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JULY 20¢

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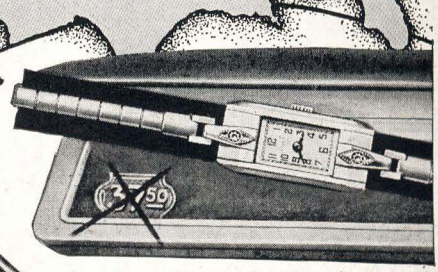

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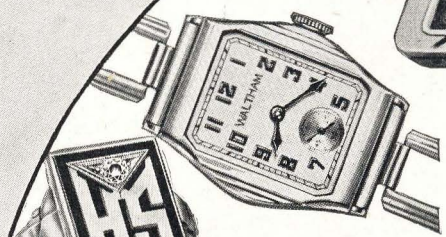

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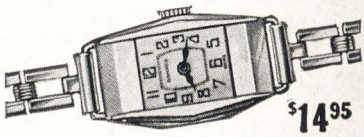

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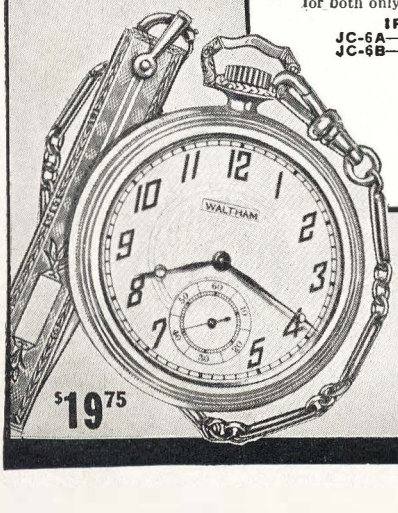

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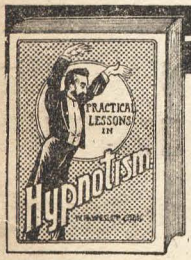

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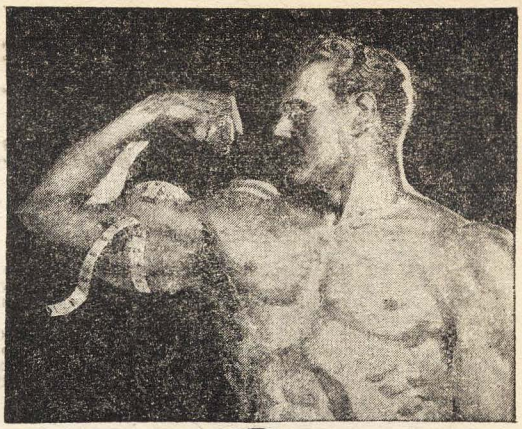

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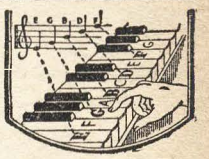

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——The Editor.

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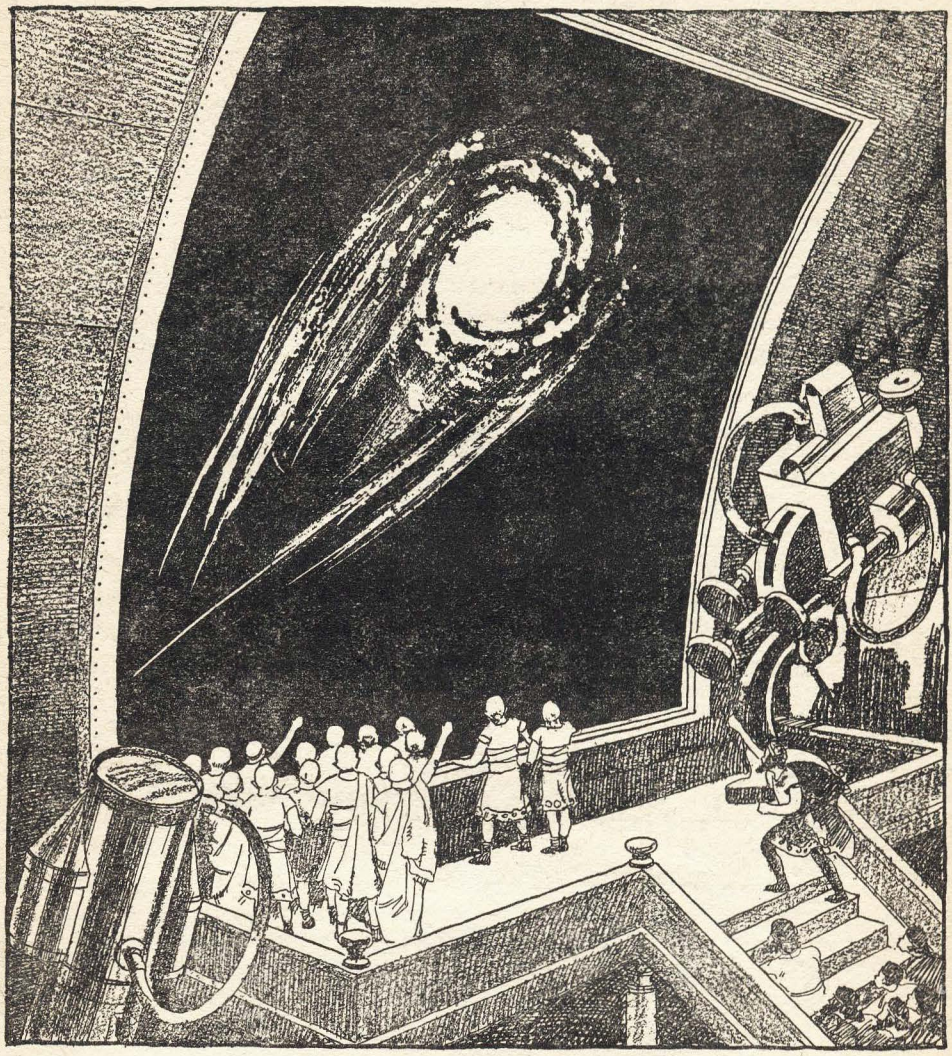


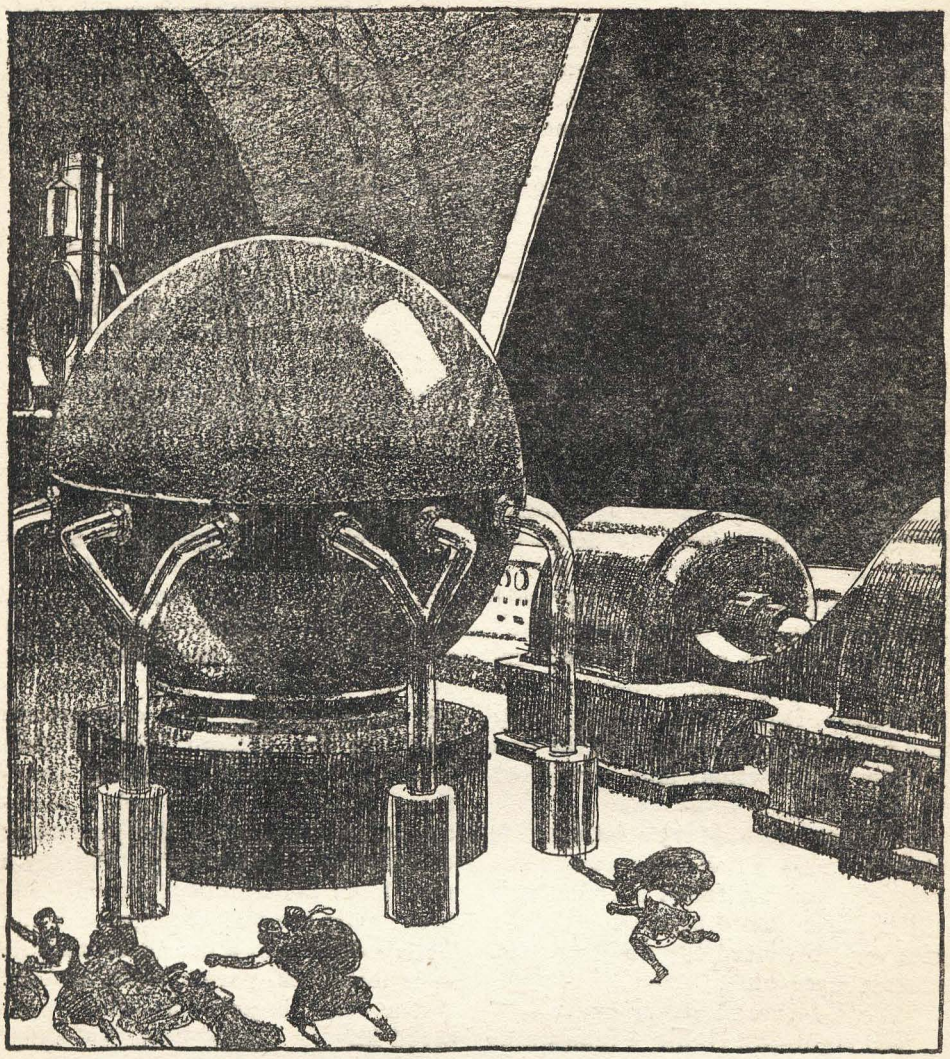
THE WINDING path across the moor took the young man and woman in a wide detour, bringing them at length, when the warm spring evening had settled upon the countryside, to a little knoll overlooking the lights of the village in which they lived.

Quietly, as though with some subconscious union of thought, they seated themselves on the newborn grass and gazed down into the uncertainty of lights and shadows where lay their homes; then gradually they looked upward to the west, with its orange and vermilion flushes, and at last toward the purple gulf of deepening night—night blazoned with the splendor of rapidly appearing stars.

CAME

by John Russell Fearn

Illustrated by Howard V. Brown



"It's—it's all very wonderful, yet very strange," the girl whispered, her chin tilted in the air. "I don't know why, but to-night the stars and the quiet frighten me a little. I mean, to think of your mind being sent backward into time. Lee, it makes me afraid!"

Lee Carnforth took her hand reassuringly. Bred of the village though he was, there was upon him the indelible impress of nobility, inherited from some long dead and forgotten ancestor. The fire of command kindled in the blue eyes; the powerful, well-developed figure and magnificent head were something curiously alien to his parents—both simple, village souls.

"Mary," he said softly, tightening

his grip upon her hand, "you mustn't worry about me. I'd trust your father to the end of time. He's an extraordinary man—in some ways the most brilliant in the scientific world. So why on earth shouldn't I accede to his request? After all, I can't get his permission to marry you by any other means!"

"I know that, but——" The girl stopped, her gray eyes troubled. For a space her delicate profile was outlined against the light of the moonrise.

"It's the unknown that worries and appalls me," she explained at last. "Up there in space is nothing but mystery; time is an even bigger mystery. You and I are just ordinary people, denizens of a planet which we call Earth. Why should father want to unlock the doors of the unknown—probe backward through time? Beyond the beyond! Lee, my dear, I am afraid—for you."

"Mary, that is no way to encourage your young man to undertake a hazardous feat," remarked a crisp and practical voice, at which the two looked up, startled, and scrambled to their feet.

Dr. Ainsworth, Mary's father, was standing only a few feet away, wearing, as ever, his faded soft hat and thick, fur-collared overcoat. Smoke rose on the windless air from his meerschaum pipe.

"Why, father, I never knew——"

"All right—all right. I take walks sometimes, you know. To-night is so peaceful, so still, that I——"

The girl moved forward and took her father's arm; her face was intent and serious.

"Father, won't you please release Lee from his promise? Please say you will! This is his last night, you know."

"You speak as though I'm going to execute Lee, or something! Nothing of the sort! Your plea, Mary, is sponsored by ignorance. There is no danger!"

"Oh, I know you think nothing of scientific experiments. To you, they're all harmless. But unlocking the past——"

"Poetic, but a trifle erroneous. Here, sit down, and I'll explain to you both the nature of the idea at the back of the experiment."

The two young people obeyed and listened intently, though Lee's eyes were fixed on Mary's reddish-gold hair in the moonlight and her earnest, classical face. For a moment an odd idea that he'd seen her seated in a similar way in similar circumstances somewhere in the past occurred to him; then he decided it was pure fancy.

"All our knowledge," the doctor began slowly, "is purely inherited and stamped on our brain cells, so to speak; the remoter knowledge is so buried beneath the accumulation of new impressions that it fails to affect us at all. We concentrate only on the present, with flashes from the past at times when something occurs to bring back a memory, or excitation of the particular cell storing that memory. We say a man loses his memory; actually his brain cells are out of alignment and he is existing in a condition that he —or else his parent who handed down the impression—also once lived in.

"The parent always hands down all knowledge to the child—except in the case of the mental defective—but the child has no idea of this fact unless the new cells are deadened so as to permit the remoter impressions to have sway. That is what we call hereditary traits, where some particularly forceful series of impressions from the parent are handed down to the child, so vividly as to

be vital above the new impressions the child has gained.

"Now, I have an electric energy of the same type as that in the human body itself, and through years of experiment I have made a ray of this electric energy, narrow enough, of needle-pointed thinness, to touch only one cell in a brain, and leave the remainder free. This ray is capable of deadening, for a given period, brain cells—layer by layer—until the deepest set of cells is reached, which of course contain the oldest impressions—those of the primordial, I presume.

"Also, I have equipped my laboratory, as you know, Mary, with a machine which is magnetic in principle and absorbs the impressions from one single brain cell. These brain-cell impressions, in the first place, were begotten by waves of light and radiations of sound, seen and heard by some remote ancestor. My converter transforms these cell impressions into the original light and sound, and the impressions are thrown on a zinc-sulphide screen—much the same as X ray impressions.

"Experiments on the brain cells of dogs have revealed the dog down to its first appearance on Earth. Then, removal of my cell-deadening ray, a rapid restorative, and the subject is normal again, with no remembrance of the past. During the test, I presume, the person must actually seem to live the particular incident over again. So now you know why I want a human subject to travel backward, yet never actually move."

"But, father, what good will it do?" Mary demanded. "What use will it be to the world to know what's been in the past? It's written down in history——"

"Yes; but we've had to take the writer's word for it," the doctor replied calmly. "There is much we may find—or, rather, that Lee will find for us. I would go myself without hesitation, but there is nobody to operate the machinery. You understand, my boy?" He glanced at Lee.

"I understand," the young giant assented quietly.

"Somewhere in the past you have belonged to people of high birth," the scientist went on thoughtfully. "So has my dear Mary. I have nothing classical or regal about me, neither had her dear mother—yet both of you, possessing as you do quite average-looking parents, are obviously begotten of some high, aristocratic stock. By tracing backward, Lee, we shall ultimately arrive at your ancestors and find out where you came from."

"Couldn't—couldn't I go with him, father?" the girl asked suddenly.

"No, my dear. I have only one ray, and it takes a person of great physical power to last through the experiment. I'm afraid I might lose you—you are a woman, and weaker. Which reminds me—I am totally unable to understand why women are weaker physically than men! My experiment may even clear that up."

"I think we'd better be moving," Lee remarked. "It's getting cool here."

"Indeed it is, my boy. Yes; come along."

AT EIGHT O'CLOCK the following morning, Lee arrived at the doctor's home—an almost monastic place separated from the main bulk of the village. He found the elderly scientist and Mary in the laboratory at the rear of the residence, after a frozen-faced manservant had admitted him.

"Splendid!" the doctor exclaimed,

advancing and shaking the young man by the hand. "Right on time! You see, I prefer early morning for the experiment because the brain is fresh and active after repose—toward night there is too much poison in the blood. I don't think you've seen my apparatus before, have you? Here is the experimental table on which you will lie; above is the ray machine. Over there is the screen for recording the impressions—which, by the way, I have decided to photograph."

"Photograph?" Lee repeated.

"Yes! I have there a professional talking-picture camera and microphone. As the sound and vision occasioned by the brain cells appear on the screen there, I shall make a talking film of them, so that there will be an everlasting record of your adventure. You see, when you recover, you will remember nothing of your experiences, and naturally you will want to know what happened."

"I see." Lee nodded. "Of course, when I come back to normal, past impressions will be once more buried."

The doctor said that was true and turned to busy himself with his apparatus.

Quietly Mary stole forward and gripped the young man's hand. "Lee, I'm still afraid! It's all so horribly inhuman——"

Lee smiled. "Don't worry, Mary—I trust your father. And——"

"Now we're ready!" the doctor's voice intervened fussily. "Mary, please don't delay us. Now, Lee, lie on the table, if you please."

With a firm clasp of the girl's hand, Lee obeyed, stretching his lissom body on the glittering metal of the experimental table. The doctor's semibald head and round face popped up beside him.

"All right? That's excellent! Now——"

There followed a clicking of switches from the control board and the soft, beating pulsation of a generator. On the far wall a safety valve glowed pink. The doctor drew across the window curtains, plunging the laboratory into half darkness.

"Everything is set," he remarked. "Merely lie down and compose yourself. That's fine. Now—go!"

He snapped in the master switch amid a flaring of blue sparks.

Almost instantly, Lee's body relaxed, and his respiration dropped to an amazing shallowness. The color slowly ebbed from his cheeks.

"Father! What——" Mary began helplessly, digging her nails into her palms with the intensity of the moment.

"Nothing's wrong!" the scientist said. "Simply incipient rigor mortis; that's all. Won't develop any further. In a sense, Lee is dead, yet alive. Now for the ray—but first we'll want the Z beam."

"Z beam? What's that?"

"I forgot to mention it to you last night." The doctor fiddled among his labyrinth of switches and presently connected up a small, single-lensed projector. A pale-cream beam shot forth and enveloped the young man's head. But most remarkable of all was the fact that his face seemed actually to vanish. Instead there was a perfect view of his skull with the distinct convolutions of the brain within.

"Father, it's horrible!" the girl gasped.

Quite oblivious to her cry, the scientist murmured: "My Z beam is indeed a masterpiece! You see, Mary, it is based on the principle of Röntgen's X rays, only that instead of using barium platinocyanide or

hydrated potassium platinocyanide screens, as is used for X rays, this beam causes instant transparence, without the necessity for a screen on which to project the image.

"The Z beam is of a different wave length to anything known to ordinary science, and apparently causes all external tissues to vanish, but leaves internal tissue quite visible. In a sense, the Z beam stops light radiation from external flesh, leaving the interior bared, as it were. I have to do this to determine which cells have to be deadened. Now for the next stage."

Breathing rapidly, the doctor switched on yet another device and stared with burning eyes at a flickering needle within an air-exhausted case. The depressing of various buttons caused the needle to switch around to various numbers, a performance which Mary watched with a gradual widening of her eyes.

"What—what is it all?" she stammered at last. "Electricity?"

"No—no! Each brain cell emits a certain frequency, you understand; during my experiments I've tabulated the frequencies that relate to certain impressions. Inside this meter is an invisible recoiling wave length, which, when tuned on a brain, shows on the meter which cell is being affected. Then I know which cells to deaden. Don't stand there, girl—you are between the vibration and Lee's brain. See, the needle has dropped to zero through the intervention of your body. Get out of my way!"

Unmeaningly curt in his excitement, the scientist hastily computed figures from the dial and then switched on his cell-deadening ray. A brilliant pencil of fire, as it appeared, almost so thin as to be two-dimensional, stabbed from the apparatus slung over the experimental table, and, with a pair of heavily insulated guiders, the doctor directed the beam until its needle point was focused upon Lee's plainly visible brain. Manifestly, the force must have passed through the almost-invisible skull bone and into the cells below. Lee made no movement, but lay as one dead.

Still in silence the doctor worked.

"So far, so good!" he exclaimed at last, the ray evidently in position to his liking. "Now, let us see what the screen has to show."

He turned aside to his instruments, and presently there came another type of buzzing sound as the vibration screen was switched on. For a space nothing intelligible was apparent—only a cloudy nebulous mystery. Intently the two watched.

"Look! *Look!*" the doctor insisted at last, gripping his daughter's arm.

She gazed at the screen with widening eyes, astounded at the sight she beheld.

"It's succeeded!" her father exulted. "The camera, quick!"

With quick strides he crossed to it and livened up the microphone. Almost at the same moment the sound system connected to the brain-vibration screen began to function, and sound accompanied the astonishing, clear-cut pictures projected thereon.

II.

LEE CARNFORTH, the instant the doctor had closed the master switch of his apparatus, relapsed apparently into a world of complete darkness—an incredible world in which he was apparently a disembodied spirit. In a sense he was alive, and yet dead. He realized he was not breathing; that his heart

was apparently still, and yet he was able to see—hazily.

For a space he lay gazing into a gulf. There came a strange sensation of fleeting pain—the doctor's probing ray—then speed, irresistible speed that seemed to buoy him upward and hurl him helplessly into the cosmos.

Lee tried to shut out the vision of coldly glittering stars and failed. He was in an abyss, in which he saw nought but stars, millions of stars, rushing and surging tumultuously, without organized precision or orbital law. Frozen terror was within him; a sense of overwhelming helplessness. Soundless onrush through infinity—an infinity which somewhere, he realized, was nought but time.

Abruptly the onrush ceased, and he became momentarily still, then he shot forth again. His memories became clearer and clearer as the ray continued. Through the frightful reaches of forgotten time his ideas hurtled—backward and ever backward, through the knowledge of his ancestors, even past them, and still backward. Already he had exceeded by far the limit anticipated by the doctor, was indeed now in a period before Earth itself had come.

Still the void swirled and changed, moved and gyrated. Star clusters rose up, evanescent, to vanish in infinity. A comet flashed and was gone. Stars shot through amazing magnitudes of brightness. The whole pattern of the eternal lay spread before him—a gigantic, complex enigma.

Then the sickening sense of speed began to diminish, and with it his powers of understanding began to lose their clarity also. He found himself watching the stars with a bemused sensation, unable to understand or comprehend them. Strange lusts and primitive passions were within him; an extraordinary desire to kill and destroy. There came a fleeting conviction of superhuman strength, then incredible weakness. Even more his power of reasoning weakened, until at last he was in a blackness devoid even of stars.

How long this peculiar condition lasted he had no knowledge, but ultimately there appeared on the rayless obscurity a tiny streak of gray, widening rapidly, until presently he beheld, for the first time, evidences of life—strange, complex evidences that mystified him, shooting as they did in snapshotting confusion before him.

A vision of an unknown laboratory rose up and was gone; another one appeared. He was staggering along some rocky defile with a limp woman in his arms. The air seemed smoky. Another picture of a blazing star shot across the view—and was gone. Darkness swirled across and blotted out an enigmatical scene of a young and lovely woman who looked oddly like Mary, seated on a mighty fallen boulder, while at the back of her loomed the mass of a colossal city of white stone. Strange, incomprehensible scenes! The black deepened. All sense of remembrance left him, but with it came a conviction that he could move.

The uncertainty of things passed. His gaze alighted upon a massive, intellectual face, heavily bearded, bending over him. Bright lights were trained upon his recumbent form; he was lying upon a surgical bed of some type or other, with a solitary surgeon surveying him.

Slowly, vaguely puzzled, he rose up, then glanced down at the semi-Grecian robe he was wearing—a sleeveless raiment with a golden gir-

dle around the waist. His hair was curiously long.

"What—what's the matter?" he asked at last.

There remained in his brain no remembrance of his travel through time. This fact alone rendered him incapable of surprise that he was speaking in a strange language. To him, it seemed the correct language, for he had no knowledge of any other. At the reply from the surgeon, he listened intently.

"Obviously, my son, you are exceedingly vigorous this morning. I've tried to anæsthetize you, so that I may conduct the brain test, but you are too strong to go under. No matter—it cannot be helped. But what causes this strength? Why did you so easily overcome the anæsthetic? Why?" The surgeon's eyes were puzzled.

Lee considered for a moment. Strange thoughts were suddenly in the back of his mind; unformed, scarcely definable, thoughts. A conviction of some other life, light-centuries from his present state. Then he shrugged his broad shoulders, slid off the table, and drew a robe of purple and gold about him.

"You can conduct the brain experiment later, Laznor," he said curtly. "But first tell me the exact reason why you want my brain? You have explained that only to my august father—not to me. I have a right to know."

"Truly," Laznor conceded. After a pause he began slowly: "You know that we plan the greatest feat of science ever attempted in the history of Jir?"

Lee nodded.

The fogs of the anæsthetic had now cleared; he was, of course, the son of Varnos, Lord of Jir, Jir being the planet itself—a synthetic planet with an artificial luminary for a sun. His name was Morna, and had he not, the day before, offered his brain for the cause of Jirian science?

"Our greatest feat," continued the surgeon, "will be the creation of an actual solar system and providing that system with life akin to ours."

Morna remembered. "Yes; I recollect your plans now," he said. "But I would really prefer to know something more first. There is much that I must see and do. I must visit Hanzan, the astronomer and chemist, since he is the prime mover in this experiment."

"So be it," the master surgeon assented gravely. "I await your pleasure, my son."

MORNA NODDED and left the operating theater, presently reaching the exterior of the great building. The City of Science lay stretched before him—a familiar scene that occasioned him no wonder. Monstrous edifices of blue-white stone gleamed in the light of the artificial sun—white, spotless streets. The quiet, thoughtful figures of men and women came and went. All was quite familiar—a typical day.

Morna stepped down into the main street and, nodding to those whom he recognized, made his way to the domain of Hanzan, the chief astronomer and chemist. He entered the expert's observatory not ten minutes afterward.

"Greetings, Morna!" the astronomer said solemnly, bowing. "This is an honor you confer upon me. I thought you were to undergo a preliminary experiment this morning?"

"I was, but I desire to understand more fully the nature of this gigantic test of your science. What precisely are you going to do?"

"Create a solar system, my son."

"I know. But—is it really necessary?"

The astronomer hesitated, doubt in his eyes. Slowly he inclined his white head.

"Yes; it is very necessary. Our knowledge must be passed on to another race, and that race, growing up through the scale of evolution, will eventually come to possess our learning. So our greatness will again flourish, even though it be millions of years in the future."

"You speak as though we're destined to be destroyed!"

Hanzan said gravely: "Our world can last only a few days longer, my son. We are a doomed race."

"A doomed race! But——"

"You are aware that Jir has recently been subjected to terrific earthquakes, landslides, tempests and——"

"Yes! But I thought that they were natural happenings," Morna protested. "To-day is so peaceful!"

"Yes, to-day is indeed quiet—a blessed respite. But the hour of our doom is very near; that is why we must not delay the brain experiment that Laznor is to perform upon you. We have much to do and little time to do it in. You see, my tests of these surface disturbances have led me to discover that our planet is subject to that which a natural planet is not—namely an explosive cancer. You see, this globe was first generated from gas, when we populated an almost freezing world far out in the cosmos, and we fashioned what we considered a perfect world for our work and migrated to it—here. For two thousand years all has gone well, but now we find that the gas from which we kindled our planet is atomic in nature and, being so, constantly spreading.

"In the early years of this synthetic planet's life the gas was dormant, for the surface was young and pliable, and the gas could escape through numberless interstices into the open. Now that the planet has become older and the crust has solidified, it results in the imprisoned gas being unable to escape, and all the time it is growing. This results in inevitable compression and resultant expansion. The gas blows itself out and causes earthquakes and landslides. Terrific though these disasters are, they only release a tiny fragment of the actual gas mass within the core. The rate of expansion is far ahead of that of liberation. So, my experiments have shown, our world will be burst asunder by the ever-increasing pressure, before many days have passed."

"Why wasn't I told of this before?" Morna demanded, appalled.

"I found it out myself only when it was too late," Hanzan answered in a troubled voice. "You would have been told in good time. I told only your father, and he refrained from informing the populace in case it might cause panic, despite the sanely balanced knowledge and characteristic fatalism of our race. There is no escape, my son."

"Surely a bore can be made to let the gas escape——"

Hanzan smiled faintly. "You know as well as I do this planet is solid rock—not soil, as are many natural worlds. Even with the materials at our command, it would take four years to sink a bore to the correct depth to be serviceable, and we have only as many days. Space-travel we could adopt, of course, since we have frequently crossed the void, but there would be difficulty in finding a planet suitable for us. Therefore your father has willed that our race end; or at least we of

Jir shall cease to be. Destiny has decided that our course is finished. This being so, we shall pass on all our knowledge to another race, as yet unborn, and you, if you will consent, will escape death by that very reason."

Morna seated himself and looked at the expert in vague surprise. "I didn't know all this, Hanzan," he remarked. "How can I hand down our knowledge and escape death thereby?"

"I will tell you. What we propose is this: When the artificial solar system has been completed and is satisfactorily installed in space, we shall hurl to the planet most likely to sustain life of our type a mass of protoplasm—synthetically made, of course. This protoplasm will differ from normal protoplasm in two things. There will be a male and a female protoplasm, capable of co-union as time passes, by chemical affinity, and secondly both will be impregnated with the cells of a male and female brain respectively, which, according to Laznor's calculations, will ultimately result in two independent sexes, such as we are, possessing male and female characteristics.

"Hence the experiment on your brain, to see if it is the type we need. Then, if all is satisfactory, the main cells of your brain—about which Laznor will tell you more when the time comes—will be placed in the artificial male protoplasm. Subsequently you and the female protoplasm will start to grow on the new world; the inevitable law of evolution will result in the rudimentary type of two-legged animal—then the ape, then the savage man, and finally civilized man; so a civilization as powerful as ours will ultimately rise up. Why? Because our knowledge will be condensed into two brains before we die. Evolution will bring it forth."

"Do you expect me to live millions of years, then?" Morna inquired dazedly.

"Of course not! You will die, but not before you have begotten others, who will possess your knowledge also. They will do likewise, and so the evolution will go on, until—— Well, who knows? In the unthinkable future you may again be living, in some other form. Perhaps similar to what you are now."

"And this new planet? Suppose it blows up as this one is going to do?"

Hanzan smiled grimly. "This time there will be no such mistake. We have guarded against it."

"Are you quite sure life will live on the synthetic planet you are going to single out?"

"There is no reason to doubt it. Solar cosmic rays reacting upon our protoplasm will be bound—according to the experiments we've made—to form the correct chemical reagent, construed as life itself."

Morna considered. At last he smiled and shrugged. "I might just as well die being of benefit to the race as not. What are you going to call this solar system? The names of the different planets, I mean?"

"It all depends upon how many planets we succeed in wresting from the mighty flaming gas which we shall kindle in the void," Hanzan replied. "The task of finding names is simple enough. Do you understand now what is before us? The need for urgency?"

"Yes. Thank you for the explanations. I shall be able to watch this solar system created, I suppose?"

"Most certainly! Here in the laboratory, at sundown to-morrow. I am preparing the apparatus even now. When the time comes it will

be fully explained to you. And now may I prevail upon you to return to Laznor that he may make his brain test?"

Morna nodded. "Yes; now that I realize the necessity for speed, I'll go immediately."

SOMEWHAT to his surprise, Morna found that the brain test of the master surgeon of Jir did not occupy a great deal of time. He was obviously satisfied with his experiment, and when his complicated task was over he stood absently contemplating a scroll of thin metal upon which he had engraven, with a peculiar vibratory instrument, a mass of symbols and numerals, computations born of the amazingly advanced science of Jir.

"A fine brain indeed!" he murmured, as Morna glanced at him and then slid from the experimental table. "With those brain cells removed, Morna, and embodied in the male protoplasm, we can create what ultimately will prove a master race." He paused, then a shadow crossed his learned face. "My son, I am troubled," he admitted quietly. "Deeply troubled indeed."

"Why? What's the matter?"

"I am wondering what brain to use for the female protoplasm. Perhaps you can help me?"

"I know of nobody, Laznor."

"Not even the Princess Axata?" the master surgeon inquired gently.

Morna's eyes flamed. Fiercely he seized Laznor's shoulder. "Axata is not for experiment; she is my betrothed! The only daughter of the second Lord of Jir, one degree lower in social scale than I, and you dare to suggest that she, with her beauty and——"

"I am not concerned with her beauty; only her brain," Laznor answered calmly. "Can you not see that I am trying to spare you unpleasant tidings, my son? The Princess Axata is the only woman in all Jir who will answer our purpose, and what science claims, it must have. That you two are betrothed, that you love each other, means nothing. In Jir, there is only science. Of course, if you can persuade her in your own way, it will make the task simpler."

"You command me to do it?" Morna asked with sudden quietness.

"Perhaps," Laznor admitted with a shrug. "In any case, she will be taken; better that you try it voluntarily than learn the news afterward. In any event, you have only a few days to live; why, therefore, do you worry?"

"It's not that; it's just that I cannot tolerate the thought of Axata being sacrificed on the altar of our science. It is brutal—cold!"

"In a way, I understand your emotions," Laznor answered quietly, taking the young man's shoulder. "But listen to the counsel of a man who has lived three thousand or more years. We are a scientific race; all our principles and motives are founded upon it. Defy science you cannot, even if you be the ruler himself. Science has chosen two beings out of the people of Jir to perpetuate our race—the Princess Axata and yourself. You can do nothing but submit. So if you try to persuade her yourself, you may feel more happy about it; either way, she will obey our behest.

"Our protoplasm, the female one, must contain impregnations of female brain. It is our plan to make our future race of a slightly different caliber to ourselves. We of Jir are either entirely masculine or entirely feminine. The perpetuators of our race will not be so. In some cases, as the evolution proceeds,

there will be distinct traces of the man in women, and women in the men. We have learned that rigid male and female is not an ideal combination; each should have something of the other to make the perfect union. You understand?"

"I think so." Morna nodded, calm now. "Very well, Laznor; I will suggest your plan to Axata. I am seeing her at sundown."

"Excellent. If you succeed in persuading her, you will feel less unhappy about the matter. You have much to pay for being highborn, my son—throughout our history it has always been the rulers that have made the sacrifices; the masses escape. Oh, and before you go, please remember that the brain test has left your brain now in a highly impressionable and malleable state; that is to say it will take and retain all the impressions you receive from now on until the final impregnation in the male protoplasm. So have a care what you do and think about, as your experiences may affect the whole destiny of a race as yet unborn. Struggle to preserve the calmness, nobility, and lack of evil motives for which Jir is famed."

"Very well, Laznor. Nothing will upset me, I promise you."

III.

THE MIGHTY bulk of the City of Science was etched out in blackest silhouette against the flaming crimson of sunset when Morna met the Princess Axata. She came, as ever, with a light but dignified tread, following the short, broad road from the city itself, until she reached the little knoll where Morna was sitting, chin cupped on hand, staring down into the spreading ramifications of the city below him. Slowly, almost imperceptibly, the basin below was filling with darkness; here and there spots of light sprang into being as radium lights were switched on.

"Thinking, Morna?" Axata asked gently, and at the sound of her voice he jumped up and seized her two hands. Seriously he looked into her perfect face—smooth, classical, determined. She gently withdrew her hands as her gray eyes studied his troubled expression.

"What can it be that troubles the son of the Lord of Jir?" she asked presently, half smiling.

"Axata—there is something vitally important which I must tell you."

For a while the two sat in silence. At last Morna turned to her.

"Axata, to-night, somehow, my mind feels as if it had experienced this same action before, as if you and I have sat together on a knoll overlooking a valley—somewhere. Oddly enough, it is not so much that we have done it, but that we *shall* do it—somewhere in the far distant future."

"How strangely you are talking, Morna! Was that what you wanted to tell me?"

"No—not that." Morna's strong face set for a moment, then again he took hold of the girl's hand. Quietly he told her the story of Hanzan and Laznor, and when he had concluded he relapsed into moody silence, leaving the girl gazing pensively heavenward.

"I can hardly believe it," she said at last. "That our planet is doomed! It is almost unthinkable! And you and I are to give our brains, our very lives, in order that we may be the promoters of a new race on a world yet unmade. It—it is all so incredible!"

"I know. It's inhuman, in fact," Morna growled. "For you, at least."

"I don't regard it in that light,"

she answered quietly. "It is an honor to serve our planet, and as we are the highest born, it is our bounden duty. I shall willingly give my brain——" She paused and smiled whimsically. "After all, why not? A few days more, and then——" She stopped and shrugged her shoulders expressively.

"I know that, Axata, but we love each other——"

"Yes; and in that we are something of a phenomenon," she answered. "All marriages as a rule are predetermined and predestined—especially among us of the higher circle. Eugenics determine the number of children; we have examinations of fitness. There's not much love left after all that, as a rule. With us, it is somehow quite different. We have been chosen by the higher circle as mates, and by a curious coincidence we happen to love each other dearly as well. Perhaps that is why we are to be parted."

"I can't stand the thought of your having to undergo the experiment," Morna muttered.

The girl gently took his arm. "There is one thing you seem to forget, Morna. In any case, we shall have to part, so isn't it better that we part in the *same* way? Don't forget, as we pass through the eternities of time and space, we may ultimately come together again. It is possible. On the new planet, when we evolve finally into a civilized state, we may meet again. If we do, surely no barrier can rise up to prevent our recognizing each other?"

Morna shook his head. "In that time the primary cells that started the business will have undergone widely diversified types. Still, it's no use defying the edict of our masters. We have to do as we're told."

"Exactly—so why worry?" Axata seemed curiously philosophical. "Between us we will start a race in which men are men and entirely without fear or evil motives; and women are likewise entirely unafraid, and every whit as strong as the men. Nothing can stop that happening. I don't altogether approve of Laznor's idea to incorporate something of a man in a woman, and vice versa; surely it is better that we remain as we are—entirely man or entirely woman?"

Morna shrugged. "I suppose he has it all weighed up. Perhaps he's right. To-morrow you must visit Laznor and undergo a brain test; he'll also do something that will make your brain malleable to impressions, just as he has mine. So be careful, as I am, that nothing happens that may impress you so much as to hand on the belief to the future women."

The girl smiled faintly. "Yes—that would be strange," she admitted slowly, and sat for a long interval pondering on the infinite complexities of time and space.

THE FOLLOWING day, the brain-operation test upon the Princess Axata having been pronounced satisfactory by the master surgeon, the two made their way to the abode of Hanzan, upon whose apparently aged shoulders rested the incumbency of creating an entire solar system. When the two entered he was standing in deep thought in the midst of a multitude of apparatus, but he was quick to give them the Jirian salutation of highest respect.

"Greetings, princess—and you, Morna! What brings you here?"

"Since we are so involved in the future of the synthetic solar system, we thought you might be able to give us an explanation as to how

this system will be created," Morna replied, a trifle tentatively under the ancient's keen eyes.

The astronomer considered for a moment, then he smiled pleasantly. "Be seated," he said gravely, and when the two had complied he paced slowly up and down before them.

