changing his position, with a tigerish sweep of hissing steel, Curtes swept the place where Jay had stood—a blow powerful enough to cut him in two.

But the technie was not there. His faster nerve responses saved him. Before that cut was half completed, he was out of the way, and before Curtes was through with his grunt of surprise, he had received a light cut on the side of his face.

"I could have put your eye out!" Jay remarked, standing well out of the way.

Curtes' answer was to rush in, his sword battering and slashing. This time Jay did not retreat, yet he was none the less elusive. He met each sharp, vicious thrust and stroke. Curtes was used to feeling the shock of opposition, the harsh rasp of parry. But now he could hardly tell when their weapons touched. His own seemed hardly opposed, yet each time it was deftly, lightly turned from its course. He became angry, and when, after half a minute, he retreated, he felt for the first time in his life, fear.

"This time you die," Jay announced softly, coming in again.

This time there was no flurry of blades, merely a gentle, lethal hiss made by a keen edge. Their weapons did not even touch. There was merely a flash of glittering metal, that withdrew as quickly as a streak of light. Jay stood clear and watched the professional swordsman sink to the floor plates. His fatal wound was a small cut, hardly an inch long. But it was precisely at that place on the throat where the jugular vein pulsates just under the skin.

Quickly Jay turned to where Idar reclined. She had recovered consciousness and had watched the battle with horror-stricken eyes.

"Oh!" she sobbed.

There was still much to do. Glancing out of a port, Jay saw that the Peacemakers were congregating near the base of the ship. They were being kept from entering the ship by the residue of the gas

still remaining inside the hull, but it was rapidly thinning.

Even as Jay watched, he saw a stream of men pouring into the gates, and still others climbing the walls. It seemed as if the whole city of Sandos had come to the attack. One compact group wore the uniforms of the Palace guards, and from this came a violet flash. Jay felt suddenly weak, though the ship's metal skin saved him from the full force of the ray. The presence of this tabooed weapon pointed to the master, Undank! Others of the masters, too, were probably directing this attack.

It was a crowded moment. Far across the campus, by the light of the tubes that were still unbroken, a group of technies left their prison. They had heard the thunder of the rocket, realized its significance, and broken out. Only one or two had swords—the other men were armed with whatever they could pick up. They formed a thin line of defense around the women, the children, and the aged.

Jay watched them hesitate. They did not dare cross that open space, so full of danger. How could he call them, and clear the way?

In a flash, an idea came. Jay leaped to the control seat. He set the stern rockets at quarter power—not sufficient to break away from Mercury's attraction. Then he began flipping the activating lever, up, down, up, down, in shorter or longer intervals.

Although he could not see, he knew what was happening. Each blast of the rockets was like a tornado of blue electric fire, a hundred yards in every direction. It enveloped the Peacemakers, sent them scurrying, gasping and singed. It eroded the concrete emplacement, sending stinging bits into the mob with the speed of alpha particles. Each blast was like the hot breath of Hades, and the mob, the Palace guards, and the Peacemakers alike, crowded and crushed one another in order to get outside, to put the high walls between themselves and this electronic inferno.

But the technies, at a comparatively comfortable distance, quickly noticed that these blasts of fury constituted the Interplanetary code:

*"Dah-dah-dit-dit-dah; dit-dit-dit-dah; dah-dah; dit-dit."*

"Come!" That was what Jay was spelling, over and over.

The technies came. They ran across a campus denuded alike of plant and animal life, across soil blackened and hot to their feet. If they touched skeletons of what had been men, those skeletons crumbled, so completely had they been burned.

Jay saw them coming, and pushing the controller back to zero, approached Idar, who had watched with fascinated eyes.

"Idar," he said, quite humbly, "not long ago I asked you . . . ."

"I know!" She smiled in a way that could not be misunderstood. But in a moment, she gently disengaged herself from his embrace. Elson, shaken but triumphant, had come with the rest of the technics through the hatch. Paying no attention to them, he seated himself at a transit instrument.

● Jay responded to discipline. He leaped to the instrument panel. A red light was glowing steadily—a warning that the ship was not yet airtight.

"We're getting close!" Elson announced, peering into the transit.

Would the red light never change?

"Almost in line," Elson muttered, and then the light changed to green. Jay sighed thankfully and lay down on the platform, one hand raised so that he could pull the activating lever. Out of the corner of his eye, he saw Idar lie down.

"Now!" Elson shouted, and threw himself flat on the floor.

With a deafening roar, the greatest space-ship ever built hurtled, with frightful acceleration, toward a new sun, toward New Earth, and a new hope for the technies as well as for the deluded fools who had tried, in their selfish panic, to stop them.

THE END

*(Illustration by Paul)*

**Vividly real against the glistening, dark background of polished volcanic glass, the figures were gigantic, hundreds of feet in height.**

# XANDULU

## By JACK WILLIAMSON

WHAT HAS GONE BEFORE:

● Brandy, a cripple, who had been cruising around the Mediterranean, spies a strange sight one night. An airplane appears in the distance fighting with some strange globes of light. The aviator wins the battle at the cost of his plane and is thrown into the sea. Brandy had recognized the flying tactics of his old buddy, Miles Kendon, and sends out a rescue boat to bring him in. His assumption had been correct, for it was in truth, Miles Kendon. With him is a strange girl. After they had rested from their ordeal, Kendon tells Brandy a strange story. He had landed on the site of a lost city in northern Africa a while before and did a little exploring. Oddest of all his discoveries in the lost city, which must have been populated thousands of years ago, is a huge well of dizzying depth. One day, a great bird flew from out of the mouth of the abyss with a girl on its back. The bird died after its tiring flight, and Miles rescued the girl. She is an odd creature, and Miles could not understand her language, which was utterly alien to all that he had ever heard. However, she makes it imperative to him by her actions that they must leave the place at once. He does so. While nearing the Mediterranean, he had been attacked by the strange globes of light, and Brandy knew the rest of the story. The light-balls, Miles was convinced, were evil things sent from Xandulu, the great land below the Well from which Su-Ildra, the girl, had fled, to capture her and return her to the world of her origin.

The next night, with the yacht steaming full speed toward France, the mysterious globes appear in the night sky from out of the direction of Africa. Miles tries to fight them off, but fails, and Su-Ildra is carried away by the sinister balls of light. After securing new supplies, he returns to the Well in the lost city, planning to descend into Xandulu himself, to rescue Su-Ildra from some unknown danger which he was sure threatened her life. Brandy waits patiently for word from him, but none comes for a long time. *Now go on with the story.*

### BOOK TWO

### The Red God of Xandulu

● Aboard the *Gay Moth III,* I had spent a winter of idle invalidism afloat upon the crystal Mediterranean. It was late March, 1929, when we put into Algiers. I had long since abandoned all hope of seeing Miles Kendon again. It was indeed a joyous surprise to me when a boat brought my old friend out to where we lay in the outer harbor, even before we docked.

"This is luck, Brandy!" he shouted, as he came striding down to my chair on the foredeck. I started to pull myself erect to meet him, and he cried, with quick concern, "No, keep still, Brandy! With you in a jiffy!"

He was smiling, and it brought me a warm glow of pleasure to survey again his clean, athletic figure. Dressed in crisp white linens, he was thin of waist, powerful of shoulder, with his old alert air of vigorous enterprise. Lean and hard, his face was; the same restless, daredevil light twinkled in his greenish eyes, and his smile was twisted maliciously, as always, by the long, livid scar of the mad Malay's kris, beneath the edge of his stiff, reddish hair.

He ran to me and took my shoulders to push me lightly back into the chair, then swallowed one of my hands crushingly in a steel-sinewed paw.

"Mighty glad, Miles!" I gasped. "I've been wondering, afraid. Did you find Su-Ildra?"

A shadow of bitterness swept the glad smile from his face; his mouth hardened grimly. The twinkle of gaiety vanished

**● At the conclusion of the first part of this story, we were left with great mystery enshrouding the fantastic land of Xandulu, from which came the terrible globes of light that had taken Su-Ildra back down into the abyss of their origin.**

**Miles Kendon keeps his promise to rescue Su-Ildra and returns to the Well in the lost city, this time descending to pass through weird adventure among three strange types of creatures, alien to the surface world.**

from his wide-set, greenish eyes; they were abruptly ice-cold, yet with a glitter of steel determination in them.

"Yes, Brandy," he told me, in a strange, quiet voice. "I found her—for a little time. I found her in Xandulu and had to leave her there."

"Then you've been," I asked, "into the place where—where those screaming globes came from?"

He nodded quietly, gravely.

"I've been there. I saw the man—or the being, for his race is really pre-human—whose face was in the globes. I saw him. I tried his power. Perhaps I won. But I am here, and Su-Ildra is still in Xandulu—still in his insidious power!"

"You must tell me the story, Miles."

That night it was warm. Mingled with the sea smells of the harbor was hint of the desert's subtle fragrance. Lights shimmered on the oily waters. The modern French town was a low jeweled band, with the Kasbah, the native quarter, a dark and tawny heap on the heights beyond.

Miles and I sat in chairs on the open deck. Carlos, my Filipino boy, had left us wine and cigars, but we indulged sparingly, for Miles was engrossed in his story, which I lived as he narrated it.

Earnestly before he launched into his story, Miles leaned toward me and said: "I want you to remember what I tell you, Brandy. The world may some day need to know about Xandulu. There is a—menace! It seems shadowy, fantastic—now. The world would laugh at it. But if you had been to Xandulu . . . . "

His voice trailed off, and he stared broodingly across the dark ocean for a long minute before he gathered himself and began very abruptly.

## CHAPTER I

### The Lost Land of Xandulu

● Disaster overtook him at the very beginning, he said. Landing at Algiers for fuel, he flew westward over Morocco, over Fez and down across the great plain of Marrakesh, over the barrier ramparts of the High Atlas that have so long guarded immemorial Xandulu. Beyond the snow-capped summits, over the lower, barren inner ranges that are parched by the Sahara's killing breath, his motor failed.

The trouble, he thinks, was clogged fuel lines; he had been doubtful about the gasoline he got in Algiers. But there was never opportunity to confirm the notion. To land the plane was out of the question. At the last moment, failing to revive the engine, he "bailed out."

Down his parachute drifted into a mad tangle of gullies, canyons, gorges, of sharp peaks and fantastic buttes and tortured pinnacles, into a lifeless, sun-baked wilderness of dark schists and red sandstones. He watched the plane roll down a mountain slope, a pinwheel of flaming wreckage.

The misfortune cost him not only means of transportation, but arms and equipment and food. In moments, fate had reduced him from superman to savage. He was on foot in unexplored mountains lifeless with the drouth of the Sahara, a region so cruelly desolate that it is shunned even by the Berber mountaineers.

At first he meant to return, though it would have taken months of toil to retrace his last hour's flight. But, characteristically, another idea took possession of him before the flames had died from his plane. He still had the parachute. That would serve to lower him into Xandulu!

It was a desperate, a foolhardy thing to do, plunging into unknown peril unarmed and without any way of retreat—but not the first such thing that Miles Kendon had done. The mountain of the city had been already in sight before he fell. He could not turn back when it was so near.

Once he had thought it impossible to reach the ruins save by air—but that was before he was forced to do it. He packed the parachute and set out for the mountain. Three days later, exhausted and rather hungry, he clambered over the last precipice and entered the hidden city.

Time-broken, brooding, silent, it was like a cemetery of Titans. Across the whole flat mountain-top—it was about four miles by six—extended the forest of ruined green pylons, like colossal crumbling gravestones.

Staggering across the débris between the green shattered piles, some of them still hundreds of feet high, Miles reached the spot where he had landed before, found water and the supplies that he and Su-Ildra had abandoned at their old camping place.

After two days of recuperation from his terrific climb, he went to the Well, climbed the rude stair of loose stones he had built against the curving green wall. He walked across the top of it—it was like a wide, curving pavement of green porcelain—and threw himself on his face, looking again into the yawning abyss.

A sheer green-walled pit, a thousand feet across, falling into the heart of the earth, it was—green walls, falling, falling, to a tiny enigmatic disk of argent radiance. He lay there some minutes, thinking of Su-Ildra, the lovely being who had come up out of the pit to him, had been carried by the dread instrumentalities of Bak-Toreg.

"Coming, Sue!" he whispered.

He stood upon the broad top of the wall, made sure that the harness of the parachute was properly adjusted, and leapt as far as he could into the Well. A blast of air was flung at him from below. The circle of blue overhead leapt up, shrank. The green-walled pit swallowed him, like a great throat, into increasing darkness.

He pulled the rip cord. It was the longest parachute drop in history. He was falling, Miles knew, a mile every five or six minutes. He looked at his wrist watch—it was just past nine in the morning. By noting the time, he could roughly calculate the distance of his descent.

Steadily the disk of enigmatic silver grew larger beneath him, the light about him fainter. An hour had passed—he must have dropped ten miles—when the silver circle expanded suddenly; the walls of the pit, brighter again, drew up and away from him. He was in the world below the Well!

Swaying under the parachute, Miles was suspended beneath an inverted bowl of green, under a green dome of the same eternal material, no doubt, as the walls. In the distance, it was vague with the blue mist of sheer space, until it seemed a sky of silver-green, reaching down to the horizons of the hidden land.

Miles had expected no more than a series of natural caverns. The green dome was so astounding in its revelation of the inconceivable powers of the dread makers of Xandulu that its impact on his mind was almost stunning.

Far below Miles, but above the gray-blue mists that veiled the floor of the space beneath the dome, hung the luminaries of Xandulu—seven suns!

Seven bright orbs, six of them spaced about the central globe, they were. Blood red was the central sun. Of those that circled it, one was dazzling white, one cold-green, one deep, ethereal violet, one other blue and gold and ebon.

The suns were many miles beneath him, and the disk of the secret world was a dizzy space beyond, a featureless expanse of heavy gray vapor.

● Xandulu, he had known from the first, was no natural world. It was a creation! Some science, infinitely beyond the comprehension of man, some vast pre-human power had hollowed this colossal hemisphere within the planet, walled it with the perdurable green material, set spinning within it the seven orbs.

The descent took nearly fifteen hours. He fell close past the strange clustered suns—their globes, he estimated, must have been a mile in diameter; he wondered futilely how they were suspended and whence came their light. For a time, he was uncomfortably hot and climbed the cords of the parachute to spill the air from it and hasten his descent.

Again and again he felt a pain in his ears which he could relieve only by repeated swallowing—an effect, he recog-

nized, of the increased barometric pressure, which otherwise did not trouble him.

He amused himself by attempting to estimate the size of the secret world. In fifteen hours, he thought, he must have dropped at least one hundred miles, even allowing for a slower rate in the denser air. Assuming the green dome to be a true hemisphere, that would make the diameter of its circular floor about two hundred miles.

The first conspicuous detail to emerge from the gray-blue haze in the heavy air was a low bank of white cloud that hung over the eastern half of the disc-shaped world—a wall of white mist shot queerly with bright flame. Motes of clear fire flickered and danced unendingly within it.

Westward he made out presently a great mass of land, curving along the wall of the dome. Dark rugged mountains and plains, he saw, that were splotched with scarlet and blue—colors, he supposed, of vegetation.