"It will take all the scientific resources of Jir to complete this final master experiment," he said at last, pausing. "By streams of vibration projected into a chosen spot in space —approximately four hundred millions of miles distant in the void, where there is at present a phenomenal lack of stars and galaxies— we shall kindle out of the utter zero of space a flaming mass of fire, which is to be the sun of the future solar system."

"How?" Morna ventured. "Cold can't create heat, surely?"

"Only ultimate cold *can* produce colossal heat," the astronomer replied calmly. "Cold is a form of extremely latent energy; in a sense it is the negative force of combined negative and positive force. Our energy-projectors, housed here in this laboratory, and trained directly on the point in space we have determined, will convert that ultimate of cold energy into its exact opposite—radiant heat. As the process continues we shall gradually widen the area of our projectors' radii until the sun—which from here will appear as a large star—is the size we desire. This size is approximately one million miles in diameter."

"But surely your projectors cannot expand their radii so as to cover a million miles' width?" Axata asked amazedly.

"Certainly they can, princess; remember that the distance away is four hundred million miles. Our streams of vibration lose nothing of their power, no matter how far they travel. The greater the distance the wider the ultimate of the beam, if one may call it such. So when this flaming gas has reached the desired width of one million miles, another type of vibration, a disruptive type, will be hurled forth, which will split masses of matter from this gas, to form planets.

"Our calculations show that there ought to be some nine planets of varying sizes, considering the actual mass of the sun itself. Naturally, these disrupted masses of gas will be hurled outward into space, but will ultimately be held by the parent gas —sun—whose mass will outweigh the entire number of planets and their moons by something like seven hundred and twenty times. Hence, it will be the center of gravitation. Indeed, our calculations have shown that some of the disrupted portions may be flung even far past the orbit of our own planet of Jir. It appears that our planet—or what remains of it after the internal gas has done its work—will lie somewhere between the paths of the first outer and the last inner planet of the sun. There will, by almost inevitable law, be four or five very large worlds to form an outer group, and four much smaller ones to form an inner group. That we know already."

"But surely, Hanzan, this terrific feat cannot be completed in four days?" Morna asked surprisedly. "Why, even from my own elementary knowledge of the cosmos I know that it requires ages for a solar system to cool down."

Hanzan smiled faintly. "A natural solar system, yes," he assented. "But with a man-made one, it is different. Let me finish explaining to you. When the nine planets have been disrupted they will hurtle in eccentric orbits round the parent body, and, if left to themselves,

would continue like that for ages to come—until, being much smaller than their sun, they would gradually cool and become habitable. We, however, who can kindle heat out of zero, can also perform the reverse action and make these flaming worlds habitable within the space of a few hours. The sun itself we shall also cool down somewhat from its primary heat.

"This same action of cooling the planets will result in the masses spinning round on their own axes, at a great speed to begin with, then gradually slowing. As they do this, they will hurl forth their moons, and these moons, being smaller, will cool first, of course. You will see these gases of planets in our intruments as unformed flaming masses, at first; then, under the action of our vibrations, you will watch them gradually take on a bulging form—globes with a distended equator. Then they will become quasi round, with a round protuberance at one end. This end will finally break off and be hurled into space to become either one moon, or several, depending on whether the mass breaks or not."

The astronomer ceased for a moment. "And out of those nine worlds one, or perchance two, will be suitable for our type of life," he added quietly.

"Why not all of them?" Morna asked quickly.

"The five outer ones will be useless, for obvious reasons. Their gravitation will be too strong; their distance from the sun too great. Upon them, other natural chemical life may form. Only upon one or two of the inner planets can our synthetic race take root and begin to grow. As soon as our cosmic work is ended, we can then determine which world we shall use for our experiment. Then, across the gulf, will be hurled the brain protoplasms, male and female, despatched in separate projectiles, and guided by the mass of light vibration—light has mass, you know—eventually to strike the chosen planet, where the projectiles will break open and the protoplasms will start to grow. Also we shall send seeds of our trees and plants, which ultimately will flourish—and finally there will be a world akin to our own."

"What of the gravitational shiftings during this process?" Morna inquired. "The appearance of another solar system will cause great upheavals, surely?"

"Certainly there will be great disturbances, but we counteract that by issuing forth bracing rays of force upon distant stars. That should hold us comparatively steady. In any case, since our world is doomed it matters little; we want respite only long enough to continue our surgical work after we've made the system."

The astronomer paused. "Have I explained sufficiently?" he asked.

"Sorry to have taken so much of your time," Morna said earnestly. "We won't detain you any longer. We'll be back again to-night at sundown to witness this celestial miracle."

"It will be your duty," Hanzan returned calmly. "The entire higher circle will be present, headed by your august father. And now, if you will pardon me, I have much to do."

WITH ALL the grandiose pomp and ceremony for which Jir was famed, the entire retinue of intellectuals who controlled the City of Science—the higher circle—filed into the vast observatory-laboratory at sundown. Varnos, Lord of Jir, and Morna's father, headed the pro-

cession—a regal, steadfast figure in robes of scarlet and gold.

Hanzan, Laznor by his side, bowed low before the ruler; then came a rustling movement among the servants as chairs were hastily placed in position for the dignitaries of the doomed planet.

Presently they were all seated. The door closed; the radium bowls blazed forth with a sudden soft yet vehement brilliance. Outside, the sun sank down in the purple banks couched to the rear of the mighty City of Science.

For a long time Hanzan stood by the window, gazing out at the slowly appearing stars. He turned and motioned to a gigantic screen occupying a large portion of the laboratory wall.

"The view screen of my reflector," he explained. "Upon this screen is projected, from my telescope, the light-waves the instrument has gathered. As your highness is aware, our object-glass is perhaps the greatest achievement in Jir. Sixteen feet wide, four feet thick, and composed of the master-element Miranium, No. 104 in our periodic table. Opaque and heavy to the eye, but transparent and magnetic to light-waves, it gathers the faintest possible radiations of light to itself for a distance of ten billion miles and brings those light-waves to itself without the faintest trace of distortion or fading. Then, subsequent magnification—and we have perfect results. This instrument is now trained on the comparatively blank spot in space where we are to create our solar system. Now——"

A clicking sound followed, then the central tube of the colossal apparatus, poking its blunt, unseen head through the circular roof, glowed suddenly white, finally becoming pink. Upon the screen there appeared a dead, deep blackness.

Hanzan smiled faintly. "Space!" he explained. "The view now is purely that of the infinite. In a moment you will see our work begin."

He turned aside and rapped out orders to his waiting assistants. They took up their positions before various control boards, attached to which were numberless dynamos, generators, and other electrical and semielectrical contrivances.

Along the floor, across the walls, in the roof, snaked and twined thick and thin cables, all heavily insulated, ending their devious and tortuous paths in six massively built machines on pedestals at the far end of the laboratory, their wide, lensed orifices pointing skyward at an angle of seventy-five degrees. Clockwork precision motors began to tick rhythmically beside them, slowly keeping them checked against Jir's natural revolution on its axis, upon the predetermined point in space.

Great springs, obviously made to stand enormous recoiling pressure, were sunken down into supports buried seven feet in a bed of metal and rhone—the heaviest and toughest stone known to Jir. Nothing had been left to chance.

Through an interval Hanzan checked up with intent, fevered earnestness upon all his calculations, and at last he nodded. A trifle dramatically he raised his hand as a signal, and immediately the six assistants, each controlling a switchboard attached to an energy-projector, depressed master switches. A monstrous column of green light rose from energy-promoting mechanism from which the power was drawn, and then slowly faded and expired.

The floor shook with power; the energy surged unseen along the de-

vious cables provided and entered the projectors. Immediately six independent beams of blinding green stabbed into the darkness outside, passing through the wide-flung window opening, and continued to blaze forth with undiminished brilliance.

Hanzan nodded in satisfaction and glanced at the telescopic screen. It was already suffusing with green—a fact which caused the intent Morna to ask:

"So soon, Hanzan? I understood the fastest known velocity is that of light, at one hundred and eighty-six thousand miles a second. Even that would take roughly forty-five of our minutes to travel four hundred million miles. Yet we are seeing the green beams almost immediately after projection."

"Quite so," Hanzan responded. "Light is not by any means the fastest known speed. I grant that it possesses the fastest velocity of its particular class of radiation, but there are infinitely faster speeds. Take gravitation—it makes itself felt instantly over any given distance. As for these beams, they move at a velocity of approximately two billion miles a second—nor is that the fastest known speed."

The convergence of the six beams of energy resulted finally in one almost blinding spot of green fire being concentrated on the utter blackness of space. For a long time, as it seemed, nothing changed. The machinery in the observatory hummed on without pause; the projectors slowly turned in their clock-motivated bearings.

At last Hanzan uttered a triumphant cry, pointing to the screen.

Out of the deadness, the frozen vacuum of space, there was gradually forming a bright, intensely blue-white spot, containing indeed the vaguest suggestion of violet. With the passing of the minutes, and the concentrated force of the energy-projectors, the spot grew, became an uneven, flaming mass of superheated energy.

Hanzan turned away from the screen for a moment and pressed a button. Immediately there fell over the screen a shield of purple glass, which mitigated the almost eye-paralyzing intensity of the glare.

As the gas grew and expanded, additional layers of purple glass were dropped into position, until at length the audience was gazing through no fewer than eight sheets of protective covering at a dazzling mass now covering the whole screen.

It was no longer possible to see how far the gas had spread; its edges had overrun the screen's limits. Therefore, Hanzan stood silent, eyes fixed upon a chronometer on the wall, only glancing occasionally at the swirling, turbulent mass of energy and unthinkable heat that his remarkable energy-projectors had produced.

"It is fortunate indeed that the gas is so rapid in growth the instant the first spark of energy has been kindled," he remarked, turning. "For it to swell to the desired size of one million miles' diameter is not a long task—about sixty minutes at the most, expanding and eating up void as it does."

He turned aside for a moment and spoke into a communicator. "Brace beams firmly fixed?" he asked curtly; then nodded in satisfaction at the answer. "At that rate there is nothing to fear from gravitative upheavals," he commented, turning again. "Otherwise, there is mass and energy enough in the void now to blow our world out of its orbit."

Minutes passed on; the chronometer hand flicked silently round its white-faced dial. Another shield of

purple glass dropped into position with soft emphasis.

Hanzan raised his hand. "Cease!" he commanded.

Simultaneously the six projectors discontinued their emanations. The massive generating engines whined down the scale of sound to a standstill. Quietness fell.

Hanzan looked impressively at his ruler. "Your highness, a sun is born," he said solemnly. "Now for the children of the sun!"

Again he swung around on his assistants. "Force beams—immediately!" he rapped out, and became once more a quick, agile figure, full of earnest, scientific intent.

THE CONVERSION of the projectors was but the work of a moment. Reversing contacts were switched onto the power generators, and the energy that formerly had kindled incomprehensible heat, from equally incomprehensible cold, was altered in vibration so that it now hurtled forth as a battering-ram of destructive, disintegrating power. Six beams of green light again stabbed from the projectors and, as before, appeared almost immediately on the sheathed screen, now only faintly visible against the glaring photosphere of the sun.

The instant they struck that seething, boiling effulgence of heat, mighty masses of flaming gas spewed out into space as though flung with a Titan's hand, pieces that immediately vanished beyond the screen's width. Hanzan made a few rapid adjustments with experienced fingers and revealed the sun at a farther distance, where it was possible to behold it now with three flaming masses of disrupted gas swinging round in a zigzagging, drunken circle, trying to fly off into the void, but held by the infinitely greater power of the parent mass.

The force beams were cut off, and then hurtled forth again, twice more —and twice more writhing gas shot forth into emptiness, to even greater distances. Indeed, five of the masses hurtled so far away that it began to appear as if they would career off into space, impelled by their initial momenta, never to return. As they vanished from the screen's view, Hanzan shrugged his shoulders.

"Evidently our dream of nine worlds will not be fulfilled," he said somberly. "Five of the glowing masses have shot beyond the gravitative reach, I'm afraid. It all depends on whether the sun's attraction is sufficiently strong to hold them before they get out of control." He looked back at the screen. "Four of the masses are safe, close to the sun," he said thoughtfully. "I should say the farthest one is about one hundred and thirty-three million miles from the sun, and the nearest about thirty-six million miles."

He turned to his assistants once more. "Release the cooling beams!" he ordered, and again the green beams shot forth, now changed to the exactly opposite vibration from that which they had started with. With their usual unthinkable speed they reached the sun, and began to concentrate upon it with unremitting power.

After a time the sun seemed to become dimmer. Quietly Hanzan moved his buttons, and the layers of purple shields vanished one after the other, leaving presently the clear view. It became instantly manifest that, while the four newborn planets, moving in their intoxicated orbits, were blue-white, the sun had changed to a snow-white shade, and, as the cooling vibrations continued,

altered very slowly to a vaguely greenish white, then down to flaming yellow-white, the yellow being somewhat predominant.

"That will do," Hanzan said, and then suddenly switched over two of his purple shields.

The glare rendered less powerful, the astonished audience distinctly beheld the actual disk of the sun itself; no longer an unformed gas, but a blazing circle.

"If we had no atmosphere on Jir we should undoubtedly be treated to the sight of superb solar prominence and pearly corona," Hanzan commented. "And in case the changing of colors puzzles you, let me explain that the ultimate of solar heat is blue-white, as you saw at first. As it cools, it goes down to yellow-white, as you see it now. As centuries roll on, allowing the sun to take a natural course of cooling, it will become golden-yellow, then slowly down through decreasing heat stages until it is red, and at last—extinct. The sun is now fully created, has a form, and a vaguely determinable revolution. The planets, being smaller, will be much simpler tasks."

With that he turned his attention to the four worlds, using two force beams apiece on the two larger ones, and one each on the smaller ones—the one nearest the sun and the one farthest away.

It was particularly astounding to the audience to watch how those flawlessly guided fingers of energy molded the formless gases across the bottomless reaches of the cosmos. Slowly, yet with inevitable precision, the aberrant, erring gases were subdued from their blazing, gassy state—through all the stages of cooling—down from the blue-white to the red, then down to the solidifying state, a process which revealed the forming of the planets even as the work continued.

Mighty, internal upheavals engulfed them all; they swelled and reared with terrific inner convulsions; threw up colossal mountain ranges and mighty columns of impenetrable scalding vapors.

The moons of these forming worlds, too, presently broke off and fell into orbits around their parent worlds.

So the work went on, but so intent was Hanzan that he overlooked one vital thing. Concentrating on the two largest planets, he forgot to halt the work on the two smaller ones, with the result that by the time the two center globes had become steaming worlds, entirely to his satisfaction, the smaller ones had become already brittle, dry, and almost devoid of water vapor. Their natural warmth had practically vanished.

Quite abruptly the astronomer comprehended this and gave a violent start. The order to halt at once followed.

"Oh, a thousand pities!" he groaned in self-condemnation. "Out of four fine worlds I've ruined two! I forgot, in the intensity of the moment, that the smaller masses would cool more rapidly. This means that, forever more, they will be infinitely further ahead in their surface conditions.

"And another tragedy, too!" he added, after a moment's thought. "Something, somewhere, has upset the path of the energy beam concentrated on the smallest planet, nearest the sun. See, its axial tilt is all wrong! It means that it will forever turn one face to the sun and the other to the void. Oh, what a bungle I have made of everything!"

"If I may say so, sir," said Morna presently, who had been closely

studying the screen, "the same thing has happened to the vibration concentrated on the second planet from the sun, as well. See, that one also is moving round with one face to the sun. The top of its axis, like the smaller one, is inclined directly to the sun."

Hanzan gazed in speechless despair at the four molded planets, turning slowly on their axes—at a speed which through the ages would slow down by solar and tidal drags—at varying distances from the sun. A long study of the second planet confirmed Morna's remark. The master scientist grunted his utter and heartfelt disgust.

"That leaves only one!" he snapped out. "Two are useless because of axial eccentricity. We'll call the nearest one 'Mercury,' meaning our ancient term for 'Mistake.' The second, also spoiled, we'll call 'Venus,' our term for 'Nothing.' The fourth one has been too far advanced in the cooling stage to be of use, so we will name it 'Mars'—'Outcast.' The center one, the third, alone remains—a warm, properly axiated world at the very dawn of its life, perfect for the propagation of our brain protoplasms. That we will call 'Earth'—or 'Home.'"

He smiled wearily. "You two, Morna—princess, have registered those names in your malleable brains and will hand them down. Probably the future race that will spring from you will find different interpretations for the names of the planets, but the original names will stay as I have given them!"

He smiled again, bitterly this time. "Five truly mighty planets missing, three ruined, and one left! And I had hoped for so much!"

"You have little justification to condemn yourself, Hanzan," said the Lord of Jir, slowly rising to his feet. "To have obtained even one fruitful world out of your experiment is to your undying credit. You——"

He broke off and looked up with a startled expression on his face as suddenly, from outside, there came the beating tumult and surging of a sudden mighty wind. The mass of the observatory began to shake slightly in the grip of an all-powerful gale.

"What is that?" Morna asked, startled.

Without waiting for an answer he dashed to the window. The moment he arrived there he stood stupefied; silently the others came up behind him.

INCREDIBLY near, as it seemed, hurtling through the star-studded sky, was a mighty flaming mass of gas, keeping on a line with the horizon. Farther away still, passing into remoteness, were three other similar masses, moving at a like speed.

"Great heavens above! The missing planets!" Hanzan jerked out huskily. "They have been flung to an unthinkable distance, have taken this long to get here, but the sun has held them! Thank the gods that they must have crossed the opposite side of our world, reducing its surface to cinders with the unthinkable heat. We, on this side, in our impregnable city, are comparatively safe. Even as it is the disturbances from the other side of our planet are causing mighty atmospheric upheavals here."

With that he swung around on his assistants and gave them an abstruse formula to work out. The moment their computations were complete they altered the position of the energy-projectors and, at a word from their master, released six cooling beams.

"This may be successful—it may not," Hanzan muttered, watching the blinding mass near the horizon. "Such colossal bodies will take a great deal of cooling, but we can only try. We managed the sun, so we can manage these smaller ones, perhaps, though, of course, we didn't try to reduce the sun to a solid state. I am training three on this giant nearest us, two on the next one, and one on the third. The fourth will have to cool down through time of its own accord. Where the fifth has gone I don't know."

Steadily, the tremendous force of the cooling vibrations began to take effect, assisted to a certain extent by the great distance from the primal luminary, the sun. In dead silence, heedless of the thunderings and buffetings of the hot and scorching gale thundering through the city, the audience watched.

Then presently came a remarkable occurrence in connection with the second planet.

Ten moons had been flung from its cooling bulk—the first two truly gigantic masses, when suddenly these monstrous pieces came into violent collision, obviously by some gravitational eccentricity that it was not in Hanzan's power to prevent.

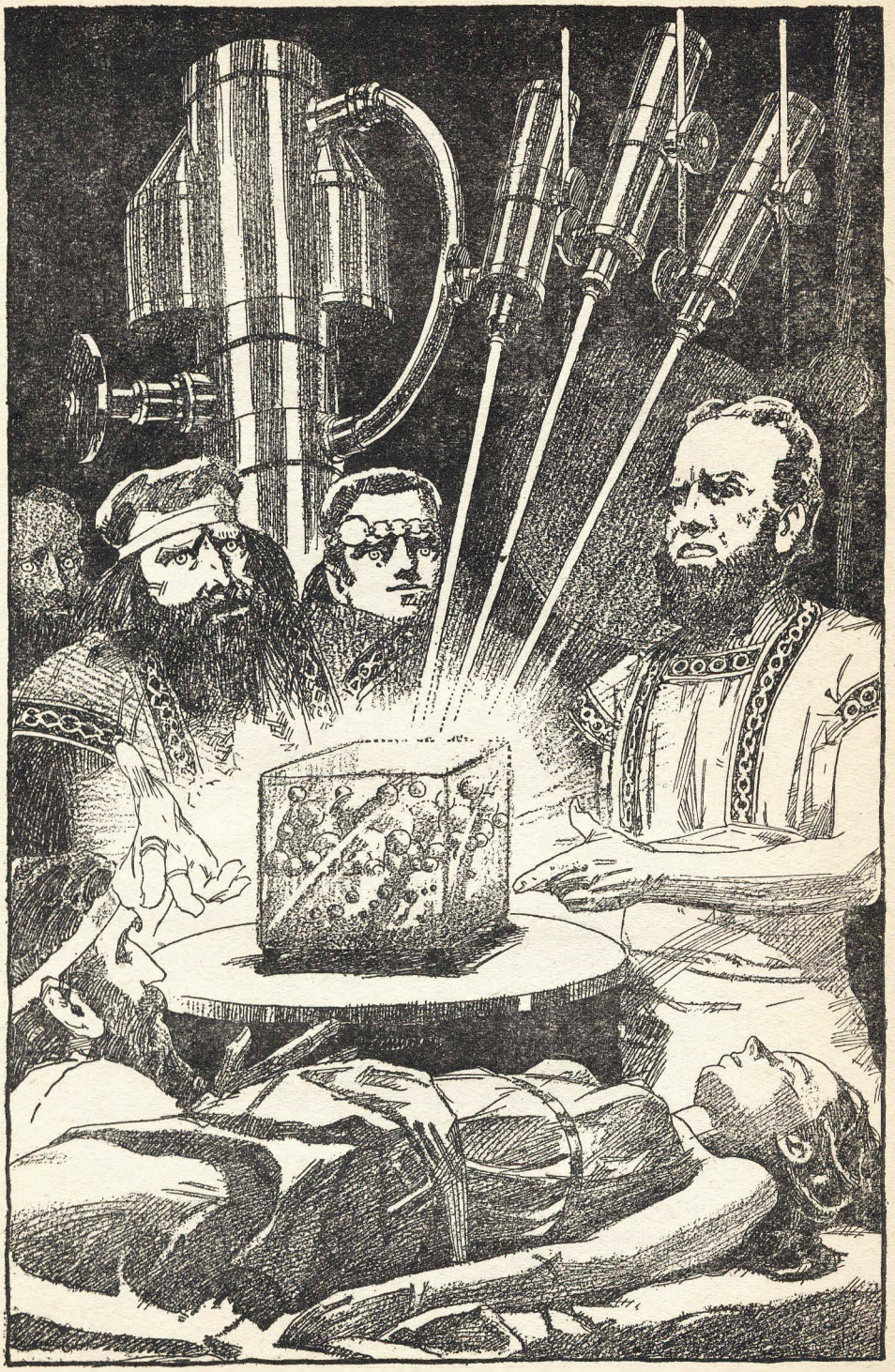
The result was remarkable. Eight moons were left, struggling to maintain their orbits round the now cooling major body, when the cooling rays struck dead in the center of the two interlocked, flaming moons. Almost immediately they began to cool, but so mighty was the gravitation of the planet itself, and so strong the pull of the remaining eight satellites, that the cooling, disintegrated pieces collapsed even further, until at last they were a cloudy mist of microscopic bodies—as compared to the planet—that finally had spread themselves with some unaccountable centrifugal action round the parent body, forming at last into vaguely understandable rings, only visible because they were very slightly tilted toward the Jirian observers.

"Incredible!" Hanzan breathed. "A beauteous creation indeed—finally it will turn into a ringed planet. An astronomical freak! We will name it 'Saturn'—'Rings.'" A troubled frown crossed his brow. "This nearer monster is indeed taking a long time to cool," he muttered. "See—it is still bulging around the equator, not even properly solid. Certainly it *is* solidifying, for its nine moons have been given birth. Perhaps if we stopped concentrating only on one area it might help. One big red spot there is solidified where our rays have touched—you see? Between the drifting clouds? But the rest of the planet is still molten." He fell to thought.

"That one must be 'Jupiter,' your highness," he announced. "That means 'Mighty.' As for the third one we'll name it 'Uranus'—'Lost.' The farthest one, which we have not attempted to solidify, we can name 'Neptune'—'Outermost.' If the fifth one should ever be discovered it must be known as 'Pluto'—'Stranger.' Yes, I must give the order for more universal concentration on Jupiter."

He turned actively aside to give the order. But suddenly the gale rose in all its screaming, devastating fury. The window glass, before which the party was standing, cracked into a thousand splinters—glass which had withstood three thousand years.

The floor heaved mightily with sudden turbulent undercurrents. From somewhere came the sound of



Within the container appeared a saffron mass—the protoplasm.

roaring and rumbling, as of some behemoth flood of water.

"Another groundquake!" Hanzan shouted at last. "The disturbances have caused yet another outbreak of that fatal inner gas. We——"

He staggered a pace, then stopped appalled as quite abruptly a monstrous fissure appeared in the observatory ceiling. Immediately afterward one vast supporting pillar cracked in two, as though of tinder consistency, hurling great masses of stone and metal into the midst of the priceless instruments.

"Quick—out of here!" Morna exclaimed, clutching Axata to him. "The whole place is falling in!"

His words were only too true. The violent ground tremors, caused undoubtedly by the annihilating force of the atomic gas within the planet, became even more constant as the minutes passed. Instrument after instrument smashed to irreparable ruin; electricity flashed and flared as wires were snapped. The vast telescopic reflector presently snapped in two and dropped amid the ruins of the six projector switchboards.

Everything became an incomprehensible jumble of débris on the quaking, shivering floor. In the midst of it all Hanzan stood like one stunned, suddenly bereft of the power to think. Then he was firmly seized by the Lord of Jir and piloted strongly and resolutely from the doomed laboratory into the splintering corridor outside.

Staggering and lurching, they at last gained the open, struggling through the collapsing doorway and down the steps.

Then abruptly—calmness!

As suddenly as it had begun the quaking ceased. There came little thuds and bumps as detached pieces of masonry fell to the ground in the sudden ensuing silence. The mad upheavals of the atmosphere passed. Clouds there never were in this perfectly organized atmosphere of a master planet, but dust there had been in vast quantities. Now the dust was gently settling to the ground again, allowing the stars and the half-cooled mass of Jupiter, sinking below the horizon, to shine forth clearly and without tremor.

Little lights that had been extinguished came up in different parts of the city. To the left the beauteous place was a shambles, but to the right there seemed to be but little change.

"An unfinished task!" muttered Hanzan regretfully. "Jupiter—I cooled only one spot to be habitable, and the rest, molten! Look at his cloud banks! And in the far future our perpetuated race will wonder what that red spot means, and not until they reach the end of their course and incidentally attain the same standard of intellect as we have now, will they realize that an accident caused it. I am disgusted! In the normal span it will take millions of years for a world that large to cool—it will outlive even our chosen planet Earth."

"Why worry over that, Hanzan?" asked the Lord of Jir quietly. "We have done much—be satisfied. Come to my abode and be rested—if anything remains of my abode," he added with grim reflection.

"I am not so troubled about that; I am wondering if the surgical laboratories are still safe," remarked Laznor, gazing over Hanzan's shoulder. "Upon their safety rests the only hope of our race being able to continue its knowledge, for there are housed the projectiles to fire the protoplasma to Earth."

"Yes," agreed Hanzan quietly,

then as though following some thought of his own: "Jir's life indeed grows short. . . ."

IV.

INVESTIGATION revealed that the ground disturbances had taken place almost entirely in the left ramparts of the City of Science, and that portion had been reduced to complete ruin, burying hundreds of unfortunates in the midst of the débris. To the right, it was found that curiously little havoc had been wrought—the lord's palace and the huge surgical laboratories were untouched, save for slight collapses that could be easily rectified. The Earth projectors and amazing instruments for the creation of artificial protoplasm were untouched.

The day following, their last day of life on Jir, Morna and Axata went out together to take what they knew was perhaps their last farewell. Their path took them, almost unconsciously, to the left of the city, through the very midst of the ruins, until at length they came to a heaped-up pile of boulders at the foot of a disintegrated cliff. With mute accord they seated themselves in the full blaze of their very-near sun.

"The last day," said Morna quietly, at length. "I find it hard to believe."

"It is not so much that that I am worrying over, Morna," Axata replied, her chin resting thoughtfully on her hand. "It is the fact that our parting from each other will cause sorrow, and as our brains are so malleable to impressions, that sorrow will be handed down to our successors. Think—men and women capable of expressing sorrow! An outrage to intelligence, is it not?"

"Maybe," Morna admitted. "Frankly, I don't think we are going to produce such a wonderful race, after all. We know already, from what our brains have impressed upon them, that the future race will know both sorrow and love—for we both love each other. Sorrow and love are two big hindrances to progress."

"I wonder——" the girl began thoughtfully, then she looked round in puzzled surprise as a grinding, roaring growl made itself evident behind her.

With astounding swiftness, a mighty fissure appeared in the ground to the rear, from which belched forth enormous columns of dense sulphuric steam and smoke.

"Morna!" she managed to shriek hoarsely, for the first time in her life revealing the forgotten element —terror.

She proceeded no further. The rock on which she was half seated lurched backward into the gulf, carrying her helplessly threshing form with it. Her screams echoed through the chasm.

Instantly Morna was on his feet, the sweat of utter horror breaking out on his face. Never in his life had he known such fright. The girl had gone. True, the fissure seemed now to have ceased widening, but —— No! there was another gap breaking forth in the distance. Everywhere, the surface of the planet was being rent apart by the pent-up gas that no longer could be withheld by walls of stone and metal.

"Axata!" Morna bellowed desperately, at the top of his voice, struggling forward on hands and knees to the edge of the smoking chasm. "Axata!" But his voice only rang in the emptiness.

He struggled forward again, lying on his face, and peered down into

the depths. He could make out now that it was not a sheer drop. There were countless ledges and crevices. The only hope was that the girl had not been hurled outward, for if so she must undoubtedly have plunged into the dark unknown below, into the very white-hot center of the tortured planet.

Intense fear for her safety was on Morna now and, with the fear, a curious, seething hatred—that the planet should have taken from him so ruthlessly the one creature in all Jir for whom he had love and affection.

For a space he lay gazing down, forming numberless conjectures. Perhaps the boulder that went with her had pinned her under its crushing weight lower down—had smashed the life out of her. Perhaps in her headlong drop into the chasm she had been caught between rocks from which it would be impossible to extricate her. Or perhaps——

Morna did not surmise any further. With a sudden fixity of purpose he clambered over the rough edge of the chasm and began cautiously to edge his way down the precipitous, newly riven slope.

It was dangerous work, he soon discovered. The pathway was strewn with countless loose stones and pebbles, and frequently he missed his footing on the narrow, downwardly sloping declivity. One slip, and undoubtedly he would be hurled into the smoky enigma below.

Slowly and with infinite care he progressed, until at length he came to a wider and more substantial ledge. He advanced a few paces, searching with frantic eyes through the smoke, shouting the girl's name, until presently his roving gaze caught sight of something white amidst the steamy riot of crumbled stones. In an instant he had reached the spot.

"Axata!" he breathed, in hushed horror.

She was lying half buried beneath a mass of loose stones, covered to her waist. Streaks of blood were upon her arms and face; her raiment was torn and slashed. Quietly, dumbly, Morna went on his knees beside her and raised her head in his arms. No sign of life came into the ashen face. At last he listened for her heart, and to his unbounded joy detected its slow beating. She still lived, then.

With renewed energy he set to work to fling away the stones that covered her, looking in horror during his operations as he found one heavy boulder that lay across her legs. He uncovered her at last, and despite his strength of character his eyes suddenly brimmed with tears at the sight of the girl's crushed and lacerated limbs.

Again that mad, almost ungovernable rage came within him—that the planet should so maltreat and belabor that which he loved. Then the rage abruptly changed into pity. Silently he picked up her limp body in his powerful arms and set about the task of climbing the slope once more—to reach the top, a ragged, blood-streaked giant, half an hour later.

With all the speed at his command he set out for the city, shouting against the planet and destiny as he went.

LAZNOR stood completely aghast when he beheld the bleeding ruin of a girl that Morna placed reverently and miserably on the operating table in the master surgeon's laboratory. Instantly he came forward and stared at the girl as though

unable to believe the testimony of his eyes.

"What in the name of the gods is this?" he demanded.

Briefly Morna explained. "She still lives," he concluded dully. "What can you do?"

Laznor thought for a moment, then he applied to the wounds an ointment that instantly stopped the profuse bleeding. The administration of a complicated opiate into a vein of the girl's arm had the effect of causing her to relax gently, as though falling into a deep sleep. For a long time Laznor stood surveying her in silence, then his deep-set eyes looked up into those of the disheartened youth before him.

"Tragedy!" he breathed sorrowfully, shaking his massive head. "Tragedy! I might have known it; we are usurping the Creator's power. Last night, the same shadow of ill luck stalked us. One planet out of nine! The observatory was reduced to dust! And now this! *This*—to affect the whole future of women! Axata will live only a few hours longer, and that life can only be under an opiate. The only thing to do is to make the brain-protoplasm projection earlier than we intended. Ah, a thousand pities!"

"How does this so alter everything? For future women?" Morna asked listlessly.

"Is it not obvious, boy?" Laznor demanded, almost impatiently. "Axata's condition will mean that her brain has taken the impressions of pain, of misery, of weakened physical condition, and lack of nervous control. It means that the women who will follow after her will be weaker than the men—will know the meaning of pain, will be prone to hysteria and nervous excitement—instead of the calm, resourceful women I had planned. Always will they be weaker than the man."

Laznor's shoulders drooped in the profound dejection of a man who has made a mighty struggle and failed to attain his objective. Presently he looked up again with curiously lackluster eyes.

"And you, my boy. You also will hand down to men the meaning of fear, of hate, of primitive passion for your mate. Upon my soul, it is atavism! Nothing more or less! All we have strived for—wiped out! We shall make a race—yes; but it will take until the end of Earth's life for it to be what we desire. Until that time it will be a world populated by men and women who know fear, love, and hate. Complex, barbarous beings. By all the gods of the cosmos! If only I had not made your brains so malleable! Still—it is, as it is. The Earth projection will take place, badly marred though it will be."

Laznor stopped and looked at the slowly breathing girl. "I must set to work immediately," he said in sudden alarm. "She has less time to live than I thought. And I must tell you, Morna, that she will never again recover consciousness. She has spoken her last word to you in this life."

The master surgeon looked at the young man's unhappy face with his understanding eyes, then went on more gently, "But when the gulfs of time and space have been bridged—who knows but that you may hear her voice again?"

With that he turned aside and, with the curious detachment so remarkable to the scientists of Jir, became immersed in his work, a trifle impatient at the short notice under which he was forced to proceed.

Morna, dazed by the rapidity of events, stood silently by the girl's

side, holding her limp hand in his. Absently his eyes continued to stare at a curious crossed scar on the girl's left forearm, a deeply chiseled but now bloodless laceration in the distinct form of an X, manifestly occasioned by the ruthless stones that had all but crushed the life out of her. In some odd way that scar fascinated his mind unduly. He pondered upon it—then suddenly he was awakened from abysmal preoccupation by the voice of his father.

"I cannot begin to express my regret for this occurrence, my son," Varnos said quietly, placing a steadying hand on Morna's shoulder. "It seems, even as Laznor has stated, that misfortune is dogging our efforts from start to finish."

"Yes; it does seem so," Morna admitted; then with an effort he aroused himself, admitting his surprise at discovering the surgical laboratory now contained not only his father and retinue, but also Hanzan, and several assistant surgeons and projectile electricians, all working under Laznor's orders.

"I was summoned here by Laznor to witness this last scientific experiment in the history of Jir," Varnos explained, reading the unspoken question in Morna's eyes. "It is my will to be with you to the end—Morna."

"Thank you, father." Morna turned aside, swallowing something in his throat, and with the others began to watch the experiment take on form.

TWO SURGEONS, after making certain that Axata was completely anæsthetized, set to work with electrical knives and saws, performing the most skillful skull and brain operation that had ever been seen. Two incisions were made in the forehead, and into the apertures were fixed two flexible tubes, leading to a monstrous glass container of dull-yellow consistency.

In grim silence the Lord of Jir watched the proceedings from under his heavy brows; Laznor moved rapidly up and down, intent only on the satisfactory outcome of his dangerous yet admirably courageous work.

"The protoplasm—female element number one!" Laznor commanded at last, and within the yellow glass container there appeared suddenly a bubbling, saffron mass, forced up from air-tight chambers below by some pressure system. For a long time the curiously repulsive, jelly-like liquid boiled and eddied, until at length it half filled the container. The pressure force was removed, and with the calm detachment of an expert Laznor surveyed the protoplasm pensively.

"Excellent!" he commented at length. "Very healthy indeed! You understand, your highness, that the tubes which are affixed to the centers of the princess' brain will draw forth by magnetic power given and predetermined cells from the cerebrum? These cells will pass through the tubes by suction and down into the protoplasm. Then an electric current will magnetize those cells, which will ultimately mean they will all join together again by mutual attraction. That, finally, will result in the independent impressions becoming formed into one composite whole.

"Inevitably our specially prepared female protoplasm will seek its opposite in chemical attraction—the male protoplasm—which will, of course, be impregnated with Morna's brain cells. So, gradually, as the law of evolution goes on, intelligent life will arrive, as cell by cell accrues, and more knowledge, stored

within those cells, is released. I fear me the process may be delayed somewhat because, in a sense, the race we are creating will have two things to accomplish—one, to use the impressions they have to begin with, and the other, to use fresh cells to cope with immediate experiences. However, that will be their task. We have given the fundamental—the rest is purely growth and expansion. Now—continue!" he ordered, turning to the assistants.

They turned to their tasks, and the curious suction machines set to work. Nothing was apparent to the eye, however, despite the length of time the engines continued their throbbing.

The girl on the table seemed presently to stiffen. Something of the limpness that had been upon her changed to rigidity. Laznor shot her a quick glance, then raised his hand for the machinery to be stopped.

"Only just in time," he said slowly. "The transference has been completed with not a second to spare, and, quite naturally, it has brought death sooner than we expected, considering Axata's weakened condition. The cells are fairly healthy, as it happens, but they will carry the unwanted impressions of which I told you."

"You—you mean that Axata is—is dead?" Morna asked huskily.

The master surgeon nodded gravely. "Yes, my son. But within that protoplasm is her brain. You saw nothing; the cells as we remove them are too small for visibility. Only by calculation is it possible to know when the work is ended. There, in that container, is the protoplasm from which the women of the planet we have called Earth will ultimately spring!"

"Oh—it's horrible!" Morna muttered, turning away.

"You are overwrought, my son. Our work is supreme!" Laznor returned steadily. "We are perpetuating knowledge. There cannot be a greater achievement than that!"

"Yes, but you don't love Axata as I do!" Morna half shouted, swinging around. "You cannot understand my emotions! All this! It's —ghastly!"

"It is not in a surgeon of Jir to understand love or kindred emotions of the nerves," replied the aged genius with unshatterable calm. "To us, Axata is—or was—a woman, and therefore capable of being the progenitor of a race. Science does not admit love or pity; three thousand years of scientific progress have drilled such sentiments out of us. Science is a calculated art, based on immovable and flawless fundamentals."

So saying, Laznor turned aside and under his directions the brain-impregnated protoplasm was pumped into yet another glass container. Here it underwent, for a time, the electrical radiations of which the surgeon had spoken, then the entire mass was emptied by a small vacuum tube into a cube of glass a foot square. Curious rays of pink and green began to play upon it from amid the laboratory's numberless instruments; at length Laznor picked the cube up and looked at it thoughtfully.

"Inside this box is the perfect vacuum," he commented, "and the walls, though they appear thin and transparent, are capable of standing the pressure of the flight through space and the infinite cold. But upon striking Earth the box will snap apart—it is designed to do so —and the protoplasm will be re-

leased into the warmth and succulence of our man-made planet."

"It is well," said the Lord of Jir steadily, watching with deep interest.

Morna gazed at the box with troubled eyes for a moment, then he started violently as he beheld two of the assistant surgeons lift Axata's body unceremoniously from the table and dump it heavily onto an adjoining one. The action aroused within him again that semidormant sense of helpless passion.

"You've no right to treat Axata like that!" he exploded abruptly and, striding forward, seized the surprised Laznor by the shoulder. "You hear me, Laznor?"

"My son—steady!" the old man commanded sternly. "When will you realize that the body of itself is nothing? When it is dead it ceases to be! Only the brain, the mind alone, counts! You see there a corpse; there is no need to treat it with reverence—that is better left to the primitive little minds. A corpse is useless when the life has gone. It only awaits a disintegrating ray to destroy it before it spreads infection from mortification. Morna, be sensible! You are a child of Jir, and son of the Lord Varnos."

Morna nodded stupidly. "All right. I'm sorry. I'm afraid I'm unstrung. In fact——"

He did not finish his sentence. The master surgeon had turned away and was directing the operation of the Earth-projectile machine. Quietly Morna moved forward to watch, by the side of his regal father.

THE GLEAMING box was placed, with infinite care and reverence, in the heart of a curiously wrought, tubelike instrument, and the keen eyes of Laznor watched the needles upon the dials that showed when the box was in position. At length he nodded, and the aperture through which the box had been lowered was sealed up.

"Continue," he instructed calmly, and stood back.

The electricians turned to their controls and rapidly moved their various switches and plugs into position. An instant later a terrific report boomed through the laboratory, and the projectile cannon shot backward on its massive recoil springs. Smoke that had a tang of ozone in it curled gently around the nostrils of the watchers.

"So, your highness, the female element has gone," Laznor said quietly, bowing. "It will reach Earth, according to our calculations, in about one hundred and eighty-four hours. Next will come Morna. And after him, the trifling job of sending forth the smaller projectiles that will contain the seeds from which plants will ultimately spring. Now, Morna—if you are ready?"

For an instant Morna hesitated, then he inclined his head in sudden complete composure.

"I am prepared," he answered quietly. "Continue!"

"My son——" the Lord of Jir began, striding forward with outstretched hands, then he staggered slightly, as did all in the laboratory, beneath a terrific, rending concussion. The metal floor shook violently.

"Seismic disturbances continuing," commented Hanzan grimly, looking out of the window. "It appears that the destruction of Jir is coming more rapidly than we expected, probably by the crust on the other side being so weakened by the passage of the giant planets last evening. Through this window I can see chasms appearing in every

direction. Jir has only a few hours more to live."

"Proceed with the work—quickly!" Laznor ordered. "We must succeed, otherwise our whole scheme is useless."

Instructions were quickly issued, and Morna laid himself on the table to await the anæsthetic. He was conscious of the fact that the floor and table were vibrating mightily as he lay there.

There came a hissing note. The male protoplasm began to bubble within the containers.

Then Laznor came quietly forward, a complicated hypodermic syringe in his hand. He stood for a moment with it poised over Morna's bared and sinewy arm. "Good-by, my son," he said very quietly. "May the gods protect you!"

Morna swung his gaze around to meet the steadfast eyes of his father, whose arm was raised in the Jirian salutation of deepest respect.

A stab! Morna felt his arm tingle violently, then the laboratory and all it contained—the watching faces, the mighty instruments, the whole area of knowledge and superscience, all vanished in a common blur of gray, which rapidly deepened, fold by fold, into profoundest black.

V.

MORNA felt that he had dropped headlong into an infinite void. For a moment he saw the stars, then his mind was, for a space, incapable of thinking anything.

This phase was followed by a reassertion of knowledge, of a vision of stars and planets, of a world that steamed and contained weird flora and fauna. He caught transient glimpses of unformed creatures that writhed and wriggled nauseatingly in algal slime—little more than advanced amœba on the muddy, filthy shore of a steaming newborn ocean. Cliffs rose up from this shore in impregnable upward reaches of friendless gray.

The vision passed. He beheld more mountain ranges, colossal and unbelievable in their size, and nestling jungles at their feet, of similarly massive proportions. Then, for another interval, he gazed briefly upon creatures of hair and boundless muscle; then upon men and sometimes women with faces that were rudimentarily human. Once in his travels he fancied he fell from a treetop—a long, dizzying flight—and crashed into darkness at the bottom.

Again he took up the amazing thread of time, tracing its ramifications and devious, twining paths through infinity, until he beheld a cooler world, a world where the days and nights were obviously of longer duration. The jungles, too, vanished at length, taking with them visions of gargantuan, repulsive beasts. There seemed now to be a distinct division between human beings and hairy creatures.

So onward his thoughts flew—thoughts now, and not remembrance—until at length he beheld the first signs of man's handiwork, saw the first dwellings, saw them enlarge. Evanescent and mysterious, there rose up before him mighty conquests and supreme vanquishments. War, destruction, famine, and death, striding, ruthless and blazingly flamboyant in their varied arrays, across the face of a miraculously changing planet.

Time and time again he would meet black patches that were meaningless. Hundreds of times he met them and, as he went on, thousands on tens of thousands of times, until he lost count of the intervals.

So onward—ever onward! Until,

out of the unformed obscurity of it all there began to emerge things which he vaguely understood. Humans—natural creatures—men and women, sometimes children. For a flashing instant he saw the faces of his mother and father. Then came a sudden fog; it deepened. Blackness!

With infinite caution he opened his eyes, aware for the first time that he was breathing hard. Vainly he tried to remember what he had been seeing and failed. His memory was a complete blank, except for the experiences of his own immediate existence since his birth in the village twenty-seven years before. Nothing remained in his consciousness of a time before that.

His eyes beheld a small round face and bald head surmounting it—another one, a girl's, framed in fair, wispy hair, rose up eagerly, compellingly, beside it. Behind the heads and faces were peculiar mechanisms and half-drawn blinds.

"Daddy, he lives!" the girl shouted, in sudden mad ecstasy. "Oh, it is too wonderful! You've succeeded in your experiment, and he is unharmed!"

LEE CARNFORTH blinked a trifle dazedly as the girl suddenly flung her arms around his neck and smothered his face in affectionate, fervent kisses. Still groping through the puzzlement that clouded his brain, he sat up, and with the action remembrance of immediate events returned to him.

"Mary!" he ejaculated eagerly. "Oh—Mary!"

And for a moment the two were locked in each other's embrace.

Dr. Ainsworth coughed primly. "My boy—how do you feel?" He assisted the young man from the table.

"Never better in my life," the young man replied, flexing his arms. "Well, has anything happened? I mean, did your stunt work, or haven't we started yet?"

"But, dear, after all you did, surely you——" Mary began, but her father silenced her with a look.

Then he turned to face Lee squarely. "Tell me, Lee, don't you remember your experiences in the City of Science on the planet Jir; remember rescuing the Princess Axata from the chasm; remember the projection of the brain-impregnated protoplasm into space to Earth?" he asked steadily.

Lee gazed at him with blank eyes. "What on earth are you talking about?" he asked in amazement. "I don't remember anything, except getting on this table. Then—then all went black for a moment, and here I am again."

Dr. Ainsworth nodded slowly. "It is quite obvious that when the cell-deadening effect is removed, the memory stored in the under cells completely and absolutely vanishes—is buried," he commented thoughtfully. "I expected that would happen, and to guard against that contingency I took a talking film of all your experiences from start to finish, and, Lee, you had enough experiences to cause me to use up nearly fifteen one-thousand-foot reels of film." He waved his hand to the camera and microphone, facing the now lifeless brain-vibration screen.

"You mean I actually did do something?" Lee demanded in astonishment.

"Far more than that, my boy. You are the cause of all men being on Earth at all!"

Lee looked at the doctor a trifle doubtfully, then a smile came to his face. At length he exploded with

laughter. "Always up to your tricks!" he managed to gasp out at last, through his tears. "That's the funniest thing I've heard yet." He became suddenly serious. "Now do I get Mary?"

For an instant the doctor hesitated. A strange expression settled on his round but earnest face. "This evening I want you to come here at six sharp and be prepared to stay for some time. In that time, with intervals, I shall have the whole film of your adventures projected for you. During what is left of to-day I shall have the film developed in my dark room. Then, when you have seen it, you shall have my answer concerning Mary."

LEE arrived punctually at six o'clock and was immediately seized upon by Mary, who led him into the doctor's own private little theater at the rear of his home. The doctor's own manservant had, for the evening, been commandeered as projectionist. What he was destined to think of the film was a matter for silent debate.

"Now, my boy," said the scientist pleasantly, as he entered, "make yourself quite comfortable, and learn what happened when I sent your mind back through time."

Lee nodded, still vaguely amused, and then turned to watch the screen as the lights went down.

So, for a space of nearly four and half hours, the reels went on—certain trivial details being omitted, but the whole thing pieced together gave, of course, a perfect reproduction of the entire adventure—and Lee, at first incredulous, became gradually spellbound and not a little startled, particularly at hearing voices that had spoken long before the Earth itself had been born. An entire adventure recorded from the impressions originally taken by his own optic and auditory nerves.

At the end of the reels he sat in silence in the restored light, baffled, bemused. Presently he sought the faintly smiling eyes of the doctor.

"I can't remember a thing about it," he admitted, "but all the same it must have been I—Morna. I, then, am the progenitor of all the males of the human race."

"Exactly," the doctor assented quietly. "Let me explain a thing or two. As you went backward from this time you experienced void and saw nothing of the Earth. The reason for that was because you were, if you follow me, thinking *backward,* therefore as each impression was a *former* idea, your knowledge was proportionately lesser. Result—nothing. Only the stars—eternal stars. Ultimately, those vanished also, because you had gone right back to the point where your brain was in the protoplasm and incapable of doing any thinking at all.

"After that, knowledge began to pick up again, then you awoke on Jir prior to a brain test. But just before you got that far, you had flashing glimpses of people, of the City of Science, of rescuing Axata. That, in reverse—and enormously speeded up, were your experiences which followed *afterward.* You see? So all the ills the flesh is heir to can be traced back to the superscientists of Jir."

"What happened before I awoke on the surgeon's table?" Lee inquired.

Ainsworth shrugged. "I don't know. I didn't force your brain back any further; I dared not risk it. Possibly, though, you could have gone backward forever—into infinity. But that need not concern us. Now, regarding the return journey. You dropped down—notice the word

'down'—to the unintellectual state of the protoplasm, then gradually improved as the impregnated brain cells formed together. You saw yourself in the first form of life, then later as a man. In between you detected countless black gaps. Those gaps were *deaths,* where one existence ended and another started, proving my theory that a brain concept does not die with death, but is handed on in the successor, who possesses all the knowledge of his predecessor and gains more in his—or her—life span.

"One experience you had, that of falling out of a tree to death—remember the black gap at the end of the fall?—is still inherited by us, only the memory is so deep down as to be relegated to the subconscious. I refer to the falling dream. That is that memory, handed down through the eons, still there."

"Suppose—suppose a married couple have no children?" Lee ventured. "How then?"

"Well, obviously their particular state is not continued. But as their knowledge is only in common with millions of other beings, what is the result? Their failure to procreate is never noticed any more than a cupful of water from an ocean lowers the sea level."

Lee muttered: "A man-made solar system! To think our solar system isn't natural—and to think we are merely the perpetuators of Jirian knowledge, doing things we believe on our own initiative, yet which actually have been implanted to start with."

"Precisely," the doctor agreed. "Your adventure also disproves the Darwinian theory. The rightful creatures of Earth are the apes—they are the outcome of natural conditions. We humans, are really usurpers, controlling the world only because the Jirians placed us here. That is why no missing link between man and ape can be found; there isn't one! We're two distinct species—the ape, natural; and we, the perpetuators of a long-dead race.

"So, as the ages go on, we shall possess the knowledge of our creators, besides what we have accumulated for ourselves. Even the names of the planets, seemingly spontaneous from Earthly astronomers' minds, are only the names invented by Hanzan, as you heard him utter them. Truly we have found different mythological meanings for them, but what is that?"

"And the giant beasts of early days?" Lee inquired eagerly.

"Again, natural creatures of Earth. Our plants and trees are probably Jirian; we do not know if the seed projectiles were ever fired, since the record ended when your own particular experiences vanished in oblivion."

Lee sat in thought for a moment, somewhat overcome, then looked up again. "All this film has been shown in less than five hours, while I was time-traveling; yet I was there about three days and nights. How's that?"

"Merely an inconsistency of time, Lee. One can live a year in a dream, whereas the actual dream is only maybe a matter of seconds."

"Anything else? I'm all mixed up, you know—but beyond doubt I am the reincarnated son of the Lord of Jir, though I doubt if anybody would believe it!"

"Nobody would believe it," the doctor agreed, a trifle sadly. "That is the drawback to an amazing discovery. Nobody credits it! They'd say that I've made an unusual talking picture, that's all. Oh, yes; there are two other points. The ninth planet has, of course, been found,

and named—as Hanzan said it would be—Pluto. And the disintegrated planet of Jir forms what we now call the asteroids, lying between the orbits of Mars and Jupiter, which is exactly where Jir once stood. Long have men puzzled over that asteroidal belt; at last we have the explanation."

"And their sun? Their artificial luminary?"

"Since it was controlled by Jir, it is obvious to assume that it expired when Jir was finally blown to atoms," the doctor replied. "Unhappily, anything that took place after your unconsciousness is not recorded, since only your brain was the interpreter. And Axata, too, had no view of it, either."

"By jove, yes! Axata!" Lee became suddenly alert. "From the look of that film I was crazy about her. Nice girl, too," he added, half reminiscently. "It's queer, though —I love Mary a darn sight more!"

A strange smile was on the doctor's round face. "Chemical law has it that chemical through the ages will find its affinity," he commented. "Take a look at Mary's left forearm, will you?"

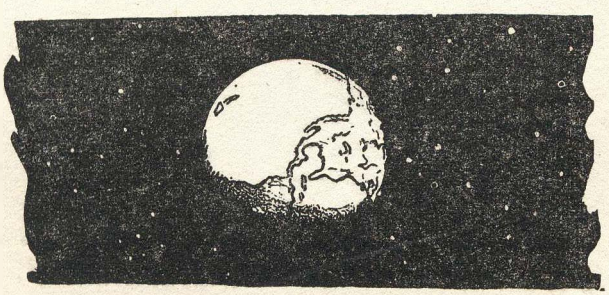
Wonderingly, Lee obeyed, looking closely at the girl's flesh as she pushed back her sleeve; then in the bright light he detected the faintest reminiscence of a scar, the shape of an X.

"Why, I—— Good Heaven, you're not telling me that——"

"All through your passage back through time to here your mates have had the form of Axata, even when in the beast-men era," the doctor answered slowly. "It is an inevitable law that the same two protoplasmic cells that combined in the first instance must always seek out each other in other existences. Remember the brain impressions—impressions destined to leave their imprint forevermore on the physical form. Axata handed down weakness and so forth to women—you handed down fear and rage and sorrow. That brought both primeval and modern wars. But that crossed scar on Axata's wrist was the most predominant visible injury upon her after the accident, and therefore it has left its impression. And again you have found your mate—and will, until some complexity of time puts you apart and breaks the affinity forever."

"Then—then Mary is Axata, reincarnated?" Lee asked breathlessly. "Why don't you send her back in time and prove it?"

"Why do that, Lee?" the girl asked softly. "Aren't you satisfied?"



The termites were holding their savage adversaries by sheer strength of numbers. And now thousands of the blind, defenseless workers rushed madly forward, around and beneath us.

Dr. Lu-Mie

A story of the termites, with a philosophy new to science.

by Clifton B. Kruse

Illustrated by Elliot Dold

ON THE MORNING of the 17th of April, the regular passenger plane flying from Barranquilla to Bogotá, Republic of Colombia, settled upon the landing field two hours before sunup. It had been a monotonous trip with but one passenger besides myself, and neither of us had felt inclined to address a word to the other. Indeed, I had been so predisposed to a bitter brooding silence that the voice of a fellow man would have been an irritation.

Though I was on my way to bury myself completely and forever upon the plantation operated by Seville, Duncan, Ltd., some forty miles in the wilds north of Bogotá, yet my heart and soul were left behind in London—in London with a beautiful English girl whom I must now think of as Lady N—— To me this flying journey across this strange, new, and yet indescribably old country of Colombia was the end of all adventure.

Immediately upon alighting from the plane an official came hurrying with a cablegram for Mr. Robert Warrington. My hands shook as I received and opened it. Could it be from Mae? No; I must remember to say Lady N—— now. However, to my utter amazement I found the message to be a succinct cancellation of my contract with Seville, Duncan, Ltd. The plantation was no longer to be operated by my employers. It had been sold to a French firm almost within the hour of my departure in the plane from Barranquilla.

"You may return by the evening plane, señor," the courteous official consoled me. "Your return passage had already been arranged, as you will note, and you will have the entire day to devote to our beautiful Bogotá."

Naturally I resigned myself to the return; although I assured the obliging official that I was in no mood for sight-seeing. I elected to remain and brood out the hours about the landing field.

"Pardon me, señor, will you?" For the first time my fellow passenger spoke to me. "But seeing that you have a day upon your hands here in Bogotá, why not accept my hospitality?"

I glanced up at him, for he was tall and truly incredibly thin. His words came from the depths of a luxurious black beard above which extended his amazingly long, pointed brown nose. His eyes, too, were shielded by thick, heavily smoked lenses, though nevertheless seeming actually to glisten through this translucent protection.

"I am not a stranger here," the man went on. "My villa lies but a few miles outside the city. You may make it yours for the day, and I

shall return you within ample time to board to-night's flyer."

Indeed, why not?

"Excellent!" And the stranger beamed, although I had not yet agreed. "Just check your baggage. My car will be along shortly. And may I introduce myself?"

His card bore the mysterious name: "Dr. Lu-mie, Bogotá, Colombia."

"And I am Robert Warrington," I replied in acquiescence, "with Seville, Duncan, Ltd. of London. I was to manage one of their plantations near here until this"— indicated the London cablegram—"came to wreck my plans for isolation."

"You are so unhappy, then?"

"Well, rather, or perhaps I should say completely indifferent to life."

"With civilization, then?" Dr. Lu-mie pursued pleasantly as we sauntered a bit beyond the flying field's station.

"There are occasions," I ruminated, "which create a bitterness within the human heart, my friend."

A native in a car of surprisingly late vintage soon arrived, and shortly we were leaving civilization's rather feeble imprint in this, to me, incipient world of Latin America and were speeding on our way south and west of Bogotá. All the while my odd though genially understanding host listened as I talked.

Was it tact, I wondered when I thought of it, or was this strange Dr. Lu-mie actually interested in me as a new-found friend?

DR. LU-MIE had a decided taste for isolation, or so I fancied, as we wound continually in and about the prolific growths of Colombia's torrid vegetation. It was already beyond the break of day before the chauffeur drove into the walled inclosure of the doctor's estate. A large iron-gray mansion stood out like a glaring outcropping of rock amid a vast garden of tropical fungi.

I shuddered with a premonition of disaster at the tomblike structure sticking up so unbeautifully in the center of such a grotesque garden. In truth, the home of Dr. Lu-mie was so different from any other human habitation I had seen as the tall, lean doctor himself differed from other men.

No serving man welcomed us to this home; although I marveled at the noiseless swing of doors as we entered the house and passed down the gray-cemented hall to the reception room, situated, as I judged, near the center of this uninviting house. Dr. Lu-mie bade me seat myself upon the leather divan as he excused himself to see to the arrangements for our breakfasting.

What an odd room! Gray walls, smooth as polished steel and utterly devoid of either pictures or other decoration. The floor, too, was of the same smooth cement and quite without a vestige of any covering. A single round globe suspended from the ceiling gave forth a sickly yellowish illumination.

Besides the divan upon which I now rested, the room boasted but a single marble-topped, iron-legged table and one large lounging chair, finished in the same brown leather as was the divan. Before me an indentation in the wall suggested a fireplace, although no blaze flared up to cheer me. Not that any fire was necessary, for certainly the room was almost uncomfortably warm. But windowless! It seemed a veritable prison, and I shook with some uncanny feeling of unreality about all of this.

To shake off my sudden spell of fear I arose and walked to the "fire-

place." There, sure enough, was a pile of rubbishlike material. To my complete amazement the thing actually exuded a perceptible bit of heat, fetid and with a slight odor of decaying vegetation, yet unmistakably heat radiations.

"Uncanny," I thought, and went back to the divan.

I listened for Dr. Lu-mie, now. Being here in this deuced gray hole alone was an agony to the spirit. All I could hear was a faint, scarcely audible, rustling sound which seemed to emanate from the very substance of the walls.

"You are comfortable, my friend Warrington?" Dr. Lu-mie suddenly appeared before me bearing a small tray which he lowered to my lap.

I nodded, attempting a smile to hide my keen mystification.

"It is odd to you, no doubt." Dr. Lu-mie, still with cloak, hat, beard, and spectacles sat down opposite me. "But first you must eat."

I regarded my bowl of grayish-colored porridge and sniffed hungrily at the steam from the small stone teapot. At least the tea seemed real enough.

"But you also, Dr. Lu-mie, are you not breakfasting?"

He shook his head slowly, the gleaming lights of his eyes showing through the masklike spectacles. "I am not eating now," he said; "later you will understand."

So saying, he sat down and left me to sip my tea. The odious porridge I could not touch.

Nevertheless I must make the best of my bargain, so excusing my want of hunger I poured myself a cup of tea and sat back to sip and revive my downcast spirits in its warm fragrance. I really wanted a bit of sugar, but as my host seemed not to sense the natural union of tea and sugar I would do without it.

Scarcely had I finished half a cup when my strange host, seated as he was quite near the indenture which I called a fireplace, reached to an almost invisible ledge along the top of the place and drew out a long, gray strip of tubing, one end of which he stuck through the massive beard into his mouth. So doing, he proceeded to relax and suck slowly from the thing. My tea chilled as I observed, open-mouthed. The fellow was actually drinking in some substance through the hose which I now noted extended on through the wall.

Mad! Unquestionably I was in the house of no usual eccentric. Chills struck my spine until I quaked. With determined force I checked a wild impulse to get up and run. Possibly the fact that I realized how deeply buried in this South American jungle we were caused me to get a hold on my fidgety nerves.

I began to drop a few pointed remarks about an earlier return to Bogotá than we had first planned. I even suggested that my host permit me to entertain him at one of Bogotá's finest restaurants. I even mentioned a suddenly acquired grip of nausea, suggesting that a dash of open air would be a most essential restorative.

To all of this the incalculable Dr. Lu-mie only shook his head. He said nothing, yet his eyes—what I could see of them—beamed steadily upon me.

"Dr. Lu-mie," I arose impatiently, "I must implore you to excuse me."

Dr. Lu-mie arose, stepped toward me. "I cannot." His words fell softly yet with fearful penetration.

"What manner of man are you?" I cried in sudden desperation. I was feeling a prickly, suffocating heat pressing over my entire body.

My lungs were beginning to gasp for oxygen.

Dr. Lu-mie seemed to shrug his narrow shoulders. "Perhaps it is better that you know, after all."

"Know? Know what? Dr. Lu-mie, I find you utterly incomprehensible!"

"I am sorry, Robert Warrington," he was rubbing his long bony hands together and for the first time I noted that he wore thin, tight-fitting gloves of flesh color, "but I had hoped to meet you and know you as man to man."

He paused. He seemed to be groping for words. "The truth is —I am not man."

"What?"

He nodded. "I don't wish to frighten you. But you have asked for it. I repeat, I am not man."

"Not—not a man?"

For an answer he slowly lifted his hands, grasped the bushy black beard and with a few deft twists pulled it free of his face.

Face did I say? Not face truly! My blood seemed to congeal with horror. I was paralyzed at the ghostly awfulness of it with beard and spectacles gone.

Long, narrow, and glistening brown. A snoutlike thing for a mouth where a chin should have been. And the eyes! Indescribable disks without pupil or iris as we think of the eye parts. Compound eyes, they were, with glinting refractions from thousands of points.

Next he pulled off the skinlike gloves, disclosing long, saw-edged paws. He reached up to part his cloak. I covered my eyes and cried out in sheer terror. The thing was awful to behold. My senses reeled. I became ill. The thing which called itself Dr. Lu-mie carried me to the divan. From the hideous snout the same soft voice attempted to console me.

"I am sorry, Robert Warrington, but you are not to fear."

My attempted replies were incoherent.

Dr. Lu-mie now removed his outer garments while I looked on in dumb horror.

THE BODY was long, truncated, and with the lower portion not two feet above the ground. His legs were chitinous, gray-brown appendages starting from a juncture of his body well above the middle. He was four-handed if I may term the upper appendages hands. One pair had been completely withdrawn during his masquerade as a human being. Then beneath his wig the smooth, coppery head bore two long antennæ. The thing had neither nose nor ears as we understand them.

"You are——" I gasped.

"Lu-mie," the thing answered me; "the termite who became a man."

"Termite!"

Lu-mie nodded, his myriad-faceted eyes gleaming down upon me. He now appeared as the man-sized insect which he truly was.

"Then this," I came to my feet, "is not a house. It is a termitarium."

I understood the gray-cemented walls, the absence of windows, the stifling, humid atmosphere so nearly devoid of oxygen.

Like one insane I whirled from the spot and dashed for the door, shoved it open violently, and ran with fear-inspired impulse down the hallway.

But where was the outer door? The passage was without sign of a single crevice and would have been quite without light were it not for the opened door from the lighted room. Lu-mie stood in the doorway, showing no indication of haste or

impatience save for the slight wavering of his two antennæ which now stood erect above the broad, shining forehead.

Deliberately he approached me, but now he had ceased to walk erect. His body dropped to a horizontal position, and he moved forward upon four bony appendages in true termite fashion. He was no longer Dr. Lu-mie the man, but Lu-mie the termite of human proportions.

I felt the long, hard forearms about me. They bound me rigidly to the soft, pulpy body. I was lifted and carried back to the one lighted room. Lu-mie laid my trembling form upon the divan, held me there. I became aware of an almost inaudible sibilation followed by the soft scurry of millions upon millions of tiny feet. My body tingled with the movement of countless tiny insect beings crawling over me. After a while Lu-mie released his hold.

I tried to spring up, but could not budge from the spot. I was literally glued to the divan, helpless to do anything save move my eyes and lips. Cold sweat exuded profusely, and I shook with convulsive chills despite the uncomfortable warmth of the place. Lu-mie stood before me looking down with that utterly expressionless face of the termite. The eyes glittered in the yellowish light, and the tubular mouth vibrated fishlike as he formed the low pitch of human speech.

"I have brought you here to teach me more of the ways of men," he was saying. "It is for you to choose whether you will do so or not."

"I'll not do it," and I cursed him in my anguish.

Lu-mie gently shrugged the collarlike shield around his body which corresponded to his narrow shoulders. "Very well. Think it over, and while doing so remember that your body is merely a substance—not a being—to my little people."

"Eaten alive!" I shrieked in horror.

"But no," Lu-mie continued; "to them you would be merely a fungus bed, the soil of their gardens. Do I make myself clear?"

Was it hours or days that I lay there? I could not tell. I knew only that life was bitterest agony. My mind swirled in fiery flights, yet my body weakened. I longed, even prayed, for death. Yet I could not die. Gradually the tempest of my individuality waned. I grew apathetic, a senseless, seemingly incorporeal and irrational consciousness.

I remember that Lu-mie came and went with periodic frequency. Now and then he would place a hard tube in my mouth. Sweet, sticky drops of some pungent substance would pass from it down my throat without effort upon my part. At first the aromatic stuff was nauseating, though as the operation was repeated again and again I felt an increasing longing for it. Fortunately I neither dared nor cared to think what the stuff might be. Though I possessed eternal consciousness yet had I ceased really to be.

As my strength and reason gradually returned under these forced feedings of Lu-mie and his termite brethren, I was permitted to sit up, though with my feet still glued to the divan in a cast of the gray termite cement.

It became increasingly clear to me why I was imprisoned. At periodic intervals Lu-mie would come to me with his endless questions. I am tempted to say "daily," despite the fact that within termitaria the terms day and night are meaningless, for the termites live in eternal darkness save those higher casts of the crea-

tures which are capable of reproduction.

Though the normal termitarium is a social state comprising up to a million workers, soldiers, and the three orders of kings and queens, this community ruled by the termite king Lu-mie must have numbered many millions. Of course up to this time I knew scarcely anything of my captors save the regular attention paid to my physical needs by an organized army of the blind, soft, and unpigmented little workers. At those times the single light would be extinguished and not relighted until the thousands of extraordinary small creatures had departed for other duties in this gigantic old termitarium.

LU-MIE and I were fast becoming pupil and teacher. He would question and I answer to the best of my ability. I gathered from these interviews that he had made but few excursions out into the odious world of light and humankind. Finding me and deciding, as he did, on the spur of the moment, to abduct me as a teacher to save many future trips to the outside world was in Lu-mie's mind a truly fortunate affair. The driver of the car, I learned, was an illiterate Indian who lived in the jungle near by and occasionally served Dr. Lu-mie without suspecting his employer's identity.

What about my country of England? Why did we employ the types of social and political assemblage common to *homo sapiens?* What were the eventual aims of human nations? Oh, the countless questions, the innumerable angles of human life to be divined by the indefatigable Lu-mie!

"But your purpose, Lu-mie," I was provoked at last to question him, "why are you as you are?"

"You learn so little," Lu-mie mused as he replied. "*Homo sapiens —sapiens* indeed! What does your kind know of wisdom? Do you realize, Robert Warrington, that your type of beings can never rule the world?"

"But we——"

"No, no!" Lu-mie interrupted. "I grant that mankind is at present supreme. But hear me. The termites have lived on this world for uncounted ages. Your own scientists have discovered the fossil remains of my ancestors who lived as far back as the Tertiary period. And we have evolved from the simple cockroach characters to the great social units of the Metatermitidæ. Now heed this. I tell you much because you yourself are slowly becoming one of us, my friend. We are not individuals as you man-beings conceive of individuality. Begin with that. It is your first clue to understanding both Lu-mie and the regular or normal termites of the patiently conquering Metatermitidæ.

"Every termitarium is a true individualism, Robert Warrington. We termites are but the units of a whole. This particular termitarium is not the kingdom of Lu-mie as you fancy it, but rather it is itself one individual being of which Lu-mie is but a part. Do you follow? See how we live, work, eat! Our workers and soldiers do not themselves consume one drop of our diet of cellulose and fungi! It is given for only the larvæ and the kings and queens of the three upper orders of life to consume such raw food.

"From our bodies we exude the food in proper form, plus the delectable exudates of our own persons and the glandular secretions of

our completely adult bodies. This partially digested food and the exudations of termite bodies circulate from pore to mouth continually, even as your own body cells pass on the superior food material from body cell to body cell. A termite, you see, is not an individual; he is merely a body cell of that true individuality which is the whole of our completely socialized organization known as a termitarium."

I nodded in stupefaction. "But you, Lu-mie, are so different. You yourself are one individual."

Lu-mie's truculent body quivered with some indefinable termite emotion. Perhaps it was amusement at my human stupidity.

"Yes, Robert Warrington; I am different. In ways I am an individual. Nevertheless it is for a purpose. Generations ago, how many I dare not suggest, the august ancestors of this termitarium conceived in their collective will the desire to conquer this world and let it be solely the habitation of termites with only our domesticated beetles and termitophilus flies. So it was that after the nuptual flight of the first-order king and queen who established this termitarium, a certain particularly promising egg was set aside and especially fed for the singular purpose of producing individuality.

"The emerging larva was never permitted to taste the common exudate of his fellow termites. His food was especially prepared from certain fungi and never recharged with the common fluid. Also certain skillful operations were performed and a special silk spun so that this larva slept in the nymphal state for ten of the seasonal changes which you humans call years.

"Thus the larva grew to giant proportions due to the glandular changes, and because of this lack of exudations of his fellow termites he failed to become an integral part of the great termite body. Thus Lu-mie was given partial individuality."

"Unbelievable," I exclaimed.

"Only to the limited individual mind of a human creature," Lu-mie resumed, "for to a termite nothing is impossible once the common mind of the termitarium has willed it to be. Only time is required, and to us time is nothing. Our little cells may be born and die, but the termite mind, incased not in one fragile little brain but in millions—and millions yet to come—does not cease to be."

For minutes we sat in silence while my numbed brain sought frantically to assimilate the incomprehensible. A thousand questions flared up in my mind. Where should I begin my questioning?

Suddenly the room resounded with the scurrying feet of thousands of termites. The walls whispered. A tense, awe-inspiring air of uncertainty pervaded us.

Lu-mie had suddenly become taut. His long antennæ rose stiff. He poised upon his steellike appendages. What message of the greater individual, the termitarium, was he receiving?

Lu-mie stood before me tensely, his myriad-faceted eyes gleaming strangely. "I must go," he was speaking; "danger threatens. Our enemy, the great red ants of the fields, are invading our fungi gardens."

"Let me go!"

For a moment he hesitated. His soft snout scented over my body a moment. "Your word?"

"I am bound. How could I escape, anyway?"

"Perhaps it is the taint of individuality which provokes me; neverthe-

less I call you friend. Yes, you may come—— But wait!"

He seemed to call. The light went out. Soon the rush of thousands of worker termites made their whispering rustle over the floor. Lu-mie was commanding them, though in a pitch of voice I could not quite understand. The creatures covered my body. Now I felt myself covered with a sticky, aromatic stuff from head to foot. The termites had left. Lu-mie was cutting away the plaster which bound my feet.

"Come," he whispered.

I GRASPED an armlike appendage and followed Lu-mie out of the room and down the long passageway to a doorway. At his command I dropped to my hands and knees and crawled many feet along a tortuously winding tunnel.

We were somewhere deep in the labyrinthine caverns and tunnels beneath the room of my imprisonment. Though I could not see I could hear and at times feel the hurried movements of termite soldiers. We went on and on, but not alone. Before and behind us marched the robotlike fighters with soft, crunching tread and the tense, excited clicking of thousands of mandibles. It was a march to war.

The passageway lightened. I could now see, though indistinctly. In regular masses the fighters moved forward, keeping an even pace and maintaining definite fighting groups of two to three hundred termites. Save Lu-mie alone these fearless warriors were no larger than small ants, yet in that determined assemblage they appeared invincible.

Now the sounds of struggle—shrieks and shrill battle cries. Antennæ were rigid. The steel against steel clash and clank of metallic mandibles gave the ringing sound of ten thousand swords. My nerves tingled.

Now the scene of battle! A broad passageway, thick with fungi, gleamed a bluish white under the first radiance of the sun it had ever known. Scarcely twenty feet before us appeared a huge gap nearly a yard in width through which poured row upon row of shining red bodies. Great creatures were they with flying mandibles. The warrior ants charged with a fury no human might feel. Utterly fearless was the charge and with a determination far more fervid than any man-against-man attack.

The red invaders were nearly three times the size of the termite defenders. Their huge, knifelike mandibles were hurled with skillful hate. A convulsive wave of thousands upon thousands of fighting creatures toiled, shrieked, and died, cut beyond recognition. Now came the charge of those brigades which we had accompanied. Mandibles flung high and chopping savagely they tore straight for the slowly advancing roll of battle. Now the line tightened. The carnage became incredible. For a moment the line wavered; now it assumed new strength; was pushing back again toward the broken wall.

The gap between us and the frenzied soldiers cleared. The termites were holding their adversaries by sheer strength of numbers and even more reckless savagery than that displayed by the red ants.

With the line holding, thousands of the blind, defenseless termite workers now rushed madly around and over us. Their bodies formed a pallid, moving carpet. On to a point midway between us and the line of

battle they advanced and stopped. Their work was just beginning. With a zeal no human worker could show, they emptied their bodies upon a line running straight across the passageway. Millions of droplets of excreta were poured forth. Thousands of jaws chewed and spat a thick, viscous fluid.

Now inch by inch a wall was raised—inch by heart-breaking inch as the thousands of warrior termites out there beyond thrust and cut and held the ravaging red ants to the line. An hour passed and yet another. Now only a tiny gap loomed at the top of the wall. Still the workers gave their all. Now came total darkness. Silence. Intense weariness.

The termitarium had been saved. But at what a cost! How many thousands of brave, determined soldiers had died on that howling, maddening, cutting line of battle! I shuddered as I followed Lu-mie back on our crawling, twisting journey up to our room. For me Lu-mie's words had become vividly real. No individuality this!

As we made our slow way back, I felt hundreds of the blind worker termites crawling upon my body. Nearly exhausted from their arduous task of wall-building against time and with stomachs and intestines now quite empty, they fell to eating the viscous fluids smeared over my own body. This I knew was chiefly exudate, saliva, and even bits of partially digested food particles which Lu-mie had seen fit to have put upon me. Had this not been done many of the frenzied fighters might have turned upon me as an enemy. Now my defense had become a delicacy to my starved captors.

Lu-mie turned off. We were now moving in a different direction. The passage way sloped downward again. Not long after, we entered a large cavern. To my gratification as well as amazement I could see. About the room fetid piles of rubbishlike substance gave off, it seemed, faint radiations. Not much, yet quite enough to enable my eyes, accustomed to absolute night, to see clearly.