Between this land and the mystery of the bright-flecked mist lay a vast reach of sea that was darkly purple, patched with a few black markings, that, he thought, must be islands. He hoped for some wind to carry him toward the land, was presently certain that he would fall, instead, into the purple sea!

The vivid and fantastic coloration of the lost world caused him no surprise; it must have been, he knew, deliberately planned.

Miles had anticipated difficulty in finding Su-Ildra. Bak-Toreg, the insidious priest of the mysterious "Red One," he knew, would have her imprisoned somewhere. Bak-Toreg wanted to shut her up, the girl had informed him; he dared not yet defy the Lelura, the Flame Folk, to the extent of doing away with her.

It was a queer freak of fate that dropped him almost into the girl's prison, right, as Miles put it, into Sue's lap.

He fell into the purple sea, the smothering folds of the parachute collapsing on top of him. He unfastened the harness, dived clear of it, removed his shoes and enough of his clothing to permit him to swim.

The dense air was rather hazy. He could not see far in any direction, but after some time, he distinguished the dark contour of one of the tiny black islands he had noted from above, dim in the haze, and struck out toward it.

It must have been several miles, though, in the strange atmosphere, he was unable to judge distances with any accuracy. At any rate, he was thoroughly exhausted before he reached it.

A jagged pillar of black rock it was, breaking the somberly purple sea with a curling spray of white. Crowning its highest grim pinnacle was a dome of blue, a tiny strange building.

He dragged himself through the rushing surf, let the waves fling him at a corner of the rock, seized it. Desperately he clung to it as the water ebbed away; he climbed, then, and presently found a steep and perilous path, leading up the sharp edge of the rock to the queer small cylinder of the blue house on the pinnacle.

He toiled up, dead with fatigue, and rapped wearily on the door of the strange house. The door, after a little time—it was a curving panel of violet metal—was flung abruptly open. Astonished, there before him, stood Su-Ildra!

The woman of all his dreams . . . . dark eyes that were wistfully blue, and hair that was a copper flame. Vast amazement was first upon her pallid face; it melted into incredulous and transcendent joy.

"Miles!" she sobbed in ineffable wondering gladness. "Miles! I knew you would come!"

Content, a desire to relax, to give way to his weariness, flowed over Miles in a dark warm flood. He reeled and staggered upon the narrow ledge above the sea, and Su-Ildra helped him through the door.

Already, he had found her! It had been too easy. He had an odd feeling that fate was jesting with him, that he was destined to lose her again as quickly as he had found her.

He was sick with exhaustion. She brought him food, anxious about him. He ate a little, tried to keep awake to talk to her, fell asleep with his head in her arms. When he woke, she was still with him. They were happy—with a happiness embittered with the constant realization that they were both, now, prisoners of Bak-Toreg, both at his mercy—if the priest of the Red One had such a quality.

Once—it was near the end of that brief, bitterly joyous time upon the rock—they were together under the blue dome that capped the blue dwelling. There were many broad windows in it; they could look out across the purple sea and the green-and-silver sky, with its seven high, vari-colored suns. They spent much time there, for there was no space outside to walk.

"That way lies Aral," Su-Ildra whispered wistfully, pointing into the hazy nest. "Aral, my country."

Miles looked at her—slim and tall in light blue silken garments, the dark eyes in her thin oval face pensively blue, coppery glints dancing in her hair beneath the light of the wheeling northern suns.

"It is a beautiful land. A little time ago my people dwelt there, content, tilling their farms in the rich valleys, or hunting upon their eagles. They called me their ruler, for I was keeper of the Sign. But they were happy, peaceful; they had no need of laws or ruler.

"And then the evil power of Neng fell upon us. The red women, and Bak-Toreg, with his evil arts, hunted us, slew us, carried us to Neng to offer to the Red One.

"I escaped for a while, and hid. Then the Sign shone, for the first time in generations. The Flame Folk spoke to me, commanded me to go into the world above. I flew out upon my eagle. There I found you, Miles. And Bak-Toreg brought me back, left me here upon the rock.

"He dared not give *me* to the Red One, for he still fears the Flame Folk, even though they do nothing."

## CHAPTER II

### The Sign

● "The Sign?" Miles questioned, a little bewildered, as always, by talk of the shadowy powers of Xandulu.

Su-Ildra reached inside her garments and drew out a small pouch of dark leather upon a chain of violet metal. From the pouch she took a little roll of white silk—out of the silk she slipped a glistening bit of polished crystal.

Ice-clear, gem-bright, it was in shape a flattened ellipsoid, three inches by one and a half, and no more than a quarter of an inch thick. The girl surrendered it carefully to his hand. He examined it; though perfectly finished, it seemed a very ordinary piece of rock crystal.

Handing it back to Su-Ildra, he said nothing. But with her quick intuition of his thoughts, she divined what was in his mind.

"You think it is nothing," she whispered. "And so did many of my people. For generations it had been dead—as you see it. We kept it as a sign of the friendship of the Flame Folk—a pledge. They gave it to our fathers when they came into Xandulu.

"Miles," she whispered solemnly, "I have seen it light. I have seen the Flame Folk in it. It was they who sent me to the world above the sky, to you—"

Her whisper died with a low breathless cry of wonder. The dark eyes were big in the pale oval of her face, and they stared at the crystal. It lay upon her trembling hand. Miles glanced at it and was astounded.

Palely, eerily, the little ellipse was glowing.

Su-Ildra held it higher on her palm, tilted it so that they both could look within it.

"Again it lights," she breathed. "The Flame Folk once more would speak! Indeed they remember . . . ."

No longer was the crystal clear. Milky cloudiness filled it—white opalescence—a pallid mist, alive with evanescent motes of flame. Vague memory tapped at Miles'

mind at sight of that white, flame-shot cloudiness. He groped for it, and recalled his descent into Xandulu.

White clouds, then, flickering with faint reverberations of unseen flame, had hidden the eastern half of the secret world. Now he guessed that Lelural, the mysterious land of the equally mysterious Flame Folk, lay beneath that white, fire-crossed mist.

That memory came and vanished, and he gazed into the glowing ellipse. The opalescence was clearing. The crystal became again transparent, *super*-transparent. It became a clear window, and he looked deep into it, through it, and at something far beyond.

A tiny thing, the crystal was, narrower than the small white tremulous palm in which it lay. But the being that Miles saw in it seemed oddly not small, but real and large and very far away.

The creature seemed to be looking at them from the crystal. Miles gazed at it in mute wonder. It was not a reptile, not any familiar reptile, certainly. Yet unmistakably much about it was reptilian. The fire-flecked whiteness of the mist dissolved from about it and left it clearly visible in a place with dark green walls. It stood upright there and watched them.

Its body—as much of its body as Miles could see—was covered with bright scales, emerald, polished, glittering like hard metal. Its arms were scalded, too, virescent; its horny fingers were tipped with slender claws, needle-sharp, incredibly delicate.

Its head was plainly reptilian, yet strangely beautiful; and something about it—perhaps only its obvious intelligence and sympathy—struck Miles as human. It possessed a singular beak, broad, curved, gleaming with the brilliance of ruby lacquer. The green-armored skull was hooded with a gay carapace of scarlet scales.

Oval and lidless and surprisingly large, its intensely black eyes shone with a light that was surely the glow of Mind; there was kindness in them, and weariness of time unthinkable, and sad laughter. Tiny and far-off as this curious being seemed in the crystal, Miles felt in those eyes a curious directness and understanding.

Those lidless eyes, he knew, had seen all existence. Their gaze had penetrated to the ends of Space. They had looked back to the Beginning, they had seen through the veil of the Future. Much they had found to interest them, much to rouse sorrow and laughter and fear, much to weary them, and nothing to make them hope. For they were tired and infinitely wise, and the quivering flame of hope was not in them.

Its wings were the being's strangest feature. Wings, alone, could Miles term them; yet he doubted that they had ever been intended for flight. Like a drooping robe of thin, transparent stuff, they sprang from the shoulders of the creature and fell about its green-scaled body. Diaphanously transparent, they shimmered with veined flame, living, restlessly flowing. Miraculous membranes, golden and blue and softly violet, they folded the being in a mantle of fire.

This creature, Miles instinctively knew, must be the flower of the Age of Reptiles, as Man is the climax of the Age of Mammals.

● "It is Alú the Youngest of Lelural," whispered Su-Ildra. "Lean near, Miles. He would speak with you."

Blankly wondering, a little bit frightened, Miles brought his face closer to the tiny ellipse in the girl's hand where the vision glowed so strangely bright. He looked at the reptilian being and the oval dark eyes met his intelligently.

Then a voice was impinging upon his mind. It was not sound; he did not *hear* it. It did not even express itself in words, but in the very stuff of thought itself. Without a language, even without pictures, it brought its meaning clearly to him.

"Miles Kendon, you are surprised. Empty your mind of fear, for we have a matter of grave import to tell you. Why should you be astonished, when even with the young science of the world above,

men can talk across the world and even see each others' features by the crude mechanisms that sometime may grow into such an instrument as the Sign? Is this more wonderful than the Well, and the green dome, and the seven suns?"

Miles tried a grin, and muttered, "Okay. Talk."

"Listen well—for the future of the planet may depend upon you and your life and the life of the woman by you. For we, the Flame Folk, have let live the seed of evil until it has made a great and hideous weed that seeks to grasp the whole earth in the black tentacles of its roots.

"As you already understand, the Flame Folk were once great. When your fathers were yet climbers in the forests we mastered the world without—or such part of it as we needed. We accomplished all that your race has done, and most of what you only dream of doing.

"Age upon age we ruled the planet, until we were weary of reigning. For know that races have youth and decline and death, even as have nations and men. Decline came upon us, and we no longer cared to conquer, but only to live.

"Then came the periodic age-long waning of the sun, and the cruel descent of the Ice upon the earth. To escape the cold and the ever-greater difficulties of life upon the surface, we spent the last constructive energy of our dwindling kind in the forming of Xandulu.

"Another age have we dwelt here, until our decline is near the brink of death. And yet we cling to life; we desire not to be destroyed. That is why we speak to you.

"Two other races were growing into the fulfillment of life when we left the world above—your race and another that you know only in your traditions of Atlantis and Lemuria. In order that their young arts might not be lost beneath the ice, we brought into Xandulu those of each race who wished to come with us and gave them two lands where they might live until the departing of the ice.

"The red race above grew wicked and was slain by the evil of its own creation. And that evil, together with the peril of the ice, brought your own kind back into the shadow of barbarism from which you are only now creeping forth.

"In Xandulu, the two races changed also. The Ara became but hunters and peaceful farming folk, their budding science forgotten in the simple joys of life. The Ryka cherished their wisdom, but they consecrated it to a new mad god of destruction, of death and pain.

"The Ara forgot the outer earth. But the Ryka, the red folk, kept alive memory of the world above. Ever they planned to return, not to settle and build new nations, but to satiate their lust of destruction, to set the heel of their evil Red One upon the new people without.

"Seeing the hateful madness of their faith, we forbade the Ryka to go out. Like them, we see no Hope in all the cosmos. Death and cold and stillness are the end, for all. But we find matter for laughter; and even in sorrow there is sweetness. We would not hasten the end.

"Their mad priesthood courted forbidden knowledge of the sciences of destruction. They seek to overwhelm the earth with a wave of red conquest, to offer all life on the altar of the Red One. Their final aim is to destroy the whole planet, when they may—and already their evil science grasps at the dread discovery that will enable them to shatter the solid earth!

"The faith of the Red One is an insane faith of annihilation.

"The Flame Folk are weak, near the abyss of death. We still possess the great science that formed Xandulu. But we have lost the vigor, the will, to use it. Bak-Toreg has defied our power; he had laid waste Aral, that was under our protection.

"And we cannot fight him. We have reached a state in the development of mind when violence is impossible. We have lost all primitive vigor and the instinct of combat. We cannot—even to save ourselves and the planet itself—we cannot make war!

"You, Miles Kendon, must be our champion."

"Eh?" Miles was amazed. He looked away from the strange bright figure in the shining ellipse, smiled absently at the lovely girl beside him, glanced through the windows of the blue-walled room, at the lonely purple sea beneath a sky of silvered emerald.

At last, over-riding his sense of strangeness and his awe, he spoke at the ellipse.

"You can hear me? Well, let's get this straight. You want me to fight Bak-Toreg and the others? There's a chance to smash them?—to get Sue out of their power?"

"You understand. Victory will not be easy. It is far from certain. The evil power of Bak-Toreg has grown too long. We will give our aid, but all depends upon you."

"What must I do?" demanded Miles.

"You must destroy the Red One," came the soundless reply.

"The Red One—"

"The Red One is a god of destruction, created by the priests of the Ryka to be the symbol and the avatar of their belief in annihilation. Every member of their cult must sooner or later throw himself to the fangs of the Red One, as his supreme gesture of faith—and the final goal of the cult is the destruction of the planet, the blotting out of all life, in the name of the Red One.

"Miles Kendon," the wordless message continued, "you left Bak-Toreg in Aral. He has long been back in Neng. He has hesitated to touch you, knowing you to be so near Su-Ildra and hence to the Flame Folk. But again he dares to defy us!

"Even now the arm of his power is reaching out to carry you to Neng. He plans to offer you to the Red One, Miles Kendon. You must go to meet his fangs and slay that foul spawn of the priests. For it is a symbol of the mad cult, and its destruction alone will stay the tide of ruin they plan.

"The death of the Red One will halt them. It will give us a chance to turn them aside from their hideous design. And what means more to you, Miles Kendon, it will save Su-Ildra. For if we allow the Red One to destroy you, then Bak-Toreg will know our power is a jest, and Su-Ildra will follow you to its fangs.

"This I, Alú the Youngest, tell you in the name of the Flame Folk."

Swiftly the crystal clouded with fire-shot opalescence that veiled the bright reptilian figure. The mistiness cleared and very soon the little ellipse was again perfectly transparent, apparently a very ordinary fragment of polished quartz.

Miles and Su-Ildra waited in the tiny house upon the rock for the striking of the sinister hand of Bak-Toreg—waited for the battle with the shadowy terrors of a world that was half paradise and half nightmare. Heavy upon Miles weighed the brooding doom of Xandulu, a sense of elder power, lurking, inexorably menacing.

## CHAPTER III

### The City of Blue Porcelain

● Miles and Su-Ildra stood beneath the azure dome, gazing fearfully through the wide ovals of its windows which were glazed with hinged panels of an unbreakable glass. Upon the black base of the rock below, the purple sea roared white; the tawny waste of it stretched desolate to silver-green horizons. High to northward hung the seven suns, their mingled beams falling through the windows to make upon the floor fantastic shadows fringed with polychromatic bands.

Upon them descended the evil power of Bak-Toreg. Miles cursed himself for his helplessness. There was nothing he could do. They could neither flee nor fight . . . . Su-Ildra held his arms. Her fingers sank deep into them, but staring across the dark sea, he was unaware of their pressure.

A swarm of bright sparks swam in the silvered malachite of the sky. Larger they grew, until they were a cluster of shining globes sweeping down upon the rock, as if upon an invisible wind.