Then I saw the queens. Five masses of whitish pulp, each nearly half a foot in length, lay helplessly accepting the ministrations of the workers. The blind termites fed the queens, coming in a constant file with their droplets of food which they regurgitated into the gaping mouths. Hundrds of the workers lapped in trembling ecstasy the luscious exudations pouring from the huge pores in the puffy, queenly bodies.

Then I saw the lines of workers going to and from each queen. Going, they were burdenless, but coming from her each bore an egg. Among the Metatermitidæ, of whom Lu-mie was so proud, the gigantic, utterly helpless queens lay eggs with clocklike rhythm at the rate of one a second.

"New soldiers for those who died back there!" Lu-mie whispered with the pride of an unconquerable people.

It was a veritable factory. Terrifying in its prolific output, ominous in its threat to other living beings.

We returned to our quarters, both completely exhausted. Although Lu-mie's face was incapable of expression, yet I could tell by the quivering appendages and the drooping antennæ that he was more shaken by the recent turmoil than he cared to admit.

Nevertheless I felt a new surge of

strength and hope within my mind. To-day's adventure had given me an idea. Alone I was helpless. But now, I thought, might I not enlist the aid of the termitarium's greatest foe? If I could only make myself understood to the red ants, let them know that I was an ally, could we not together destroy this hellish place? Despite the fact that during the moments of battle I had no thought of escaping, for indeed my numbed senses had actually rejoiced at the courage and resourcefulness of the defenders; nevertheless I felt myself now more nearly rational.

But why hadn't I made a dash for liberty through that break in the wall? For a long while I could not understand my utter lack of wit.

Gradually I saw the truth. What had Lu-mie mentioned about the common mind of the whole group being formed in the circulation of exudates, digested food particles, and ejecta from body to body? I sickened as I reasoned my way out of the dilemma. The feeding tube which had been regularly stuck in my mouth. The sweetish, pungent sirup which had poured through it into my own system. And Lu-mie's own remark about my becoming more termite than human.

My blood curdled with the ugly thought of it. I had been fed upon the common stuff of the termitarium. I had been filled with it, and my own mind had been dulled by the powerful exudates. I shuddered. I vowed never again to touch it. But what else could I eat?

My fate was clearly before me. Obviously I dared no longer consume the stuff from the bodies of my captors lest my own free mind and human individuality be completely warped. This meant immediate action. Whatever I would do must be done before my body should become hopelessly weakened by lack of any food at all.

Lu-mie was in the room with me now, his weary body slumped upon the floor with deadening fatigue. He had sipped of the tube and fallen into a lethargy which rendered him unconscious. Just how lost to the world he might be I feared to think. None the less I had to chance all. It was life or a living death for me.

I AROSE slowly, my eyes held to the still figure of the giant termite. My first thought was to leave the room undetected. Deliberately, step by step, I moved to the doorway. Here I paused. Lu-mie had not stirred. Once in the hall I made frantic plans. Which way should I turn? I thought of the scene of battle. That way doubtlessly led to some long tunnel extension used for food forages. Without definite plans I started on, dropping to my hands and knees as I entered the low-ceilinged cavern and tremblingly felt my way on and on through the thick, hot darkness of the place.

Turn after turn, through tunnel after tunnel and cavern after cavern I burrowed for hours. My back ached and the palms of my hands as well as my kneecaps became raw. Still I crawled on with a delirious hope and a growing fear. Darkness and fear! Heat and stench!

Suddenly I came upon an apparently straight tunnel leading out I knew not where. My heart leaped with new hope. Clearly this must lead somewhere away from the termitarium.

I had to lie down to catch my breath and ease my throbbing muscles. I rolled the ragged bits of my trousers up over my knees. My shirt went for hand bandages. The air was so rare that my heart

pounded and my lungs burned for more oxygen.

Scurrying feet! A tense charge of something in the air! Approaching termites! I recognized the heavy rustle of innumerable tiny feet. I was on my hands and knees. I shook convulsively with nauseating fear. But I crawled on, exerting every atom of my strength now in a frenzied dash on and on through the narrow, black tunnel.

Suddenly I crashed headlong into a wall. The tunnel had ended. Frantically I threw out my hands. I felt myself in a small cavern. But I could stand up. My knees cracked with fiery pain as I raised myself. I stretched my hands upward. Still nothing above.

Yet the room was not black dark but only shadowy gray. And I drew sweet, oxygen-filled air into my lungs. But where was the outlet? Somewhere above surely. I strained my eyes. Yes; there appeared a ledge above me, and beyond it extended another tunnel which seemed to give out a few feeble rays of light. That was indeed the way to the outer world.

Behind me the horde was advancing. I could hear them distinctly now.

"Robert Warrington!" It was Lu-mie's voice calling.

I braced myself with back to the wall. Above me, beyond my reach, was the way to freedom. Tears of rage and despair flooded my eyes. Bitterest irony!

But I would never go back! My fists were clinched. I would sell my life dearly—though futilely as I knew too well.

Then Lu-mie stood before me. Behind him the tunnel teemed with warriors and workers in brigade after brigade. But Lu-mie did not advance. He stood there, great termite that he was, and surveyed me.

"Robert Warrington!" His voice was oddly low.

I tensed myself for the struggle which I thought inevitable. Still we stood there, motionless, tense, each of us trembling with the mysterious emotions of our separate kinds.

I prayed in awe. "Were you but a man, Lu-mie!"

A moment of silence.

"And you!" Lu-mie's voice choked with emotion. "Were you but a termite—my friend!"

"Lu-mie," I gasped, "you understand?"

"I understand," he replied simply.

Suddenly one of his handlike appendages stuck out. "Like men, my friend."

I reached out, grabbed the claw. We held the clasp, our eyes fixed steadily upon each other.

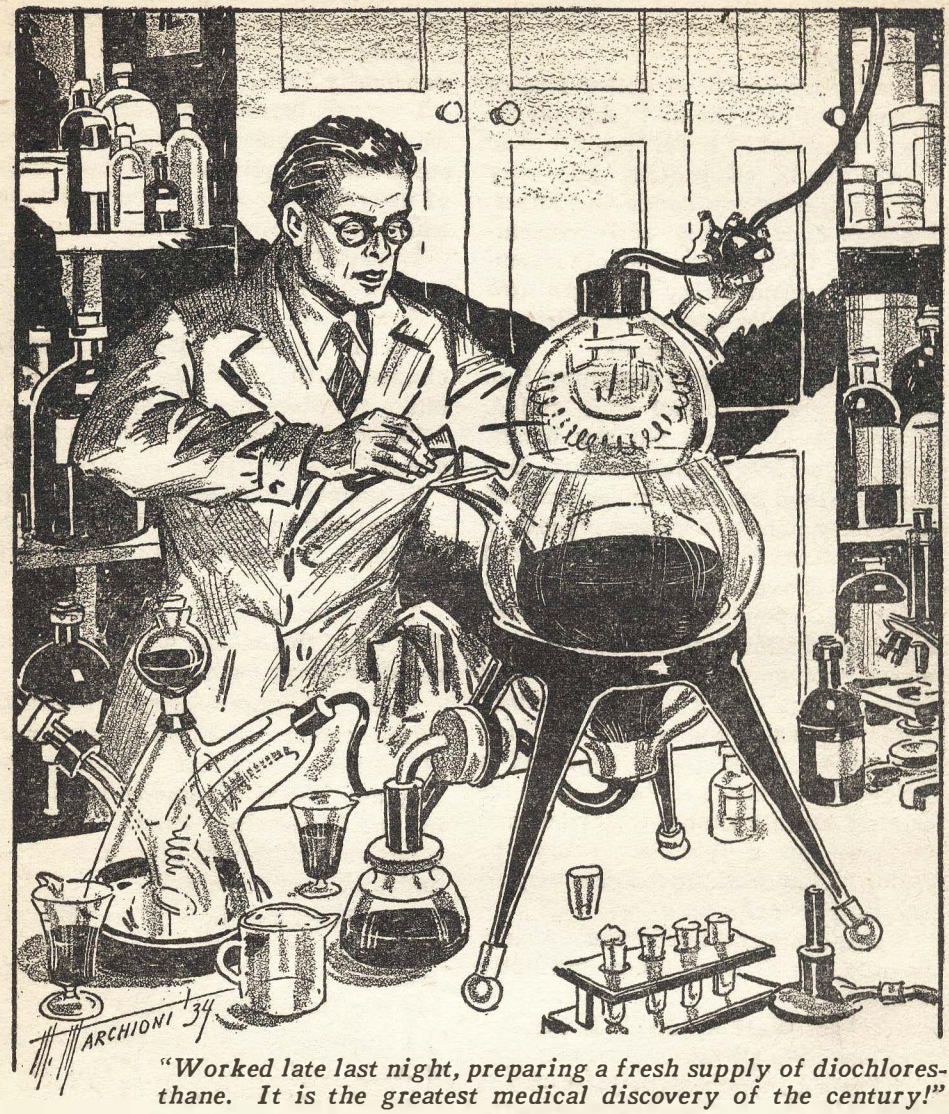
Now Lu-mie came forward. "Above you is—human freedom." He spoke with effort. "Follow the way and you will come to the house of the man-being Juan. He will give you clothing, human needs—and take you to Bogotá."

He lifted me bodily so that my hands reached over the ledge. I crawled up. Ahead of me I could see the faint, bluish light of day.

I turned to call farewell to my strange captor-friend. "You are a man—a real man—Dr. Lu-mie!" I gasped out.

"And you," the sad voice returned, "are indeed a true termite of the first blood, oh, my brother!"

Thus we parted; I to my human world of which I now feel so inexplicably apart; and Lu-mie? What of him? Truly both termite and man in that moment of revelation learned that life itself—the nobler life—is greater than any earthly kind.



"Worked late last night, preparing a fresh supply of diochloresthane. It is the greatest medical discovery of the century!"

(Extracts from the diary of Dr. E. J. Loris-Hayle, M. D., Ph. D., Sc. D., etc.)

MARCH 14—Tried my new anæsthetic on rats. No external effects visible, but incision of skin and other tests indicated internal changes affecting nervous system. Diochloresthane would seem to cause complete anæsthesia or insensibility to pain but without loss of consciousness. Correction: rats have no consciousness. Must experiment further with diochloresthane.

March 20—Performed two appendectomies and removed one tumor to-day. Tumor patient a woman of sixty who had neglected tumor behind left eye for many years. Protrusion of eye, atrophy of optic nerves, sympathetic atrophy of left salivary gland, most pronounced

The Nerveless Man

A trip into medical science with a surgeon whose experiment proved——

by Donald Wandrei

Illustrated by M. Marchioni

symptoms. Advanced age of patient and weak heart made general anæsthetic impossible. Used local. Patient suffered great pain, but operation successful. Diochloresthane would be a blessing in such cases. Novocaine, morphine, ether, chloroform, et cetera, all have limitations. Urgent need for an anæsthetic that is one hundred per cent effective, but without attendant loss of consciousness.

April 3—To date, twenty-three intravenous injections of diochloresthane in rats, dogs, and cats have been completely successful. No loss of awareness evident, no sense of pain detectable in any of the experiments, in spite of incisions, excisions, vivisections, et cetera. New anæsthetic appears to paralyze all nerves. Wonder if human beings would give similar reaction? Complete anæsthesia without loss of consciousness has never occurred in medical history so far as I know, excepting, of course, cases where hypnosis, dementia, shock, or other abnormal conditions were present.

April 6—Injected two cc diochloresthane into foreleg of dog. Tests for sensitivity to pain gave strong reaction at fifteen and thirty seconds, trace of response at forty-five, no reaction after sixty seconds, yet the animal walked, barked, exhibited full control of its muscular system. Confined it and amputated left foreleg. Loss of blood surprisingly small. Blood circulation, pulse, et cetera, normal.

Explanation seems to be that the new anæsthetic not only paralyzes nerves but also causes intense molecular cohesion of blood on exposure to air, or else expedites coagulation. Further research necessary on this point. Proceeded with vivisection of animal. Finished in two hours, when animal died, with no indication of pain, after removal of heart.

Experiment an extraordinary success. Full vitality, liveliness, and animation present to moment of death. My new anæsthetic seems to cause not only complete and perfect insensibility to pain but also to last indefinitely. As a consequence, the subject lived well beyond the point where vivisection under the influence of other anæsthetics would have caused death. Possibilities of the discovery are tremendous.

I am so excited that I can hardly keep my mind on my practice. Could make a fortune from my discovery, but don't want it. Will broadcast my anæsthetic to the ends of the earth, give it free to humanity. The millions of sufferers from cancer, ulcers, rheumatism, leprosy, and all the other dreadful scourges of man will not be cured, but pain will be gone forever. Greatest

medical discovery of the twentieth century. Only step left is to try diochloresthane on human subject to verify symptoms and properties indicated by experimental subjects.

April 11—Opportunity knocked, and I answered. It happened on the spur of the moment. Worked very late last night completing my laboratory studies of the effects of diochloresthane on animals. Used up my supply and prepared a fresh batch. Had the bottle in my hand when phone rang. Stuffed the vial in my pocket. Talked quite a while with Charlie over his leukæmia research. Almost mentioned my discovery, which might have subsidiary influence on white or red corpuscles, but decided to wait for final test. Felt tired and turned in.

AT HOSPITAL this afternoon, emergency patient brought in for immediate operation. Attractive young man of about twenty-eight, looked intelligent, good physique, victim of automobile accident. Diagnosis indicated punctured lung; severance of carotid artery; lacerations of scalp, fracture of skull, and probable concussion of brain; displacement of left kneecap; left leg broken in two places between knee and ankle; general body contusions and possible internal injuries.

Patient conscious when brought in. Total anæsthetic dangerous in his condition, locals inadvisable because of shock, time requirements, et cetera. Immediate operation essential. Remembered vial still in my pocket and acted at once. Injected five cc diochloresthane. Results splendid. Patient suffered acute pain up to time of injection, relaxed completely within a minute. Sutured artery. Trepanned where piece of skull was pressing on corvex. Removed splintered rib from lung and closed puncture. Set broken leg and taped it in splints. Spent whole afternoon working as I've never before worked on one patient. Not a sound, cry, or protest of any sort from him. Talked with him while I worked. Repeatedly asked if he felt any pain; he always replied "Not a bit of it."

My new anæsthetic has met its last test. Diochloresthane in its first human application has proved itself everything that I dreamed. Pain, the dread specter always hovering over mankind, is gone forever. There need never again be the torture of nerves to any human being. Colin R. Leeds, track man, fencer, and star athlete of last season, has the honor of being the first to show humanity the efficiency of my anæsthetic.

April 12—Made thorough examination of Leeds for postoperative developments. Patient responding well, though condition still serious. Asked if he wished hypodermic. He declined with remark: "Thanks, doc, but I haven't felt a bit of pain since I was brought here." I was puzzled. After effects should include excruciating pain for two to seven days. Can it be—but no; that seems impossible.

April 14—I am becoming worried about Leeds. Recovery all that could be expected so far, but patient has not once complained of the least twinge or degree of pain. Pricked him with pins while examining his spinal column. No reaction. Either patient is under influence of persisting shock, which appears unlikely, or effect of diochloresthane has not worn off, which appears incredible.

Leeds has begun to inquire about his condition. He spilled hot broth on his hand yesterday, but felt nothing. He asked me the reason, and

I evaded direct reply by telling him broth must have been cool and he was mistaken in thinking he saw it steam. Also, hinted he had been given sedatives in his food to prevent the occurrence of pain.

April 25—I can no longer deny the truth to myself or to Leeds. He is a nerveless man, may always be such. Diochloresthane was too perfect an anæsthetic agent. It paralyzed Leeds' nerves not only temporarily, but apparently for all time. Patient has full consciousness, muscular control, locomotory control, but complains that he cannot feel objects he touches, and is certainly insensible to pain. Told him the truth. The joy on his face made me miserable. He thought he had been given great blessing. Didn't have heart to tell him the full implications. In any case, I may be wrong. Hope so.

Spent to-night going over my formulæ in an effort to discover a neutralizing agent. The anæsthetic seems to have permanently deadened, numbed, or altered Leeds' nervous system so that he cannot experience pain. Yet he can see, hear, and smell as well as before. Says he tastes the difference between foods. I am not sure how much of this is true, and how much is merely memory- and experience-conditioning that makes him think he tastes and smells things when actually he does not.

May 15—Leeds recuperating in amazing fashion. I presume his splendid physical health up to hour of accident has pulled him through. He looks cheerful, has stolen the heart of every nurse, and is liked by every one on the hospital staff. But I have noticed a thoughtful, almost puzzled, expression on his face once or twice. The queer look makes me uneasy. I know I am to blame, but it is doubtful whether he would even be alive if I had not used diochloresthane.

Still, Leeds is likely to remain the first and last human being upon whom it will ever be used. Have given up hope of its effects wearing off. Leeds is a nerveless man, absolutely insensible to pain. He will go through life, a pariah in one sense, free of physical agony, but in continual danger for that very reason. Must keep a careful watch over him after he is discharged. Feel personally responsible for his welfare. No progress with my efforts to discover a counteragent to diochloresthane.

May 29—Leeds discharged. Not completely recovered, but hospitalization no longer necessary. Wondered how to broach topic of check-ups, but he saved me the trouble by asking if I wouldn't drop in occasionally to see him.

May 31—After finishing charity cases yesterday, made a call on Leeds.

"You know, doc," he said, "I've been thinking about this stuff you used on me. Will its effects last all my life?"

I faced the issue squarely. "I hope not, but so far as I know, they will. I am sorry to add that you will need to be under constant medical supervision."

"Why? For that matter, I have my own family doctor."

I may have flushed at the implication. "My practice is already so large that I am forced to limit the number of new patients. I do not care whom you see, nor will I ever send you a bill for any call I make upon you, but you must keep in close touch with a competent physician. Your life depends on it. Nature has always used pain as a warning that some part of the body is

not functioning properly. You will no longer have that warning.

"In a sense, you are well off because you will never suffer. You cannot be physically hurt. But you could literally rot on your feet and never know it. You could die from any one of hundreds of injuries or diseases without realizing in the least degree that you needed attention. To avoid such a fate, you must take advantage of every prophylactic and preventive measure."

"I see," he answered slowly.

Again came that peculiar light in his eyes that has bothered me before. His glance strayed to the wall. We were sitting in his library, and above the fireplace two swords hung crossed.

"I am devoting all the time I can manage in search of a counteragent," I told him.

His gaze returned to me. I wonder what was in his mind. We talked a few minutes more before I left.

June 9—Where can Leeds be? I have stopped at his home daily since the first night I was there, but no lights show, and I have been unable to obtain any answer to my ringing. Can he have done away with himself? Or has he gone off on some wild adventure? I hope it is merely that he has consulted a good physician. Perhaps he has placed himself under expert care and retired somewhere.

Still no success in developing an antidote.

JUNE 16—Just returned from Leeds' house. Drove by there as usual after completing the day's appointments. Had begun to give up hope of seeing him again, but the lights were on when I passed about eight thirty. Leeds himself answered my ring. His attitude was strange, half aloof, half hostile.

"Well?" he remarked, lounging in the doorway.

"I came merely to make sure that nothing had gone wrong," I began.

"I'm all right," he said, eying me with that queer, hot, vacant look that was beginning to give me suspicions and apprehensions.

"You have been under good care?" He seemed healthier than when I last saw him.

"If you mean medical, no. Otherwise, yes. Spent two weeks with my family in the lodge up in the Catskills. Just got back to-day."

"Haven't you had an examination since you left?"

"I didn't need one. I can feel now. The effect of the stuff has worn off."

For a moment I felt relieved, then my natural skepticism asserted itself. Besides, his eyes were not sufficiently normal.

"How do you know the effects have worn off?" I demanded.

He thrust out his arm. The left forearm was scarred from elbow to wrist with cuts and half-healed knife wounds.

"I've been deliberately cutting myself every day," he replied. "A week ago, I began to feel twinges, now it actually hurts as it used to when I cut myself."

"I am delighted to hear this," I told him. "Do you mind if I make a thorough examination? Naturally, I am deeply concerned over your case, and I would like to satisfy myself that the operative work was a complete success."

He objected. I tried persuasion and insistence. At last he consented.

In the library, he stripped and lay on his stomach on the settee while I opened my kit. First I made a

small incision in his shoulder. Then I used a probe to prick him in various spots. Not once did I receive a reaction. That was conclusive proof that the effects of the diochloresthane had not worn off.

When he cut his forearm, he only imagined he felt pain. It was purely psychological, a wish-fulfillment combined with memory-suggestion of past experience. He wanted to feel pain. A cut and flow of blood once signified hurt. Autosuggestion made him believe he again felt pain. My false elation subsided. Leeds had been a physiological phenomenon. Now he was on the way to becoming a psychopathic case as well.

I did not try to disillusion him. I suppose I hoped that I might foster his belief. Then I asked him to roll over. The slight swelling and feverish condition of his abdomen were grave symptoms. Perhaps it was already too late. I ordered him to lie still and hastily dipped my instruments in antiseptic solution.

"What are you going to do?" he demanded.

"I am preparing to operate. You have a burst appendix. There is not time enough to rush you to a hospital. It is a matter of life and death," I told him. "I can't tell how recently the appendix broke, but the condition of your skin indicates that it must have been several hours ago. Your system must be full of toxic poisons already. Since you felt no pain, the operation should also be painless."

I have never before seen on a human face so strange, dazed, and feral an expression as that which reddened his eyes then. But he lay without a quiver. Even his breathing was quiet. I opened the abdomen, removed the ugly mess, cauterized, and stitched the incision.

All the while I worked, his hot, blank stare followed my motions. It must have been one of the weirdest operations yet recorded; an emergency appendectomy without anæsthetic, patient fully conscious and watching every move of the instruments, yet experiencing no real pain though he may have imagined some.

Suddenly his eyes flamed. "Damn you!" he shouted. "I can't feel; I don't hurt! Why don't you hurt me, why don't you do something? I'm all cold! It's living death!" he screamed.

Before I could prevent him, he seized the scalpel. I deflected his aim. The razor-sharp instrument cut my hand and ripped a deep gash across his right thigh. I knocked the scalpel away. He tensed as if to leap at me, then shuddered and shook.

"Lie quiet!" I commanded in as soothing a tone as I could muster. "You will be all right. The operation would have been agony to any one else. It will be only a matter of time until I discover something to nullify the diochloresthane."

His feverish expression cooled. "Sorry I blew up," he muttered. "I guess the sight of blood and watching you and not feeling anything got me."

"You must remain quiet. Shall I have you removed to the hospital or would you prefer to have a nurse here?"

He decided to stay at home. After treating my cut and his, I made arrangements for both day and night attendants. By the time I left, his hysteria had subsided. His temperature was 102, pulse above normal. Both were probably symptoms of toxic poisoning. I may have arrived too late. His condition is serious as a result of nature's inability to warn him through pain of

appendicitis and the consequent developments. However, his general health was good, and he stands a fair chance of recovery. Hospitalization desirable, but he can summon his own physician if he wishes. Thought it best not to press the point in view of his resentment.

MENTAL phases of the case beginning to worry me. When Leeds is better, believe I'll ask Berger, the psychiatrist, to accompany me. I'll introduce him as a co-surgeon interested in trepan work. The pretext should enable him to obtain a general impression of whether Leeds needs mental hygiene. Can't help wondering if Leeds' reactions are merely psychological, or whether the anæsthetic, in some slow and concomitant metabolism, is altering the brain cells themselves, with a possible result in insanity of recognized or new type.

Tired from strain of day. No time to experiment to-night.

Later—Must record impressions. Tossed around for an hour after retiring. Passed into half-waking, half-sleeping condition where conscious thoughts and subconscious dreams intermingled.

Had terrifying vision. Vaguely aware of room, but also saw immense field in distance. Dreamed that vast army was attacking a city. Millions of men swarmed ahead, every soldier looking like Leeds. Machine-gun bullets raked them, but they ran on.

Shells blew fragments from living flesh, but the advance continued. Liquid flame sprayed them, but they drove onward irresistibly, without a cry of pain. Gases shriveled their skin and lungs, but they did not know it. They had all been inoculated with diochloresthane and were impervious to pain. The horror of war meant little to them. They might die, but they could not be hurt. So, though they fell by thousands, they rolled on, a horde that nothing could halt, except absolute annihilation to the last man.

This possible use of my anæsthetic which had not previously occurred to me has caused me to consider. Diochloresthane is revealed as one of the most potentially powerful and efficient agencies ever known in offensive warfare. Shall I turn my discovery over to the government? Shall I release it for use on those suffering from incurable afflictions? Or should I adhere to my recent decision and destroy the formula because of its disastrous, antipreventive effects as in the case of Leeds?

June 24—Leeds almost recovered. Gave permission for him to move about, if he walked with care. He dismissed the nurses. His motions are mechanical. Sometimes he looks dull, half asleep, doped.

I have not yet been able to determine whether his hyperneurotic condition is physiological or psychological in origin; that is, whether it expresses a physical result of the anæsthetic or was induced by brooding over his situation. To-morrow I will speak to Berger and ask him to accompany me to study the patient covertly.

June 25—No doubt they will be here soon. I have telephoned the police. I shall make a simple statement that will, presumably, be borne out by external facts, but I must let no hint of the real cause escape me. I have destroyed all the diochloresthane solution I had, together with the ingredients on hand, and the formula.

I spoke to Berger at the clinic this afternoon. He had a full day and could not find time enough be-

tween engagements to accompany me, but promised to do so to-morrow.

OPERATIONS, survey of patients recovering in various wards, dinner, and two emergency cases arriving successively, delayed me. It was nearly nine before I got away. The warm June evening, the young lawn of the boulevards, the greening oaks and poplars acted as a pleasant tonic. I enjoyed the cool feel of wind as I drove along Linwood Avenue and turned into Blair Street. I stopped at Leeds' place, No. 1432, a three-story stone house of the late Victorian period. There were lights on, a half-open window, but I received no answer to my ring.

Then I smelled the smoke. It drifted out, just a wisp, but sickening. I tried the door. It was unlocked. I hurried in. The smoke was stronger. I called, but got no response. I followed the smoke. It grew thicker, more horrible. I came to the library door which stood ajar and pushed it open.

"Leeds!" I shouted, sick to my stomach as I ran forward.

It was all too plain—the half-open book, the cigarette tray. He had fallen asleep while reading, and a lighted cigarette did the rest.

I did not reach him. My cry must have wakened him. Out of the smoke and smoldering fire of the settee, the thing sprang, scorched, blackened, with smoking tatters of clothes and flesh peeling away, its eyes mad, hot coals. Before I was half to it, it leaped to the fireplace and snatched one of the swords.

Through swollen, seared lips, it gibbered: "You don't need to tell me; I can see it in your face! I'm dying, and I don't know it! I can't feel; I can't feel pain! But you're going to feel all the pain that I can't, and I'll watch you writhe and roast yourself, damn you!"

It bounded toward me through the evil smoke like a thing of nightmare horror. I crashed the table against it. It leaped around, covering the door so that I could not escape.

In defense, I jumped for the other sword. The thing plowed after me. I tried to make the telephone, but it slashed the wire.

Leeds was an expert fencer, but I received my training in Heidelberg. These were real swords. The smell in the air, the frightful appearance of the creature attacking me, may have helped to create something like frenzy in me also.

"Why don't you die!" I cried out.

The swords locked. Crash of steel. I parried, a lunge ripped open his cheek. Blood spattered his arm.

He mouthed in insane hatred: "Cut me, burn me, do anything, and you can't hurt me! But you will hurt, bit by bit, while I kill you and watch you suffer!"

He meant it.

I cannot describe that duel. The odor and smoke, the clangor of steel, the dreadful specter of living death that hurled itself at me, are memories I prefer to forget. Neither fire nor steel nor any known affliction could hurt that creature, half cooked and dying. Yet I sickened every time my sword slashed and sliced him, and I paused only to stamp out the fire after that scorched and bloody pulp sank in the final mercy of death, my sword in his heart. I flung a pail of water on the débris of the settee.

From my own residence, I telephoned the police. I shall plead self-defense. I think the hideous reality will bear out that part of my story. What else may come——

But they are knocking at my door.

SPOOR of the BAT

A story of piracy and interplanetary intrigue which involves three worlds.

by Arthur Leo Zagat

Illustrated by Elliot Dold

I CAN SHUT my eyes and see my brother Darl again as he was on that flaring, riotous night at Nick's when we celebrated his first command. I can see the wide-shouldered, thick bulk of him, a strand of yellow hair across his brow, his broad-planed face flushed with the potent greenwine of Jupiter, square jaw outthrust, and gray eyes meeting mine in level challenge. His voice was a bit thick, but so was mine.

"I'll beat you to Calinoor, old socks, or split a rocket tube trying."

My head went back, and I roared with laughter, jeering laughter in which all the crowded, roistering room joined. Those bronzed young master rocketeers knew the absurdity of that defiance. At dawn we should blast-off for Mars, I in the *Terra,* he in the *Luna,* sister ships as like as two peas. Only superior spacemanship could give one an advantage over the other, and I had captained space ships for five years, while the ink was not yet dry on his master's ticket.

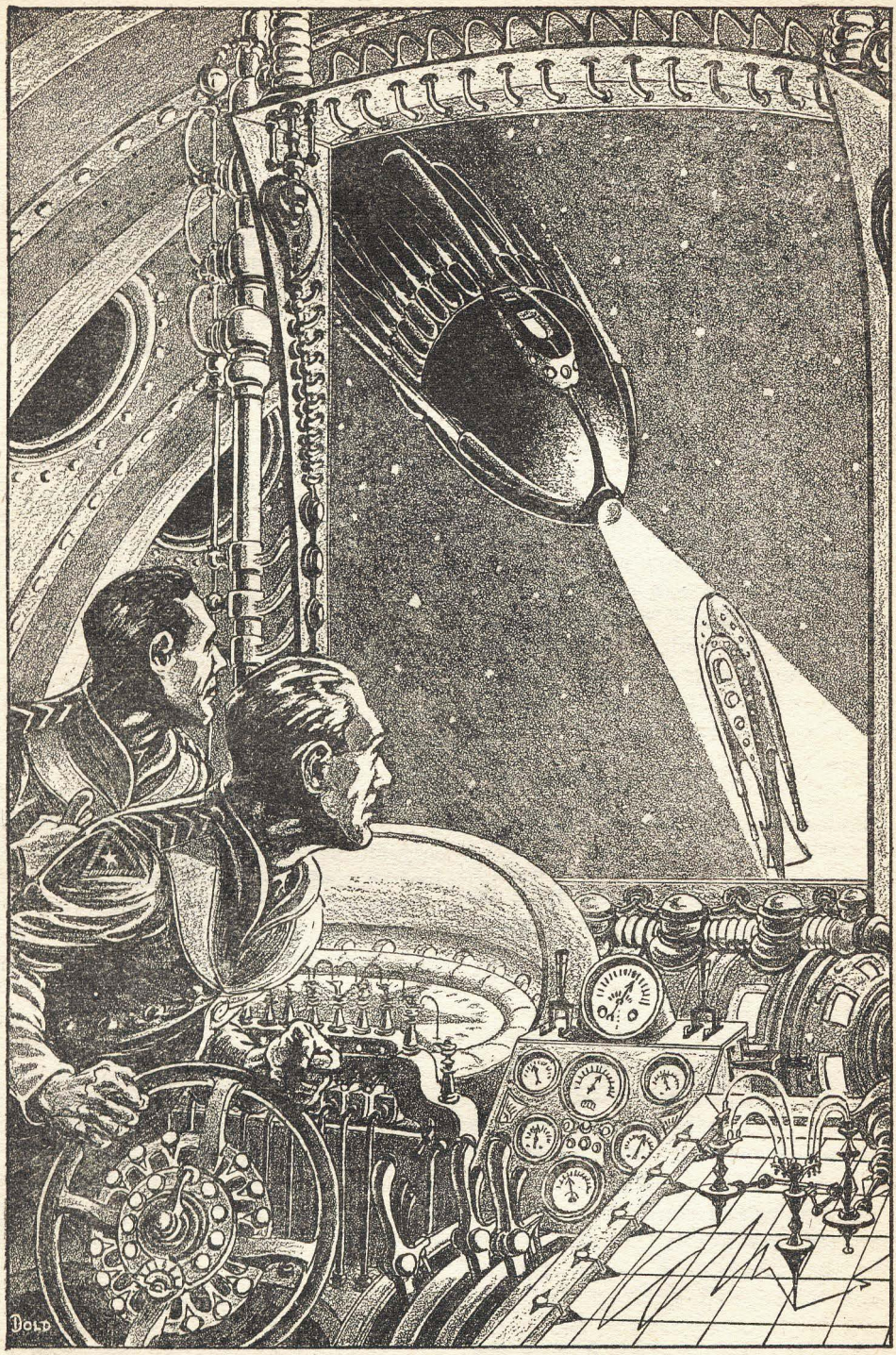
They laughed, yet I could see grudging admiration in their eyes. The gall of him, the consummate nerve of the bantling, they were thinking, and their hearts warmed to the cockerel.

I taunted him, baited him till his eyes slitted, and there were two white spots either side his nostrils. "You weanling!" I roared. "You squalling infant! I'll be rolling down the *Sloora* before you've shut off the refrigeration tubes in the *Luna's* skin. You beat me!"

Darl's hand clenched, and the glass that was in it shattered, tinkling to the floor. His neck, where he had ripped open his tunic collar, corded so that he had to squeeze utterance through his anger-white lips. "By Gemini!" he husked. "I'll make you eat that, Brad Hamlin. If the *Luna* is not first on Calinoor tarmac I shall never fly again. I dare you to say the same!"

That hushed the grinning listeners knotting close around us. It was life itself Darl proposed as the stake of the gamble, they knew, for to him who has known the exaltation of interstellar flight to be Earthbound is no better than to be dead. I slammed my fist down on the table. "It's a bet, Darl! The one of us who checks in last at Calinoor, grounds himself for good!"

A great shout went up, and they pledged our healths in greenwine, and Martian *slota,* and palate-searing *lanrid* smuggled from Venus, crushing round us with mazed babble of hour lines, ether eddies, meteor swirls, and all the manifold jargon terms of our craft. Then



Again the ray shoots out from the black tiger shark—and catches the Luna *square. The dance of death is ended.*

suddenly they were thundering the sky song of the rocketeers:

"Blast old Earth from under keel,
Shape our course for Mars.
Spurn apace Sol's burning face.
We're off for the farthest stars.

"The comets set our cosmic pace
As through the void we soar.
We've said good-by to the human race,
For we'll never come back any more.
We'll never come back any more!"

A roly-poly chap in cits leaned maundering on my table. "There's lots of 'em never come back, eh, captain?" He chuckled. "The best of 'em, too." His little round belly shook with laughter. "'Specially if the Black Bat gets on their tail."

I stared at him, slow anger mounting. What the devil was funny in that? But before I could say anything some one yelled, "Hey, Toom, come give us a song!" and he was weaving off, trolling some doggerel in a not-unpleasing voice.

"The piebald pony and the gaunt gray cat
Sliding down to Venus on a comet's tail——"

IT WASN'T till almost time to leave for the blast-off that I could find chance for a whispered word with Darl: "Well played, lad! They're nicely fooled."

There was an instant's gravity in his look. "I'm not so sure, Brad. That bird in the corner—I've been watching him. There was an odd cast to his eye when we put on our act. Who is he, anyway?"

I reeled as if I could scarcely hold my feet and got a glimpse of the man he meant. A squat fellow, black-haired and swarthy, with an old blast burn across the right side of his face that had seared the eye from its socket. There was a sardonic twist to what was left of his mouth.

"Don't know," I answered. "First time here, came with Jack Nevis, I think. But he's got the rocket, with three stars—an old-timer."

"There's more than one old-timer gone wrong. And the leaks must be coming from somewhere—— No; I'm not crayfishing! If either of us is yellow it's you."

I took the cue. "You unlicked brat! Say that again, and I'll turn you over on my knee and spank you."

He pawed at me drunkenly. "Can that big-brother stuff or I'll sock you. I'm a better man'n you in space or on er groun'."

Roisterers swirled between us, forced us apart. And that was the last I saw of Darl until——

Except for one more glimpse across the tarmac of New York space-ship terminus. The *Luna* was mountainous above him in the dim pre-dawn light. But somehow his tiny figure dominated her. First voyage or not, he'd take her through, I thought. He had been the aptest apprentice a space pilot ever had, had conned the *Terra* from Venus to Earth our last trip together with never a word of help from me, had made as pretty a spiral landing as ever I'd seen. No need to worry.

Unless the "Black Bat" swooped across his course.

The Black Bat was the only pirate the spaceways had ever known, his loot the concentrated wealth in solar dollars that once an Earth-month is sent winging from planet to planet to adjust the trade balances of the system's commerce. For two years now he had spotted, with uncanny prescience, the very ships secretly convoying the treasure, had appeared suddenly from the depths of the interstellar void, had made

his raid and disappeared, leaving no witnesses!

Leaving no witnesses. For the Bat, having won his booty, pithed his victim from end to end and left it a gigantic coffin floating forever in the empyrean with its freight of frozen, changeless bodies.

That was the reason for the drama Darl and I had staged at Nick's. The I. B. C.'s fastest ships had succumbed to his unheard-of speed. He had darted in among a convoy of five Triplanetary Union patrol ships, smashed his prey, and was gone before they could bring their heat cannon to bear. Now the Interplanetary Board of Control was attempting guile to get the shipment through. And we had been chosen to work the trick.

Speed was needed, of course. And there must be excuse for it. So Darl had feigned himself a drunken braggart and flung the challenge at me, and I had accepted it, and all the system knew, or thought they knew, why our craft would be pushed to the uttermost getting across space to Calinoor.

Secrecy was needed, too. So neither Darl, nor I, nor any save one gray-haired man knew which chest it was of the twins in the *Luna's* chart room and mine contained the currency and which was an empty fraud. One of us should get through, one of us at least. There was a fifty-fifty chance of the plan's succeeding. A fifty-fifty chance for each of us that he live to reach Mars' treaty port.

II.

THE SECOND Earth-day out, while Earth was still a shining sphere against the black of space, I was writing up the log in my control room when suddenly there was a click in the intra-ship communication disk. I raised my head, expecting some report from Jed Morse, my first, who was checking manifests below, or Grendon Elliot in the tube room. But it was neither of these who spoke. Rather it was a lugubrious voice that came from the disk, singing:

"The piebald pony and the gaunt gray cat
Sliding down to Venus on a comet's tail——"

I stared at the thing, unbelieving. Did ever such balderdash come over a ship's talk-wires before? Was I really hearing it, or was this a delayed hangover from the stuff I had swilled at Nick's? But the doggerel continued:

"Met the bull in a round red hat.
Took 'em by the neck and hauled 'em off to jail."

I looked at the indicator. E hold! But that was empty, locked. Couldn't be any one in there.

"Hey, there, anybody listening? How in the name of Merope and the seven other Pleiades does a fellow get out of here? It's dark as the coal sack."

What in space—— I punched the call button for Jed, rasped orders. In minutes he was coming through the hatch, dragging after him the roly-poly singer from Nick's.

The fellow drew himself up to the full height of his five feet, brought a hamlike hand to an awkward salute. "Toom Gwyllis, sir, reporting for duty." His clothes looked as if they had been slept in for a week, and there was a black smudge across his button nose that somehow emphasized the good-humored glitter in his tiny eyes. "Unavoidably detained, sir, by circumstances beyond my control."

I was hard put to it to repress a smile, but I managed a stern countenance. "How the devil did you get aboard?"

He grinned ingratiatingly. "Well, to tell the truth, sir, that is exactly the question I was going to ask the captain."

"Look here, my man, I'll not stand for any insolence. Answer me."

The corners of his mouth drooped. "No offense meant, sir, and I hope none will be taken. The answer is, I don't know, sir."

"Poppycock! You had better be careful. The penalty for stowing away aboard an I. B. C. space ship is two years on the Moon."

The fellow looked as if he were about to cry. "I'm sure the captain won't be too hard on an old rocket hand. Two years aboard the *Arcturus,* sir, as steward."

"How did you get on board?"

"To my sorrow, sir, and with the utmost willingness to furnish the captain with the information he requests, it is impossible. I remember speaking to the captain at Nick's and singing for the boys, and that's all I do remember till I woke up in the pitch dark below. I must have had one glass of *slota* too many by the furry taste in my mouth."

"I ought to put you in irons till we get to Calinoor and turn you over for trial. They'll get the truth out of you quickly enough."

The red burn faded a little from his cheeks. "As the captain wishes," he said abjectly. "But have I the captain's permission to make a suggestion?"

"What is it?"

"I cannot escape from the ship, sir, and I should like a chance to work my passage. I am a very good cook, sir. May I take charge of the galley? In my spare time I could do some swabbing up, sir. Begging the captain's pardon, I might remark that the ship could do with some cleaning."

I caught Jed's pleading eyes over Gwyllis' shoulder. The I. B. C. had been cutting down expenses to make up for the losses the Black Bat had caused them and had cut their crews to the barest essentials. On the freighters this meant only the three officers, since lading could be done by the port ground staffs. As a result, care of the mess had devolved on the third mate, who was emphatically not a cook. And cleaning went altogether by the board.

"Very well!" I snapped. "As long as you show a willingness to work I shall permit you to do so. Remember, this does not commit me to shielding you in any way at the end of the voyage."

"Oh, no, sir! I couldn't expect that. And thank you, sir."

Which is how Toom Gwyllis became a member of the *Terra's* crew. Nor had I cause to regret my leniency. His unfailing good humor, his unlimited repertoire of ditties, his sly jests, went a great way to ease a tension that otherwise might have flared into some regrettable occurrence.

WE NEARED the end of the fourth Earth-week, and Mars was already a tiny but veritable disk. Almost I thought I could see her two moons, and I was beginning to nourish a real hope that our stratagem was succeeding.

With Jed Morse on watch, I went into the chart room to plot the *Terra's* landing spiral, always a ticklish job with Phobos racing around its mother planet three times an Earth-day. I was startled to find Toom there. He was polishing some bright work, but it seemed to me

that he had begun just the moment before I opened the hatch.

"What are you doing in here?" I snapped. "I thought my orders were that no one was to enter this room."

He gave his usual ludicrous imitation of a salute. "Begging the captain's pardon, sir, I have heard no such order."

"Nonsense! I issued it right after we left the stratosphere."

His small eyes met mine guilelessly. "The captain forgets that just then I was asleep in hold E, not knowing even that I was aboard the *Terra*."

The man was right. He could not possibly have known of the ban I had set against this space where was hidden the precious chest that might contain a hundred million solar dollars. I was uneasy, but in common justice I could say nothing more than:

"Well, you've heard it now. Be sure I don't find you in here again or it will go hard with you."

"Yes, sir." He saluted again and departed as fast as his short legs would carry him. From behind the door I could hear his voice piping his eternal:

"The piebald pony and the gaunt gray cat
Sliding down to Venus on a comet's tail——"

It faded out till the "jail" was barely audible.

I turned to get down a copy of Mulvihall's "Phases of Phobos and Deimos." But my hand never reached it.

From the speaker disk overhead, Jed Morse's voice crackled: "Sighting a strange body, sir, astern." Routine, this. Any object unaccounted for was a potential danger to a space ship. But I whirled to the hatch, rasping: "Coming!"

In seconds I was at Jed's side, peering into the rear-view periscope. "I can't see anything. You must have imagined it."

"No, sir. I'm positive. I caught it first against Sirius, then it transited Procyon. If it keeps on that course it will be crossing the Sun's disk, and we'll get it plain."

I waited, my eye on the Sun's lower limb, pondering. It might be a meteor, it *must* be a meteor. To have come thirty million miles safely and now to be caught! It wouldn't be just.

III.

"THERE IT IS!" Just a black dot against Sol's white. Invisible were it not for the Askinson ray filter, tempering the solar blaze. Just a flyspeck, but it was moving, slow-appearing at that great distance, but moving nevertheless. Slow moving?

"It's two diameters larger than at first!" Jed exclaimed.

The thing was growing visibly as we watched, was overtaking us at terrific speed.

I switched in the electelscope. The moving object leaped out on the positive screen.

"I'll be pithed," Jed exploded. "What in space is it?"

A man-made thing, no doubt of that. A space craft. But none such as I had ever seen. Black, dull-black, and oddly shaped. Blunt bow, curving to pointed stern. No visible rocket blast such as had streamed out behind the *Luna* our first days out, while she was still accelerating. But an odd shimmer flowed along the ship's black sides, blurring its outline. And it was moving across the screen's distance lines at an unbelievable pace. It was

coming toward us as if we were standing still.

"You'll be pithed all right, mister," I said grimly. "That's the Black Bat."

A chuckle behind me. "The Black Bat!"

I twisted to Toom. For his weight he had an amazing capacity for moving soundlessly. "Get out of here, you jelly bowl, get below," I roared. "Get down on your knees and pray. You'll be sliding to hell on a comet's tail in about ten minutes or I miss my guess."

"Yes, sir. As the captain pleases." He saluted and vanished—from the control room and from my mind.

The pirate would overhaul us in an hour, that was certain. And there was nothing to do. I'd used nearly all my fuel reserve in building up the tremendous speed at which we were now flying, had left little more than I'd need for landing. Nor even if I used it all for acceleration now could I hope to outdistance the pirate. Darl, I knew, was in like case. One of us was doomed. The other had a chance, a slim chance.

I JUMPED for the space-radio key, thrust the earphones over my skull. *"Q-M-S,"* I staccatoed: *"Q-M-S—Q-M-S. All Mars stations. Attacked—by—Black Bat. Dispatch—all—patrol—ships—to—help. Attacked—by—Black Bat. Position —Alpha-2 — Beta-359 — Gamma-27. E-H-11 E-H-11 E-H-11." The last* was the *Terra's* signature.

I grabbed the voice transmitter. I could talk to Darl now, no further need for concealment. "Hello, the *Luna!"* I called. "Hello, the *Luna!"*

Darl's voice in the earphones, metallic, but his voice. *"Luna* O. K. What do you want, *Terra?"*

"Darl! Brad talking. The Bat's got us spotted."

No excitement in his tones: "Yes. I've seen him."

"Listen! I've radioed Mars for patrol ships, but we both can't get away. I'll check speed, veer toward him. You shoot ahead. I think I can hold him in play till the patrol meets you."

"Guess again. I'm the one to drop behind."

"As senior I'm in command, Darl. I *order* you to go ahead."

"You know what you can do with your orders. I'm sticking."

No use arguing with him. No time to argue if there was any use. But there was still a chance.

"Listen, you nut. I'll choose you." Childish, but he was a youngster, a sport. "I'll think of a number and you say odd or even. If you're right I stay."

"I'll do the thinking and you the guessing," he checkmated me. Quickwitted, that lad. I couldn't fool him.

No time, no time to argue. The Bat was closer, closer. "It's a bet!" Still a chance. Darl would play fair.

"Go ahead!"

For an infinitesimal time that was infinitely long I wavered. Odd or even? Even or odd? Life for my brother, or death? Then I cast the die. "Odd."

A thrill in his voice, relief. "The number was four, old top. I stay." Relief and exaltation. Death comes easy to the young when it comes with flying banners. "So long! Give my regards to the boys at Nick's." And before he shut off I could hear him start the sky song:

"Blast old Earth from under keel.
Shape our course for——"

And the last lines echoed like a dirge in my brain:

"We've said good-by to the human race,
For we'll never come back any more.
We'll never come back any more."

Mercifully I had no time to think—the gap between us and the Bat was closing—the black ship's image was flitting the screen's thousand-mile distance lines one to the minute. If Darl's sacrifice was to avail I must get away.

"Elliot," I snapped into the intra-ship disk. "Elliot! All stern tubes. Full power ten seconds."

"Aye, aye, sir!" The response was crisp, steady. The boy knew something was wrong, all right. Full power in space was no usual thing. And he knew the state of our tanks. But you couldn't tell it by his tone.

Jed's tone was steady, too, as acceleration weighed us down and the *Terra* leaped like a live thing. His charge was the shifting-colored light in the spectrum speed gauge, focused on Aldebaran. "Nineteen, sir," he intoned. "Nineteen two, nineteen seven, nineteen nine, *twenty.*" His voice lifted to that. Fastest man had ever gone! Fastest save for that killer in the black hell ship. He was doing nearly twice that.

I glanced through the port. The *Luna* was small now, tiny, dropping astern; blue flame spurting from her silver nose, checking her speed; checking to wait for the pirate that I might escape.

The earphones again. Faint whine of the I. B. C. station on Mars. "*E-H-11 E-H-11 Twenty—patrol—ships—on—way. Accelerating—to—twelve. Hold—out. M-S-I-B M-S-I-B M-S-I-B E-H-11 E-H-11 E-H-11 Twenty—patrol—ships* ——" I switched them off.

Twelve per second. Slow. But twelve added to my twenty. Thirty-two. Will it be fast enough? How long can Darl hold the Black Bat?

THE *LUNA* is too far back now to be seen through the lookout. Get her on the periscope, switch in the electelscope. There she is, a silver fish in the void. And the black tiger shark leaping on her. Close! An orange beam flashes out from the pirate's bow.

But Darl leaps aside. Good boy! The first stab of whatever devil's weapon is the Bat's sting misses by a hundred miles. The lad's handling his huge ship like a gyrocopter, whirling her away from the attacker in swift, veering darts. Whirling her away from my course, too, so that when the inevitable end comes the *Terra* will be all the safer. Blue flame spurting, now left, now right, from nose, from stern, as his rocket blasts answer his commands. No reason for him to conserve fuel now. He'll not need it for landing.

The Bat swoops after him, the orange ray stabbing. Avid, implacable, venomous. A dull-black streak in space. Death incarnate pursuing the victim marked down. Baffled for the moment, but inescapable. What is the beam's secret, what the secret of his incredible speed?

Ah-h-h-h! Almost had him! Just missed! Again the ray shoots out—and catches the *Luna* square! The dance of death is ended. A sob rips through my tightened throat, and I feel Jed Morse's arm around my shoulder, rank forgotten. "Steady, Brad!"

"Thanks, Jed. I'm all right."

"He put up a splendid fight."

"Everything he ever did was splendid."

"Aye, sir!"

They hung together, motionless in the immensity of the space between the stars. The black ship clung to its victim like some loathly leech. And I switched the view-screen blank. I had rather not see the

final act of the tragedy, the pithing of the *Luna,* the killer drawing away from the gutted slain.

I hardly cared whether the Bat came after me or not. I was empty of emotion. But I was comparatively safe.

The scarlet flotilla met me and escorted the *Terra* back to Calinoor, detaching a ship to inspect the *Luna.* Jed Morse gave the commands as we landed. I was locked in my cabin, remembering.

"CAPTAIN HAMLIN reporting, gentlemen." I saluted. The Mars section of the I. B. C. was seated at my chart-room table. Ransoor, the Martian, was in the center, huge. Earth's representative, Lewis, gray-haired, stern-faced, seemed a midget beside him despite his six feet. He sat to Ransoor's right, at the Martian's left was the Venusian, Atna, lath-thin, sardonic, his breathing gills pulsing slowly, his green, webbed hands outspread on the table top.

Ransoor acknowledged my salute and his boom filled the little room. "You are ready to deliver the chest, captain?"

"I am, sir."

"Please do so."

I worked the combination of the safe in the bulkhead, got the heavy box onto the table. The three I. B. C. men bent forward to inspect the seals. I stood stiffly, my face devoid of expression. But within me something stirred. After all Darl had thrown away his life that this chest might reach Mars.

IV.

"OPEN IT," Atna squealed. "Open it." I wondered at his impatience. "Let's see which one it is." This was a matter between Earth and Mars. Venus could have no interest.

Lewis got a small heat gun from the pocket of his jacket. Its red beam stabbed out, impinged on the lead-soldered jointure of the chest. The metal bubbled, dripped down the box's sides in molten rivulets. The sealing wires glowed and snapped. He got an asbestos glove on one hand and threw back the lid. It blocked my view of the interior, but I could see his face and Ransoor's. Shock, dismay, blackened them. I looked at Atna, forgetting that the denizens of our inner neighbor are as expressionless as the fish they resemble. I thought his eyes gloated.

It was he that broke the stunned silence: "Well, Ransoor, what is Mars going to do about the payment to us?"

The Martian turned slowly to face him. "That is a matter for the council. But undoubtedly you will have to give us more time."

"Time!" the Venusian shrilled. "Time! We've given you time enough. This looks very queer. You keep saying that you cannot pay us till you receive Earth's payment, and Earth can't seem to get a remittance across to you. I assure you Venus will insist on a rigid investigation. Good day, gentlemen. I go to make my report to the *Trina.*" He stalked from the chamber trailing an atmosphere of righteous indignation.

"I'm afraid they mean trouble," Ransoor said heavily. "Lewis, how would Earth stand if it came to a break between Mars and Venus?"

The Earthman's face was a stony mask. "Really, Ransoor, I am hardly authorized to——"

"Oh, unofficially, man, unofficially and strictly between ourselves."

"Well—if you put it that way—

we should probably throw in with you. We could hardly remain neutral for long with the spaceways ablaze with war, and we are much closer to you in every essential than to the fishmen. But Earth does not want war."

They rose. Lewis started as he saw me still standing there. "Oh, Hamlin—er—I had forgotten you were here." He exchanged a worried glance with Ransoor. "You understand that what you have just heard is confidential."

"I realize that, sir. I shall repeat it to no one."

"I am sure of that. May I say that we in no way blame you for the failure of your mission."

I bowed. "Thank you, sir. May I make a request?"

He looked at me keenly. "Of course! Anything within reason."

"I should like to be permitted to resign from the fleet."

"My boy!" he protested. "We can't spare men like you."

"Nevertheless, sir, I desire to be relieved. I wish never again to enter a control room."

"I understand. You have just passed through a trying experience. But you will change. Suppose you lay off for three months."

I had to be content with that.

Jed Morse stepped up to me at the main hatch, as I turned from escorting Lewis and Ransoor off. "We have our receipts, sir, and the unlading gangs will be aboard shortly. What shall I do about the stowaway?"

I had forgotten Toom. "I suppose I shall have to turn him over to the provost, though I hate to do it. He's a likable chap. Where is he?"

"I had Elliot lock him in E hold before we landed. Thought I'd make sure he'd be on hand when we wanted him."

"Get him up. No, wait!" as Jed started away. "I'll go down myself."

E hold was in the very stern of the *Terra*, just forward of the tube room. I reached the hold, unlocked the steel hatch. The tube light was burning inside, sending its beams into every corner of the small compartment. But there was no one there!

I got to the hatch in the outer skin. No; it was tightly locked. "Gren!" I called. "Gren!"

Elliot came running. "What is it, sir?"

"Where did you put Gwyllis?"

"In here."

"He isn't here now."

"Impossible! He must be. He couldn't get out."

"May be impossible, but it's so. Get Morse and search the ship."

The search was unavailing. Toom was gone. I looked at my two officers. "This is nice. How am I going to explain that?"

Jed answered: "Don't know, sir. But is it necessary?"

"Is what necessary?"

"To explain it at all. Seems to me to be lots simpler to say nothing about his ever being aboard. After all the fellow's gone. I—well—I mean to say——"

"That you're damn well glad he's got away. I might as well confess that I am, too. All right, boys; it's between ourselves."

THEY LEFT my cabin, and I started to pack. Nothing much. My master's ticket was on the wall, framed. I left it there. I laid out a suit of cits and sat down to unlace my leggings. Knuckles thudded at the door.

"Come in!"

It was Jed. His sharp face looked worried. "Messenger just came from Mr. Lewis, sir. You are to report to his office at once."

Two of the giant Martian police stood at the door of Lewis' office. I thought they looked at me queerly as I entered. Ransoor was there with the Earthman, and Atna. The Venusian's eyes were excited. But Lewis was very grave, and his lips were a tight line under his clipped mustache. His voice was cold.

"Captain Hamlin," he began. "The patrol ship S14, which was detached to inspect the wreck of the *Luna* has returned. Its captain reports he found the bodies of the mates aboard, but your brother's was not there."

The words blurred in my head. "What was that, sir?" I stammered. "I don't understand."

"Your brother's body is not aboard what remains of the *Luna*."

Darl's body not there! Then he might be alive. He *must* be alive. Darl was the Black Bat's prisoner, but he was alive! I swayed, pulled myself erect.

The Terrestrian was saying something. I caught only the last word, "—suspicious." Again I was forced to ask for a repetition.

"You seem to be having a great deal of difficulty with your hearing. I said that this circumstance seems to us suspicious."

"Suspicious, sir, of what?"

"Of some understanding between you, your brother, and the pirate."

"What!" I shouted. "What put such an idea into your head?"

Lewis froze. "Captain Hamlin," he grated. "Remember to whom you are speaking and comport yourself accordingly."

Years of discipline asserted themselves. "I am sorry, sir. I was so astounded that for the moment I forgot myself. May I ask how you arrive at such an accusation?"

"The Bat attacked the craft that carried the real treasure, permitting you to escape unscathed. That might have been mere chance. But when, contrary to his invariable custom, he removes the captain of the other ship as well as his loot the affair takes a different aspect."

"And from this you conclude——"

"We conclude nothing, but we suspect that the Bat was informed which ship carried the actual money, that there was a rendezvous, and that your brother, having betrayed his trust, has joined the pirate crew."

"No! Never! Darl would have died rather than——"

"Mr. Lewis," Ransoor interrupted my cry of protest. "Did not Captain Brad Hamlin request permission to resign from your fleet?"

"That is so."

"It appears to me that also is suspicious. He may be planning to join his brother and the buccaneer."

I felt as if a net were closing around me. "But, gentlemen," I burst out. "We didn't know which ship carried the money. We were not told."

Atna cackled shrilly at that. "Impossible for you to open the chests in your chart room, eh?" he sneered. "Of course you Earthmen are too stupid to think of that."

I dropped hands to my side, palms out. "If your minds are made up, nothing I can say will change them. But I feel that I am entitled to present a defense."

"That is your right." Lewis' tones were expressionless. "This is merely an informal investigation. You will be brought before the Mixed Court to-morrow. In the meantime you are under arrest." He pressed a button and the two po-

licemen entered. They appeared to have been already instructed, for they stepped to each side of me and grasped my wrists. Ransoor nodded, and I was led away.

V.

I SCARCELY noticed the clang of the durasteel door that shut me into a cell. It was as if Darl had been restored to me from the dead. The Black Bat would have left him on the *Luna,* to die horribly when the doomed craft was pithed, if he had killed him at all. Darl was alive, a prisoner! I must go find him, rescue him. I started up from the hard palette on which I had thrown myself.

And the blank, immovable cell door confronted me! Only then did my own position become real. I, too, was a prisoner, accused of treason. To-morrow I would be brought to trial before the Mixed Court that sits in judgment on outworlders in Calinoor treaty port. The penalty for the crime with which I was charged is death, but even death was nothing to the black disgrace a guilty verdict would smear across my name. Mine and Darl's! My fists clenched, and I bit my lips as the crowding walls whirled about me.

Steady! I wasn't condemned yet. Nor, I tried to assure myself, would I be. The evidence against me was of the flimsiest, of the most circumstantial. The Venusian judge would be against me, of course. And the Martian might be swayed by the other's prejudice. But a death decision by the Mixed Court requires a unanimous vote, and the Earthman would be open to reason, would give me the benefit of the doubt. The worst that could happen would be a verdict of "not proved." Not vindication, of course, but it would leave me free to hunt down the Black Bat, rescue Darl, and prove our innocence.

The lock grated and the door swung open. "Your attorney, prisoner," he rumbled. "You have ten minutes for consultation."

"I don't want any lawyer," I growled. "I'll conduct my own defense."

"The regulations provide that you must be represented by counsel of your own race," was the reply.

The official stepped aside and a figure came into the cell. A Terrestrian by his size, but he was wrapped closely in the fur *parka* Earthmen wear against the Martian cold, and his face was hidden within its hood. Behind him the door clanged shut.

"I don't need any——" I began, cut off when the man's hood dropped back. Lewis! Haldon Lewis, Earth's representative on the Martian section of the I. B. C. What did this mean?

"Sit down, my boy." His voice was kindly again, but muted with weariness. "We have only a very short time, and I don't want to be discovered here."

I sank to the bed and Lewis took the one chair. He leaned forward, keeping his tone very low.

"I'm playing with Trinite coming here at all. If Atna learns of it there will be hell to pay."

"It is good of you."

"No. My duty." He paused, seemed at a loss as to how to proceed. "I want to assure you that I know you are guiltless of the crime for which you are here."

"Thank you, sir. I didn't think any Earthman would believe it. I am positive Judge Reynolds will not vote against me."

For a moment he didn't reply but looked at me pityingly. Then:

"Yes, Hamlin. I am sorry to say that Reynolds will vote against you. And Tarool, too, the Martian. In fact my purpose in coming here is to ask you to plead guilty, to confess."

"To confess what? I am guilty of nothing. I——"

"I have already told you I am convinced of your innocence. But you *must* be convicted whether you confess or not. We have no other recourse."

"I don't understand."

"Naturally! I'll explain. Hamlin, on what happens to-morrow depends the peace of the system. Venus is spoiling for a fight, is using this question of interplanetary settlements as an excuse. Earth and Mars are trying to avoid war, not because we are afraid of Venus, but to avoid the destruction of milliards in property, millions of lives.

"We had almost prevailed upon the *Trina,* Venus' ruling body, to extend Mars' time for payment when the patrol ship's report came in. Atna seized upon it as a new provocation, hinted and more than hinted that the Black Bat is an agent of Mars and Earth, that his depredations are fictitious and merely a subterfuge to defraud Venus. He has sneeringly suggested that there was no more money on the *Luna* than there was on the *Terra.*

"The skunk!"

"Skunk he may be, but he is dangerous. There appears to be a peace party in the *Trina* still powerful enough to force the jingoists to move cautiously. But if Atna's theory gains credence in his world they will be overthrown and war is inevitable. Do you see now how important it is that this incident be proved the result of traitorous machinations by you and your brother? If you should be released by the vote of Earth, or Earth and Mars——" A gesture of his hand completed the picture.

"So I'm to be the goat," I summed up bitterly.

"Exactly! Earth, the whole system, will execrate you and your brother. Only a few of us will know what you have done and revere your memory. But your confession will draw Atna's teeth."

I seized at a straw. "Suppose I escape."

Lewis shrugged. "That would be taken as a confession and possibly serve the same purpose. But it is impossible without outside aid that I dare not give you; well-nigh impossible with it. There has never been an escape from this prison, and the Venusians have placed their own men around the jail to make assurance doubly sure."

"Then I have no choice. I shall do as you ask."

Lewis sighed. "Thank you. You have made the most difficult task of my life a little easier." He rose, gathered his *parka,* pulled its hood down over his face. The jailer's key grated. The I. B. C. man's hand came out from his furs, gripped mine. He followed the keeper out.

I THREW myself on the thin mattress of my palette, face down. While Lewis was still here I had been buoyed up by his conception of me as a hero. But that was gone, now. What a way to go out! Reviled, despised, death-rayed as a criminal, a traitor. My fists beat against the straw in an agony of revolt. At last, exhausted, I lay quietly, listening to the sounds coming through the barred window.

The prison was just at the edge of the landing field and familiar noises added to my black mood. I heard the roar of tubes being tested

against to-morrow's flight. That might be the *Terra,* refueled, turning around fast. Nearer at hand were the high piping of Venusians, the boom of Martian voices, a Terrestrian singing in the distance. There was something familiar about the tune. The singer neared, and I could make out the words:

"——pony and the gaunt gray cat,
Sliding down to Venus on a comet's tail,
Met the bull in a round red hat.
Took 'em by the neck and hauled 'em off to jail."

Toom! Toom Gwyllis by all that was holy! It couldn't be any one else. The fat little rascal was still in Calinoor, then. Probably full of *slota.* If he kept on making that infernal noise he'd be picked up by the police. He'd be in trouble then, sure enough, without a departure stamp on his system passport.

I got to my feet, crossed to the window, intending to shout a warning down to him. There he was, rolling along the crowded plaza, more like an animated ball than ever in a dirty brown *parka.* He was right opposite my window and his song was very clear now. He was trolling forth a new verse, apparently extemporized, for the rhythm limped, and he had to slur the words to fit the music:

"The pony cried, but pussy called, 'Little Dog
Rising from bed, will you help us get out?'
'Sure I will with the aid of the fat frog.
We don't like the bull and we'll get you out.'"

I clung to the bars, my shout never given. Was he trying to get a message to me? Impossible! What could he do against that impregnable prison, against the extra guard of Venusians whom I could see, thin even within their piled furs, patrolling the jail front with heat guns conspicuous in their membraned hands?

Toom kept on going, kept on singing, too, repeating the new verse. When he got to the "frog" he hopped, ludicrously like that amphibian. And on the "bull" he lurched against a passing Martian. Could he mean that he himself was the frog, the bull the Martian giants, my jailers? But who was the "little dog?" I repeated the gibberish to myself:

"The pony cried, but pussy called 'Little Dog
Rising from bed——'"

Wait a minute! Little Dog, Canis Minor, was a star constellation. Could he be referring to that? I racked my brain. What was the date in the Martian year. The third week in *Landoor.* Yes. Canis Minor would be visible in Calinoor's sky, rising at about midnight. Rising—that was it—"Rising from bed ——" It was the *time* he was trying to tell me. When Canis Minor rose, midnight. He would get me out at midnight. That was the message.

VI.

GWYLLIS rounded a corner, tripping over his own feet, and disappeared. Drunk as a Mercurian! I laughed mirthlessly. I was kidding myself, that pudgy sot could never help me to escape! Even sober he was G-5 mentally, a space-ship steward, classified for menial service. And an A-1 would find the job too hard a nut to crack.

Calinoor prison is known throughout the system for its strength. Two-foot walls of molecular con-

centrate, impregnable even to the infra-red torch of a heat gun, to which all other known materials must yield. Windows barred with duralsteel, the system's toughest metal. Cell doors of the same alloy, individually locked. A central lobby the height of the building, teeming with Martian keepers, every cubicle in full view along the circling balconies. And outside were the prowling Venusians, Heaven knew how many of them, determined to keep me in the toils if all else failed. It were sheer madness to think of escape. Gwyllis' doggerel meant nothing; it would take an army to get me out.

Yet obstinately, unreasonably, I clung to hope as the red planet's swift night fell and Phobos' huge globe rose, paradoxically, in the west.

It hung low in the east before the tail of Canis Minor peered over the horizon beneath it. My eyes strained to see the stars. If there was anything in my interpretation of Toom's apparent gibberish, something was due to happen at any moment. The plaza below was deserted, except for the Venusians skulking close below, their odd-shaped shadows pools of black on a pavement otherwise a glaring white under the tube lights. In my temple a pulse throbbed, and I was taut with expectancy.

What was that murmur of sound in the north? A low growl, barely discernible. Off there spread the *Sloora,* the pleasure district, brawling, sordid resort of spacemen on leave. The noise grew louder, nearer, was distinguishable as the roaring of many voices. I could make out the booming of the big-chested Martians, the high screaming of the fishmen, the shouting of Terrestrians, merging in a crowd-noise that could be heard nowhere but in the system's space ports.

Unmistakably a *zanting* was on, a mass battle among the spacemen, such as every so often flared in the dives of the *Sloora* for flimsy reasons or none at all. Martian against Earthman, Earthman against Venusian, Venusian against both. Flying fists, belt buckles rising and falling, trampling of shod feet on prostrate bodies. Here and there the gleam of a knife or the flash of a heat gun.

Then would come the charge of the scarlet police, and bruised, bleeding fugitives would scatter into the dark passages of the space port. A half hour later they would be drinking elbow to elbow in the *slota* halls again, wrangling amicably over the merits of their respective fleets.

But there was something more venomous, more viperish than usual, about the tumult of this *zanting.* And it was very close now. Never before had they ventured so far from the *Sloora.* Suddenly dark masses jetted out from the defiles of the circumscribing buildings, dark masses that merged, that filled the plaza with a tossing, writhing sea of maddened fighting. Their shouting came clearly to me, clinging to the bars: The Terrestrians; "Kill the Venusians, smear the fishmen! Kill them! Kill them!" And the screams of the green ones, shriller than ever with fear. The huge Martians were struggling out of the rout.

This was a scrap between Earthmen and the scaly ones of Venus; the men of the red planet were glad to get out of it. A fight to the death, no mistake about that. A fight to the death, and the Earthmen were winning, were harrying

the others, were stamping them into the ground.

Beneath me the Venusian guards shrilled encouragement to their coplanetarians, waved pipestem arms hysterically. Their officers gave orders, holding them back, leashing them to their duty. Trying to hold them! But suddenly the line broke, surged forward irresistibly, and instantly was swallowed up in the tossing mêlée.

The battle swung away from the prison toward the other end of the plaza. I crushed against the bars, trying to keep it in view, my own predicament forgotten. But I whirled to the scraping of bolts behind me. In the open doorway was framed a short, round figure, furred, the face covered by some sort of mask, goggle-eyed, but unmistakable. Toom! Miraculously, Toom Gwyllis!

HE WAS holding another mask in his hand, thrust it at me. "If the captain will put this on, quickly."

There was a taint in the air, something gripped my throat. I was choking. I snatched the thing, got it over my face, got the rubber bit between my teeth. My lungs cleared.

"Follow me as fast as the captain can. The gas will last only a few minutes." Muffled as it was, his voice had a new authority. I obeyed unhesitatingly. We hurried along the gallery on which my cell gave, down a narrow spiral stairs, past giant guards sprawled in all sorts of ungainly postures, the rotunda floor piled thick with them. The great entrance door at last!

Toom opened it a crack, glanced out. Then back to me. "Quickly, sir!" He stooped to a bundle on the floor. "If the captain will—a *parka.*"

I got it around me. Aping Gwyllis, I pulled the mask off, tossed it behind. He jerked the hood over my head, hiding my face, adjusted his own.

"Come, sir!"

We slid out between the leaves of the portal, were in the open. I got air into my lungs, tenuous, chilled, but wine to me. Free air, unfiltered through prison bars!

Far across the plaza the riot was slackening. A wedge of tall figures in scarlet uniforms was slowly forging into the still scrapping mass. Thin, furred shapes were breaking away, were running toward us. Toom broke into a run, and I joined him. We skidded around the prison corner, keeping close to its wall, made for a dark alley straight ahead. We got there.

Gwyllis slowed, put a hand on my arm. "We're safe now, sir, if we stroll as if we had nothing to worry about."

"Nothing to worry about!" I exclaimed. As soon as my escape is discovered I'll have plenty to worry about. They'll close all exits from Calinoor, start a house-to-house search. It may take time, but they're sure to find me at last. And even if I get out of the town, where will I go? You know damn well an Earthman can't live long on the Martian tundras. There's water only along the canals, which are closely guarded, and not a living thing on the desert, not an edible plant."

"If the captain will trust me," Toom murmured.

"Trust you! I'll say I will. You've done the impossible already."

Gwyllis chuckled. "Not impossible, sir."

"No; you've proved that. You're a wonder!"

"Merely fortunate, sir. Just happened to pass the prison when them Venusians decided to get into the scrap. The Martian keeper on the door was foolish enough to open it to see what was going on, so it was only a matter of tossing in a couple of gas bombs, finding the key to your cell, and getting you out. Just accident, sir."

"I suppose it was just accident that you happened to have gas bombs with you, eh, and masks and a *parka* for me?"

"Yes, sir."

"And it was just accident that the riot started right at the time you mentioned in your song."

"What song, sir?"

"All right; I dreamed it. How did the scrap begin, anyway?"

"Why, as to that, sir, it was very peculiar. It kind of got spread around the *Sloora* that an Earthwoman had been attacked by a couple of Venusians. No one knew who started the story, but, as the captain will understand, it got the boys a bit riled, and the natural result was a very satisfactory *zanting*."

"Of course you had nothing to do with starting that rumor or spreading it. Toom, I think you are a faker."

"Yes, sir. As the captain says."

All this time we had been twisting through the devious passageways of the old part of Calinoor. In perhaps ten minutes more the houses fell away, and I saw that we had reached an open space. Shapes towered above us in a long line, mountainous against a graying sky. Before each a tiny dark figure paced, silent but alert. I caught the glint of a stray light ray on the blued barrel of a heat gun. We had come a full circle, were on the space-ship landing field. Those were rocket craft in their webbed cradles, guarded by armed marines.

The edge of the field was in shadow, and Gwyllis kept to it. With a start, I realized we were coming to Earth's section of the tarmac. I'd know the *Terra's* lines anywhere.

"Wait here," Toom muttered in my ear. The gun he held in his hand brushed against mine.

"Toom!" I whispered. "That's an Earthman out there. I won't have you burn him down."

"Don't worry, sir. Worst he'll have is a headache."

He was out in the open, reeling, muttering to himself, a spaceman seeking his ship, after a hard night in the *Sloora*. I could hear its sodden, half-intelligible phrases: *"Shiriush,* thash m'ship. Where at'sh *Shiriush?"*

The sentry at the *Terra* came toward him, but he staggered away, back into the shadow.

The guard came faster, calling: "Hey, you! What're you up to?" His voice was thick with drowsiness.

Gwyllis reappeared, halted, swaying. "Where'sh *Shiriush?"*

"The *Sirius* blasted-off hours ago. You're A. W. O. L. C'm here!"

"Comencash me." The apparent drunk was playful now, stumbled into the darkness.

The sentry followed. "Come here, damn you! I've got to take you in to the provost." He thrust a heat gun into his belt, freeing his hands, plunged into the pool of dark.

A faint thud came to me, nothing more. But in seconds Toom was at my side.

"He's out for ten minutes or so, sir."

He peered out at the field. The guards at the other ships were turn-

ing away. Their fellow was marching the drunk to the disciplinary officer, no doubt.

"Come on, sir! Now's our chance."

VII.

We SHOT across to the *Terra,* were hidden under her keel. Toom turned toward her stern. I kept pace with him, wondering. None of this made sense; we couldn't hide here.

He halted and climbed on some empty tanks, piled there when the *Terra* had been refueled. I could discern that his hands were over his head, that he was fumbling at the vessel's skin. We must be under E hold, I thought. What the devil, he couldn't get that hatch open! Only the port captains had keys to the auxiliary entrances. Metal scraped and a black hole gaped above me.

"Up with you, sir!"

I got my hands on the coaming, hauled myself up and in. Gwyllis was right after me. He pulled the hatch cover up.

"That's that," he grunted.

"So you passed out at Nick's and woke up in here! Had no idea how it happened. And I believed you!"

He chuckled. "Is the captain sorry he brought me to Mars?"

"Of course not, you pot-bellied fraud! Who the devil are you, anyway?"

"Toom Gwyllis, sir, at your service." I swear he was laughing at me.

"Where did you get an auxiliary hatch key?"

"Found it in here, sir, when I was locked in before we landed. Must have been dropped by whomever brought me aboard."

"Very likely!" But I had to let it go, there was no getting anything out of the man. "What do we do now?"

"May I offer the suggestion that we blast-off before trouble starts, sir?"

"We'll never get away with it Morse and Grendon——"

"Are ashore. Just before the *zanting* started they received orders for a special conference at the I. B. C. building. They're cooling their heels now, I hope, waiting for some one to show up."

I grunted. "Another accident, I suppose. But the patrol ships, man —they'll be after us like a shot."

"There's not a patrol ship on Mars, sir. A call came from space, apparently, that the Bat was in the offing, and every ship was dispatched in an attempt to catch him. If the captain will set a course two points off the ecliptic, due west, they won't spot us. But, sir, every moment is precious, and we are wasting time."

"I have no tubeman."

"The captain may rely on me."

"I seem to be getting into that habit."

The *Terra* kicked off perfectly, and I was never more glad to see any planet drop under my keel. I set her on the course Gwyllis had suggested and let her ride. The tenseness that had sustained me vanished, and it was all I could do to get back to the couch. Oblivion swallowed me the moment I hit it.

I woke instantly at a touch on my shoulder, but knew I had slept long and well. Instinctively I glanced at the gauges. We were in free flight, still on the course I had set. The gravity coils were on, everything was functioning perfectly. I sniffed an appetizing odor of coffee and grilling bacon and grinned at Toom.

"You're a man of parts, Gwyllis,

as good a rocketman as you are a cook."

In the mess room he stood behind my chair.

"I squirmed. "Pull up a chair, Toom."