Miles unconsciously slipped an arm about Su-Ildra. Her slim body was tense, trembling a little. She glanced up at him

in brief concern, a brief warm smile upon her pale face, and then looked quickly back at the approaching globes.

Shimmering bubbles of violet flame, they were—yard-thick spheres of energy, projected, directed, by the yellow priest from the far city of Neng—the uncanny instrumentalities called the "thousand faces" that had snatched Su-Ildra away from Miles in the outer world.

Miles anticipated the faces before he could actually distinguish them. Their horror had been burned into his mind—flat masks, yellow and ancient, twisted with timeless evil—the eyes of them paradoxically, horribly limpid and benevolent, twinkling golden.

They had fastened the windows—futile defense! Nothing else could be done. They could only stand and wait .... body to body .... heart to thudding heart .... closer in peril than they had ever been. Su-Ildra's face was white. She was trembling; she had bit through her lip, so that it was bright with blood. But she unfalteringly stood beside Miles as the bright globes came on.

Violet spheres swarmed above the house, and the shrill vibration of them came through the walls like the humming of insistent insects. They were at the windows—bright bubbles of flame, seeking entrance. The panes rattled as if shaken by unseen hands.

Then splintering bolts of blinding green flame stabbed at the house. A window shattered crashingly. The blue porcelain about it crumbled, fell in rotten lumps. The virescent lightnings ceased, and a globe came sailing into the room.

The two did not retreat from it; they stared in helpless, scornful hate at the strange intruder that filled the room with its thin, monotonous screaming. Behind the curved iridescent surface was the face of Bak-Toreg, a seamed mask of triumphant evil.

Miles pushed the girl back behind him and stepped to meet the sphere. An amazing attraction seized him; he was drawn swiftly off the floor and into the shining globe. It swelled to receive him and the yellow face vanished from it.

Bathed in violet light, Miles hung in the sphere. For a moment, he did not try to move; he was paralyzed with wonder and dread. The room about him looked oddly tinged with violet, as did Su-Ildra's tense, horror-stricken face.

Then he struggled. He found that a barrier had closed about him—a transparent, violet shell. A vibrant wall, it must have been, of sheer force held in equilibrium; yet it was effective as a wall of steel. A flying bubble, the sphere imprisoned him. In vain did he kick at it, batter his fists against it until they bled.

Su-Ildra broke from her trance of dread, ran toward him. She beat upon the barrier. Watching her agonized face through the violet screen, he saw her lips move, but no sound of her voice came through the shell.

Then the bubble sailed out through the hole in the wall.

Miles looked back as he was carried away. The house was a tiny blue cylinder on the rock with Su-Ildra's despairing face watching through a ragged opening. She waved at him. The rock dropped away behind, was merely a black fleck upon the purple sea.

The other spheres swarmed close. Staring at Miles in hideous triumph from each of them, was the drawn yellow visage of Bak-Toreg, thin lips snarling back from jetty teeth, golden eyes softly inquiring.

The black point of Arnac Rock became indistinguishable upon the purple plane. The spheres flew on beneath the seven suns. And at last, a tawny smudge of land rose out of the eternal mists of Xandulu, and the clustered globes sank above an island city.

● The isle was circular; a low broad plateau surrounded a steep and rugged black mountain. Its shape, it came to Miles, was a little like a hat, the plain being the very broad brim, and the mountain the high, conical crown.

The city was built upon the plain; there

was no building upon the mountain—which was indeed surrounded by a bare strip of level land, as if its dark, beetling obsidian precipices were shunned by the people of the city.

The buildings were all of a glistening, translucent, richly blue material, that for want of a better name Miles called porcelain. Like those of the ruined green city above the Well, they were tall, slender, and spaced very far apart — better described as towers or as pylons than as mere houses.

At various levels, these lofty perpendicular walls were set back to form terraces which served as landing stages for the flying disks of violet metal of which Miles saw thousands gliding about the city. The very extensive spaces between the pylons was partly paved with blue and largely covered with trees and shrubs of fantastic shape and color.

Riding the disk-fliers, or idling upon high terraces, or hastening along the azure paves, Miles saw countless multitudes of the people of Neng, the red race. The women were like gigantic Amazons, carrying weapons armored in violet metal. The men were smaller, almost dwarfish by contrast, clad almost universally in the black robes that were the mark of devotion to the Red One.

This was Neng, city of the Ryka, seat of the Red One's power!

For some little time, the violet globe in which Miles was imprisoned hung motionless, level with the tops of the looming blue pylons; and many of the disc-ships glided near him. The smaller spheres left and streamed away toward the top of the nearest building.

The slender spire of this pylon, Miles saw, was crowned with a curious dome of violet metal, and through that dome projected a colossal barrel, like the tube of a great telescope. One by one, the violet bubbles were swallowed by the open, yawning mouth of this cylinder. They were returning, Miles was sure, into the unknown mechanism that had given them being, and maintained and directed them upon their far mission. Bak-Toreg, he knew, must be beneath that dome, surrounded with the instrumentalities of a mad science of destruction that had risen to menace the very planet!

Presently the sphere carried him onward toward the dark looming mass of the central peak. Covering a full square mile, the mountain reared its tallest ebon pinnacle a full two thousand feet into the gray-green sky. Its overhanging cliffs were peculiarly rugged, and save for a few tiny patches of green vegetation in high crevices, it seemed barren of all life.

Then Miles saw the theatre and the scorpion.

At the foot of the mountain was a semicircular pit, the black cliff facing him forming the straight side of it. The curved wall was a structure of blue porcelain, and above that wall rose tier upon tier of seats that faced the ebon precipice across the pit.

Upon the jet-black mountain wall in front of the seats, was a scene that checked his breath with wonder, slowed his heart with instinctive fear—a colossal, strange mosaic, inlaid in the rock. It portrayed a woman in the fatal embrace of a scarlet scorpion.

Vividly real against the glistening, dark background of polished volcanic glass, the figures were gigantic, hundreds of feet in height. In the execution of them was a startling *actuality* that made Miles tremble with foreboding horror. Struggling, helpless, the woman was held fast in the cruel great pincers of the crimson monster whose armored tail was arched up over its back, bringing the barbed tip of its sting against her shrinking body. Upon her white face and in the attitude of her straining limbs had been caught an intensity of agonized horror that, Miles felt, it would be maddening long to behold.

The flying globe sank into the pit, paused a few feet above the firm, packed clay of its floor. And then the transparent violet walls—whose adamantine hardness had made Miles's knuckles bleed were changed again to impalpable mist. He fell out of the bright sphere and sprawled on the clay. When he got up, it was gone.

Semi-circular, the pit was two hundred feet along the straight side. Smooth as a great screen, the dark cliff with the hideous picture upon it rose a thousand feet into the greenish-gray sky. The curving wall of blue porcelain on the other side, beneath the seats, was forty feet high, quite unclimbable.

The hard clay floor was bare. The seats were empty. Miles could see nothing save vacant pit, empty seats, the weirdly terrible mosaic on the mountain, and the seven vari-colored suns wheeling in the hazy greenish sky.

## CHAPTER IV

### The Bright Visitant

● Miles remained in the pit while the suns revolved six times—nearly two days. During that time he had two visitors. The first was a man robed in black who came to the edge of the blue porcelain wall and lowered a basket containing three square loaves of dark bread, a cluster of fruits resembling purple grapes hypertrophied to the size of small oranges, and a blue jar full of water.

Near the end of the second day, exhausted by the strain of endless waiting, he threw himself down on the hard clay floor and slept. Grim, overshadowing menace had all but killed his hope. An unarmed prisoner awaiting sacrificial death—how could he ever free Su-Ildra from the implacable power of Bak-Toreg?

He never knew precisely what wakened him, but he sat up suddenly, in full possession of himself, aware of a presence near him. At first he saw nothing; he was on his feet when he found behind him a form taller than a human being, cloaked in white mist through which shone flecks of moving bright flame. Instantly, the flame-shot mist brought him memory of the Flame Folk and of the extraordinary means of communication through the Sign.

"Miles Kendon," he again felt the impact of a wordless, unspoken message upon his mind, "your time grows short."

Too dazed to speak, Miles merely stared at the mist-shrouded form.

"I am Alú, the Youngest of the Flame Folk," resumed the voiceless flow of thought. "I bring you a weapon. This much we can aid you, and no more. Even to prepare the weapon and to plan for you to use it has almost wrecked our minds.

"Because all thought of conflict is destructive to us, we have delayed too long. The Red One—or the fanatic cult of annihilation that has created the Red One for its symbol—menaces the world. You must destroy it. If you fail, Bak-Toreg will know that our power is totally gone. Su-Ildra will follow you to the fangs of the monster, and then all the world! The forging of this weapon has cost the supreme effort of the Flame Folk. We can do no more."

"Su-Ildra—" Miles stammered, half forgetting his fear of this astounding visitant in concern for the girl. "Is she—"

"Bak-Toreg has left her on the rock. He will not dare harm her—if you can destroy the Red One. You would like to see her?"

"See Sue?" Miles was puzzled. "Of course, if—"

"Then you may, in the same manner in which you see me, who am really not beside you, but in Lelural. It may seem strange to you, yet some of your scientists know already that Space is no real thing, that it is but a barrier the groping mind creates unawares to stop its own advance."

"How?—" cried Miles, stepping toward the awesome being, in his eagerness.

"Stand still," came the soundless command.

A white tentacle of mist reached out, caressed his face like a cool breath. For a moment, he could see only shining whiteness, flecked with darting reverberations of bright flame. A peculiar giddiness swayed his body, confused his sense of direction.

The white, fire-pierced mists cleared away. The black mountain and the theater of blue porcelain had vanished. He stood beneath a glistening blue dome and pur-

ple seas were running far, far beneath its wide windows.

He was in the house on Arnac Rock.

Then he saw Su-Ildra standing listlessly by one of the great windows, staring forlornly across the purple sea. Her lovely face, in profile, looked white and drawn; he saw dark marks beneath her eyes.

"Sue!" cried Miles, anxiously. "Sue!"

She did not turn; she was not aware of him. He knew, then, that he had spoken back in the pit by the mountain.

"Sue!" he called again. "You must hear me, Sue! Buck up! The world isn't coming to an end! I love you, Sue! Don't forget that—and I'm coming back!"

She whirled around then, in quick, half-frightened wonder. She looked at him, *through* him. Her lips moved and he was faintly aware of her voice.

"Miles! Where are you? I heard you speak to me! Are you all right?"

"Of course, Sue! I'm coming back!"

Little did Miles dream, when he made that promise, the distance that he would have to go to keep it!

"I'll wait for you, Miles," she said. She even smiled a little, and asked, "What else could I do? But where are you? How—"

Sight of her dissolved into bright-flecked mist, and the mist was drawn away. Miles was standing alone in the pit below the black mountain and the mist-wrapped figure was gone.

Seconds had passed before he discovered that his right hand was holding something that felt like the handle of a sword. Looking down quickly to see the weapon that "Alú the Youngest" had left him, his eyes could see nothing of it. His fingers seemed closed upon empty air.

An invisible sword! It had the cold feel and the weight of metal. Cautiously he fingered it. Its blade was slender, flexible, two feet long, with an edge so keen that it cut through the skin of his testing thumb. Still he could not see it. It was made of some steel-tough substance more transparent than glass, a substance which neither reflected nor refracted nor absorbed light to make it visible.

This weapon had been left him, then, with which to slay the Red One—whatever the Red One might prove to be. He practised a little, swinging it at an imaginary foe. It soon occurred to him, as he became accustomed to the novelty of its invisibility, that it might prove rather an unsatisfactory weapon; he wished that "Alú" had been able to provide him a good automatic pistol.

● It was not long after that Miles became aware of a vast increasing hum of human voices. The red-skinned Ryka were soon filing in endless lines along the aisles of the great theater above him, filling the innumerable seats—huge, violet-armored women, vermilion-red; dwarfish, pale-skinned men in black.

Miles was standing in the middle of the pit trying to hold the invisible blade in such a manner that his attitude would not reveal it. Countless eyes rested upon him, cold, curious, hostile—none of them sympathetic, none friendly. They were like an oppressive burden. They probed him like needles. Some of them, he feared, must discover the invisible blade, if only from the position of his hand.

He faced the seats, grimly, boldly. He laughed at the menacing thousands and fiercely resolved that he would give them no opportunity to express their challenging scorn.

For nearly an hour the seats were filling. At last, the aisles were vacant and the deep-toned murmur of the assembled tens of thousands was hushed expectantly. Innumerable eyes left Miles, and moved to a blue tower that rose immediately above the pit at the foot of the ranks of seats.

Upon that tower had appeared aged, yellow-visaged Bak-Toreg, swathed in the black robes that hid his shrunken body to his feet. In his hand was a great yard-long key of violet metal.

His voice amazingly deep, his manner slow and ceremonial, he began a measured chant. Solemn, awful, his voice rolled across the hushed great theater. At intervals he paused, and from the worshiping myriad came a thunderous response, fearful with the wildness of its

fanatic madness. Upon the voice of the throng rode devouring terror side by side with insane, joyous ecstasy.

As the uncanny ceremony continued, Bak-Toreg lifted the great key and held it solemnly above his head. At last the ritual appeared to have reached a climax. Tense, expectant silence fell once more upon the theater.

Bak-Toreg turned slowly from the crowd toward the mountain and made a strange slow gesture with the bright key. Then he inserted it in some mechanism that rose from the top of the tower beside him and turned it with a harsh, grating sound that rang across the silent space like a strident, ominous scream of fatal warning.

Miles noticed, then, that the eyes of the multitude were shifting toward the black mass of the mountain behind him; he turned, to see a surprising thing. The mountain was no longer black. Over it had spread a ghostly silvery radiance that ran like white flame up every high pinnacle. As he watched, a soft bright mist swathed the mountain in increasing brilliance, hiding the dread representation of the woman and the red scorpion upon the cliff.

Then the mountain seemed to dissolve. It faded into a bright phantom of itself, became a cloud of grey mist. And out of that cloud materialized—the temple!

The temple of the Red One!—a vast, squat edifice, spreading black-pillared wings over the whole space where the mountain had been. Huge and square and deadly black, its columns were covered with deep-graven figures unthinkably and obscenely hideous; they were smeared with the slime of decay, crumbling, rotten.

Level with the hard clay floor of the pit in which Miles stood, the courtyard of the temple stretched far back across the space from which the mountain had vanished, toward the colossal thick black horrors that were the colonnades.

That immense space was carpeted with ghastly white—with the bones and the round, grinning skulls of the innumerable victims of the Red One!

## CHAPTER V

### The Scarlet Scorpion

● Inured as he had become to astonishment at the weird wonders of Xandulu, Miles was struck motionless with horror upon the amazing disappearance of the mountain and the coming of the black and sinister temple.

His mind at first refused to accept it; he had a fleeting idea that the change had been trickery, hypnotism, illusion. But the evident physical reality of the temple and of the untold thousands who had offered their lives there—the latter attested by a stench of dry decay that swept in a nauseating wave of corruption from the white charnel field — countenanced no such theory.

Explanation for the thing — so Miles later reasoned it—can be sought only in yet unproved theories of interlocking space, of interpenetrating matter keyed to a different pitch of vibration, throbbing through our world, unseen, unfelt, unguessed save by the most daring of our physicists.

His amazing visitant from Lelural had told him that Space was but an illusion due to the weakness of the exploring mind. Had the priests of the Red One mastered that illusion, formed for their god a dwelling somewhere—Outside—yet capable of being brought back at their will into the limits of our familiar three dimensions? So Miles thought.

A cold and heavy silence yet hung upon the assemblage and all eyes were staring—with an intentness stamped with maddening horror—toward the black hideous columns. Again Miles heard Bak-Toreg's voice; and from the myriad throats rose a solemn hymn, made deep with fanatic yearning and edged with a quivering note of fear.

Through the black pillars and across the white field came the Red One!

A scorpion it was, larger than scorpions should be in a world of sanity. Upon its eight thin hairy legs it scuttled swiftly forward from the squat dark temple,

making a great rattling and crashing upon the field of bones.

It was red. Every armoring plate of its hideous body, which was heavy as the body of a horse, of its fearfully long, tapering, upcurved tail, was bright as vermilion enamel.

It was gigantic! The stinging tip of the thin tail was raised ten feet above its horn-plated back. The fearful scarlet pincers upon the foremost limbs looked large enough to cut a man in twain.

Indeed the faith of the Ryka was a cult of horror and death. As the monstrous scorpion came running with fearsome avidity to respond to its worshippers' invocation, a fanatic roar of welcome, thunderous with insane exultation and shuddering with horror, rose to greet it.

Looking back for a moment, Miles saw three black-robed small men and one great scarlet Amazon leave their seats to run forward and hurl themselves into the pit, howling in frenzied ecstasy. They lay silent and broken on the hard clay. A second furious uproar filled the pit, in praise of this supreme act of self-annihilation.

Miles stood his ground in the middle of the pit while the great scorpion came running with frightful agility across the yard of bones. Its loathsome, scarlet-armored body, scuttling out upon eight hideously hairy legs, was incredibly huge. The slender, horn-plated sting, wickedly upcurved over its back, was many yards long. The terrible red pincers on its forelegs clattered upon the bones as it ran, and its black eyes glittered diabolically.

None the less, he was frightened. Xandulu had filled him from the first with dull and nameless awe, her archaic mystery, her slumbering power, the unguessed and unthinkable secrets of a science that had grown through a thousand centuries.

The scorpion was the embodiment of his ultimate terror—a nightmare become dread reality. Fashioned by unholy arts, to be the supreme object of adoration of a cult worshipping fear and destruction and death, the scorpion was the supernal pinnacle of horror.

Miles braced his feet and gripped the hilt of the invisible sword and waited, for he was thinking of a girl on a lonely rock in the purple sea, a girl with dark, anxious eyes in a pensive face, waiting for him to come back to her—a girl who would follow him to a frightful death, unless he destroyed this god of horror!

He knew that the deep voice of the thousands was hushed with wonder at his boldness . . . . and then he forgot about all but the scorpion, for it was upon him. Savage tearing pincers were grasping at him; the horror-barbed red sting was seeking him horribly.

With a quick slash at one of the pincers, Miles tried to leap back to temporary respite, but the encounter was not to be a graceful duel. His invisible blade slithered harmlessly from crimson, metal-hard plates. Then the opposite pincer caught him.

● Scarlet jaws, with torturing, lacerating force, closed upon his left arm and shoulder. Knife-like edges sank through clothing and skin; he felt a warm trickle of blood beneath his garments.

Immediately, the arched tail whipped down. In vain he writhed and twisted in that inexorable grasp; futilely he sought to guard himself with the invisible blade in his free arm. The poisoned barb was not to be evaded.

It touched his left shoulder above the grasping pincer.

Liquid flame spread over his body from the sting. Razor-keen pain shot along his useless arm and down his side and up into his neck. The very shock of it made him dizzy, half blinded him.

Again he struck, desperately, with an arm half paralyzed. The blow was slow and awkward, but it caught the slender sting. The barbed end of it, sheared away cleanly, fell twitching at his feet — too late! The poison from its swollen glands had already been forced into his body. The great jaws of the pincer still held him in an agonizing grasp.

With the panic strength of terror, he hewed at the limb above it. Fire was throbbing along his veins, the swift venom

from the sting in his shoulder. Alternate waves of heat and cold parched and chilled him. Retching sickness drained away his energy. Bright, wheeling flame raced amid dark mists before his eyes.

Still he hacked blindly, savagely, at the red, scaly limb that held him, while the now innocuous tail of the monster drove its bleeding stub repeatedly at him.

As if realizing the uselessness of its sting, the scorpion lifted him abruptly toward its frightful head, toward the hideous fangs of its slavering, scarlet mouth. Desperately, but to no end, he struggled in the pincer—which he could hardly feel now, as the deadness of the poison spread.

Paralysis had numbed all the left side of his body. Throbbing waves of darkness beat upon him—the work of the venom was nearly done. Through haze of pain he saw the black, glittering eyes of the scorpion, baleful wells of supernal evil.

Fierce instinct of battle nerved him for one last effort. He did not strike for himself—he had no hope of surviving the effect of the monster's venom. His blow was for Su-Ildra. He broke the bonds of icy paralysis, called upon his ultimate reserve of vitality, and drove the invisible sword hilt-deep into the nearer jet-black eye.

He was still grasped relentlessly in the scarlet pincer when darkness flooded him and all pain was mercifully extinguished.

Miles was standing abruptly on his feet again with an impression that strong, kindly arms had assisted him to rise. Flaming agony was gone from his body; upon his shoulder he felt a soothing coolness. The lacerations made by the great pincers—though he did not observe the fact at the moment—had been cleansed and closed; they were covered with a tough, transparent adhesive, under which they were to heal with rather surprising rapidity.

The squat black temple with its courtyard of bones faded and vanished in a grey haze, even as he saw it, and the polished obsidian wall of the mountain was suddenly back where it had been—but that astounding dwelling had gone unoccupied.

Beside Miles, upon the hard clay floor of the pit, the gigantic and hideous bulk of the scarlet scorpion lay lifeless, the hilt of the sword projecting from one eye, now made visible with blood.

A furious outcry of rage was ascending from the multitudes who had just witnessed the death of their god. An avenging avalanche, they were sweeping down the banks of seats to the edge of the pit, lowering themselves to the hard clay floor, surging across toward Miles.

But Miles was not alone.

Kind, powerful arms had helped him to rise. Now he felt a touch upon his side, and turned to see a form supernormally tall, shrouded mysteriously in bright-flecked vapor of white. A green-scaled hand, armed with delicate, needle-sharp claws, had reached out of the mist to touch him.

Once more the soundless voice of Alú the Youngest of the Flame Folk, penetrated his consciousness.

"Miles Kendon, you have done well. For a time, at least, the menace is at rest and Su-Ildra is unharmed. But you are not safe in Xandulu, with the wrath of the priests hot against you. Let us go. Surrender your mind to me."

The van of the howling mob was but yards from him when swirling tentacles of the mist reached out, enwrapped him. Dense white fog enclosed him, shot with quivering motes of pure fire. He experienced a sudden dizziness, a confusion of his sense of direction, a sensation of headlong, plunging motion.

Then the mist was gone from him and he was alone.

● He was bewildered, terrified, on a sandy beach. Below him black waves were lapping. The sea that stretched away from him was dark—not the purple ocean of Xandulu. The sky was grey; it was dawn; a wan old moon burned cold in the east by the ghost of the morning star.

Inland from the beach, dark mystery hung beneath the clinging shadows of the night. He made out tufted crowns of

palms near him, against the tarnished silver of the east, and knew the heap of darkness westward for a hill. The old, familiar scent of the desert reached his nostrils.

That morning he trudged into Algiers, bewildered, confused, heart-broken. Anticipation of such civilized comforts as the town afforded gave him no satisfaction, for his heart was crying out for a sky of argent-misted emerald, set with seven clustered suns, crying out for a sharp black rock in a waste of purple sea and the girl waiting there.

Without his knowledge or consent, the Flame Folk had restored him to his own world through their astounding mastery of Space, merely, he supposed, because his life had been in danger. He was not grateful as he walked into Algiers, barefoot, clad in the silken tunic that Su-Ildra had given him, penniless.

Meeting an astonished chance acquaintance—not one to whom he dared entrust his story—he obtained a small loan which kept him while he cabled San Francisco for funds. It was only a week later that the *Gay Moth* reached the harbor, and he came out to me.

Miles left me on the morning after his story was finished. Seeing nothing of him in the next three days, I sent Carlos out to find him. That afternoon he came aboard again, once more trimly neat in flying togs. His greenish eyes were restless, nervous; and his thin face had almost forgotten the old grin that is twisted so oddly by the scar on his temple and brow.

"I was about to set the *gendarmes* on your trail, Miles," I greeted him. "You look worn out. Let's make that cruise together, that I've been planning for us so long. A few months in the South Seas will help you forget—"

"I don't want to forget, Brandy." He grinned at me, wanly, and gave me a powerful hand. "Sorry, but I can't make the trip. Just came aboard to say good-by, and tell you how much I appreciate—"

"You aren't going back?" I was almost astonished—though, knowing Miles, I need not have been.

"Yes, Brandy—back to Xandulu—to Su-Ildra. I've just bought a new crate, a light sea plane. It's ready to go."

"A few weeks, anyhow," I urged. "You need rest, Miles."

"Nonsense!" he snapped. "I'm starting in the morning. Going to fly down the Well and land by Arnac Rock. With any luck, I can diddle Bak-Toreg and be back here with Sue in a week. Then, if you say, heave-ho for the South Seas."

"I've a short-wave telephone set," he told me before he left. "You may hear something, Brandy—say about eleven p. m.—" and he named a frequency.

That week passed, and others that have grown into two long years.

Miles has not come back. But there has come a message . . . .

*(Concluded next month)*

# WHAT IS YOUR SCIENCE KNOWLEDGE?

## Test Yourself by This Questionnaire

1. How do ants direct their motions? (See page 941)
2. What is the peculiarity of marsupials? (See page 943)
3. Describe some of the habits of the mud-dauber. (See page 948)
4. What is the ant-lion? (See page 955)
5. What is the meaning of "Mare Serenitatis"? (See page 970)
6. What are the two missing elements in the atomic scale? (See page 988)
7. What is meant by "the universe running down"? (See page 1009)
8. What is chlorine? (See page 1021)
9. How much acceleration can the human body stand? (See page 1045)
10. Can oxygen be artificially administered to the blood? (See page 1046)

# THE LAND OF MIGHTY INSECTS

By A. C. Stimson

*(Continued from page 967)*

compass, I sped toward the *Hazard*. Intense excitement, anticipated joy of reception and my extreme desire for success minimized the pain of the cold, biting winds and two hours of steady flying found me in the vicinity of where I supposed the *Hazard* lay.

After circling a radius of ten miles over this location, I began to worry. Visibility was perfect and I knew that I should sight the ship if I approached within fifteen or twenty miles of it. I then dropped to a thousand-foot altitude and made a closer inspection.

There was no ship!—no sign of a ship and my gasoline was running perilously low!

Frantically I searched the cold, dreary waters and at last picked up a small, dark object below.

It turned out to be a little gasoline launch and I cried out in despair as I recognized it for one of the two small craft belonging to the *Hazard*. Slowing the plane to its minimum speed, I circled its vicinity. Charred boards, floating benches, and half-burned doors told me their silent, ghastly tale of the recent burning of the *Hazard*. Closer inspection showed me that the fire had been caused by a terrific explosion; great splinters of floating timbers proved the power of the blast.

Why, I pondered, should the motor boat be intact and apparently deserted? Again flying dangerously low, I visited it. Closely huddled in its stern, I discerned the body of a man and woman. I recognized them as Captain and Mrs. Spaulding, both dead.

● Well aware that my fuel supply would not last long, I kicked the lever releasing the pontoons and slipped into a landing beside the boat. Quickly mooring the plane to the boat, I examined the bodies. Judging from the blood that had exhumed from their eyes, ears, and noses, I assumed that they had died from the concussion of the explosion. A few fish lying in the bottom of the boat suggested that the Captain and his wife—she was the only woman that had accompanied the expedition—had just been boarding the *Hazard* on a return from a fishing-trip when the catastrophe had occurred.

After weighing the bodies, I gently lowered them into the depths and began rummaging around among the articles in the boat. My first goal, of course, was the gasoline tank, and I received a new lease on life when I discovered it practically filled—enough to easily fill the tanks of the plane.

Carefully studying the map I have always carried, I see a fighting chance that by heading NNW, I may make the South Shetlands or at least fall in line with an ocean-lane in that vicinity.

Therefore, I close this diary with the heartfelt prayer that whoever may find this writing will not, upon reading its incredible contents, condemn it as the written ravings of a madman and cast it aside; for in so doing, you will also condemn to a lingering death of horror these brave companions of mine that are even now tremblingly watching and waiting for my return.

Not only will you have delivered them from such a fate, but you will have also earned the reward——

TEN THOUSAND DOLLARS TO BE PAID THE FINDER UPON THE DELIVERY OF THIS MESSAGE TO FRANK RICE, SMITH BLDG., NEW YORK CITY, U. S. A.

THE END

## Passing of the Planets —

# *Venus*

### by H. S. Zerrin

Young Venus awoke, free from Time's yoke —
The sun was now haggard and wan . . . .
Eons had sped on wings of the dead,
Preparing a world for her dawn.

The waters ran dry, the lands rose on high,
And rich life crept forth from the slime;
Poison fog vanished, cloud swathings banished,
While fate shaped on the stern lathe of Time.

Side by side on the swift ebbing tide,
Rank myriads battled and fed;
Their dumbness rife with love of life
And blind faith in the ages ahead.

The Law held true though it offered no clue
To the silence soon to fall;
And never a spark in the empty dark,
To whisper of Doom's last call.

The sun grew pale, and an awesome wail
Was torn from each quivering wretch,
As they visioned the end to which all things tend:
Subjects for Time's mocking sketch.

Snuffed out ere their prime, with no chance to climb
To where glory dreamed on the peaks,
They died with the sun, the dread cycle run —
Death conquers whatever it seeks!

# Science Questions and Answers

THIS department is conducted for the benefit of readers who have pertinent queries on modern scientific facts. As space is limited, we cannot undertake to answer more than three questions for each letter. The flood of correspondence received makes it impractical, also, to print answers as soon as we receive questions. However, questions of general interest will receive careful attention.



## Acceleration

*Editor*, SCIENCE QUESTIONS AND ANSWERS:

In reading interplanetary stories, I notice that the space-travellers, in many of them, do not even feel any discomfort in accelerating away from the gravity of the earth. I have heard that a speed of from six to seven miles per second is necessary, in order to overcome gravity and escape into space. Would not the acceleration needed to reach such a speed be fatal to human beings? I wish you would publish some facts concerning acceleration and the limits that the human system can stand. I think that your Science Questions and Answers and Mr. Gernsback's editorial are great assets to the magazine along with The Reader Speaks, and their omission would be a great loss to us, your readers.

ARTHUR WALLACE,
Chicago, Illinois.