"As the captain wishes, but it is hardly fitting for a steward to——"

"That will be just about enough of that," I rasped. "Hereafter you will have the title and rank of first officer. Please log that, mister."

Gwyllis accepted that with his everlasting chuckle. "Very well, sir. Thank you, sir. I shall try to do my duty."

"As you know," I continued, "there is very little formality among officers of these freighters except in line of duty. Pull up a chair and start eating."

A LITTLE LATER I pushed back my empty coffee cup. "You'll start your new duties with a ward-room conference, Toom. We can't go rocketing through space forever."

"No, sir. Nor can we land at any space port in the system; they're all on the watch for us by now."

"I don't want to land at a space port. I want to find the Black Bat, to get my brother Darl out of his clutches."

"I want to find the Black Bat, too, to find him and smash him!"

I had been toying with a spoon, but I looked up quickly at the sudden change in Toom's voice. The humor was gone from his eyes. His nostrils flared; his jaw seemed to be thrust forward and his face to lose its roundness. I'd hate to have this bulldog on *my* trail, I thought.

Then the old Toom was back, in outward seeming at least. "I have a little bone to pick with the fellow myself." He grinned. "We can't find him soon enough to suit me, sir."

"But how, man, how?" I voiced my puzzlement. "In all the infinity of space how are we going to run down a ship that outspeeds our best two to one, that pounces from nowhere, strikes, and vanishes into the unknown? How can you and I, alone in an unarmed freighter, hope to find it, or having found it to cope with that mysterious orange beam that seems to render any rocket craft it touches helpless?"

"We must find his base."

"That seems as hopeless as finding the ship itself."

Toom leaned across the table in his earnestness. "Captain, they were saying in the *Sloora* that Venus is using the Black Bat's forays as an excuse to force war on Mars."

"I have bitter reason to know that to be true. But the *Trina* is mad. If hostilities break out, Earth will join Mars, and the combined fleets will wipe the Venusians out of space."

"I wonder, sir. No one has ever accused the fishmen of stupidity. They always have been recognized as the shrewdest, the most cunning, of the people in the Triplanetary Union. Has it ever occurred to the captain that there must be some reason for their closing all but their ports to outworlders? Two years ago they did that, sir, just when the Black Bat's depredations began."

My scalp prickled. "By gosh, Toom, that gives me an idea! Suppose Venus has developed a new type of space ship that has twice or three times the speed of any the rest of the system possesses——"

"Like the Black Bat's craft, sir?"

"Exactly! Like the Bat's hell ship. And a weapon, too, before which the fleets of Mars and Earth would be helpless."

"Like the Black Bat's orange beam, captain?"

"Like the Black Bat's orange beam! And suppose that under the clouds veiling her from the rest of the system she has been building a fleet of war craft like the Bat's, wouldn't that explain a lot of things?"

Toom's eyes were shining. "Then the captain thinks——"

"That the Black Bat is a Venusian! That his putative piracy has been accomplishing two things—testing the new ship and the new weapon, and furnishing the *Trina* with an excuse to precipitate the war they desire. That under the cloud curtain of Venus a fleet of space ships lies lurking, waiting for the word that will send it forth to destroy, to murder, half the people of Earth and Mars and enslave the rest!"

"You think we can find the Black Bat then——"

"On Venus! Let's go!"

VIII.

I CAME into the control room yawning. Gwyllis glanced around at me with red-rimmed eyes, turned back to the screen. Not for a moment would he relax the scrutiny on which so much depended.

"What luck, Toom?"

"None, sir."

It seemed he had made that reply to me, and I to him, countless times, in the days we had circled the vapor-shrouded orb of Venus, keeping her ceaselessly on the electelscope screen. Our portholes were blinded so that no betraying light gleam might escape. Our tubes were silent. I had thrown the ship into an orbit around the fishmen's world, made the *Terra* her satellite, and unremittingly we had watched every foot of her cloud sphere for some sign of what we sought. Unavailingly!

I looked at the quarter orb filling the screen. The night side of Venus showed a rolling, featureless expanse of faintly luminescent vapor. Featureless save for the glowing red circle of the cloud-piercing searchlights that marked Ratna, in the north, the treaty port on this hemisphere. And there was that one faint spot of white light down near the equator. We hadn't been able to make out what that was. I noticed that Gwyllis was watching it.

"Still worrying about that white spot, Toom?"

"Yes, sir. I have a hunch—— Look at it! His fingers seized my arm, dug into it.

The light had blinked out, come on again instantly. As we watched, it shone steadily while one might count five, then it blinked again—four times. Another fairly long period of steadiness. Then the cycle was repeated.

"It's a signal!" My voice was hoarse. "No doubt about that."

Toom was calmer. "A signal all right. One dot, then four dots. Captain, isn't that E-H in the old Continental Morse code?"

"Yes—E-H. The beginning of all Earth call letters. But it can't be that. It's just a coincidence."

"Maybe; maybe not." Gwyllis seemed to be talking to himself; I could scarcely hear him. Then, more loudly: "Look! It's changing."

"Yes; it's different now." I reached for pad and pencil, jotted down: one dot, four dots, one dot, four dashes, three dots, two dashes. I was pounding on Toom's back, was shrieking like one possessed: "E-H 13, Toom, E-H 13! It's the *Luna's* call! It's Darl, Toom, It's Darl!"

"It's the captain's brother all

right." There was a vibrant thrill in his voice, but his eyes never left the screen. "Must have escaped somehow, sir, got to that light, blinked it on the wild chance that an Earthship was somewhere in the offing—— *Look!*"

The signal beam was now flickering wildly, its staccato rhythm gone. Then it was steady again, a dim white spot on the chaotic, tumbling sea of clouds, inscrutable.

"What—what do you think's happened?" I gasped.

"Simple enough, sir. They caught him at it, were struggling over the light. He couldn't fight them off."

Toom sensed my agony. "They haven't killed him, sir. There wouldn't have been any struggle, the signaling would have stopped suddenly. For some reason they're keeping him alive, for the same reason that they fetched him from the *Luna*."

"Thanks, Toom." His logic was perhaps faulty, but I wanted to believe he was right. "Listen. We're going down there to get him away from those scaly devils."

"Of course, sir. It's what we have been looking for—the break that had to come. For better reasons, if I may say so, than the mere rescue of the captain's brother."

I flashed round at him, my blood boiling. But his blue eyes caught mine in a steady, meaningful gaze. And I remembered that far greater issues depended on us two than Darl's liberation. It was certain, now, that those clouds hid a deadly menace to our native Earth. My fist unclenched.

"You're right, Gwyllis, as usual. If you'll get to the tuberoom we'll start."

IN THE SIXTY Earth-days since our escape from Mars I had learned to rely on Toom as I had on Elliot or Morse. Where the man had been trained he never told me, but he was as efficient a rocketman as any in the fleet.

And I had need of efficiency for the task ahead. This was no question of landing on a charted field, with a trained ground force and a waiting cradle to take the shock of the final plunge. I had to set the seventy thousand tons of the *Terra* down on an unknown terrain, a tarmac I could not see until it would be too late to cope with any threatened disaster. Three quarters of Venus' surface is water, that is known; the rest, save for the city clearings, a steaming, miasmic swamp. The cloud ceiling is never more than five thousand feet above the gigantic, tangled vegetation of that swamp, and the rain is eternal.

There must be solid land near that light. I had only that to guide me. I made my calculations.

The intra-ship talk disk clicked and Toom reported: "All set, captain."

"Two tenths power on the nose, steady."

My first move was to check speed sufficiently to get the ship falling in a long, flat spiral, so that her final dive would be almost tangent to the ground. Then I must continue to decelerate so that contact would be at exactly the point I wished to reach and at a rate that would not destroy the vessel. A delicate maneuver, even with clear vision. And I should be blinded by clouds until almost the last instant.

We flashed around the vapory sphere, ever slower, ever nearer. Now we were in its atmosphere, and I switched on the refrigeration system against the friction heat of our still terrific speed. We plunged into the clouds. Grim gray masses

ripped by the portholes, and the periscope screens were useless. It was possible to tell whether we were above one hemisphere or the other only by the Sun's flood in the impenetrable mass of thick haze or its absence.

This alternation of day and night grew less frequent. Now for an hour we traveled in black murk, lightless fog like none ever seen on Earth. The inclinometer showed the angle of our course to be very near that of Venus' surface curvature. And suddenly we were through the clouds.

Torrential rain lashed at the portholes, continuous lightning crackled all about, and thunder crashed till the universe seemed ripped apart. In the under-keel periscope nothing showed but an illimitable expanse of black, tossing ocean. We were dropping fast, dropping toward the hungry waters. No good! Still a chance to blast away and try again. I snatched up the talk disk.

"Stern and keel tubes, full power!" I snapped.

"Aye, sir!" Toom's voice. But there was no blast roar, no lift of the *Terra* away from the waiting sea. A click and Toom's voice again: "I can't get a spark, sir. Lightning's burned out the coils."

"It's good-by, then." I was surprised at the steadiness of my own accents. "We're dropping into the water."

Nor was Gwyllis' reply any the less steady: "As the captain says. Good-by, sir." And he actually chuckled.

I gazed lacklusterly at the periscope screen. We were only twenty-five hundred feet up and falling as we shot onward. Ten seconds more to live!

There was a black mass ahead, more solid than the heaving sea. Land! A pillar of light boring up from the horizon! I had miscalculated by seconds only! As well have been hours. The *Terra* hurtled into the waves, water pounded against the ports. A tremendous crash flung me across the room—head-first for the wall. The universe exploded in a flare of light!

IX.

I STRUGGLED up to consciousness. Toom was shaking my shoulder. Lightning flickered, and water streamed from the little man's face.

"Wake up, sir!" he yelled. "Wake up!"

I was lying in water, but there was mud under it, soft to my aching body. There was some sort of canopy above that kept most of the rain from us. It was hot, and the top of my head felt as if it were caved in. I pushed myself to a sitting posture, tried to stop the squirrels running around inside my skull. The air was thick with moisture, respiration was agony.

"There were Venus suits in the *Terra's* lockers. Too bad we can't get them."

"Is the captain certain we cannot? Look out there, sir."

Toom waved a hand to the left and chuckled. The heavens split open. There she was, a glistening behemoth, waves foaming along her keel, but the rest of her steady and unshaken. I gaped, bewildered.

"She plunged into the sea where it was still deep enough to prevent damage. She kept right on going, just like a submarine. Being airtight there was no chance of water leakage, sir, and she had way enough to bring her to shore. What knocked you out was the jar when she hit the shelving beach."

"She's smashed, of course. Done for."

"I was afraid she was and got you to shore. But I've been back, and she is sound as a whistle, hasn't sprung a single plate. Has the captain any plan for locating the place of the white light?" He changed the subject, avoiding the thanks that rose to my lips.

By now I was completely recovered, except for a throbbing pain in my skull. I recalled what I had seen just before we crashed. "Don't need a plan, Toom. We're there."

"If the captain will just lie down again——"

"I'm not delirious, you fat chump! It's off there." I pointed. "Not twenty miles. I saw it."

"Great jumping constellations! And the fishmen couldn't possibly have seen us!"

I scrambled to my feet, my hair brushing against two great *banta* leaves Toom had drawn together with thorns to make a flimsy shelter. "Let's go!"

"May I suggest that we make haste slowly, sir?"

"Slowly! Darl's there, man! Hurt. Dying perhaps."

"The Bat's there, too, I hope," Toom returned grimly. "But I am sure the captain will agree that we should attend to the *Terra* first, get her in shape to fly. If we succeed in——"

"You're right, Toom, as usual. Come on!"

SWIMMING out to the ship was no joke, although the sea had moderated and the downpour had dwindled to a mere drizzle. C hold port was open, well above the water line. A stream of water trailed after me as I hurried down the catwalk to the tuberoom.

The spark coils were a welded mass of copper, but there were spares neatly shelved, and it was a matter of minutes only to substitute them. I checked the rest of the set-up carefully and found everything shipshape.

"Lunch is served, sir." Toom's cheery call rang out of the disk. Coffee was steaming on the grill in the mess room and steaks were broiling. "It is my opinion, sir, that a man as well as a space ship functions better with full fuel tanks." He grinned.

"One second," I grunted, "while I get into dry clothes."

"All laid out in your cabin, sir. And I've found the Venus suits, too."

For all his assumed calmness, Gwyllis gobbled his meal as fast as I. At last we were through. We got into our Venus suits. These are made of a water-shedding fabric, simulating the scaly skin of the natives, but so light and ingeniously contrived that they do not impede movement. And the breathing filters, tiny contrivances clamping within one's nostrils, are shrewdly devised to keep moisture from one's lungs while they admit air. A perfect match for the Venusians' gills. We thrust heat guns into capacious pockets. Toom put something else in his, I could not see what and I forebore to ask.

"All set!"

For hours we struggled through the nightmare of that swamp, that steaming, miasmic jungle. We climbed over the gnarled root knees of gigantic *banta* trees, swam through green-scummed, stinking pools, forced our way between the fronds of towering ferns, almost impaled ourselves on the man-long thorns of the *xitipus*. A warm, penetrating drizzle sifted through the tangle overhead—fine weather for

Venus—and the loathsome fauna of the place was out full force. Fifty-foot long-legged snakes slithered away from our approach, and leprous tree toads, big as horses, deafened us with their croak. We reeled on, drunk with fatigue, half drowned despite our Venus suits, peering through the blackness ahead for some sign of our goal.

We got to the top of a slight rise. A clump of giant ferns covered its summit. But light filtered through the thicket ahead—white light that could come only from the signal beam that had called us here. We pushed aside a final curtain of low, vine-hung bushes, and stared out at a great level clearing from the center of which leaped the searchlight beam to impinge on the low-hung clouds. And we knew that in our speculations sixty million miles away we had hit upon the terrible truth.

Long lines of monstrous space ships hulked out there on the jungle-hidden tarmac, distinct in the soft glow of clustered tube lights. Space ships like the Black Bat's, blunt-fronted, curving to pointed sterns—a hundred of them at least. A black wasp swarm, brooding, waiting to leap into space, to swoop on unsuspecting Mars, unprepared Earth. An irresistible armada of death!

I groaned. "If they're like the one we saw in action our navies haven't a chance!"

"Careful, sir, they'll hear us!"

Gwyllis wasn't chuckling now. The field swarmed with Venusians, their scale skins iridescent. Some composed screeching galleries, cheering players at *telon* or *stama*—those queer games of the fishmen. Others strolled in groups or alone. But far across the clearing there were silent, pacing figures, heat rifles on their shoulders—sentries, evidently, guarding the light beam and the two buildings just beyond it.

ONE OF these was low and long, and from this came the thud of machinery. It seemed to me that over its surface there played the same odd shimmer I had noted rippling the skin of the Black Bat's vessel. From beneath its farther end, that reached the extremity of the vast field, a turbulent stream issued and rushed away to our left. And behind, blotting out the drear sky, a tremendous wall rose. No question as to what that was. A dam, supplying hydraulic power to whatever device was lodged in the long structure.

My gaze shifted to the other building, to the right, and suddenly I was trembling. It was much smaller, mushroom-roofed to shed water in the Venusian fashion. Blinded windows were lighted ovals in its dark wall. And outlined on one of these, sharply silhouetted and unmistakable, was a tall Earthman's figure—Darl's figure! The broad-shouldered, stalwart form I had thought never to see again.

"The dam's the vulnerable point, sir," Toom whispered.

"We've got to get Darl out."

"We can't do anything from this side, captain. We must get around under the dam."

"Let's go!"

Interminable crawling again, through labyrinthine jungle, casting a great half circle around the clearing. At last we were squirming along under the dam, were in the shadow of the small building that was Darl's prison. There was a cleared space of some fifty feet intervening, and only one fishman paced between. No windows faced

this way, in either building. Evidently the guard was merely routine; no real danger was apprehended. We crouched, watching the sentry.

"What now?" I breathed, trying to plan.

Gwyllis chuckled. "I've got a trinite time bomb in my pocket, sir; thought it would be useful and brought it along." An ounce of trinite, combining classic explosive power with atomic disintegration, would destroy a hundred thousand tons of any solid matter. "I'll warrant there's water enough behind the wall to sweep all this to hell."

"But Darl's there, Toom!"

Suddenly deference was gone from the man's voice. It was flinty. "Earth's safety is more important than Captain Darl Hamlin's life, or ours."

He was right. But Darl was my brother. I found myself pleading. "Listen, Toom! We can wipe this out, but the Venusians will build more ships like these. We'd only be delaying the inevitable. Maybe Darl has found out the Black Bat's secret so that Earth and Mars can duplicate these craft and meet the fishmen on their own terms by the time they have rebuilt their fleet."

"There is something in what the captain says," he responded. "But we may lose our chance, sir, in trying to rescue him."

I got an inspiration. "Listen, Toom; you stay here and plant the bomb. Give me twenty minutes. Then, whether I'm back or not, crash the dam. If there appears to be a chance of failure, crash it anyway. You'll have time to get away, and I'd rather stay here than leave without Darl."

Even in the dark I could see his hand come up to salute. "Aye, aye, sir! Twenty minutes it is, sir." Then his voice broke. "May I—may I shake the captain's hand?"

"Of course, Toom!"

Our hands met in the dark.

"God be with you, sir!"

X.

I CROUCHED, heat gun in hand, my eyes on the solitary sentry. He reached the end of his beat, turned, and came slowly back. I got him on the sights. The spat of my weapon was inaudible even to me against the roar of the power-fall to the right. But the Venusian crumpled to the ground, twitched, and lay still.

I was across the open space in a flash, was pressed close to the hut wall. It was of corrugated metal, chill to my touch. I knelt, put the heat gun's muzzle close against the wall, held the trigger down. A red spot glowed at the barrel end, blazed white. Metal dripped slowly down, hissing on wetness. I released the trigger and pulled the gun away. A neat hole was burned through the thin plate. Light gleamed through it.

I got my eye to the aperture. The hole was near the floor, as I had hoped, but I had a good view of the room within. I could see Darl, seated now at a small, light table. His left hand was bandaged, but otherwise he appeared unharmed. He was listening to some one.

I shifted the angle of my gaze to see the other. And gasped! No Venusian this! Another Terrestrian! The squat, dark fellow who had watched our little act at Nick's, smiling sardonically! He wasn't smiling now; the scar across his face was livid, and his one good eye glared balefully. There was no one else in the room, and the door was shut, bolted.

"——last chance, Hamlin," the other Earthman was saying. "I'm

tired of waiting for your decision."

"I should like a little more time to think it over, Dias," Darl replied.

The other was implacable. "No. You've stalled me long enough. I admit I want you with me, badly, but I can get along without you if I have to. There is nothing to justify your hesitation except silly sentimentality. Thank God the way the I. B. C. treated me after I got this," his hand touched his seared cheek, "cured me of that."

"It's damned hard to turn against my own people. Give me twenty-four hours more."

"I cannot give you another second." Dias paused, spoke again. The words dripped slowly from his twisted mouth: "I've just received word that the *Trina* has sent its ultimatum to Mars. In an hour the fleet takes wing, to strike without warning."

Darl leaped from his chair. "Not if I can help it, you filthy, murdering renegade!"

His big hands snatched for Dias' throat, but the other thrust the table against Darl's knees, and I saw a heat gun flash into his hand. My brother lifted and crashed the little table into the turncoat's face, Dias smashed to the floor, Darl after him.

I was frantically running my own weapon in a circle around the wall, desperately trying to burn an entrance before Dias got his gun to bear and blasted Darl. The line I drew was white-hot, but I could not wait. I snapped off the heat, plunged a shoulder at the center of the circle. It gave. I drew off, dived at it, and was through!

The combatants were apart, Darl sprawling from some thrust of Dias' trunklike arms, and the renegade was snatching up his gun for the *coup de grace!* I plugged him, saw flame burst from the cloth over his heart, twisted to my brother. He lay, exhausted, and stared up at me. "Brad!" ripped from his throat.

I thought of Toom and his time bomb. How much of the twenty minutes was gone? There was a shrill piping outside the window, a pattering of many feet.

"Snap into it, Darl!" Something crashed against the door. "We've got to get out of here."

We found Toom in the shadow. "Hurry, the bomb's set for five minutes more!"

We were running along the dam wall, running with bursting lungs, careless of discovery. But the Venusians were scurrying toward the hut where their dead leader lay, had eyes for nothing else. We got past the dam, scrambled up the abutting height. Just as we reached the top all hell broke loose!

VENUS' Earth-month-long night was ending, and a fitful light struggled through the muddy, rolling clouds. Darl and Toom and I got painfully to our feet. Our clothing hung in tatters, and there wasn't a square inch of our bodies that was not bruised. But we didn't feel any of that as we gazed down into the whirlpool in the valley below. Scaly bodies tossed in the receding flood, and the smashed, shattered remnants of a hundred black space ships that never now would menace the spaceways were everywhere.

Darl sighed. "Well, that's the end of all that."

Gwyllis turned to him. "Sir, were you able to get any idea of how those ships worked? Something our engineers can base research on to duplicate them."

Darl's mouth twisted. "No need

for that—they won't build any more."

Toom's voice was respectful, but insistent: "Why not, captain?"

"Because the only man who knew the secret lies somewhere down there." He jerked a thumb at the shambles below.

"Dias?" I asked.

"Yes. The Black Bat."

"What I heard sounded as if you knew a lot about him."

"He talked plenty. He was fed up with the fishmen and spilled over to me. He was a master pilot, years ago, when space flight was just beginning, and the ships weren't as safe as they are now. Was burned in a tube burst, but brought his ship safely down. In the hospital he got a hunch, went to the I. B. C. for backing to work it out. Was laughed at for his pains and swore revenge. Peddled his idea to the *Trina,* and they snapped it up. But he made it an absolute condition that the basic principle was to be his secret, and they had to give in."

"What was his reason?" I asked.

"He had big notions, that boy. After Mars and Earth were licked, he was going to turn on the Venusians, make himself absolute ruler of the three planets. A super-emperor. That was the prize he dangled before me, to be his prime minister, and then his heir. With all his bitterness, blood told at the last. He loathed the green-scaled fishmen, he told me, wanted an Earthman to follow him. The spies he had bought with the money he stole were anathema to him. Took a liking to me at Nick's and picked me for the job. Which proves he was insane!"

"And you kidded him along?"

"Playing for a chance to kill him, or smash the works, or something. He was always after me to commit myself, the alternative being death. I did my best to get out of him the secret of his black ships; they weren't rockets, that I knew. But all I was able to find out was that they worked on a new principle, space-warping of all things, controlled from power stations based on some planet, like the one down there. And the orange beam doused molecular activity, made rocket tubes and heat guns useless. Would kill, too, stepped up a little."

For a few minutes longer we stood on that hilltop, silent, thinking. Then we started back to the *Terra.*

IN DUE TIME we reached Earth's atmosphere, made our signal, and landed at the New York terminus. A file of marines in O. D. surrounded the *Terra's* cradle. Their officer stepped up to me as we came out of the main hatch.

"Captain Brad Hamlin?"

"That's my name."

"Captain Darl Hamlin?"

"Right here," Darl drawled.

"I have orders to place you gentlemen under arrest. You are under indictment for treason and theft of an interplanetary money shipment. There is a further charge against Captain Brad Hamlin of escaping from jail and stealing an I. B. C. space ship. Anything you may say will be used against you."

I threw back my head and laughed. After all I had gone through, all we had accomplished, this was really funny. Wonderful are the twisted ramifications of red tape. It would be easy to get out of this with Toom's evidence. I looked about for the little fellow. He was nowhere to be seen.

The lieutenant barked an order, and we were marching across the tarmac in the center of a hollow

square. I began to worry a little. Had Toom some reason for avoiding notice here? After all, I knew nothing about him. Perhaps he, too, was under some charge, certainly he was not the space-ship steward he had posed as. Without his corroboration would our wild tale be believed?

We neared the administration building. A tall, bald-headed figure was coming out of the entrance, in the gold lace of a general. I recognized him—Major General Lance Thomas, Chief of Staff of Earth's military forces! And arm in arm with him, his round face beaming, his little blue eyes twinkling, was none other than Toom Gwyllis.

The general answered our leader's salute, made a sign with his hand. "Halt! Ground—arms!"

The flustered lieutenant stood at attention as the oddly assorted couple reached him.

"Lieutenant," the general snapped, "release your prisoners. My adjutant will furnish you with a written order for their parole as soon as he has had time to prepare it."

Our erstwhile guards marched away, leaving us a sadly bewildered pair of brothers.

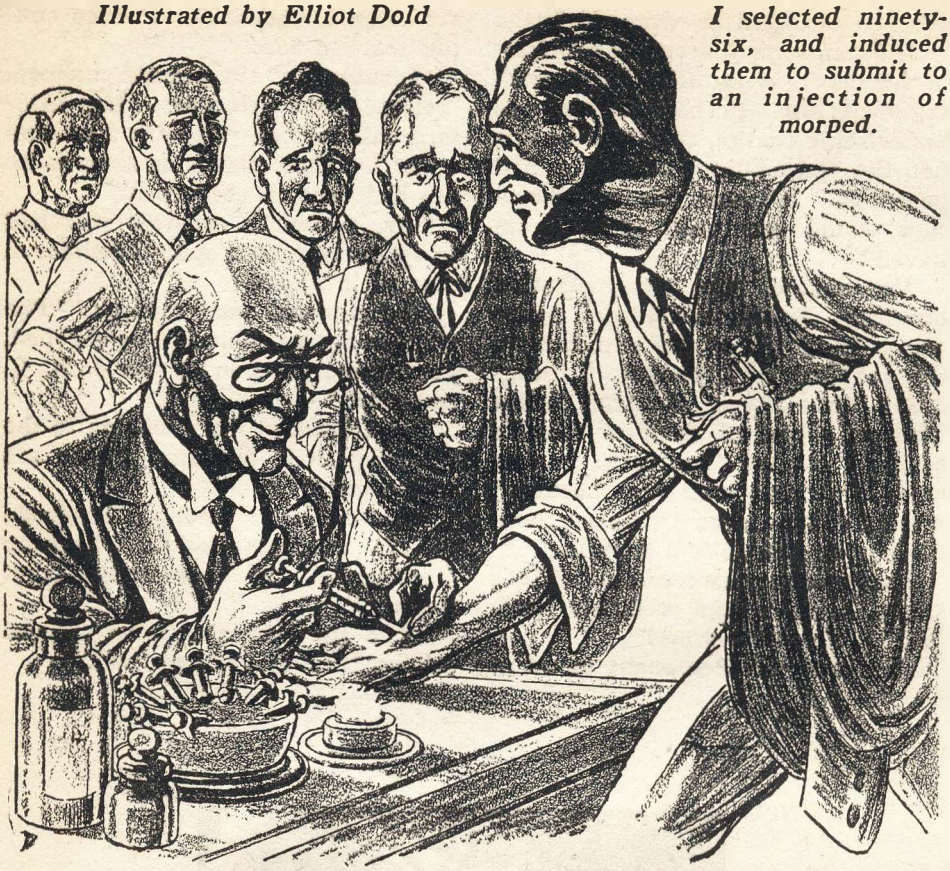
The general was saying: "The charges against you will be quashed, gentlemen, as soon as the I. B. C. can meet."

But I ignored him, whirled to the grinning little civilian. "Who are you, Toom?"

He chuckled. "Lathrop Gresham, if the captain pleases. Lathrop Gresham of the Terrestrial Secret Service."

"And the best man," the general put in, "the service ever had."

Illustrated by Elliot Dold



I selected ninety-six, and induced them to submit to an injection of morped.

The Radio Mind-Ray

Strange power emanated from the brains which had touched blood filled with——?

by Stanton A. Coblentz

FROM the remote South Sea island where I pen these words in exile and neglect, I look back upon a life so filled with astonishing contrasts that I can hardly believe it was I who lived through the experiences which I am about to record. Now, in the dying years of the twentieth century, I am an outcast, a refugee, the butt of universal scorn and derision; yet it is no more than a decade since I set out on my career of conquest, and little over five years since I was a leading figure in the eyes of my fellow countrymen if not of the world.

The whole trouble began as recently as September, 1986, when I perfected the diabolical invention

which I at first considered so beneficent. At that time I still enjoyed the comparatively obscure position of professor of experimental psychology at Middlestate University. Although not unknown in my field—being the author of several works on "Neuronic Ratiocination" and "The Inhibitory Processes of the Unconscious"—I had never aspired to recognition by the masses; hence it was to be as bewildering to my friends as it was amazing to myself to find myself launched upon a political career.

But I fear that I anticipate unduly. First let me tell about the unlucky source of all later difficulties—the Radio Mind-Ray.

For years I had been investigating the untapped abilities of the human mind. In particular, the phenomenon of hypnosis had engaged my attention; it had been well established, long before my time, that one mind may under certain conditions have a mesmeric effect upon other minds; and so powerful may this effect become that there are well-authenticated instances of blisters produced, toothaches relieved, impaired vision and hearing improved, the circulation of the blood controlled, the secretions of the glands and the flow of the gastric juice regulated, and operations performed solely under the influence of hypnosis.

All this, of course, was a familiar story to our great-grandparents; but what I sought to determine was not only what could be done, but *why*. In other words, what was the physical instrumentality that made possible the influence of one mind upon another. By means of painstaking laboratory measurements and experiments, I sought to confirm a theory which I had formed long before—that every brain gives out an invisible electrical emanation, akin to the radio wave, and that this emanation, if manifesting itself in the proper wave length, may strike against the brain cells of others as against the tubes and wires of a radio-receiving set, and so may influence the will and the very thoughts of any individual.

Even to outline the process by which I reached this conclusion would require many pages; let me therefore pass on to state that my laboratory investigations did actually confirm my hypothesis, proving that every thinking mind gave forth a powerful ray which might impinge upon other minds and effect both thought and conduct.

Thus, in a measure, might be explained the well-recognized phenomenon known as mental suggestion; thus, also, might be explained the power of all the dominating personalities of history—the Cæsars, the Alexanders, the Napoleons, et cetera.

Yet interesting as this discovery was from the purely scientific point of view, it did not at first seem to have any practical value; the effect of mind upon mind was too brief, too casual, to be gauged without the most delicate instruments. However, it was my ill fortune to conceive the idea of employing drugs to heighten mental activity; and after experimenting with a compound known as morped, which contained both morphine and adrenaline, and acted on the glands as well as the nervous system, I found that the electrical rays given out by the brain might be increased many times in power and intensity.

Indeed, they might work miracles in a practical way. I well remember the experiments I tried upon my poor unwitting wife when, having injected my veins with a dose of

morped, I concentrated upon making her undertake or not undertake certain things against her normal inclinations.

All I had to do was to think intently upon the matter, when she announced the intention not to purchase the new dress she had previously set her mind upon; all I had to do was mentally to command her to gentleness, when she completely forgot the rage she had felt on seeing my study floor littered with papers and the inkwell upset.

But not only my wife—utter strangers were affected in the same way. If I wanted a seat in a crowded subway, I had merely to wish hard enough that a certain individual should make way for me, and, lo and behold, he would arise with a sheepish expression, as if not knowing exactly what he was about.

If I desired to prevail in an argument, I had only to impinge my electrical rays upon my opponent, and he would be stricken speechless; if I entered a store to make a purchase and felt that the price demanded was too high, I could as often as not secure a reduction by attacking the bewildered clerk with my electrical brain emanations.

So far, so good—I was enjoying myself immensely and was getting my way in many little things with an ease that surprised all observers. Had I been content to let matters rest at this point, everything would have been well; but it was here that the insidious imp of ambition attacked me.

If one man could accomplish so much with the aid of morped, I reasoned, what might not ten, fifty, or a hundred men be able to achieve when acting persistently and in concert? Might they not be able to influence the minds of judges, legislators, the governors, and so make themselves the unacknowledged lords of the land?

NO SOONER did the idea come into my head than I set about putting it into execution. Being in possession of a fair-sized income from royalties on my psychological treatises and textbooks, I advertised for a hundred men to aid me in a new laboratory experiment; and, after much sifting and examination, I secured ninety-six who seemed to suit my purposes.

These all I induced to submit to an injection of morped; and then, gathering them together in a large lecture hall, I assured them that for the next hour they need do nothing but read and re-read the words on a multigraphed sheet, keeping the meaning fixed in their minds and concentrating upon it continually.

I remember that the men looked at me a little queerly, as if they doubted my sanity; however, they were being well paid; and, besides, I watched them carefully to see that they followed instructions.

The words on the multigraphed sheet were well calculated to make my assistants gasp. "Professor Hamlin Osborne," they read—this being, of course, my name—"Professor Hamlin Osborne *must* be elected president of Middlestate University. Professor Hamlin Osborne *must* be elected president of Middlestate University." And the same phrase was repeated half a dozen times.

Certainly, there seemed to be neither rhyme nor reason in it, for no one had ever thought of me as a possible university executive. It was true that, following the resignation of our former president, the regents were that day meeting to select his successor; however, the only two names prominently men-

tioned were those of Dean Westbrooks and Major Gulder, both of whom were considerably my superior in age and experience. How, then, had I any shadow of a chance?

Yet it was with intense impatience that I awaited the regents' decision. Did I expect that they would actually select me? Frankly, I did not. Yet I felt just enough uncertainty to be anxious. Hence it was with mixed emotions that I was told, a few hours later, that the regents, contrary to expectations, had not been able to decide that day; that, for some unforeseen reason, they could not agree on either candidate. But a decision, it was said, would certainly be reached on the following day.

On the next day, accordingly, I again injected my ninety-six hirelings with morphed and caused them to concentrate once more on the multigraphed words: "Professor Hamlin Osborne *must* be elected president of Middlestate University. Professor Hamlin Osborne *must* be elected," et cetera. But that evening I still remained trembling in uncertainty; for the regents, with an unexampled lack of decisiveness, still withheld their final word. And on the succeeding day, to every one's surprise, the same story repeated itself. It was not until the fourth evening that there came the announcement which electrified the campus with amazement:

"The regents, for various reasons, have been unable to appoint any of the candidates previously mentioned. As a compromise measure, they have agreed upon one of the most eminent of our faculty members, although one not hitherto considered in this connection—the head of the department of experimental psychology, Professor Hamlin Osborne."

It was significant that, while I was being deluged with congratulations and while the regents were being showered with astonished questions, none of them were ever able to give a cogent reason for the appointment.

However, there were many who did not envy me my sudden rise to office. With most of the faculty hostile because of my promotion over their heads, with the student body frankly skeptical of my capacities, and with the general public unconvinced, I would have a difficult task to assert my authority. So it was generally believed.

Accordingly, it was the occasion for widespread surprise that, from the first, I had no difficulty at all in gaining my way in everything. If a donation was required for a new dormitory or gymnasium, the money would come with remarkable swiftness from some unexpected source; if the executive council seemed to oppose my will in regard to academic policy, their resistance would vanish like thin fog once they came to the test of a vote.

Within three months, consequently, it began to be recognized that I was the most powerful executive Middlestate University had ever known.

What people did not recognize, of course, was that it was not really I that deserved the credit; it was the drug known as morped, which, daily injected into the veins of my ninety-six employees, enabled them to direct their thought-rays against all opposing wills and accordingly to consummate my designs.

Naturally, all this was kept strictly secret. The men under the influence of morped were emphatically enjoined to say nothing as to the nature of their work, and they were never taken into my confidence

as to how I was using their mind-rays. If they ever guessed anything, in those early days of my success, they either kept their conjectures strictly to themselves, or else their surmises appeared so incredible that no one would take them seriously. At all events, I had told no one about the drug, and no one as yet seemed to suspect the truth.

It might, however, have occurred to me to take warning for the future; and doubtless, had my wits been fully about me, I would have known that a day of reckoning would come. But such was the heedlessness of my triumph that I looked neither to right nor to left; under the goad of ambition, I had become like a madman; no thought was in my mind but my own advancement, and there were no limits to my aspirations. Who would have supposed that, only a few months before, I had been a quiet, "dry-as-dust" professor of experimental psychology?

AS NEW perspectives gradually opened out before me, the mere presidency of a university came to appear, after all, a position of no importance. It was consequently not long before I began to send out thought-emanations that would lift me to higher rungs of the ladder.

I first set my mind on the governorship of my State, which, it seemed to me, might be the stepping-stone to yet more eminent office; and though I had been as little considered for this position as previously for the presidency of Middlestate, the mind-waves of my ninety-six hirelings prevailed—prevailed to such an extent that I was not only named at the Democratic convention, but, to every one's astonishment, received the nomination by a handsome majority.

Yet this was the mere beginning. Having been nominated, I was not conceded so much as a fighting chance for election; for the Democratic party in my State had come out a poor second in every election for forty years; in fact, only two years before, it had been snowed under by five hundred thousand votes.

This, however, did not daunt me. I conducted a secret campaign which, it seemed to me, could not but bear fruit. While my rivals, convinced of an easy victory, made only the most perfunctory efforts to win voters, I kept my ninety-six assistants constantly busy, sending out thought-rays which, I was certain, would influence large numbers of citizens.

My progress, from the start, was indicated by the results of several successive straw votes. In the first of these, taken immediately after my nomination, I came out behind in the ratio of two to one. In the second, less than a month later, I was still behind, but only in the ratio of five to four. In the third, recorded ten days before election, I was ahead in the ratio of seven to six.

It was then that my adversaries first began to take alarm; but, still not crediting the testimony of straw votes, they did not exert themselves as powerfully as they might have done. And meanwhile my morped-takers, now being paid with the campaign funds of our party, were still kept busy, with the result that the news on election day was such as to send a gasp of astonishment across the country. In the ratio of more than three to two, I had been victorious.

But again no one was able to explain what had caused the sudden sentiment in my favor. Nor could

any one understand why, on becoming governor, I was able to make my will felt against a legislature of hostile political standards; nor how I happened to be made a virtual dictator without ever being officially endowed with dictatorial powers.

The attention of the country was now focused upon this singular college professor, who almost in a day had arisen to be the dominating figure among all the governors of the forty-eight States; and it began generally to be taken for granted that I would rise even higher. It was, in fact, rumored that I had eyes on a senatorial seat; but that I would aspire even beyond this was not yet in any one's contemplation.

However, who can gauge the audacity of ambition? Let it be freely admitted that I, Hamlin Osborne, Ph. D., whose highest aspiration two or three years ago had been to become an honorary member of the American Scientific Association, was now so inordinately puffed up with vanity that I cast a covetous glance upon the highest office in the land. Yes, I, Hamlin Osborne, authority on the functions of the neurons and the complexes of the subliminal, felt that I was qualified to become President of the United States.