(To enable a rocket to leave the sphere of the earth's gravitational attraction, an initial velocity of not less than 36,000 feet per second must be imparted to it; after which no further acceleration will be necessary. Such speeds, so far, have not been approached by artificial means. On the other hand, if it were possible to accelerate the rocket gradually, it would be quite feasible for a man to leave the earth without suffering greatly from the effects of acceleration.

Lieut. James H. Doolittle, the famous flier, in making experiments with acceleration for the U. S. Army at McCook Field, obtained accelerations in the order of 7.5 gravities (a "gravity," abbreviated g., is acceleration at 32 feet per second, per second). This, the greatest so far recorded in human tests, was obtained by pulling up sharply from a dive in a PW-7 military airplane. Generally speaking, accelerations of 4 to 5 gravities are not uncommon in flying maneuvers; and even such ordinary maneuvers as the take-off and landing impose on the airplane stresses of almost 3 gravities. In actual experiments, it was found that pilots are not inconvenienced by continued accelerations of up to 4.5 gravities, and can stand without discomfort instantaneous accelerations up to 7.5 gravities; but they quickly lose consciousness under continued accelerations of over 4.5 gravities.

Applying these findings to man-carrying rockets, we find that a rocket accelerating at the rate of 1 gravity for 1000 seconds would at the end of that time reach a distance slightly over 3000 miles over the surface of the earth, and its velocity at that point would be far in excess of 27,000 feet per second, which is the velocity of liberation at that point (the velocity of liberation diminishing in inverse proportion to the square root of distance from the center of the earth). Similarly, continuous acceleration for 256 seconds at 4 gravities would result in the rocket's leaving the field of the gravitational attraction of the earth without serious discomfort to its passengers.

The chief difficulty at present would be to design a rocket capable of steady and controllable acceleration; but it is believed that this particular stumbling block will eventually be surmounted. There will still remain, however, a great many known obstacles to interplanetary transportation and, possibly, many as yet unknown. There is the problem of resisting the heat and electricity developed in the skin of the rocket during the first few seconds of flight, and due to atmospheric friction; the problem of living conditions in the still unknown interplanetary spaces; and the fact that interplanetary space has a great quantity of meteors, a collision with one of which would probably be fatal to the enterprise.

However nothing is impossible, once human ingenuity is applied to the task.—Henry W. Roberts, Aviation Editor, "Everyday Science and Mechanics".)

## Suffocation from Pneumonia

*Editor*, SCIENCE QUESTIONS AND ANSWERS:

I have had two ideas that I have thought about a great deal. Knowing practically nothing about either one, I would like to ask your opinion of them.

1. About a year ago, my brother died of pneumonia. He was not killed by the infection, but was suffocated. Wouldn't it be possible or practical to artificially supply the blood with oxygen and remove the carbon-dioxide?

2. This one concerns gravity. If everything were expanding at a uniform rate of acceleration, would it account for gravity? That would make the sun and

planets retreat in straight lines, but appear to remain in relatively the same positions because their volume was increasing. There is probably a flaw in my reasoning somewhere, but I fail to see it.

KENNETH CASE,
Bakersfield, Calif.

(1. It was reported recently, in the "Medical World," that Oliver B. Simon of Batavia, Illinois, has succeeded in administering oxygen under the skin, a thing which had been done by only about a dozen men in the world. Mr. Simon believes that it will soon do away with the necessity for oxygen tents and oxygen chambers, for his method is far cheaper and just as effective. He has been conducting experiments with subcutaneous injections of oxygen, searching for an inexpensive method of treating cases of pneumonia, heart disease, asthma, carbuncles, deep burns, and severe infections. The oxygen is administered hypodermically, like a vaccine or anti-toxin. We have not heard of any method of removing the carbon-dioxide from the blood, however, and do not believe that it has been done as yet. While the hypodermic oxygen is a relief to pneumonia, no method of duplicating the respiratory process by these means has yet been discovered, and we believe that the known processes would not have saved your brother.

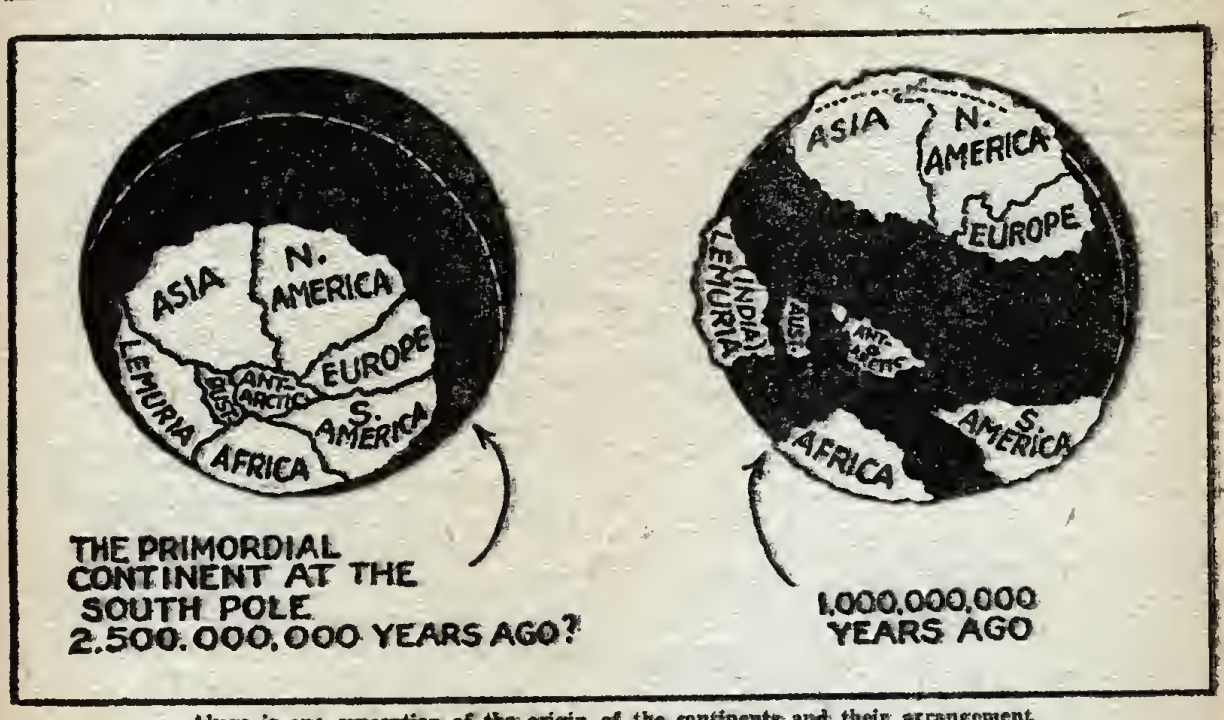
2. Your idea as to the nature of gravity is extremely interesting and seems very ingenious to us. Of course, there is no way of proving your theory any easier than there is of proving those of Einstein, Eddington, and Jeans, but it is logical and may be near the truth, for all we know. If everything expands relativeiy, as you state, the motion can not be perceived. The effect would correspond to a rapidly ascending elevator, and would indeed cause the phenomena called gravity.—EDITOR.)

of 60,000,000 people. In science, arts, and invention, they were far advanced. Then a cataclysm precipitated the continent and its colonies to the bottom of the sea. To counterbalance the sinking of Mu, South America rose from the depths carrying with it the Mu island colonies which became the mountain tops of the new land. Tell me how Mu and Atlantis both started in the Sahara desert. How could Mu have started in the Pacific and Atlantis in the Atlantic?

RAYMOND WILSON,
Wilmington, Del.

(The existence of Mu and Atlantis, at present, is still a fable, as no one has proven that they did exist. There are many indications that the said continents could have existed, but nothing to prove it up to now. As to the 60,000,000 inhabitants—you may as well say that there are ten billion on Mars. One guess is as good as another. We like to imagine that the civilizations of these ancient continents had an advanced science—but that, also, is mere conjecture. There could, very logically, have been continents in the great ocean which were thrown to the bottom of the sea by upheavals of the crust of the earth. In the not-so-far future, there may be expeditions to the ocean floor which may discover the ruins of great cities. That would be conclusive proof that the fabled continents really were. Theorists like to assume that the Easter Islands are remnants of Mu, for upon them is statuary unlike any other on earth. In any case, the problem makes interesting discussion.

Another idea, and one just as logical, if not more so than that of Atlantis and Mu, is illustrated on this page. It shows the topography of the earth as it might have been in the very distant past.—EDITOR.)




Above is one conception of the origin of the continents and their arrangement, as it might have been a billion years ago.

## Mu and Atlantis

*Editor*, SCIENCE QUESTIONS AND ANSWERS:

I read an article in a magazine which stated that Colonel Churchward, while in India, found tablets telling something about the land of Mu. According to the history of Mu as evolved by Colonel Churchward, some 15,000 years ago, a continent stood where the Pacific Ocean now rolls by South America and Asia with South America still unborn, except for a sprinkling of islands. Mu was a great and glorious continent

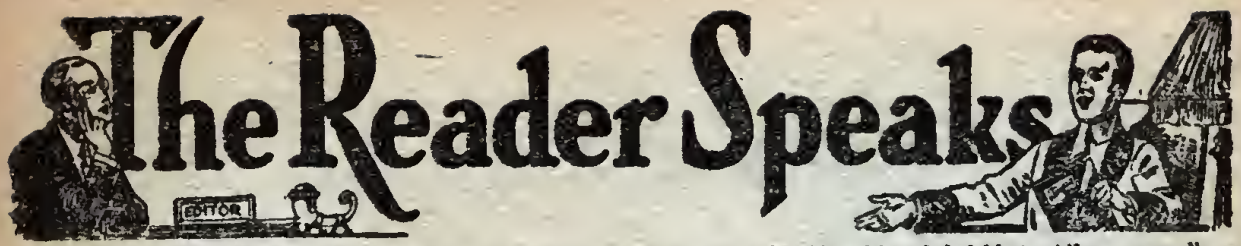
## Melting Ice with Salt

*Editor*, SCIENCE QUESTIONS AND ANSWERS:

Everyone knows that if a little salt, sodium chloride, is sprinkled over an icy pavement, the ice will soon melt, but I wager there are few who understand the reaction which takes place when the salt comes in contact with the ice. Would you please explain this action?

EDWARD P. WALSH,
Pittsburgh, Penn.

*(Continued on page 1052)*




IN this department we shall publish every month your opinions. After all, this is your magazine and it is edited for you. If we fall down on the choice of our stories, or if the editorial board slips up occasionally, it is up to you to voice your opinion. It makes no difference whether your letter is complimentary, critical, or whether it contains a good, old-fashioned brickbat. All are equally welcome. All of your letters, as much as space will allow, will be published here for the benefit of all. Due to the large influx of mail, no communications to this department are answered individually unless 25c in stamps, to cover time and postage, is remitted.

## From Budapest

*Editor*, WONDER STORIES:

Although I am a veteran reader of all the Gernsback Publications since the old EXPERIMENTER days and have piles of several hundred of his magazines upon my bookshelves, including RADIO NEWS, SCIENCE AND INVENTION, EVERYDAY SCIENCE AND MECHANICS, WONDER STORIES, and the former science-fiction monthly which appeared then under his editorship, all very neatly preserved and sorted in complete volumes, I never wrote to you because I considered WONDER STORIES so well directed that a comment upon it would have been rather superfluous. If today I take the liberty to address you with a few objections on behalf of a certain story, do not think that I am throwing brickbats at you. Mistakes will be ever present in your type of literature and they are very apt to slip in because of the writer's eagerness to stress his point. However, in your January issue, Mr. Rice Ray proves such an unacquaintance with cinematographical and optical laws that I cannot suppress the remark that an authority at least should try to become an expert—between certain boundaries, of course—in the mechanics concerning his story-contents.

Two points caused the interruption of my silence. First, that I know every bit of the art of movie making—being a leading amateur in my country—and secondly your editorial note on top of "Today's Yesterday." If these two causes should have been nonexistent, the poor editor would not have been obliged to read this boresome criticism.

No sir, I am not a "militant anti-time travelist" and I like this sort of story just like all other science-fiction tales—but there must be logical sense in it. Let us analyze that story from a purely physical standpoint and let us assume that the theory of the time-wave is logical and eventually possible. Moving pictures can only be photographed if the light reaches the film through lenses which are put in focus so as to form an image of what takes place in reality before them. Such is not the case in a sound recorder anyhow. The sound track originates by the fluctuations of a galvanometer mirror which reflects the *steady* light of a recording lamp. The galvanometer registers only *sound* fluctuations through the "mike" and no picture impressions, and the lamp itself burns with equal strength when the variable area system is employed. Besides, the lens in the sound recorder focuses only the light of this lamp on the film and nothing more. It is very improbable that anything resembling a real picture could be photographed in this way, or the picture must have been formed in the lamp filament itself, and therefore be of scarcely noticeable smallness. But even in this case, the picture in the filament must have a sound origin in the mike, as a microphone is only sensible to sound and not to light. But remember, the mike was disconnected from the set and could not give any impressions. However, I must say that these speculations can be overcome by saying that the huge coil itself picked up impulses which formed the image in the filament. Nothing was said about this in the story, but if the author or the editor comes out with this explanation, I must yield.

But I am not yet out! The illustration shows the film occupying the whole projection area, whereas the sound track is only on the left-hand side and takes in only a narrow margin. This margin is crosswise on the film and therefore the projector must have cast the picture turned to 90 degrees and only a very narrow picture. As the operator did not know he was projecting something uncanny and Earl did not tell him so—as it appears obvious in the tale—he did not turn the projector and cover a part of the picture area. Surely, the illustrator made a grave mistake. I note with relief that it was *not* Paul. I would have been much disappointed!

But I have still more up my sleeve! The sound film runs through the recorder with equal speed. A moving picture can only be photographed if the film motion is intermittent and the transporting height between stops and goes—24 times per second—equals the height of the projection aperture. *This is in fact the fundament of movie making.* Therefore, with a standard sound recorder and a standard projection machine, no moving pictures can be produced. The picture on the screen would be a badly blurred line. The writer says that Earl actually *saw* a picture on the film with his magnifying glass. How on earth could he project it running, and how could that picture ever originate on the steadily running film? Well, well, Mr. Ray and Mr. Editor, here you have some questions to meditate upon.

I hope that my brickbat did not hurt you very much and that by sheer force of distance between us, it has lost part of its impact. Next time you'll do better, won't you, Mr. Ray?

I hasten to state that I like WONDER STORIES very much and wouldn't miss one issue. I am probably your only private subscriber in Hungary and have just prolonged the subscription.

There is one other thing I wanted to tell you. Just now I have finished the production of an amateur photoplay on 9½mm stock dealing with a scientific fiction theme. The picture runs ¾ of an hour on the screen and deals with a rocket flight to the moon. It is entitled, "The Cataclysm" and has won 5th prize in this year's International Amateur Movie contest at Paris. I directed and photographed the picture myself and enclose herewith 3 photos from it. Mayhap you would like to print them, only I think your grade of paper is not very well suited for photo productions. The film is a real thriller and met with great success. This year I intend to make another science-fiction play. Would you like to hear something about its production and get some "stills" from it? Why is it that American movie fans do not produce such plays? Perhaps this letter will give them an impulse to do so.