It was perfectly true that, of all our hundred and seventy-five million citizens, no one except myself had ever thought of me in such an exalted connection. But that realization did not disturb me. My business now was to plant far and wide, in the minds of unwitting multitudes, the suggestion that Hamlin Osborne should be elected President. As it happened, I had many months to plan my campaign; moreover, making use of a large legacy which some evil stroke of fortune had just put in my way, I engaged a hundred additional men to concentrate under the influence of morped.

And thus, one by one, I cleared the difficulties from my path. Several months before the convocation of the Democratic convention, my name began to be heard as one of the suggested nominees; and while every one except myself was surprised, the general astonishment did not prevent the movement from gaining impetus. Indeed, I succeeded so far as to go to the convention with thirty-six delegates pledged to support me.

Out of a total of more than a thousand, this was of course an insignificant percentage. But every one knows the erratic course taken by the celebrated convention of 1992; how, from the outset, the two leading candidates appeared hopelessly deadlocked; how, after the eleventh ballot, the votes began drifting toward that "dark horse," Hamlin Osborne; how all my opponents made futile efforts to stem the tide, which grew irresistibly, so that by the fifteenth ballot I had more than a hundred votes, and by the twentieth more than two hundred, and by the thirty-fifth close to five hundred, and on the forty-first had more than a majority, and on the fifty-second ballot had triumphantly passed the two thirds mark and had been nominated for the Presidency.

Such turns of fortune, to be sure, had been known more than once before in the course of our political history; but always before there had been some clear-cut, understandable reason. In the present case no one —not even the delegates themselves —could explain why so many votes had spontaneously come over to me instead of to more popular candidates.

But, though the world was bewildered, I had at all events prevailed again; and in my mind, as I planned my further campaign, there was now no doubt at all but that Hamlin Osborne was to sit in the chair once dignified by Washington, Lincoln, and Wilson.

YET NOW, of all times, I should have kept my eyes open. I should have realized that my political opponents, driven to desperation, would spare no effort to defeat me; I should have known that they would not pause at any measure however contemptible. Nevertheless—strange as it may seem—I was so confident in the powers of morped that I did not take even ordinary precautions.

While ostensibly conducting a speaking campaign in the established fashion, I was giving most of my thought and attention to those hundred and ninety-six men who, sending out their mind-rays under the influence of morped, were exerting a witchery over voters far and near. Moreover, I was gratified to note that the straw votes were showing the same tendencies as in my governorship race. Though originally far behind, I was gaining markedly at each successive poll, and two months before election had already achieved a majority.

But it was just at about this time, ironically, that everything started going wrong. I was too preoccupied to guess why, but now and then it would seem as if something or somebody were exerting a mesmeric influence over me. I would find myself doing something I had not intended doing, saying something I had never thought of saying; I would turn my back needlessly, insultingly, upon one of my chief supporters, so perhaps alienating thousands of votes; I would strut and swagger with an arrogance quite contrary to my disposition; and once or twice, during my speeches, I created a national consternation by some uncalled-for remark that welled up spontaneously as if in response to some outer will.

On one occasion, I remember, I earned nation-wide reprobation by casting an unjustified aspersion on George Washington, though I actually have the deepest reverence for this great man; on another I astonished myself and my hearers by publicly proclaiming that I favored large-sized wars, though all my life I have been known as a pacifist; and by such means I bewildered and antagonized the political public no less than I amazed myself.

But in the end all might have been well; in the end morped might have triumphed over every obstacle—had it not been for the culminating misfortune.

As I look back upon it now, I know that morally I was blameless; that no effort of my will could have averted the disaster. But this, of course, could not have been apparent to the millions who condemned me.

It seems that one day—the facts, I must admit, are just a little hazy in my mind—I received a visit from an earnest-looking delegation who conferred upon me a bulging brief case and urged my signature to a red-lettered document. It was in a sort of trance that I received them; I reeled, and for the moment felt almost like a man who has drunk to excess; I was only cloudily conscious of my own movements and had no power over what I did or said.

And while a feeling of resistance to my visitors did arise within me, mixed with a sort of vague fright

and horror, still I found myself automatically acting in obedience to their demands. I have a recollection that they smiled with a sort of evil triumph as I put my signature to the paper, and that they chuckled with malevolent mirth as they bowed and left my presence; but it was not for many minutes that I could recover myself sufficiently to rise and look into the brief case they had left behind them. I found it, to my astonishment, filled with greenbacks and gold coins.

Then slowly realization dawned upon me. I had been guilty of accepting a bribe.

AS THIS knowledge seeped into my awakening consciousness, another recognition came to me with the force of a thunderbolt. I had become the victim of my own invention. My political foes, bent upon ruining me, had discovered the secret of morped and had turned it against me.

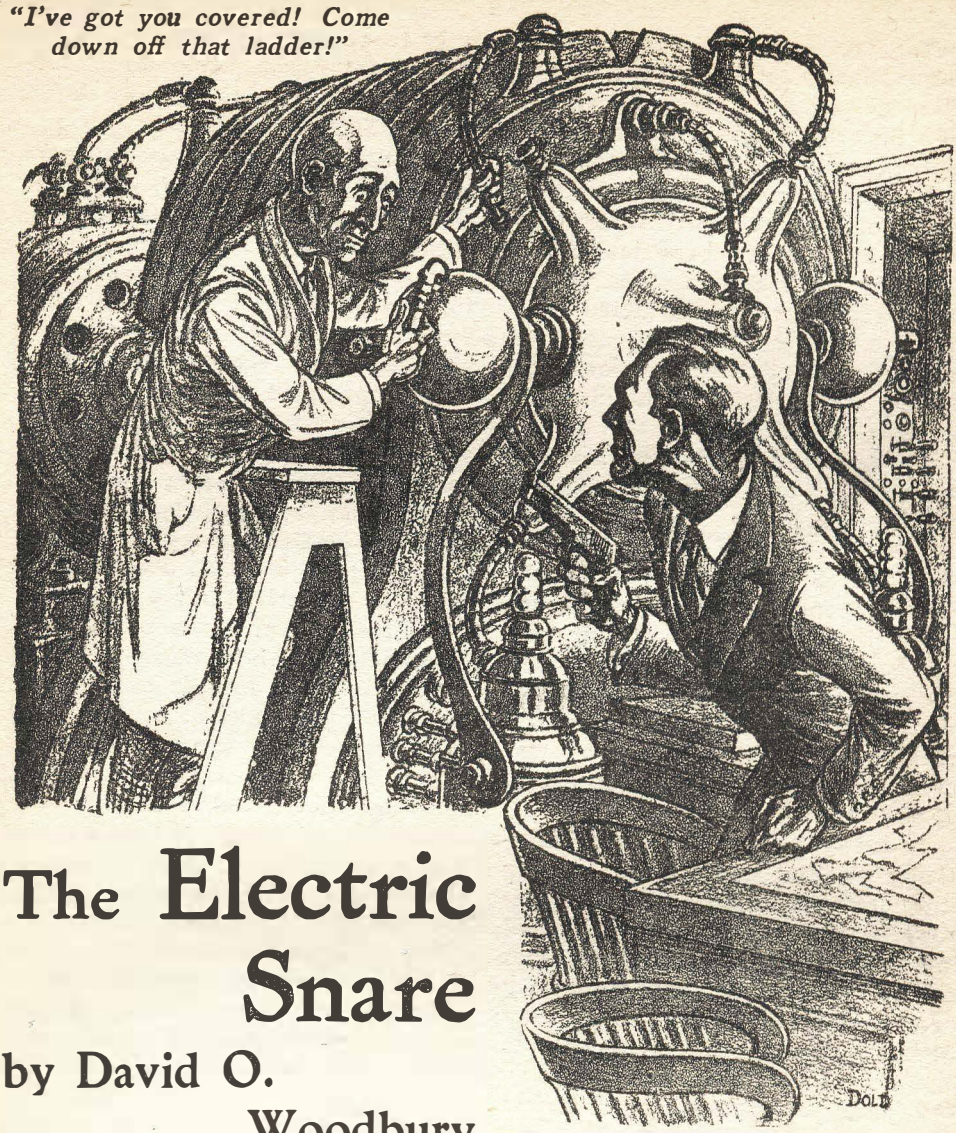
In fact—as I was later apprised—they had had confederates among my hundred and ninety-six employees and from them had learned my methods of group concentration and had secured and used a quantity of the drug. By this means, they had been forcing me to many actions against my will, and now, thanks to the joint thought-waves of scores of men, had so completely overridden my own powers of volition that I had signed their document and accepted their funds. In the circumstances, no man could have resisted—but how make my innocence generally known and believed?

The plain fact was that I was ruined—ruined beyond repair. Rarely before has such a storm been let loose against one man as fell upon my defenseless head. One has only to consult newspaper files for October, 1992, in order to realize what a world-wide tumult burst forth. Throughout the length and breadth of the country newspapers screamed the headlines: "Hamlin Osborne takes bribe! Hamlin Osborne takes bribe!"

Yes, I, Hamlin Osborne, candidate for the Presidency of the United States, had taken a bribe. There was the actual record of it, my signature appended to the red-lettered document, wherein I promised to sell the high cabinet posts in return for a sum of money, receipt of which was acknowledged. Moreover, the actual money—in greenbacks, all of it marked—had been found by detectives in my rooms before I had had time to secrete it. No case could have been more damning. I was disgraced forever in the eyes of all civilized men.

So absolute was my downfall that it was futile for me to seek to defend myself. I had, I must admit, not even the courage to face my accusers; nor the courage to confront the certainty of a long prison term. On one day it was announced that I had resigned as a candidate for the Presidency; on the following day it was proclaimed that I had disappeared and that the police had been unable to trace me.

There was, it is true, a few who knew that I had chartered an air liner for the South Seas, having first taken time only to destroy all remaining vials of morped along with the formula for its manufacture. But there was still enough of pity surviving among my former devotees to restrain them from pursuing the poor wreck of a man who, grown old and broken overnight, had flown away to lead the life of an outcast in a remote corner of the earth.



"I've got you covered! Come down off that ladder!"

The Electric Snare

by David O. Woodbury

Illustrated by Elliot Dold

FORTY-EIGHT hours would finish it. Shelby Cobb stood on the top of his stepladder and adjusted a last connection along the wall of the laboratory of his latest and greatest invention—the million-volt cathode-ray gun. An assistant might have done it perfectly, but Shelby did not like assistants. He preferred to work alone.

Besides, assistants meant the risk of spies—Jorgensen's spies. An industrial secret of this magnitude—the kernel of vast improvements in fields as divergent as medicine and metallurgy—could not be too carefully guarded. So far the secret was his alone.

In a day or two, with the final tests made, the last of the data in, the patent attorneys would be sum-

moned, and a great, a tremendous load would be shifted from Shelby's narrow shoulders to many broader ones, and all would be well.

Two days! Jorgensen had time to strike yet. And there was, as various interested persons no doubt knew, Confidential Report 129——

Shelby Cobb's pliers tightened the last connection. Below him, in the corner of the crowded room, the door of the lead-lined chamber stood awaiting his hand. Like a small boy he had anticipated this moment for weeks, months. But like the mature scientist that he was, he had not once considered short cuts, not once yielded to the urge to close the little row of switches and loose the machine's mighty power before its time. He knew that Confidential Report 129 would stand or fall by what occurred in the next ten minutes.

"Come down off that ladder!" a man's voice growled behind him. "I've got you covered."

SHELBY stretched upward a little farther and gave the connection an extra test with his fingers. His mind, released on this new problem, worked swiftly, impersonally, as it had always done.

"Don't bother me now," he said, without looking around. "Go away!"

The man put his foot on the bottom step of the ladder. "Turn around and come down here," he ordered. "I want that confidential report."

Shelby slipped the pliers into his lab-coat pocket. Then he reached up and shook the connection again. That second shake had given him time to complete the solution of his problem.

"I really haven't a moment to bother with visitors this morning," he said plaintively. "Come in another time, please." Then he turned. If the sight of the gun startled him, his steady step on the ladder did not betray it. "Move one side," he finished. "I am coming down."

The man scowled, but shifted slightly, still covering the little scientist. He jerked his head toward the desk in the corner. "Back over there and sit down," he ordered.

Shelby stood exactly where he was and looked at the intruder over his glasses, uncomprehending annoyance wrinkling his forehead. "It's extremely bothersome of you to come here this morning," he said. "Now to-morrow, my final tests would have been made and I——"

"Get me the report and stop talking."

"Now you know," Shelby went on conversationally, "I never had the pleasure of meeting Jorgensen, yet I admire him. He's an enterprising man. He has sense enough to know what he wants and to go after it. It's a pity——"

The man put the muzzle of his gun in Shelby's ribs and pushed him backward toward the desk. "Leave Jorgensen out of this and get that report. I'll give you sixty seconds."

Shelby sat down at his desk and grasped its edge with his hand to keep from falling. Then he found his balance and pulled open a right-hand drawer. Confidential Report 129 lay there in full view, bound in blue covers. Shelby picked it up and handed it to the man with a slight smile. His only emotion seemed to be annoyance, and not very much of that.

"Tell Jorgensen to study it carefully before he begins his work. The construction is rather intricate. It may be difficult to write patent

specifications with sufficient breadth for——"

The man snatched the manuscript from his hand and flipped the pages quickly, his keen eyes running over the columns of figures appraisingly. Then, apparently satisfied, he backed toward the door, still covering Shelby with his gun.

"You had better not mention this visit," he said in a low voice. "It'll be healthier for you!" With his left hand he fumbled behind him for the doorknob.

"No," Shelby murmured. "It will be better for every one if it is never mentioned."

"Hey! What's the matter with this lock?" the man cried. "Let me out."

Shelby rose in leisurely fashion. "Oh, I'm sorry!" he apologized. "I have an electric catch on it. The apparatus here is dangerous, and I often do not wish to be disturbed."

He turned, ignoring the weapon, and entered the lead-lined chamber at the back of the room. "The control switch is in here; that is, one of them is. I'll open it for you at once." He reached under the bench. "Try the knob, now, and I think the lock will release."

IN THE INSTANT that the man's eyes were diverted toward the lock, Shelby swung the door of the chamber shut, with himself safely inside. The crash of the gun's discharged followed a split second later. Three times the man fired, and then there was silence.

"I wouldn't do that," Shelby's voice came faintly from a small aperture in the side of the cabinet. "It won't do any harm, of course, but your ammunition is quite wasted against three inches of lead."

The intruder made a savage step toward the chamber. At that instant the room was plunged in darkness. There was a heavy bump as the man crashed into the desk.

"Turn on those lights!" he shouted hoarsely.

"Just a moment," Shelby soothed him. "Now that you're here I should like to give you a little demonstration. It will help to clarify the report for you."

A strange violet glow filled the upper part of the room, and the hum of a transformer could be heard. Shelby's voice came again from the cabinet, as dispassionate as a professor's to his class.

"The cathode ray generated by nine hundred thousand volts," he explained. "It's not very spectacular, I'm afraid. But it's quite interesting in its effect. At this potential the rays generate hard X rays upon whatever metal they may strike. The room, of course, is filled with metal. Your own gun, for instance, my dear Jorgensen, is flashing out X rays this minute far more deadly than your little lead bullets."

There was an instant's silence; then the clatter of the gun upon the floor. The man leaped into the middle of the room.

"For Heaven's sake, turn it off! Turn it off!" he yelled.

"Notice the peculiar shape of the glow at the end of the tube," Shelby pointed out placidly. "My special construction makes that possible. It means much faster electrons and, of course, more abundant X rays."

"Turn it off!" the man screamed, and threw himself in a heap under the desk.

"My dear Jorgensen!" the scientist protested. "Don't make yourself uncomfortable. You are quite aware that wood is no possible protection."

"I'm not Jorgensen. For Heav-

en's sake stop it!" the victim wailed.

"If you weren't, of course, I should not have bothered to give you this demonstration. As a matter of fact, if you had sent one of your usual spies instead, I should very likely have had to let him go unharmed. Your spies, Jorgensen, are aware, I believe, that I have a door control button under my desk top."

"For Heaven's sake—for Heaven's sake stop!"

"Besides," Shelby added, "you're the only man in your organization who would recognize my report by its text. I'm afraid you've identified yourself hopelessly. Take a good look at the tube now. I'm going to shut it off."

THE LIGHT in the room vanished, and a second later the electric bulbs flashed up.

"The door is open," Shelby said.

The man staggered toward it. The blue-covered report and the gun lay in the middle of the floor.

Shelby stepped out into the room, stooped and picked them up. Deliberately he broke the gun breech and spilled out the remaining cartridges. Then he proffered the weapon to Jorgensen.

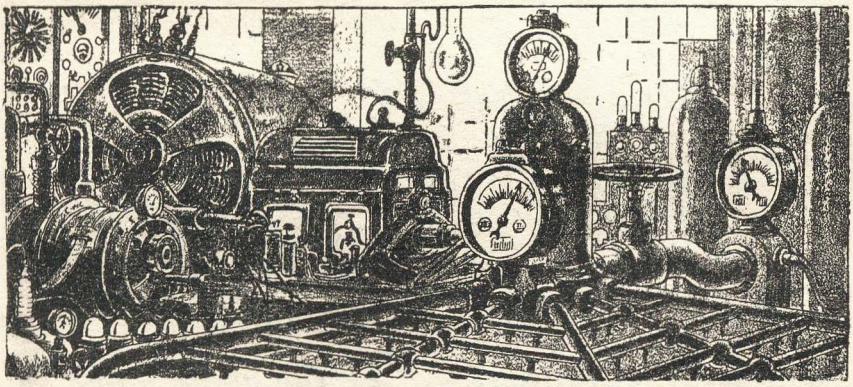
"Here, you'll want your gun," he said mildly. "You'll pardon me if I keep this report. The officials will require it to-morrow."

The man's fingers were white as they clutched the door latch. He seemed unable to propel himself out.

"Don't worry, my dear fellow. You'll feel all right again in a minute. Of course, an exposure to X rays such as you have just experienced is always fatal. But not for some time. In a month or so I'd advise you to go to a good hospital. They have treatments which relieve the burns somewhat. In the meantime——"

But the man had toppled and lay in a dead faint upon the floor.

Shelby lifted the receiver of his telephone and spoke to his secretary. "See that an ambulance is sent to the laboratory at once," he said crisply. "A man has been hurt."



Shabby scarecrows of men, they drifted on down toward the sinister black city of the unholy Medusae.

Illustrated by M. Marchioni

Part Four

The "Three Musketeers" of the void move on toward the breath-taking climax of their adventure in:

The Legion of Space

by JACK WILLIAMSON

UP TO NOW:

In the thirtieth century, John Star —then John Ulnar—receives his commission in the legion of space, with orders to join the guard of Aladoree Anthar, a lovely, mysterious girl, keeper of AKKA—the secret weapon of humanity, so terrific that its plans are intrusted to only one person in the system.

For two hundred years AKKA has protected the democratic Green Hall Council from the "Purples," who plot to restore the old empire, with the despotic family of Ulnar on the throne.

Now, Adam Ulnar, wealthy leader of the Purples and commander of the legion, has sent his nephew, Eric Ulnar, claimant of the throne, to the far star Yarkand, where he made an alliance with the weird, monstrous, but highly scientific "Medusae," to help crush the Green Hall, promising them iron, precious to them.

Aided by the Medusae, Eric Ulnar abducts Aladoree, to deprive the Green Hall of her weapon. John Star, with three others of her loyal guards, Jay Kalam, Hal Samdu, and Giles Habibula, sets out to rescue her.

They seize the "Purple Dream," space cruiser of the legion fleet, capturing the traitorous commander on board. He tells them that Eric took the girl to the horror-haunted planet of Yarkand. Braving the perils of the long interstellar flight, they reach the planet, fall into its atmosphere, the cruiser crippled by the space defenses of the Medusae.

Adam Ulnar, communicating with them, learns that Eric has been tricked. Tricked into betraying mankind! The legion prostrate, AKKA lost, an outpost established on Earth's moon, the Medusae are conquering humanity for themselves. Their sun dying, they plan to wipe out the human race, colonize our younger system.

The "Purple Dream," helpless, plunges into a yellow sea.

XVI.

"SO WE'RE stuck on the bottom of a mortal sea!" observed Giles Habibula. He was not in a mood of rejoicing. His voice approximated that of a well-grown and lusty tomcat protesting a weighty tread on its tail.

John Star nodded soberly, and he went on:

"Twenty blessed years I've served in the legion, since that time on Venus, when——"

He checked himself, with a roll of his fishy eye, and John Star prompted:

"How was it you came to join?"

"Twenty years old Giles has served in the legion, as loyal and true a blessed man, and—ah, yes, in life's name—as brave a soldier as ever was!"

"Yes, I know. But——"

"Old Giles has put his past behind him." His voice was reproachfully plaintive. "He has redeemed himself, if ever a blessed man did. And look at him now, bless his precious bones!

"Accused for a blessed pirate, when for twenty long years he's

never done more than—when for twenty mortal years he's been a hero in the legion. Ah, yes, lad, look at old Giles Habibula. Look at him before you now!"

His voice broke; a great tear trembled in the corner of his fishy eye, as if terrified by the purple magnitude of the nose below, hesitated and dared and splashed down unheeded.

"Look at poor old Giles! Hunted like a dog out of his own native system. Driven like a rabbit into the mortal perils of space. Hurled headlong into this planet of bloody horrors. Stuck to spend the rest of his cheerless, suffering days in a precious wrecked hulk on the bottom of a mortal sea!

"Pitiful old Giles Habibula! For years he's been feeble, tottering, with gray hairs crowning his mortal head. He's been lame. He's been forgotten, stuck away at a lonely, desolate little outpost on Mars. Now he's trapped to starve and die in a wreck on the bottom of a mortal sea!"

He buried his great face in his hands, and trembled to sobs resembling the death struggles of a harpooned whale. But it was not long before he straightened, wiped his fishy eyes with the back of his fat hand.

"Anyhow, lad," he said, "let's have a drop of wine to help forget the mortal miseries that are piled upon us. And a taste of cold ham and biscuit. And there's a case of canned cheese I found in the stores the other day.

"And I'll tell you about that time on Venus. It was a brave adventure—if I hadn't stumbled over a blessed reading lamp in the dark! Old Giles was as clever, then, and as nimble as you are, lad."

"No, we've no way to move the ship," John Star repeated, standing with Jay Kalam, a little later, on the bridge. "She lies in shallow water, though—according to the pressure on the gauges, she's less than a hundred feet down."

"But we can't get her to the surface?"

"No. The *geodynes* are dead, the rocket fuel gone—if we had those drums we left on Pluto's moon! And the hull is too heavy to float. Wasn't designed for water navigation."

"Still," objected Jay Kalam, thoughtfully grave, yet with a calm determination that meant more than another's utmost vehemence, "still, we can't give up. Not so long as we're alive, and on the same planet with Aladoree. Not after crossing from the system."

"No," agreed John Star, quietly decisive. "If we could release her, just long enough to find materials and set up AKKA, we'd have the Medusae at our mercy."

"That is what we must do—what we shall do.

"And now," he added, "let's talk to Adam Ulnar."

THEY FOUND the man sitting wan and dejected on his cot in the brig, still dazed from the shock of the Medusae's revelation. He was staring blankly at the wall, dry lips moving. At first he was not aware of them; John Star heard the whispered words:

"Traitor! Yes, I'm a traitor! I betrayed mankind."

"Adam Ulnar," called John Star, torn between pity and scorn for the shaken creature, who started, looked up at them listlessly. "Are you willing to help undo your crime?"

A little flicker of interest, of hope, came into the dull, tortured eyes. But he shook his head. "I would

help," he droned. "I'd give anything, my life. But it's too late. Too late, now!"

"No, man!" shouted John Star. "It isn't too late. Wake up!"

Adam Ulnar got uncertainly to his feet, his haggard face anxious. "I'll help. But what can be done?"

"We're going to find Aladoree, set her free. Then she can wipe out the Medusae with AKKA."

He sank back wearily. "You are fools. You are lying in a wrecked ship on the bottom of an ocean. Aladoree is guarded in a fortress that would be impregnable to all the fleets of the legion—if the Medusae haven't already tortured the secret from her and done away with her! You are idle fools—just as I was a fool——"

"Tell us what you know about the planet," said Jay Kalam. "The geography of its continents. And about the Medusae. Their weapons, their civilization, where they would be likely to imprison Aladoree."

Adam Ulnar looked at them, dully, from his apathy of despair. "I'll tell you the little I know—though it will do no good. I was never here, myself, you know. I had only the reports that Eric's expedition brought back.

"This planet is much larger than Earth. About three times the diameter. Its rotation is very slow, its day about fifteen of Earth's. The nights are fearful. A week long, and bitterly cold—it is because their system is dying that the Medusae want ours."

His stare was drifting blankly past them; John Star prompted sharply:

"The continents?"

"There is just one large continent —about equal in area to all Earth. There's a strip of strange jungle along the shore, savage and deadly. It grows, Eric said, with amazing rapidity in the long day, and swarms with fierce, unearthly life.

"Along the east coast, beyond the jungle, is a towering mountain range, more rugged, Eric said, than any in the system. West of the mountains is a vast, high plateau, lifeless, cut up by wild cañons. Beyond is the valley of an immense river that drains almost the whole continent.

"The Medusae—their numbers have been dwindling because of the cold and the endless battle with the weirdly savage jungle life—the Medusae inhabit a single great city near the mouth of the river."

"Aladoree?" prompted John Star again, anxiously.

"She would be in the city, no doubt. A strange, amazing place, Eric said, incredibly huge. All built of black metal. Surrounded with walls a full mile high, to keep back the terrible jungle. There's a colossal fortress in the center, a gigantic tower of black metal. They'd be apt, I imagine, to have her there—guarded by weapons that could annihilate all the fleets of the system in an instant."

"Anything else, you know?" urged Jay Kalam, as the hunted eyes fled back into vacancy.

"No. Nothing else."

"Wake up! Think! The system is at stake!"

He started. "No. Yes, there's one thing I remember, though it won't do you any good to warn you. The atmosphere!"

"What about the atmosphere?"

"You saw that it's reddish?"

"Yes. What—isn't it breathable?"

"It contains oxygen. You can breathe it. But it's filled with the red gas. It does the Medusae no harm—it's necessary for them, in fact. Those that came to the sys-

tem had to mix it artificially with the air they breathed. But to men ———" His voice trailed away into brooding, hopeless horror.

"What does it do to men?"

He collected himself with a visible effort. "You remember that wound on your shoulder, John? That was caused by the red gas. Squirted on you in liquid form. The Medusae have learned to use it for a weapon. The members of the first expedition——"

"Those lunatics, you mean, dying in the hospitals?"

"Yes. Their trouble came from just breathing this atmosphere. It didn't trouble them at the time, except for a little discomfort. But later there was a mental derangement. Their flesh started turning green, flaking off. And there was a good deal of pain."

"Nothing to do for it?"

"My scientists worked out a neutralizing formula. But we haven't the ingredients on board."

"We can live, though, for a time, in spite of it?"

"For months."

"Then it doesn't greatly matter."

"No," he returned, with dull irony, "it doesn't matter. You'll find death, if you manage to leave the ship, in a million quicker forms. The struggle for existence on this dying planet has created a fauna—and a flora—that is rather incredibly savage."

"We are going to leave the ship," John Star informed him.

"The *Purple Dream,*" he said a little later when they were all five gathered on the narrow deck just within the air lock, "is lying on the bottom of a shallow sea. The water is only about eighty feet deep. We can't move the vessel, but we can get out——"

"Get out!" echoed gigantic Hal Samdu. "How?"

"Through the air lock. We'll have to swim to the surface, and try for the shore—with the water only eighty feet, it's probable that we're just off some coast. We'll have to strip for it.

"We could exist indefinitely here on board. Plenty of air and supplies. Probably we can survive only a few minutes outside. We may not even reach the surface. If we do, it will be only to plunge into the perils of a strangely hostile world—where even the air is slow poison."

"My mortal eye!" broke in Giles Habibula. "Here we're all stuck to die of slow starvation at the bottom of a blessed sea. And that isn't enough! You want us to swim out like fishes at the bottom of the ocean?"

"Precisely!" agreed John Star.

"You want poor old Giles to drown himself like a blessed rat, when he's still got plenty of victuals and wine? Poor old Giles Habibula——"

"You're a fool, John," said Adam Ulnar, with dull emphasis. "You'll never get ashore. You don't realize the unearthly horror or the amazing savagery of the life—plant as well as animal—that fights for survival in the planet's long day. Or the fearful, deadly cold of the nights——"

"Any of you may stay on board, who wish," Jay Kalam interrupted quietly. "John is going. And I am. Hal?"

"Of course I'll go!" rumbled the giant, almost angry. "Did you think, with Aladoree at the mercy of those monsters, I'd stay behind?"

"Of course not, Hal. And you, Giles?"

His fishy eyes rolled anxiously; he

trembled spasmodically; sweat came out on his face; in a dry voice he spoke, with a jerky effort:

"Mortal me! Do you want to go away and leave Giles Habibula here to starve and rot on the bottom of the blessed ocean? Life's precious sake!" he rasped convulsively. "I'll go!

"But first old Giles must have a taste of food to put strength in his feeble old body, and a nip of wine to steady his nerves."

He rolled unsteadily away toward the galley.

"And you, Adam Ulnar?" demanded Jay Kalam. "Are you going?"

"No." He shook his head, dully hopeless. "It's no use. You'll be caught before you get to the surface."

THE FOUR entered the air lock, stripped to the skin, carrying their clothing, proton guns, a few pounds of concentrated food, and—on Giles Habibula's insistence—a bottle of wine, all wrapped in a big watertight bundle.

The heavy inner valve sealed, John Star opened the equalization tube through the outer; and a thick stream of water roared into the little chamber, flooding it, rising ice-cold about their bodies, compressing the air above them.

The inrush stopped, with water about their shoulders. John Star tried the mechanism of the outer valve; it refused to open.

"Jammed!" he gasped. "We must try it by hand."

"Let me!" cried Hal Samdu, surging forward through the chill water, his voice oddly shrill in the dense air. He set his great back against the metal valve, braced himself, strained. His muscles snapped. Agony of effort twisted his face into a strange mask. His swift breath was harsh, gasping.

John Star and Jay Kalam added their strength, all of them struggling in cold water that came to their chins, gasping in the stale air.

The valve gave abruptly. A rush of water swept them back. Air gurgled out. They gasped full lungs, dragged themselves through the opening, swam desperately for the surface.

Dark water, numbingly cold, weighed on them terrifically.

John Star fought the relentless, overwhelming pressure of it, fought a savage urge to empty his tortured lungs and breathe. He struggled upward through grim infinities of time. Then suddenly, surprisingly, he was upon the surface of the yellow sea, gasping for breath.

A flat surface, glistening, oily, stretching endlessly away from the level of his eyes; yellow, moving in slow, lazy ripples.

At first he was alone. Jay Kalam's head burst up beside him, dripping, panting; then Hal Samdu's red hair; and Giles Habibula's bald dome, with its thin white fringe.

They swam on the yellow sea, and breathed deeply, gratefully—forgetful that every breath was insidious poison.

The blank surface lay away from them, a waste of silent desolation. The sky was a lowering dome of sullen crimson, the sun burning low in it, an incredibly huge disk of deeper, sinister scarlet.

"The next problem!" panted John Star. "The shore."

"Our bundle," muttered Hal Samdu. "With the guns. Didn't float!"

Indeed, it had not appeared.

"My blessed bottle of wine!" wept Giles Habibula.

Then they were all silent. Some large, unseen body had plunged above the yellow surface near them, fallen back with a noisy splash.

XVII.

THEY WAITED, treading water, getting back their breath, while they watched for the precious package, with their clothing and weapons and food, and Giles Habibula's bottle of wine.

"It isn't coming up," John Star despaired at last. "We must strike out for the shore without it."

"It leaked, I suppose," said Jay Kalam. "Or hung in the valve."

"Or it may have been swallowed," wheezed Giles Habibula, "by the monster that made that fearful splash. Ah, my precious wine——"

"Which way is the shore?" demanded Hal Samdu.

Away from their bobbing heads reached the oily, glistening yellow sea, rippling, unbroken by any landmark. Oppressively low overhead hung the dull and gloomy crimson sky. Far across the sea burned the vast, sullen sun, a blood-red ball. A light breeze touched their faces, so faint it hardly scarred the yellow surface.

"We've two possible guides," observed Jay Kalam, keeping afloat with the same unhurried quietness with which he spoke. "The sun, and the wind."

"How?"

"The sun is low, rising. It must, then, be in the east. That tells us direction.

"As for the wind, there would surely be a sea breeze on the coast of a continent so large as Adam Ulnar described. At this time in the morning the wind should just be rising from the sea, as the air over the land mass is warmed and ascends."

"So we swim with the wind? Toward the west?"

"Our best chance, I'm sure. The reasoning is based on a very incomplete knowledge of conditions, here, of course. There may be some flaw. Or it may be that we aren't near the coast at all, simply over some shoal. But that's the best chance."

They struck out away from the red sun; John Star with a steady, effortless crawl; Hal Samdu breaking the water with slow, powerful strokes; Jay Kalam swimming with a deliberate, noiseless efficiency; Giles Habibula puffing, splashing, falling a little behind. For a time that seemed hours, they swam, until he gasped:

"For life's sake! Let's rest a bit! What's the mortal hurry?"

"We may as well," agreed Jay Kalam. "The shore may be within two miles. Or it may be two hundred or two thousand."

They treaded water for a time, swam on again, with slow, weary determination.

At first they had noticed nothing unusual in the air. But John Star presently became aware of an irritation of his eyes and nostrils, an oppression in his gasping lungs. He found himself coughing a little, presently, heard the others coughing. The unpleasant fate of those survivors of the first expedition came to his mind, but he kept his silence.

It was Giles Habibula who spoke:

"This mortal red atmosphere! Ah, already it's choking me to death! Poor old Giles! Ah, it's not enough that he should be flung into the ocean of an alien planet, to die swimming like a blessed rat in a tub.

"Ah, mortal me! That's not enough! He must be poisoned with this precious gas, that will make a raving mortal maniac out of him,

and eat the very flesh off his poor old bones with a green leprosy! Poor old soldier——"

A tremendous splash cut short his melancholy wheezing; a huge, tapering body, black and glistening, had plunged above the yellow surface behind him, dropped back.

"My blessed bones!" he gasped. "Some whale, come to swallow all of us!"

Unpleasantly aware that they were drawing the attention of the unknown denizens of the yellow sea, they all swam harder—until the creature splashed again, in front of them.

"Don't exhaust yourself," Jay Kalam urged. "We can't distance it. But perhaps it won't attack."

"Another horror!" wheezed Giles Habibula.

They saw a curving, saw-toothed black fin, cutting the oily yellow surface not far away. It curved toward them, cleaved a complete circle about them, vanished for a time, only to appear again and cut another circle.

"We're a mortal holiday!" panted Giles Habibula.

"Look, there ahead!" boomed keen-eyed Hal Samdu abruptly. "Something black, floating."

John Star soon made it out, a long black object, low in the water, still veiled in the sullen, red-yellow haze.

"Can't tell what it is. Might be a log. Or something swimming."

"My mortal eye!" shrieked Giles Habibula suddenly, fell to furious splashing, purple-faced, desperately gasping for breath.

"What's the matter, Giles?"

"Some—monster—nibbling away —at my mortal toes!"

They swam doggedly on, toward the distant black object.

John Star felt a harsh, stinging rasp against his thigh, saw his blood staining the yellow water at his side.

"Something just took off a sample bite of me!"

"They must be just investigating us," said Jay Kalam. "When they find we can't fight——"

"That *is* a log, ahead!" shouted Hal Samdu.

"Then we must reach it, climb on it——"

"Before the mortal creatures eat us up alive!" finished Giles Habibula.

DRIVING leaden-weary muscles to the utmost, they struggled on. John Star was gasping for air, every breath a stabbing pain, every stroke a supreme act of will. The others, he knew, were as near exhaustion, Hal Samdu's face savage with effort; Jay Kalam's white and set; Giles Habibula, panting, splashing desperately, was purple-faced.

The yellow surface for a time was clear. Then the black, saw-toothed fin came back, cut the water in a deliberate curve, came slicing directly at John Star.

He waited until it was near, then splashed suddenly, shouted, kicked out at it. His bare feet came lacerateingly against sharp scales. The fin turned, vanished. For a while the surface was again unbroken.

On they swam, every breath a torturing flame, every stroke an agony of effort. The black log was not far away, now, a huge rough cylinder, a hundred feet long, covered with coarse, scaly bark. On its upper side, at one end, they could see a curious greenish excrescence.

Ahead of them, something splashed again. The curved black fin looped its silent way between them and the log.

They swam on, drawing the energy for every stroke from sheer

power of will. The curving rough surface was above them. John Star was all but grasping for it, when he felt sharp jaws close on his ankle. A savage tug dragged him strangling under the surface.

He bent himself double, hands jabbing at a hard, sharp-scaled body, free foot kicking. His hands found something soft, that felt like an eye. His fingers gouged into it, jabbed, hooked, tore.

The thing writhed under him, rolling and twisting furiously. He jabbed again, kicked desperately. His ankle came free; he struggled for the surface, strangling. His head came above the yellow water, he cleared his eyes to see the curved black fin cutting straight at him.

Then Hal Samdu's giant hand clutched his arm from behind, hauled him up; he found himself seated with the others on the great black cylinder of the log.

"My mortal eye!" wheezed Giles Habibula. "That was a blessed narrow——"

He stopped with a gasp, his fishy eyes bulging; Jay Kalam observed quietly:

"We've a companion on board."

John Star saw the thing he had already observed as a greenish excrescence on the other end of the log. A huge mass of muddily translucent, jellylike matter that must have weighed several tons, in color a dull, slimy green, it clung to the black bark with a score of shapeless pseudopods.

Slowly, ominous, it seemed to become aware of them. Semiliquid streams began to flow within its formless bulk, as he watched in puzzled horror; it thrust out extensions, flowed into them, and so began an appallingly deliberate, strangely terrifying march down the log toward them.

"What is the thing?"

"A gigantic amœba, apparently," said Jay Kalam. "Looking for dinner."