Your authors are apt to run out of original plots even if they master all the intricacies of the English language and its best style.

I do not master the English tongue—which I learned by private lessons only—to do any literary work in English. For this reason, I am afraid you must smooth out the style of this letter if you want to print it in your columns.

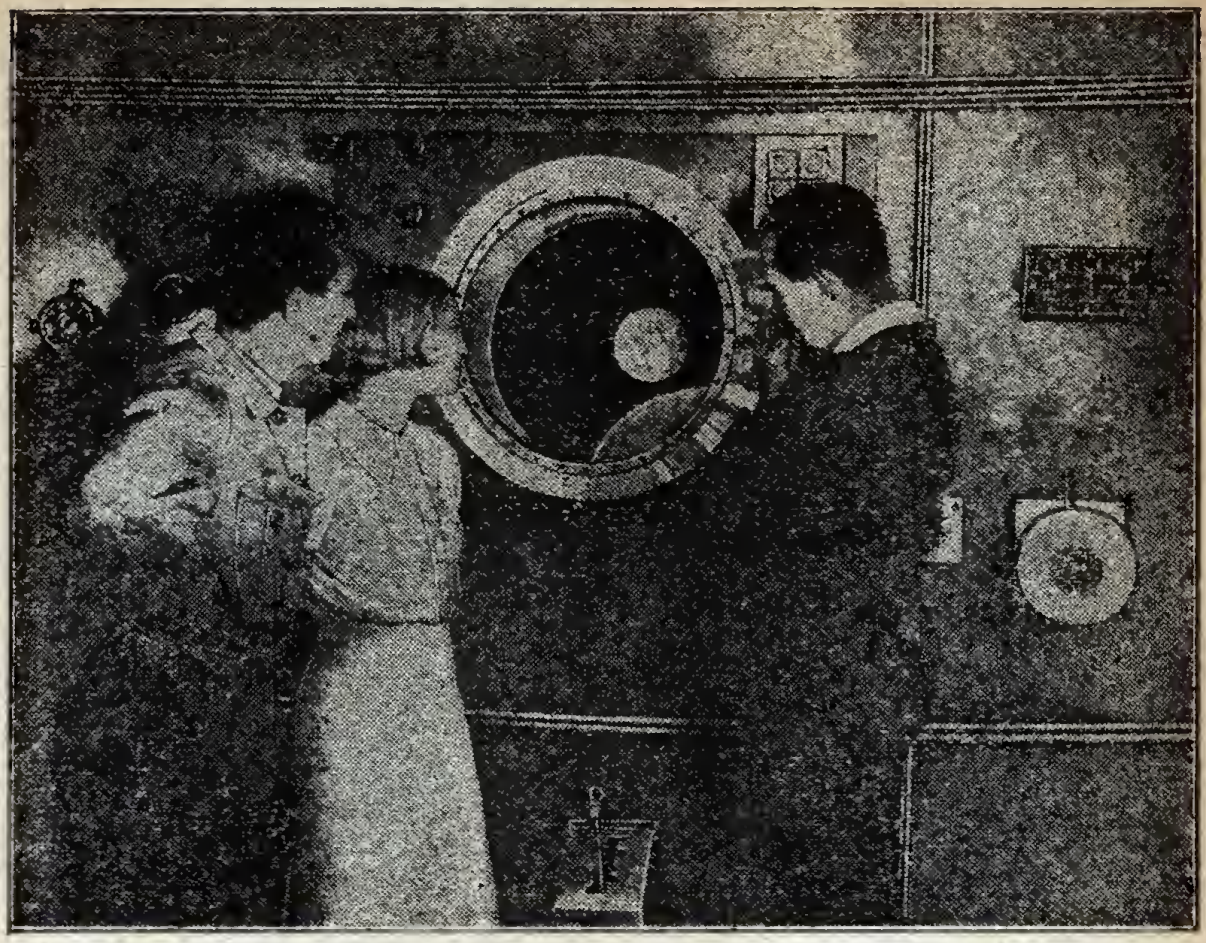
One request more—don't print any poems. They do not belong between pages full of adventures and only take the place of some other science-fiction story.

Keep up the good work on your excellent magazine.

ANDREW LENARD,
Budapest, Hungary.

(This is indeed one of the most interesting letters that we have ever received. It is clear and concise and written by one who knows what he's talking about. Naturally, being a movie expert, you would find error in "Today's Yesterday" that would otherwise have gone undiscovered. On the next page we are reproducing two of the photographs which you so kindly sent us from your science-fiction movie production. We would certainly like to keep in touch with you and learn about your future productions. Your work is a great aid to the advancement of science-fiction. The American film companies have put out quite a few movies of this type in the past, among which stand out "The Lost World," "Metropolis," "Just Imagine," "Frankenstein," "King

*(Continued on page 1049)*



(On this page are reproduced two stills from the Hungarian science-fiction motion picture, "The Cataclysm," produced by our correspondent, Andrew Lenard. Above, we see the three space-travellers looking out of one of the ship's portholes upon the receding earth. To the left we see the ship after it has landed on the moon, half imbedded in the pumice. This production won the fifth prize in the International Amateur Movie contest at Paris in 1933.)

## THE READER SPEAKS

*(Continued from page 1047)*

Kong," "Deluge," "The Mysterious Island," and "The Invisible Man." They are becoming conscious of the increasing demand for scientifilms, and we are promised "A Trip to Mars," "The Time Machine," "The End of the World" and several others. We wonder why our readers in countries where other languages are spoken think that their English is far from perfect. Your letter is written in excellent style.—EDITOR.)

### A Judgment Graph

*Editor*, WONDER STORIES:

I have had two or three things on my mind, but have not had time to write concerning them recently. The first should be of great interest to you and to the readers. It illustrates a practical value to you directly of the "Reader Speaks" column. I received a letter from a gentleman in India several weeks ago, which I have answered, sending also some old numbers. I do not mention his name; he may write your column later if he cares to. He said in part:

"Accidentally, I have come across a torn page from WONDER STORIES for August, 1933, which contains a letter addressed by you to the editor. The two pages in question were wrapped around a book on philosophy which I had ordered from a New York bookseller. My University is now controlling 60 colleges and more than 1,260 High English Schools. There are Common Rooms attached to all these institutions. I have been long on the look-out for a magazine or two which contains stories based on the latest developments in science. I am ordering WONDER STORIES as an experiment to see if it will suit our requirements."

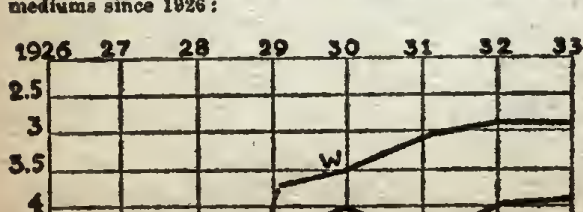
I have been very pleased by the class of stories during 1933. The only objections to any have been on the grounds of lack of literary merit. I believe that on the whole, you have two classes of readers—those who judge solely by the ideas presented, and those who judge to some extent by the means of presentation, or literary skill. Some praise one and revile another story; others reverse the same two. I believe that one reader is looking at the writer's literary ability and the other is not, and this is why there is such an apparent difference of opinion.

In judging the stories, I do not consider that alone, but it is an important element, and if it is lacking, it must excel to a great degree in something else. Grading from 1 to 10, 1 being as good as one can hope for, I list my favorites for the past year:

1. The Man Who Awoke—Manning.
2. The Lunar Consul—Patzer.
3. The Wreck of the Asteroid—Manning.
4. Monsters of Callisto—Hinton.
5. The Eternal Dictator—Schachner.
6. Revolt of the Scientists—Schachner.
7. Men of the Dark Comet—Pragnell.
8. Men Without Sleep—Bruell.
9. Gulliver, 3000 A.D.—Stone.
10. Evolution Satellite—Haggard.

The first two were 1's. Your average of all stories for the year is 3.014, which compares with about 3.67 for your competitor. That's a fine average, although not quite as good as that of 1932 which I recorded as 2.879. That was the best year any magazine has in my grading. You had just a few more stories this year not quite as hard to forget. The main difference between the 1's and 2's is in their literary qualities. The 1 stories, like "Brood of Helios," "The Time Stream," "Exiles of the Moon," "A Mutiny in Space" and "The Ark of the Covenant" are not forgotten because they *live*.

This graph compares the two leading science-fiction mediums since 1926:




Thanks for your comment on my letter in August. I have noticed that it was appreciated by other readers who are interested in present-day economic and social trends, and I have told you how the letter itself was instrumental in creating a possible field for sales.

JACK LEITER,
Portland, Ore.

(The story of how your Hindu friend came upon science-fiction through your letter in our August, 1933, issue is very interesting. We are glad to see the rapid advance of WONDER STORIES in foreign countries. Your graph shows careful consideration and your list of favorite stories corresponds with our most popular tales very closely. We will be pleased to learn your 1934 favorites at the end of the year and the extension of your graph.—EDITOR.)

### Paul the Best

*Editor*, WONDER STORIES:

"The Exile of the Skies!" That's the name of the best story in the January WONDER STORIES. It's the best serial since "Brood of Helios," and promises to be the greatest of them all. It's different, unusual, exciting; it's dandy!

The rest of the stories were all fine, although they were too short. I prefer four to five long stories to more shorter ones. "Moon Plague" is another "different" tale. I'll welcome another story by J. Harvey Haggard in the near future. "Evolution Satellite" is his best. Yes, let's have a sequel to "Today's Yesterday." The German translations were fine; let's have some more. The next time you have a story about prehistoric animals, give it a cover showing the monsters in a battle.

Paul's cover is fine. One of the reasons I prefer the large size is the larger illustrations. Winter is good, but I prefer that Paul did the most of the illustrating.

I hope you will be able to increase the number of pages and cut the edges smooth soon. The magazine reads too fast as it is. The stories are improving, Paul's illustrations are of the best and WONDER STORIES all around is the best magazine published.

I am glad that you are now giving us the names of stories that we may expect in the future. I would also like the names of stories that are to appear in the following issue as well.

I wish the Gernsback Publications a most prosperous 1934.

JACK DARROW,
Chicago, Illinois.

(Thank you for your very kind letter. Being an active science-fiction fan, your comments carry much weight with us. You will be pleased to read "Druso," the German novel by Friedrich Freksa. We are glad to see that you notice the improvement in WONDER STORIES.—EDITOR.)

### Science Wonder's Superiority

*Editor*, WONDER STORIES:

I have read all the stories in the February issue of WONDER STORIES. It is a great improvement over the January issue, which was putrid. There were far too many short stories which were not 8tf. at all.

The best short story in February was, of course, A. J. Gelula's masterpiece, "The Vengeance of a Scientist." However, I must congratulate you on "The Exile of the Skies" by R. Vaughan. I think that it is the best interplanetary serial in a long time.

The cover was rather poor for Paul. I agree with Mr. Jack Darrow of Chicago, who says that the strip, "Adventures of Futura Science" should be abolished. If you must have a strip, why not have it on the bottom telling what stories are in that issue? as in the SCIENCE WONDERS. Remember, huh?

The illustrations were oke, but the one thing that ruins them is the modern make-up. I know that a lot of readers like this but I feel certain that if they compare it to the make-up in the SCIENCE WONDERS, they will agree with me. Especially in the small size do these heavy black lines appear distasteful. Stop them and put the title of the story above the illustration and I will forgive all.

In the "Reader Speaks" I notice that SCIENCE WONDER STORIES is claimed to be worse than the present magazine by Mr. Lewis F. Torrance. I disagree. Anyone with half an eye can see how S. W. lords it over

the present WONDER in illustrations, dep'ts, stories, and covers. The same goes for AIR WONDER. If WONDER ever raises to one-half of the standard of SCIENCE WONDER, it will be a vast improvement

I now come to an important part of my letter—Reprints. O Mr. Gernsback, how can you go on denying us the really good Stf. yarns? Two of the most popular stories you ever printed were reprints, namely, "The Ark of the Covenant" by Victor MacClure and Geo. Allan England's "Flying Legion." Please slip us a few reprints.

I think that you should revive the QUARTERLY and use that for reprints. Even if you don't use it for reprints, revive it.

ALVIN H. LYBECK,
Hollis, New York.

(Yours is the first objection we have ever received to our modern make-up. We consider it an excellent format, and so do most of our readers who have written in about it. It distinguishes WONDER STORIES from the common pulp magazine with ordinary arrangements. Our magazine should look distinctly different from all others, for we publish distinctly different material.

We are forced to disagree with you when you state that the old SCIENCE WONDER was more than twice as good as the present WONDER STORIES; not because of our own opinion, but that of the majority of our active readers who have been with us through the years.

You ask for reprints and the revival of the QUARTERLY. We may have something this year to satisfy both of your desires.—EDITOR.)

## Our Stories "Growing Weird"

*Editor*, WONDER STORIES:

I fully realize that people buy magazines to read something that will occupy their minds, that is, raise them from the state of dull drudgery and commonness that they are in. I understand because it is the same way with myself, that the reader likes to find plenty of adventure and excitement. But nevertheless, truth is stranger than fiction, and though I will admit that scientific truth is nowhere nearly as weird as the average story you print, I must say that a lot of readers probably like it as a basis for stories.

Isn't it a good idea to keep up the reputation and prestige of WONDER STORIES?—Our magazine. There are many magazines on the market; you can guess the kind I mean, those that are so weird, impossible, and sometimes smutty that no respectable person will read them. So far as I know, your magazine has very faithfully kept out the latter trait. But lately, your stories have grown weird and are beginning to sound ridiculous and impossible. For instance, you can say that such a story as the "End of Tyme" will be possible at some time in the far-off future. Personally, I don't believe it. Then, as in the "Vengeance of a Scientist" where you have your man entirely invisible, you mention that X-rays were the cause of the phenomena. Has this ever been noticed before? Not that I don't know that science fiction must have a certain amount of impossibility in order to be science-fiction, but too much of the former does not help to improve it.

To leave off making criticisms, I would like to compliment you on the excellent story "The Exile of the Skies." Telzon is a wonderful character and the plot of the story is clever to say the least. I like the new small edition and I hope that I am not being too trite by saying that it is very compact and convenient. The artists Paul and Winter make a good combination. Paul is doing good work in machinery. Keep up the good work and please don't have any more stories where the story-teller is featured as a character.

HOLMES H. WELCH,
Milton, Massachusetts.

(We stated in the blurb for "The End of Tyme" that the story was not to be taken seriously. Indeed, it was a burlesque on time-travel stories. In the process that Farrington used to make himself invisible in "The Vengeance of a Scientist," there is plenty of logic in spite of the fact that nothing like it has as yet been discovered. You will remember that Farrington worked very hard before he had perfected the ray of invisibility for practical uses. Science-fiction does not discuss what has been already done, but what logically could develop from present-day facts and theories. We are glad that you liked "The Exile of the Skies," however, for almost every letter, including those of criticism, like your own, praise it.—EDITOR.)

## A Satisfied Reader

*Editor*, WONDER STORIES:

Hurray! There is still hope! WONDER STORIES has finally deserved the name given. After reading the January issue of the magazine, my interest, which had been sadly lagging from the lack of "good" stories in some of the previous issues, has flared up again. The writers have finally awakened to the fact that we (the fans) desire something more original, thought-provoking, and fresh. Something that would leave an impression on us, not a story that we read and forget the next day. Anyway, you sure started the new year right, and I hope that the magazine will improve with each issue.

I firmly believe that Laurence Manning should be added among the "immortals" for his "Man Who Awoke." If you can get him to write another story or a sequel to "The Man Who Awoke," I shall be forever indebted to you. Also get more stories from J. Harvey Haggard and E. H. Hinton.

JOHN TUSCHIK,
Ashtabula, Ohio.

(Our steadily rising circulation assures us that you are correct about the magazine improving. "The Man Who Awoke" series is closed, but how do you like Mr. Manning's new stories based on the adventures of the members of the Stranger Club?—EDITOR.)

## Paul "A Drawing Card"

*Editor*, WONDER STORIES:

I have always been one of the silent readers, but now I have decided to come out into the open and do a little complaining and lauding, myself. Since nearly all things end good (take a tip, authors), this letter will do likewise, and therefore I'll have to start out complaining.

First of all, I ask, have you signed an NRA code for artists? Then why all at once so many newcomers? Do you know that you actually ruined some stories by not letting Paul illustrate them? What have you got Paul for anyway, a drawing card? I'm for an all-Paul illustrated issue forever. You started out by saying that, but you strayed from your word. I know that the other artists are passing, but they cannot compare with Paul, and I demand the best.

Now, that I know ye Ed can take it, I'll give more. What's the matter with the aristocratic scientifictionist, Dr. David H. Keller himself? Do you know that there hasn't been one of his stories in WONDER STORIES since "The Time Projector"? That was way back in 1931. Please Editor, make a note of that; get an occasional story from Keller. I'm thirsting for them.

I must state that WONDER STORIES did not exactly come up to my expectations in 1933, but I have got high hopes for 1934. From what I've heard, WONDER STORIES has got some high stepping stories coming up, headed by "The Exile of the Skies" and "Xandulu." The change of policy is something that will save the day.

Now let me impress you with this: now that you have changed the size, keep it that way forever. I just have the devil of a time in trying to keep all my WONDER STORIES in order. (I luckily possess every one published.) With the changing of the size comes up again the old argument. Many people will yell their heads off in trying to induce ye poor Ed (?) to make the pages even, cut off the overlapping cover, change the quality of the paper, etc.

Now this time I'm on the Editor's side. The unlucky devil can't do two things at one time. First let him publish a steady stream of excellent-plus stories in every issue, then yell your heads off.

Another thing, revive some of the deceased good features of the magazine, and also add new ones. You know, after looking at the current WONDER STORIES and a real old Stf. magazine, I think that Paul's style is changing. This is only my opinion and I am not an art critic.

Finally I must state that I have noticed a decided change for the better, and now I am sure WONDER STORIES is on the right track to success.

RAYMOND PEEL MARIELLA,
Philadelphia, Pennsylvania.

(We recognize the fact that most of our readers agree that Paul's work is the best in the magazine, but they at the same time approve of some work by other artists, even if only for the variety. Surely, Winter in

particular has no little merit and his work has made quite a hit with the fans.

You will notice that Dr. Keller is back with us once more. His stories are always welcome and the readers seem not to be able to get enough of them.—EDITOR.)

## Science in the Magazine

*Editor*, WONDER STORIES:

Your magazine is the most instructive periodical of its kind that I have ever come across. I have just finished reading your Jannary edition and I have learned in its many engrossing pages more facts concerning the atom, radio, centrifugal force, atmospheric conditions of the lesser known planets, ultra-violet rays, cosmic rays, infra-red rays, etc., than I could have learned in a month's reading of scientific treatises. That is what makes your magazine so interesting and instructive to the man who is unable to devote his time to the more intricate theories of astronomy, physics, and chemistry. It is your general choice of subject matter, also, which makes your magazine the best fiction science magazine in print.

I am determined to write a story for your magazine before the month is out; I already have the story almost complete in my mind as to its plan, and I am starting right now to develop it. It is with this view in mind that I am asking you to send me a copy of your "Suggestions to Authors." You will find the postage enclosed.

EDWARD P. WALSH,
Pittsburgh, Pennsylvania.

(Yon seem to find a lot of science in our stories. We do our best to include plenty of good, logical, and correct data within the magazine in a manner that will instruct the reader, hut at the same time, not become boring or text-bookish. A general scientific education can be had through a constant perusal of WONDER STORIES.

We have sent you a copy of onr "Suggestions to Authors" and are willing to do the same for anyone else who would like to try his hand at science-fiction. We live in hopes that we may discover more geniuses as we have in the past.—EDITOR.)

## More Lost Races

*Editor*, WONDER STORIES:

I am indeed highly pleased with the new, or should I say old, size of the November issue of WONDER STORIES! The new illnstrators are also very good, especially Winter, but I shall always prefer the incomparable Paul!

"The Lnnar Consul, Part I," hy Sidney Patzer claimed first placa for its suspense and well worked out plot. Next in line comes "The Tomh From Beyond" hy Carl Jacobi. This finely-written tale is of the type that I most enjoy; a story hased around ancient or lost civillzations. Mr. Jacohi ranks with the best of your authors. Then "Death Between The Planets" hy James D. Perry takes third place for its excellent action and description. It was extremely well composed.

"The Man With X-Ray Eyes," "The Call Of The Mech-Men," "The End of Tyme," and "Through the Einstein Line" claim fourth, fifth, sixth, and seventh places in their respectiva order. They are all very good, especially "The Man With the X-Ray Eyes."

I have come across some very interesting articles from time to time which I think you would be interested in. I ahall endeavor to give you the titles of some of them as I have them here before me: "Find Relics of Lost Race in South Africa"; "Clue Found to Beliefs of Cretans"; "Tribe Akin to Mayas Discovered"; "80-Foot Serpent Seen in Ocean hy Canadians"; "Scientist Shows Evidence Indian Trihe Roamed Southwest 15,000 Years Ago"; and "Frenchman To Reveal Deadly Gas Only If Nation Is Attacked." The titles of all of these euggest exeellent stories and some stories I believe have been hased on just such happenings as these headings indlcate. I have the complete articles of all of these, and if you desire proof of what I have just written I will forward same on condition it be retnrned in a reasonahle length of time.

I hope that I shall live to read many, many more issues of WONDER STORIES, and hope that yon may not be destroyed in the "depression" as so much of the literature has been.

FRED J. WALSEN,
Denver, Colorado.

(Yon needn't send us the clippings yon mention, although they are very interesting. We have heard of most of them, and they are becoming so numerous lately that we are ceasing to he surprised at each new one. Every year scientists are learning more of the past of the earth and its civilizations.

We have safely managed through the depression and have come out none the worse. When so many magazines have failed during the past three years, this shows the faith that our readers have in WONDER STORIES.—EDITOR.)

## A Real Fan

*Editor*, WONDER STORIES:

The editorial each month is interesting and stimulating. It often sends me to the public library to follow up the suhjects presented. I like the Science Questions and Answers department, too, and "The Reader Speaks," and the book reviews—in fact, I like everything about your magazine except its cover, most of the illustrations, and its class of advertising.

Few illustrations in science-fiction magazines satisfy any artistic sense—most of them seem to be a strictly utilitarian presentation of the subject in hand; however, science-fiction and science-fiction illustrating are as yet barely out of their infancy, so too-severe criticism is hardly justified. I should like to make a suggestion, though, that your artist, in picturing a star-sprinkled sky, which he quite frequently does, picture some of the known constellations in the sky, instead of the haphazard polka-dot effect that usually occupies the hackground of such pictures at present. A small detail, hut one that makes for verisimilitude.

Although science-fiction is several centuries younger than the other forms of literature and has had comparatively little time in which to grow, its advance has been rapid. It is a form of literature that grows on you. From a mild interest in science-fiction, I have gradually become an enthusiastic fan.

Your magazine is one that makes people think, takes them out of the rut of humdrum everyday things and starts unused hrain cells functioning. It is a sort of relaxation and exercise combined. The mental sensation is comparable to the physical one of going to an open stretch of country, after being cramped in a city for months, and having an opportunity to run and exercise natnrally and work unused and city-cramped muscles into the pink of condition. It's a crude comparison, but comes nearest to expressing the mental exhilaration I enjoy in reading good science-fiction.

As you may have deduced, I am "sold" on science-fiction. Already its influence is making itself felt, and in years to come I believe that its influence will become a force to be reckoned with. It is a force that makes people think; and anything that does that is helping mankind on its upward climh.

FRANCES TASBETTS,
Seattle, Wash.

(Here is a fan who knows how to express her enthusiasm for science-fiction. Her only complaint about our magazine is the illustrations. Without them, the magazine would look dry indeed, and our readers would not like WONDER STORIES to be mistaken for the *Congressional Record*.—EDITOR.)

*(Continued on page 1058)*

*If You Have a*

*Non-Technical Scientific Question of General Interest, send it in to*

**Science Questions and Answers**

We will answer all such queries to the best of our ability

## SCIENCE QUESTIONS AND ANSWERS

*(Continued from page 1046)*

(Salt melts ice through a chemical reaction. When salt (NaCL) comes in contact with ice (frozen water—$H_2O$), the compounds add together to form larger molecules. These new molecules formed by the reaction cannot exist in the form of ice. That is the reason why salt water, like the ocean, does not freeze. While the Arctic Ocean is composed of salt water, the icebergs, nevertheless, do not contain salt. The temperature is so low that the salt must be forced out of the water before ice will form.—EDITOR.)

### Einstein's Theory

*Editor*, SCIENCE QUESTIONS AND ANSWERS:

I have several questions to ask you.
(1) Do you believe that space is finite or infinite?
(2) Does light follow a curved path?
(3) If space is curved, has it boundaries?

I am a reader of WONDER STORIES, and I wish you would please answer these questions in your *Science Questions and Answers* department.

STUART AYERS,
Lewiston, Idaho.

(All of the questions you ask pertain to one of Einstein's theories. His explanation of the finite universe answers all of them. There must be a limit to everything and, declares Einstein, space is no exception. Though it is finite, no one could ever reach its boundaries, supposing that he had a space-ship; for, if he could, there would have to be something beyond. The boundary is purely theoretical and could not be illustrated by a wall. How large this finite cosmos is, no one of course knows, but estimates have been made. To have Einstein's finite universe means that nothing can travel in a straight line. Theoretically, a ship travelling in a "straight line" would eventually return to its starting place in an unguessable number of aeons. As nothing is straight, this means that light, also, is curved. From photographs taken on Tin Can Island, a few years ago, during an eclipse, Einstein proved that light from distant stars curves around the sun, so that a star which appears to be to the left (or right) of the sun, may really be behind it. These are purely conventional terms. Whether Einstein's theories are totally or partially correct, we have no way of knowing, but it is more logical to think that there is a limit to space, a finite infinitude, than to think that there is no limit. We cannot conceive of a thing that goes on forever, which only proves how insignificant is the gross intelligence of Man who must explain almost every intangible thing with theories.—EDITOR.)

## "The READER SPEAKS"

is open to everyone — use it freely. Give us your opinions and suggestions. Tell us the type of stories you like and those you disapprove of. We want WONDER STORIES to be run as you like it.

## THE READER SPEAKS

*(Continued from page 1051)*

### Back Numbers for Sale

*Editor,* WONDER STORIES:

Would you please print this letter, as I have many back numbers of WONDER STORIES which I would like to get rid of. All readers wishing to buy back numbers send their want list to address below.

G. L. BEDFORD, JR.
42 Harvard Rd.,
Belmont, Mass.

(Here is another opportunity for those readers to secure the issues that are missing in their collections. —EDITOR.)

### A Call for C. A. Smith

*Editor,* WONDER STORIES:

"Moon Plague" is a mighty fine piece of fiction, the best story in the January issue, I thought, with the serial, "Evolution Satellite" running at a close second. I won't read the new serial till I get it complete. I'm glad to see that a story by Jack Williamson is coming. That's worth looking forward to. By the way, you have been neglecting C. A. Smith here of late. I sure like his style of writing. He's got one all of his own.

OLON F. WIGGINS,
Denver, Colorado.

(You will find the story "Xandulu" by Jack Williamson up to your expectations. C. A. Smith has not had time lately to work on science-fiction, but as soon as he submits his next story, we will be pleased to present it to you. His style of writing, as you say, is outstanding and different from all others. It has been claimed that no author has a vocabulary that can approach Mr. Smith's.—EDITOR.)

### Veto on the Covers

*Editor,* WONDER STORIES:

I would like to start kicking the "flashy" cover on the February issue, but it isn't any use, so I will just save my breath. You will merely reply that "flashy" covers are good newsstand sellers.

I thought that the January cover was a dark! If professional secrets don't forbid, can you tell me how much sales dropped on the January issue? (I didn't consider it flashy). With the exception of your covers, I like WONDER STORIES very much. Time-travelling stories are my special weakness—and I sit me down and try to pick each story to pieces, just for the fun of it.

The second installment of "The Exile of the Skies," for some reason, didn't live up to the pace set by the first. However, it was well worth reading.

By the way, are we going to have any annuals or quarterlies? Reprints? How about a science-fiction cartoon strip? Ah!—there's something now, for us ignorant readers to worry you honorable editors about. Let's have a science-fiction cartoon strip!

But to get back to the stories. In the February issue, "The Vengeance of a Scientist" was different and delightful, a truly good story. And the Earth-Guard episode by J. Harvey Haggard was fine. Satire is well handled and displayed in "The Shot From the Sky"—but the cover—*OIY!*

Well, seeing as I have gone this far, I might add one more little item concerning the nemesis of readers, and stand-by of publishers: advertisements! I know that they must be there, to keep the publishers from going broke and to drive readers goofy. But they don't have to be in the reader's department crowding out letters, do they? Why not put letters all over the page, and put aside separate pages for advertisements?

Seeing that I have such good taste, don't you think you need an assistant editor or sumpin?

BOB TUCKER,
Bloomington, Ill.

(While Mr. Tucker criticises us severely—especially for our *terrible* covers, his letter is most amusing, and is not written in the style of a crank. The question he asks in his first paragraph he answers as well as we could, so we'll let it drop there. Anyhow, our readers

*(Continued on page 1054)*

## THE READER SPEAKS

*(Continued from page 1053)*

would jump all over us, literally, if we did not have vivid covers illustrating some story in the issue. Our circulation for the January number did not drop—it took a nice jump—in fact, our circulation has been going up at a nice rate since the first of the small size issues. The advertisements do not crowd out any letters. There are just so many ads and so many letters scheduled per issue, and it is the best policy to intersperse the ads and the readers' letters. At the present time, we do not need any more editors, but in case we ever do, we'll drop you a telegram.—EDITOR.)

### Our January Issue

*Editor*, WONDER STORIES:

Have just reluctantly finished reading from cover to cover the January issue of WONDER STORIES. I strongly approve of the return to the small size as it is very convenient. I have long been a WONDER STORIES fan, and therefore, don't take my complaints too much to heart.

The first installment of "The Exile of the Skies" is excellent. "Today's Yesterday", "The Secret of the Microcosm", "Moon Plague", and "Garfield's Invention" were all pretty good, but I did NOT like Wolfheim's "The Man From Ariel." Winter's and Paul's illustrations of the plant-men differ slightly. I think that Paul's is more nearly correct.

I am very much interested in writing science-fiction and would be very much obliged if you would send me a copy of your "Suggestions to Authors." I hope you will accept some of my contributions in the near future.

JOHN SCOTT,
Shreveport, La.

(In your first paragraph, you state that we should not take your complaints too much to heart because you are an old fan. In that case, your opinions are valuable, for you have read all kinds of science-fiction and should know what's good. It was a relatively unimportant error, though lamentable, that Paul's and Winter's plant-men differed slightly. It so happened that Paul and Winter were working on the illustrations at the same time, and did not see each other's work until it was published. They followed the text and used their own imagination. In view of this fact, the creatures look remarkably alike. We have mailed you a copy of the "Suggestions to Authors" which was written by Mr. Hugo Gernsback in order to acquaint new authors with our needs. He, who published the first work of such popular authors as Jack Williamson, Harl Vincent, David H. Keller M.D., P. Schuyler Miller, Edward Everett Smith, Ph.D., and innumerable others is always on the look-out for others who may contain great potentialities within their mental resources. "Suggestions to Authors" is free to all ambitious would-be authors.—EDITOR.)

### The Size and Format

*Editor*, WONDER STORIES:

When I turned to "The Reader Speaks" of the January number, I expected to see it full of protests about the new small size. I guess I'll have to supply some.

You admit that a person after reading science-fiction tires of it, and what he reads does not seem as good as when he first started it. If that is the case, then a great many must quit reading it, for a while at least. And therefore you must depend upon new readers to fill the gap.

In your answer to Morris Miller's letter, you claim that you need such gaudy covers to attract attention. Yet, you defeat your own purpose in cutting down the size. When the magazine was larger, it was not usually put with the so-called "trash." (By this I mean such as dime novels, western stories, etc.) If it was put with it, "our" magazine stood out by itself because of its size. Again, all these "trashy" magazines have loud covers. It is almost impossible to make your magazine stand out by a loud cover. To say the least, a more moderate cover would stand out better.

Another thing, even if a colorful cover would attract attention, it would certainly not make a very favorable impression. All you do when you cut it down in

size and brighten the cover, is to make the magazine look like dozens of other magazines.

If you put the magazine back to its large size and keep it there for a while, it will attract manufacturers to the magazine with their advertisements. Then if you cut out the "sexy" advertisements, you would get still more of the better class advertisers. If I touched a sore spot, holler.

Why not have the same artist that draws for "The Science Forum" in your sister magazine, EVERYDAY SCIENCE AND MECHANICS, draw the same sort for "The Reader Speaks." It would make it much more interesting.

In conclusion, let me say that "The Exile of the Skies" by Vaughan promises to be just as good as "Interplanetary Bridges" by Anton in the QUARTERLY.

GORDON BATEMAN,
Sand Coulee, Mont.

(Your theories as to the effects of our return to the small size are entirely incorrect. You did not see many protests from our readers because we have not received many. Advertisers advertise only in magazines which get *results* for them—size is of no consequence. Though the size of the magazine has been reduced to that of those you call "trashy," the format of WONDER STORIES is altogether distinctive and different from all others—we mean the page make-up and the general arrangement, so that when a new reader picks up a copy and glances through it, he will immediately see that it is not like any other magazine. Our illustrations will help to convince him. The success of "The Exile of the Skies" has surpassed our expectations.—EDITOR.)

## Life on Mars and Venus

*Editor*, WONDER STORIES:

I have read WONDER STORIES for about two years and now feel qualified to write.

By obtaining some old issues, I have noticed only one point that does not show phenomenal progress in your stories. Let's have more of Clark Ashton Smith's marvelous highly imaginative works. Stories like his make more general magazine readers into readers of WONDER STORIES. At least, it was "The City of the Singing Flame" that first interested me in scientifiction. May we also have more stories like "Exile of the Moon", "The Man Who Awoke", and "The Radio Terror."

I should like to state a couple of my ideas regarding life on neighboring planets. I think that, from recent scientific reports on the very small amount of oxygen in the Martian atmosphere, there is either very simple life or none at all on Mars at the present time. Venus, on the other hand, I believe has evidences of the beginning of evolution, such as giant forms, dinosaurs, and vast steaming marches. These ideas have scientific foundations.

What do you think about the recent rocket flight of six miles straight up by a German and sponsored by the German War Ministry?

More power to your improving authors!

GEORGE MALSBARY,
Los Angeles, Calif.

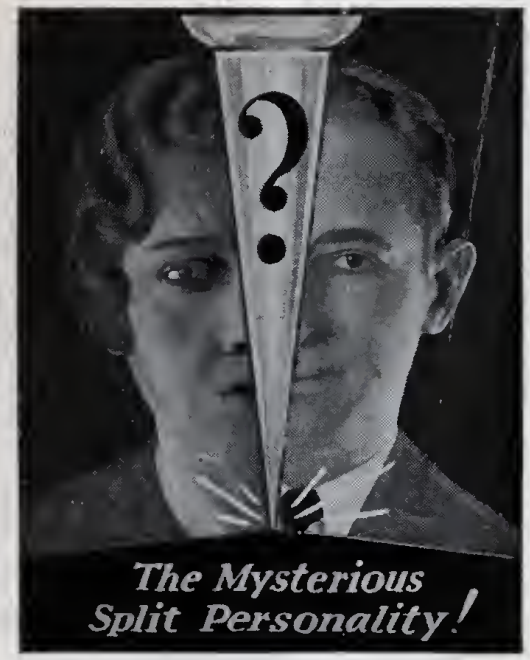
(Your ideas as to the nature of the life on Mars and Venus are very logical and have been used in our stories dozens of times. You will notice that we recently printed the article reporting the six mile high rocket flight as a filler. We presented it with an open mind, but if we were asked our personal opinion of it, we would say that we are unconvinced. There is nothing to actually prove that this was really done, and we must take their word for it. Scientific hoaxes have appeared in newspapers for over a century. The moon hoax is the most common. However, if this miraculous flight is not a hoax, it will herald in an era of new experimentation, and interplanetary travel should not be in the too-distant future.—EDITOR.)

## Invasion and Conquest

*Editor*, WONDER STORIES:

This is my first time to write. I have been a constant reader since October, 1931. I don't care what the size or shape of the mag is as long as the stories are good. Let's have more and longer stories and less advertisements. Especially, I want more stories on

*(Continued on page 1058)*




# The THIRD SEX! Man or Woman?

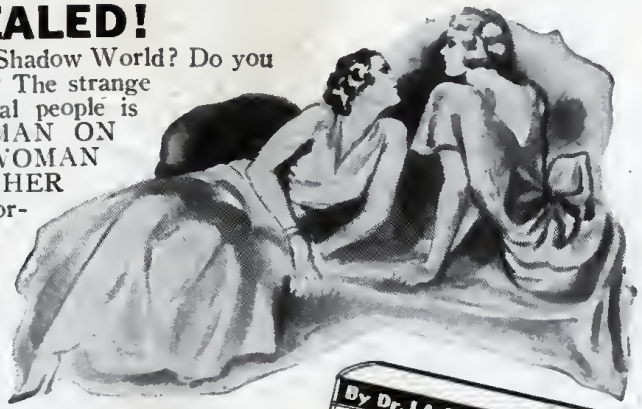
For hundreds of years men and women have talked with hushed voices about "STRANGE PEOPLE"—men who are not men—women who are not women. No one has ever *dared* to talk out in the open about it. Is it any wonder that the shocking, lurid facts of this great social evil are unknown to the great mass of men and women? Is it any wonder that strange nick-names are commonly used to describe these creatures.

## A DOCTOR CASTS THE LIGHT OF TRUTH ON THE STRANGE, EXOTIC WORLD OF TWILIGHT MEN AND WOMEN!

Now a Doctor has dared to tear away the veil of mystery. In blunt, understandable words he describes the unbelievable facts. "STRANGE LOVES," A Study in Sexual Abnormalities, by Dr. La Forest Potter, noted authority, is a document so weird, so startling, as to amaze the civilized world. Dr. La Forest Potter, the author, is a late member of the New York County Medical Society, Massachusetts Medical Society, Boston Gynecological Society, Associate Professor of Rhinology, Laryngology, and Otology, New York School of Clinical Medicine, and the author of many well known works.

## THE TRUTH REVEALED!

Can you distinguish these men and women of the Shadow World? Do you know that their number is constantly increasing? The strange power these men and women wield over normal people is almost unbelievable. Dr. Potter says, "NO MAN ON EARTH HAS A CHANCE AGAINST A WOMAN ONCE SHE HAS SUCCUMBED TO ANOTHER WOMAN." Actual clinical cases reveal the abnormal ties and the unnatural desires and erotic reactions of these twilight men and women! There are records that actually prove that men have been MADE INTO ABNORMALS. A startling, provocative indictment against the false modesty that has been responsible for the growth of these fantastic, strange amatory curiosities among savage and civilized races.



## STRANGE LOVE

Dr. Potter tells about the hidden, secret passions that dominate these women's exotic lives. He talks about the tragic duality of the effeminate man—half man—half woman. He delves deep into the ages—relates the bestialities and savageries practiced by the old Egyptians, Hindoos, Greeks, Assyrians and Romans—the sensuality that was ascribed even to the Greek Gods, to Zeus, Apollo, Hercules and Jupiter—the growth through history from ancient countries to France—to Germany—to its tremendous spread through the United States.

## MUST THESE SUBJECTS BE CLOTHED IN SILENCE FOREVER?

Fearlessly, openly, the meaning of many misunderstood subjects is brought under the searchlight of truth. Sadism—Necrophilia—Phallic Worship—Sodomy—Pederasty—Tribadism—Saphism—Uranism—the normal man and woman will refuse to believe that such abnormalities exist and have been practiced through the ages.

## ASTONISHING DISCLOSURES ABOUT THE WORLD'S MOST FAMOUS MEN

How many of the famous men of history were considered "odd"? Socrates, Plato, Caesar, Virgil, Oscar Wilde, Leonardo da Vinci, Lord Byron, Tchaikowsky, the musician, Walt Whitman, the gentle, lovable poet, Napoleon—men and women of all kinds in all stages of life.

## FOR MATURE, SOPHISTICATED READERS OF THIS MAGAZINE!

This document in book form contains bewildering disclosures and discoveries of a subject that is seldom if ever discussed, that most people know little or nothing about—yet one that deserves the most painstaking and thorough investigation. A limited edition has been prepared for ADULTS ONLY, 256 pages, beautifully bound in cloth, printed on fine paper—for the book lover and collector of rare, esoteric literature. Reserve a copy of this book—the most startling document of its kind—by mailing the coupon.

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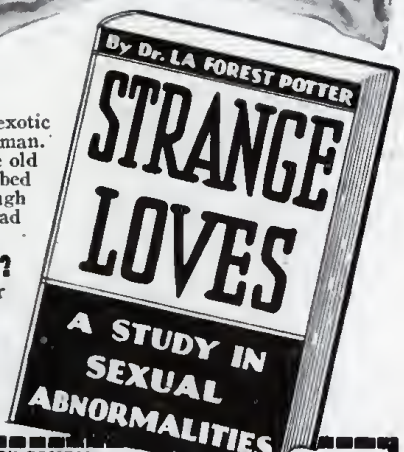


**GRENPARK COMPANY**
**Dept. WS, 245 Greenwich St., New York, N.Y.**

Please send me IN PLAIN WRAPPER a copy of the original edition of Dr. La Forest Potter's book "STRANGE LOVES" — A study in Sexual Abnormality. I hereby affirm that I am an adult person.

[ ] I am enclosing remittance of $2.50. Send book all charges postpaid.

[ ] Ship C.O.D. I promise to pay postman $2.50 plus postage on delivery.

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Town ..... State .....

(We reserve the right to return all orders after this edition is exhausted. Prepaid orders receive preference and will be shipped before C.O.D. orders.) (Canadian and Foreign orders must be accompanied by remittance for $2.25.)

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**and the smokes are on us!**

If you do not receive, IN YOUR OWN OPINION, at least $5 worth of smoking pleasure from these 50 assorted cigars, tell us frankly, and we will refund every penny of your money—and the smokes will have been on us!

HERE'S THE SECRET! Our inspectors put these cigars aside for slight color variations, etc. (unnoticeable to the eye of any but an expert!) but we guarantee, on a Money Back Basis, that you can smoke and enjoy every one of these 50 cigars just as though you had paid the full retail price.

DELIVERED FREE TO ANY PART OF THE U. S. (we pay postage). Send check or money-order for $1.50 or pay the postman when these cigars reach you. We have been making fine HAVANA CIGARS for over 50 years. References: Dun-Bradstreet or any bank in U. S. or Cuba.

*Our Money Back Guarantee Protects You!*

## EDWIN CIGAR CO.

**2338-J—Third Ave., New York, N. Y.**

## THE READER SPEAKS

*(Continued from page 1055)*

space-travel; also time-travel. The story where the people in it go into distant lands of space and meet great odds but finally conquer the elements and natives gets along much better with me than the story in which some horror from the outside invades our world. How about some author trying this theme: explorers going outside the solar system to some remote galaxy. I especially like "The Exile of the Skies," the present serial. Why don't we get some illustrations in the middle of the story as well as at the beginning? I also like the old style of printing the picture of the author. I hope that I have accomplished something in my ramblings.

FREDERICK BURNHAM,
Central Falls, R. I.

(Your suggested theme has been used very often in science-fiction. You will receive many more such masterpieces as "The Exile of the Skies," but we will not give you stories built upon the hackneyed themes that have been overused for the past ten years. Our new policy will bring you many new, original stories such as you can find in no other magazine.—EDITOR.)

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### A Bouquet for Winter

*Editor*, WONDER STORIES:

It was with great enthusiasm that I awaited the arrival of the November issue. At first, I thought that I would not like the change, but after having carefully made comparisons, I have decided that it is not so bad after all.

But I would like to make a few suggestions. The appearance of the magazine would be *greatly* improved if you could smooth up the edges. It would tend to bring the magazine out of the pulpy class and elevate it to its rightful position. The new artist, Lumen Winter, is an excellent one. The old title-page is fine—glad you're using it now—but can't you give us an idea of what to expect in the next issue?

Is Gawain Edwards by any chance G. Edward Pendray, the science editor of the *Literary Digest*? Their pictures look almost identical. And for two cents, I'd bet that Epaminondas T. Snooke, D.T.G. is none other than Mr. Gernsback. It sounds just a little too much like Baron (Scientific) Munchhausen. Nevertheless, let's have some more from him—and be sure it's not about the success or failure of the Intergalactic Recovery Act (IRA).

Here's hoping your sales increase with your expectations, and for a speedy return of the QUARTERLY.

LEWIS F. TORRANCE,
Winfield, Kans.

Gawain Edwards and G. Edward Pendray are one and the same. As for the identity of Snooke—why blame it on Mr. Gernsback? He has been a self-respecting man all his life and does not deserve such treatment! Have you ever thought that Snooke's real name might be Snooks?—EDITOR.)