"And he'll find it," estimated John Star, "at his present rate of motion in about half an hour."

The four men, naked, defenseless, sat on their own end of the log, watching the fascinating horror of the thing's approach. Thin green arms thrusting out. Slow streams of semifluid jelly flowing into them, swelling them. The whole colossal, hideous bulk advancing on them, with a motion almost imperceptible.

How would it feel, he was wondering, to be engulfed in it? To be seized by the shapeless, creeping arms, drawn into the avid, boneless mass, inch by inch, smothered? He jerked his mind away, looked nervously about.

Sullenly red was the sky above. Angry, blood-red, the enormous, sinister disk of the sun burned low in the east. The wind, freshening out of it, ruffled the surface of the yellow sea. Yellow horizons melted into reddish haze. Around and around the log, in endless circles, sliced a curved, saw-toothed fin.

The colossal amœba reached the middle of the log.

"When it gets here," suggested John Star doubtfully, "we might dive off and try for the other end again."

"And be swallowed alive in the mortal water!" predicted Giles Habibula dolefully. "Old Giles is going to stay where he can see what eats him."

"The wind," said Jay Kalam, "is drifting us toward the shore—I hope. And it should be near, or there wouldn't be driftwood."

The creeping horror was three fourths of the way down the log

when sharp-eyed Hal Samdu shouted:

"The shore! I see land!"

Far off, under the smoky red sky at the rim of the yellow sea, was a low dark line.

"But it's miles away," said John Star. "We must get past this monster, somehow-——"

"We can rock the log," suggested Jay Kalam. "Turn it. And run past while our fellow passenger is underneath."

"And spill ourselves off to feed the mortal things in the water, when it turns over!"

But they stood up, perilously, on the rough bark, and stepped in unison, at Jay Kalam's word, from side to side. At first their huge craft showed no visible motion; the great amœba continued its unhurried flowing attack.

Gradually, however, under their combined weight, the log began to spin lazily back and forth, each time a little farther. The wet bark was slippery; Giles Habibula sprawled, once; gasped in terror as John Star dragged him back:

"Bless my bones! I'm no mortal monkey——"

The black fin cut close enough; his fishy eyes rolled after it.

The nearest reaching arm of formless, avidly flowing, green jelly was not five feet away, when the log passed the point of equilibrium, turned suddenly, set them scrambling desperately on hands and knees to keep on top of it.

"Now!" breathed Jay Kalam.

CLINGING to one another, they tottered unsteadily along the wet surface, toward the other end, safe again for a time. But the great mass of hungry protoplasm appeared again above the log, started its slow, fearful march back toward them.

Twice again they repeated the dangerously awkward maneuver, before the log touched bottom.

A black world lay ahead, somber, ominous, dreadful.

The yellow shallows lapped on a beach of bare black sand. Beyond the beach rose an amazing jungle—a dark wall of thorns. Straight, dead-black spines, flaming with innumerable huge violet blooms, bristling with thousands of ebon, sword-like points. An impenetrable barrier of woven blades, easily a hundred feet high.

Above the gloomy jungle of thorns rose the mountain ranges, immense peaks towering up, rampart behind gigantic rampart, a rugged, precipitous, sky-looming wilderness of crags, bare, grimly and lifelessly black. The last somber wall drew its ragged edge across the crimson, sullen sky midway to the zenith.

Black sand, black jungle of thorns, black barrier of nightmare ranges, under a scarlet sky; the world ahead was shadowed by a spirit of hostile malevolence; it slowed the heart with nameless dread.

"Ashore!" exulted John Star, as they splashed through the shallows, waving a mocking farewell to the amœba on the log.

"Yes, we're ashore," agreed Jay Kalam. "But, you observe, an eastern shore. The city of the Medusae is on the west coast. That means that we have this jungle to cross, and those mountains, and all the strange continent beyond.

"We have the unearthly, savage life to battle, that has driven even the Medusae within their metal-walled city. And the terrible nights to endure."

"Ah, yes, a black continent ahead, full of mortal horrors," wept Giles Habibula. "Ah, me, and we've no weapons, we're naked as blessed babes. Not even a bite to eat! Poor old Giles, destined to starve on the alien shores!"

XVIII.

"WEAPONS," began Jay Kalam, "are what we must first——"

John Star caught his breath with pain as something jabbed into his bare foot, broke in with a wry smile:

"Here's one to begin with. Edge like a razor—warranted!"

He picked up the thing he had stepped on, a wide, slightly hollowed black shell, with a curving edge. Jay Kalam examined it seriously.

"Good enough," he said. "A useful blade."

He looked for others, as they walked up the beach, found one for each of his companions. Giles Habibula accepted his disdainfully.

"Ah, you expect me, with this mortal thing, to hew a way through that lot of daggers and bayonets waiting for us ahead—waiting to cut us to blessed ribbons!"

He pointed at the menacing jungle barrier, bristling with gigantic black blades.

"And so we're armed," said Jay Kalam. "As soon as we can cut a spear apiece with our shell knives."

They approached the black, violet-flowering barrier of thorns and spines and spikes. Many of the blades were ten feet long, black, glistening; they were close-grained, hard and sharp, almost, as steel. Naked and sensitive as their bodies were, it was not easy for the four to get near the blades they selected; it proved still less easy to cut and shape the iron-hard wood with the shells.

Weary hours had passed before each of them was armed with a black, ten-foot spear, and a shorter, triangular, saw-toothed dagger. Hal Samdu shaped himself also a great club from a piece of driftwood.

"Ah, so we set out to cross a mortal continent on our bare, blessed feet——" Giles Habibula had begun, with a last regretful look back toward the yellow sea, when his fishy eyes spied something, and he ran heavily back toward the beach.

It was their bundle he found, drifted ashore while they worked.

"It was slow in reaching the surface," said Jay Kalam. "The wind carried it after us."

"Our clothes, again!" exulted John Star. "And real guns!"

"And my blessed bottle of wine!" wheezed Giles Habibula, laboring to open the bundle on the sand.

Their hopes for weapons were dashed. The package had leaked; their clothing was sodden, half the food ruined, the delicate mechanism of the proton guns quite useless from contact with the corrosive yellow water.

Only the bottle of wine was completely undamaged. Giles Habibula held it up toward the red sun, regarded it fondly with his fishy eye.

"Open it," suggested Hal Samdu. "We need something——"

Giles Habibula's mouth was watering; but he swallowed, slowly shook his head.

"Ah, no, Hal," he said sadly. "When it's gone there'll be no more. Not a blessed drop of wine on the whole mortal continent. Ah, no, it must be preserved for an hour of greater need."

He set it down firmly but carefully on the black sand.

Discarding the useless proton guns, they finished as much of the food as remained edible, and grate-

fully donned their half-dry clothing—even under the continual radiation of the huge red sun, the atmosphere was far from tropical. John Star rudely bandaged the lacerations on thigh and ankle that he had sustained on the way ashore. Giles Habibula stowed the bottle of wine in one of his ample pockets, carefully wrapped against breakage. And they plunged into the menacing mystery of the black jungle.

Thick, fleshy black stems rose close about them, twisted together overhead in an unbroken tangle, that bristled with knife-sharp, saw-toothed blades. The dense roof of thorns hid the crimson sky completely; merely a ghastly blood-hued twilight filtered to the jungle floor.

With infinite caution they picked a way under the tangle of blades, and even caution did not save them. Clothing suffered, each of them was soon bleeding from a dozen minor cuts that throbbed painfully from the poison of the blades. And soon they met a danger vastly more appalling.

"One advantage," Jay Kalam was observing, "is that if the thorns hinder us, they also hinder any enemies that—*ugh!*"

A little choking cry cut off his grave voice. John Star turned to see him carried off the ground by a long, thick purple rope. Hanging from the crimson gloom above, it had wrapped itself twice about his body, clapped a flat, terminal sucking disk to his throat. Struggling savagely, he was helpless in the contracting, inch-thick tentacle. Swiftly, it was drawing him up into the tangle of black thorns.

JOHN STAR leaped after him, dagger lifted, but already he had been carried out of reach.

"Throw me, Hal!" he gasped.

The giant seized him by knee and thigh, flung him mightily upward toward the roof of thorns. With one grasping hand he seized a coil of the tough purple cable. Immediately it shortened, drawing him higher, forming another loop to throw about his body.

Hanging to it with one hand, he sawed at it with his dagger in the other, above Jay Kalam's shoulder. The tough purple skin cut through, a thin, violet-colored fluid streamed out and down his arm—sap or blood, he did not know. Hard fibers, inside, formed a core that did not cut so easily.

A coil slipped about his shoulders, constricted terrifically.

"Thank you, John," Jay Kalam was whispering, voiceless, but without panic. "But turn loose, while you can!"

He sawed and hacked away silently.

Suddenly there was red in the fluid that streamed out—it was, he knew, Jay Kalam's blood.

The purple cable contracted spasmodically, with agonizing, bone-cracking force.

"Too—too late! Sorry—John!"

Jay Kalam's white face went limp.

He made a last, fierce effort, as the unendurable pressure forced the breath from his lungs in a long gasp of agony. The purple cable parted, they fell.

They were, the next John Star knew, outside the jungle.

He was lying on his back, in a little glade covered with some plant like grass, soft, fine-bladed, brilliantly and metallically blue. Below, over the top of the black thorn jungle, he could see the oily yellow ocean, a glistening golden desert that touched the rim of the red sky, beneath the low, sullen sun.

Above towered black mountain ranges; vast sloping fields strewn with titanic ebon boulders; bare, rugged, jet-black precipices; barrier of peaks beyond barrier of somber, Cyclopean peaks, until the jagged dark line of them scarred the bloody sky.

Jay Kalam lay beside him on the blue grass, still unconscious. Hal Samdu and Giles Habibula were busy over a little fire by the edge of a tiny, flashing stream that crossed the glade. Incredulous, he caught the scent of meat cooking.

"What happened?" he called, sitting up painfully, body stiff and aching from bruises and the inflamed wounds of the jungle thorns.

"Ah, so you're awake at last!" said Giles Habibula. "Well, lad, Hal and old Giles got the two of you out of the mortal jungle, after you fell back with the end of that tentacle. It wasn't so blessed far. Here in the valley, Hal threw his spear at a little thing grazing on the blue grass, and I struck sparks with stones to make a fire.

"That's the story, lad. We're through the jungle. But we've got these mortal mountains to climb, after you and Jay are able, and life knows what blessed dangers to face beyond. Ah, if that purple rope is a fair sample of the horrors waiting for us!

"This life's too strenuous for such a precious feeble old man as Giles Habibula, that deserves to be sitting somewhere in a blessed easy-chair, with a sip of wine to lift his old heart from the woe that weighs it down."

He cast a fishy eye at the bulge in his pocket.

"Ah, yes, I've one mortal bottle. But that must wait for the hour of greater need—it will come, soon enough, life knows, with a mortal continent of horror ahead of us!"

Up the mountain barrier they clambered, when all were sufficiently recovered. Over tumbled heaps of colossal black boulders. Up sheer, rugged ebon slopes. Mounting range after wild range, always to find a wilder, more rugged range beyond.

Slowly the enormous, scarlet sun, that served as their compass, wheeled across the gloomy crimson sky, through the long week of its progress. Often they were hungry, often thirsty, always deadly tired. The air grew thin and colder as they climbed, until they were never warm, until the least exertion meant exhaustion.

Sometimes they killed the little animals that grazed the blue grass, cooked them while they rested. They drank from icy mountain torrents. They slept a little, shivering in the sunshine, one of them always on guard.

"We must go on," Jay Kalam urged them, again and again. "The night must not catch us here. It will be a week of darkness and frightful cold. We would freeze, or starve."

But it was already sunset when they mounted the last divide, looked across a vast plateau, lifeless so far as they could see, black and grimly desolate. It was piled with masses of dark rock, riven and scarred with the stern marks of volcanic cataclysm, a wild waste of utter black. In the darkling sky of sullen scarlet hung the blood-red, dying sun, its sinister disk already touching the waste of ebon stone.

"We would die here surely," said Jay Kalam. "We must hasten on."

And they went on, breathless in the thin, bitter air, as the sun's red disk was slowly gnawed away by

the teeth of the jagged western horizon, and a chill wind rose about them.

XIX.

FOR HOURS they hastened on, across the black, lifeless volcanic waste of the high plateau, the bitter promise of approaching night increasing in the air. The huge red dome of the sun sank before them, vanished at last, and in the lurid crimson twilight they came to the rim of the chasm.

Its floor a full thousand feet below, it was a mighty slash across the plateau, a huge, cliff-walled trench filled with dusky crimson gloom.

"A river," Jay Kalam pointed out, "with forest along it. That means firewood and the chance of food. And we should find a cave for shelter in the cliffs. We must climb down."

"Climb down!" snorted Giles Habibula. "Like a blessed lot of flies!"

But they found a slope that looked less menacing, started the descent, clambering over heaps of fallen, colossal black rocks, sliding across banks of talus, scrambling and dropping down sheer precipices. All of them were bruised and lacerated against jagged rock, all of them took reckless chances, for dread night came swiftly.

Only the faintest crimson glow marked the narrow slash of sky between the mighty walls when at last they stumbled into the strip of strangely black forest at the bottom. They were trembling with cold, violent as had been their exertions; ice crystals already fringed the river beyond.

Giles Habibula started a blaze, while the others gathered deadwood among the weird, cruel-bladed trees.

"We must find shelter," said Jay Kalam. "We can never live here in the open."

With torches they explored the cañon wall. John Star came upon a round, eight-foot tunnel. He shouted for the others, and entered, flaring torch in one hand and spear in the other, alert for danger, for the air had an acrid, animal odor; he saw strange tracks on the sandy floor.

The cavern proved to be vacant, a twenty-foot room hollowed out at the rear.

"Just made to our order," he cried, meeting the others in the entrance. "Some creature has lately used it, but it's gone. We can carry in wood, wall up the entrance——"

"Mortal me!" shrieked Giles Habibula, who had been cautiously in the rear. "Here comes the owner!"

They heard a crashing in the fringe of dark trees, as the thing came up from the river. Then torch light gleamed yellow and green on a crown of seven huge eyes, glistened on close-scaled, scarlet armor, glinted on black, sharp-edged, terrific fangs.

It met them at the tunnel-mouth; they had no time to choose to fight or not. John Star, Jay Kalam, and Hal Samdu braced their long black spears against the floor, to face its charge. Giles Habibula shouted, scrambling back behind them and holding up his torch:

"I'll give you light."

A river creature, it must have been, that retired to the cave to escape the terrible night. Its body was crablike, thick as an elephant's covered with hard red armor; it had innumerable limbs, the foremost armed with savage talons. It exhaled an overwhelming, nauseating stench.

John Star's spear, set against the

floor, was driven by the force of its charge into the side of its armored snout.

With a hissing, screaming roar, deafening in the cave, the creature threw up its head, splintering the shaft against the roof. A black tongue, hooked with cruel spines, darted out, impaled his shoulder through garments and flesh, jerked him spinning toward black-toothed, yawning, tremendous jaws.

He brandished his torch, struck with it the seven great eyes set in a crown of armor, thrust it ahead of him into the reeking maw.

The monster screamed again, the tongue lashed, flailing him from side to side of the passage, drew him back, numb, bleeding, half-conscious, toward the jetty fangs.

Hal Samdu's spear came past him, sank deep in the roof of the yawning mouth. He was vaguely aware of the gigantic club, raining pile-driver blows on the crown of eyes and the armored skull.

His shoulder was bound, when he came to; he was lying by a fire in the cave. The others were busy, carrying in wood and great pieces of meat from the huge carcass at the entrance.

"Mortal cold, outside, lad!" Giles Habibula informed him. "Snowing, with a blessed blizzard roaring down the cañon. The river's already frozen. Poor old Giles is too feeble for such a life as this! Killing monsters in the wilderness of a precious alien planet!"

Even by the fire in the cave, the long night reached them with its numbing fingers. When they emerged again, after the long, weary delay and the grim battle with the cold, they found the river a racing torrent, fed by melting snows, rising almost to the mouth of the cave.

"We shall build a raft," decided Jay Kalam. "Follow the rivers across the continent to the Medusae's city."

With improvised tools of stone, they laboriously fastened fallen logs together. The slow sun had already reached the zenith when they poled the clumsy vessel out into the rushing stream, began the voyage to the black city by the sea.

Four painfully built rafts they lost. Two that broke up on rocks, leaving them to struggle ashore as best they might, through angry, ice-cold water. One that was wrecked by a green, lizardlike water animal. One that they abandoned—at the last instant—upon the brink of a great fall.

Week-long days came and departed, between week-long nights of savage cold, when they fastened the raft by the shore, and landed to battle for food and warmth.

BELOW THE great fall, the colossal gash of the cañon was deeper, a Cyclopean gorge, rugged black walls shutting in perpetual crimson twilight. Then the river joined a larger stream, that carried them away from the mountains, across an interminable plain, between low fringes of black vegetation—vegetation that died in the bitter nights, grew amazingly again by day.

Steadily the river became wider, deeper, its yellow torrent swifter. The somber, menacing jungles along its banks grew higher, the animal life in the water and the jungle and the air larger and more ferocious. With spear and dagger and club, with fire and rude bows, they fought many times for possession of the raft.

They had become four lean, haggard men—even Giles Habibula was almost thin—black from exposure, ragged, unkempt, shaggy, scarred

from many wounds. But they had got an iron endurance from the endless struggle, a calmly desperate courage, an absolute confidence in one another.

Through all of it, Giles Habibula carried his bottle of wine. He defended it when the camp was attacked by a great flying thing, with splendid wings like sheets of sapphire, and a deadly, whipping sting. He dived for it when the green river creature destroyed the raft. Many times he held it up to the red heavens, gazed at it with longing in his fishy eyes.

"Ah, me, a sip of it would be mortal good!" his plaintive voice would wheeze. "But when it's gone there'll be none—not a blessed drop of wine on the whole continent! Ah, I must save it for a greater need!"

They were drifting one day near the middle of the river, vast now, a deep, mighty yellow flood, ten miles wide. Sheer walls of black jungle stood along its banks; barriers of violet-flowering thorns, interwoven with deadly purple vines; brakes of towering canes that whipped out at anything moving like living swords; gigantic trees laden with black moss that was bloodsucking death. Above the black walls hung the low, smoky dome of the crimson sky, the huge red sun burning sullen at the zenith.

Hal Samdu, at the steering sweep, roared suddenly:

"The city! The black city of the Medusae!"

Like a mountain it rose, ominously dim in the red haze, colossal beyond belief. Above the black barrier of the jungle, its sheer walls leaped up, infinitely, incredibly up, to strange ebon towers and huge fantastic mechanisms. It was a city planned by madmen and built by giants.

Strange sensations overcame the four ragged men on the raft, gazing at the city they had crossed the abysm of space and a savage continent to reach. They stood with heads back, gaping in mute wonder at the unguessable, titanic mechanisms that lined the sheer, looming mountains of its walls.

"Aladoree!" muttered Hal Samdu at last. *"There!"*

"So Adam Ulnar thought," said Jay Kalam. "In that higher central tower—can you see it, dim in the red, above the rest?"

"Yes, I see it. But how can we get there. I want to kill the monsters. But my club—against those machines on the walls! We are like ants!"

"Ah, that's the word, Hal!" said Giles Habibula. "Ants! We're nothing but blessed ants! Ah, me, those mortal walls look a mile high, indeed! And the towers and machines half a mile more on top of them! Nothing but ants! Except—a precious ant could climb the walls!"

The others kept silent, staring over the river's yellow, raging flood, over the dark menace of the jungle, at the portentous, unbelievable mass of the city towering into the sullen red sky, Jay Kalam grave with thought, John Star picturing the girl Aladoree as he last had seen her, gray eyes demurely cool, hair a sunlit glory of brown and red and gold. How, he wondered, could her quiet, fresh beauty be shut up in the dread mass of somber metal ahead?

The mighty current carried them on; beyond a bend they saw the base of the black walls, rising sheer from the edge of the yellow river, plunging up a full mile, a vertical, unbroken barrier of dead-black metal.

Hours went by, and the yellow tide bore them on.

The city marched up out of the crimson haze, ever more awful, the

bulk of it swelling incredibly, to blot out half the red sky with Cyclopean ramparts of gleaming ebon metal, the titanic machines that lined it silencing them with awe and wondering fear.

A palpable atmosphere of dread and horror hung over the colossal, unearthly metropolis, a sense of stupendous power, of enormous strength, of ancient wisdom and science, a tide of strange hostility, ruthlessly implacable, that struck them with the force of utter evil.

The four ragged creatures on the raft gazed on the marching walls with hopeless horror, minds prostrate with realization of the age-old power of the Medusae and their strange science, with the fearful knowledge that from this ominous pile of black metal—unless their puny efforts could free the girl imprisoned there—was issuing the doom of mankind.

THE CITY seemed dead, at first, a somber necropolis, but presently they saw strange movement along the walls, the stir of unearthly life. One of the weirdly colossal machines spread titanic vanes, rose silently, vanished in the red sky like some ominous black bird.

"We must cover ourselves," said Jay Kalam. "They might be watching."

He made them screen themselves with branches of black vegetation, to look like driftwood.

Carried straight ahead toward the mighty wall by the river, they watched in awe-struck silence until Hal Samdu cried:

"See them moving! Above the wall!"

And the others presently distinguished the moving things, still tiny with many miles of distance—the people of the planet.

John Star had glimpsed one of the Medusae, on Mars, in the gondola swung from the black flier before its weapon struck him. A swollen, greenish surface; a huge, ovoid eye, luminously purple. But these were the first he had fully seen.

They were floating, drifting above the wall like little green balloons. Their eyes were tiny dark points in their bulging sides—each had four eyes, spaced at equal distances about its circumference. From the lower, circular edge, like the ropes that would have suspended the car of a balloon, hung a fringe of black tentacles, scores of them.

They were dome-shaped, fringed with tentacles; John Star could see the superficial likeness that had earned them the name Medusae.

In the distance they did not look impressive. There was about them a certain grotesqueness, something awkward; somehow the thought of intelligence in their bulging hemispheres was almost ludicrous.

Yet in the way they moved, floating, drifting at will in the air above the black wall was a power and a mystery that made for respect. And in the knowledge that they were the builders and the masters of this amazing metropolis, of those colossal, incomprehensible machines along its walls was room for awe and terror.

The raft drifted on, until the wall shadowed them, leaping up, gleaming, unscarred, jet-black metal, fairly to the zenith, hiding the machines and the drifting Medusae. Almost they touched the metal where it rose from the water; then the boiling yellow current tossed them back away from it.

"We'll land," said Jay Kalam, "in the edge of the jungle, below the wall."

They threw aside the screening black branches, seized sweeps, fought for the shore, where the river drew away from the ebon precipice.

XX.

THEY abandoned the raft when it touched bottom, taking only their crude weapons, and Giles Habibula, his priceless bottle of wine. Hal Samdu stood in the shallows, giant hand knotted about his club, staring at the metal barrier shadowing the black jungle ahead—staring, helplessly shaking his head.

"How——"

"There'll be a way," promised Jay Kalam, though even his confidence seemed a little strained. "First, let's get through the jungle."

They attacked the living wall, a barrier that held lurking death in a dozen guises. Spear-sharp, poisoned spines. Bloodsucking moss. Deadly tentacles of the purple vines. Blooms of fatal perfume. Animal death, that crawled and leaped and flew.

But the four had learned in a savage school to meet the jungle death on even terms. A dozen hours of swimming and floundering through sucking mud, of hacking deadly vines and creeping through *chevaux-de-frise* of venom-tipped thorns, of meeting with level spear or lifted dagger the hungry beasts that charged from the undergrowth or rose from the mud or dropped from above, and they emerged from the river bed upon the plain—Giles Habibula still with his bottle of wine.

Close on the right hand rose the wall, sheer, black, gleaming dully, a mighty, overwhelming mile of it. The plain reached off to the left, covered luxuriantly with fine-leafed grass, metallic, vivid blue. It sloped up in the distance to blue hills. From blue hills to black city ran the aqueduct.

Jay Kalam's thoughtful eyes surveyed it, straight channel of dull black metal, miles long, carried from azure hills to ebon walls on a colossal trestlework.

"One chance," he said gravely. "We shall try."

They skirted the jungle to remain out of sight, marching twenty miles, then climbed into the blue hills. They had eaten, slept for a time, but still it was mid-afternoon when they came under the immense dam of black metal below the reservoir.

Though no guard was visible, they crept up very cautiously beneath the dam, climbed slippery, wet walls and flanges of black metal, until they reached the lip of the uncovered channel. Below roared the cold clear torrent from the floodgate, three hundred feet wide, two hundred deep.

"The water," Jay Kalam observed laconically, "gets into the city."

He dived. The others followed, leaving all but their thorn daggers. The clear icy torrent rushed them along with astonishing speed; the dark barrier of the dam drew back, the city's colossal ebon ramparts marched on them. They kept afloat with slight exertion, saving themselves.

Ahead, in the black wall, appeared a tiny arch, grew larger, abruptly swallowed them up. They were in roaring darkness; the arch framed a bit of crimson sky, swiftly dwindling. The steady current plunged on, through utter darkness.

Thunder drummed against their ears, increasing, deafening.

"A fall!" warned Jay Kalam.

His shout was swept away. They shot into terrific confusion of waters, plunging torrents, merciless, sucking currents, savage whirlpools,

smothering foam. All in utter darkness.

John Star gasped for breath. He fought the savage current. It carried him under. Down! Down! Resistless pressure weighed on his body. He endured the agony of suffocation. Desperately he tried to swim. Wild water mocked him.

But he was flung back to the surface, gasped his lungs full of air before he was again dragged down.

When he came up a second time, he contrived to stay afloat, swam away from the thundering chaos of the fall. He was in a vast, cavernous reservoir, utterly dark. Its vast extent he could guess only by the rolling reverberation from its roof.

He shouted as he swam, heard with keenest joy Giles Habibula's plaintive wheeze:

"Ah, so you lived through it! It was an awful time, lad, when it sucked me down. Ah, me, poor old Giles is too feeble to be diving over mortal waterfalls! But I've still my blessed bottle of wine."

Hal Samdu hailed them, then. A little later they came upon Jay Kalam, and all swam away from the thundering fall, came at last to the side of the tank, slick, unclimbable metal.

"Ah, so we must drown, like so many kittens in a blessed bucket!" wailed Giles Habibula. "After all we've been through. Ah, mortal me!"

They swam along the slimy wall and came presently to a great metal float with a taut chain above it—it must be, Jay Kalam said, the mechanism that measured the level of the water—and climbed the chain.

It brought them at last, with weary limbs and blistered hands, to a huge drum upon which it wound. They climbed upon it, saw the red light of the sky glowing on its shaft, clambered out toward the light.

Scrambling over the immense bearing of the shaft, they found a little circular hole in the metal roof of the tank—it must have been left for attention to the bearing—and climbed through it, Giles Habibula sticking until the others pulled him out, and so, on the roof of the reservoir, were fairly within the city.

They stood on the edge of a conical roof of black metal, a sheer dizzy drop of two thousand feet below them, and the slope too steep for comfort.

Standing there on the perilous edge, John Star's first impression was of nightmare strangeness, bewildering confusion. Gleaming black buildings, towers, stacks, tanks, fantastic machines, loomed up about him, against the lurid sky, appallingly colossal—some of them reaching, he soberly estimated, two miles high.

If the weird metropolis had order or plan, he did not grasp it. The black wall had seemed to inclose a regular polygon. But within all was strange, astounding, incomprehensible, to the point of dismay.

THERE WERE no streets, merely yawning cavernous abysms between mountainous black structures. The Medusae had no need of streets. They did not walk, they floated! Doors opened startlingly upon sheer space, at any level from the surface to ten thousand feet.

The stupendous ebon buildings had no regular height or plan, some were square, some cylindrical or domed, some terraced, some—like the reservoir upon which they stood—sheerly vertical. All among them were bewildering machines, of unguessable function—save that a few were apparently aërial or interstel-

lar fliers, moored on landing stages, but all black, ugly, colossal.

The four stood there for a little time in dismayed confusion, caution forgotten.

"Bless my eye!" moaned Giles Habibula. "No streets. No ground. No level space. All a tangle of blessed black metal. Can't get anywhere without a mortal pair of wings!"

"That must be the central tower," observed Jay Kalam. "Still miles away."

He pointed to a square, forbidding, Cyclopean pile, towering up amazingly against the red sky in the distance, truly a mountain of metal, landing stages carrying colossal fliers and other grotesque black machines along its sides.

Weary, hopeless, he shook his head.

"We must get back, hide until dusk."

"The mortal Medusae," apprehensively promised Giles Habibula, "will see——"

"One, I think," broke in John Star, "already has!"

Hundreds, perhaps, of the city's people had been in view from the moment they came on the roof, greenish hemispherical domes drifting above the confusion of black metal, dark tentacles dangling. All had been far away, insignificant by comparison with their vast works. But now one had drifted abruptly over the point of the conical roof.

Giles Habibula dived for the hole through which they had emerged. He stuck; before the others could help him the Medusa was overhead.

The sheer size of it was astounding. Those in the distance had been tiny by comparison only. Its green dome was twenty feet through, the hanging, ophidian tentacles twice that in length.

It was infinitely horrible. Vast, bulging mass, gelatinous, slimy, unpleasantly and translucently green. Scores of tentacles, hideously writhing and twisting. The eyes, staring down from the bulging sides —long, ovoid wells of purple flame. All pupil, rimmed with tattered black membrane. Strange, great mirrors of infinite age and infinite wisdom and infinite evil! Luminous, burning with frozen cruel fire.

The sheer, elemental horror of it set off some primeval fear response. Paralyzed their limbs with tingling cold, slowed their hearts, stopped their breath, drenched them with sweat of terror.

Fear-numbed, they stood motionless, until the tentacles had whipped about them, snatched thorn daggers from their nerveless hands, pulled Giles Habibula like a cork from the hole. The Medusa carried them away, vainly fighting the hard thin tentacles.

"My mortal wine——" panted Giles Habibula.

It dropped from his pocket. Like a plummet it fell into the chasm below, fell two thousand feet.

"My blessed bottle of wine!" And he sobbed in the coiling ropes.

Moving by what force they did not know, by what amazing conquest of gravitation, the creature swept through the air with them, above the titanic black disorder of the city, toward—John Star noted it with a certain grim satisfaction—toward the gigantic central fortress.

They were overcoming the horror that had numbed them.

"Something about it," gasped Jay Kalam, even as it bore them, "perhaps some obscure vibration—sets off our mechanism—of instinctive fear. Must be that. Huge brain—powerful—dreadful!"

It carried them into the stupendous building, through a door opening on sheer space, five thousand feet high. Through a green-lighted hall, colossal, black-walled. Stuffed them through a rectangular opening in the floor, dropped them.

SPRAWLING in a black-walled room, twenty feet square, they found beside them a man—or the shattered wreck of a man.

Pale, emaciated, ragged, he was sleeping on his face, breathing with long, rasping snores. John Star shook him, after the Medusa had vanished from above the locked grating overhead, woke him. He sat up. Stark, feverish terror stared from red eyes in his pallid, haggard face.

He uttered a shrill, hoarse scream of agonized terror, clawed in wild, blind insanity of fear at John Star's hand on his shoulder.

John Star himself cried out, for the man was Eric Ulnar.

The handsome, insolent officer, who would have been emperor of the system, become this feeble, twisted wreck!

"Leave me be! Leave me be!" he shrieked. "I'll do what you want! I'll do anything! I'll make her tell the secret! I'll kill her if you want! But I can't stand any more! Leave me be! Leave me be!"

"We won't hurt you!" John Star tried to soothe him, horrified as he was by the import of his cries. "We're men. We won't harm you. I'm John Ulnar. You know me. We won't hurt you."

"John Ulnar?" Red, fevered eyes stared. "Why, yes, you're John."

The trembling wreck, abruptly sob-shaken, clung to his shoulder.

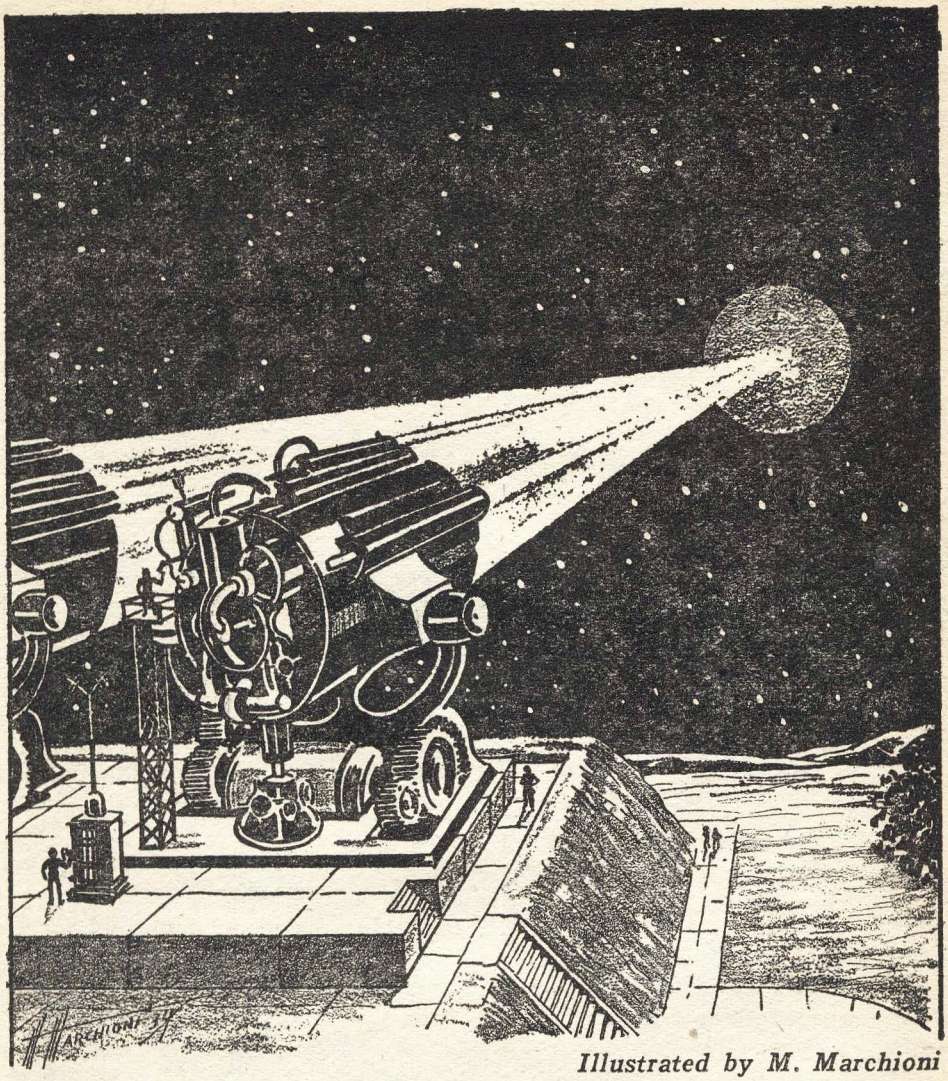
"The Medusae!" he wailed. "They tricked us! They're murdering mankind! They're bombing the system with red gas, to eat men's bodies away and make them insane. They're murdering mankind!"

"Aladoree?" demanded John Star. "Where's she?"

"They make me torture her!" sobbed the weak, wild voice. "They want her secret. Want AKKA! But she won't tell. And they won't let me die till she tells. They won't let me die!" he shrilled. "They won't let me die!

"But when she tells, they'll kill us all!"

To be continued next month.



Illustrated by M. Marchioni

Guns of Eternal Day

by Howard W. Graham, Ph. D.

DR. MAUDLEN stopped the car on the brow of the hill. He was unspeakably surprised at what he saw, as though he had been given a sidewise glimpse of the devil fleshed. Unconsciously he pushed an arm through the car window, palm up, like one who would feel the rain. The night sky was clear; the air was sluggishly warm. Maudlen nudged his daughter, Ruth, who had fallen asleep against his shoulder. Ruth followed him sleepily

out onto the roadway, thinking they had arrived at their destination.

The thing that had so startled Maudlen was still there. This thing was the huge and undeniable moon, which hung hot and red in the sky like a cannon ball seen in a nightmare.

Maudlen could feel the heat of the moon resting on him like tangible weight. Was this the full moon? The full moon, indeed, but it was still no heavenly body with which Maudlen was familiar. If he was not drunk and a fool, the moon had become incandescent. It glowed—red. Maudlen squinted at it, dumfounded and angry. The Minnesota landscape lay ruddy under its light like a bad painting. Broad maculations of crimson mottled the light dust surface of the roadway ahead.

"Look, Ruth!" Maudlen commanded irritably. "Do you see it? Why, it's hot! What the devil do you know about that, eh? The moon is hot!"

Then the girl became fully aware of the phenomenon and gasped with surprise. She was wide awake now, whirling to look around at the red trees and red hills. She was afraid.

Father and daughter stood on that Minnesota hill as if they had been suddenly cast into an alien existence —forever alien. The night air was warm and stagnant, and the heat increased by the moment. Ruth's flimsy silk clung to her skin; her heart tripped rapidly in her breast as she guessed intuitively, even then, at the terror that was going to come out of the sky. Her father was worried, too, as he absently pressed her hand.

They looked furtively at familiar things, amazed, as men were doing that fatal night throughout the hemisphere. The moon smoldered brighter in the murky crimson night. Then Ruth saw the guns of Maiden Hill. She raised her arm and pointed.

Maiden Hill was a hill of barren, solid granite. It appeared ahead and to the left and was somewhat higher than the one on which they stood. High and broad, it was a natural freak that was a well-known landmark on Maudlen's farm. Under the moon's red light the hill looked like an Easter egg half buried in overgrown turf.

On top of the hill stood two harsh shapes, which, clearly seen in the red illumination, projected skyward like black, stubby pencils. Each of these shapes shot aloft a pale beam of light. They looked like guns whose target was the moon. Tiny figures moved devilishly on the hill, working swiftly at the two shapes like ants busy with a match stick.

"Well," said Maudlen snappishly, "strangers on my land. Trespass! Get in, Ruth."

Dr. Maudlen had a fairly literal mind. He fastened on the fact of trespass if only to establish his own peace of mind. A red-hot moon! It was unthinkable. Trespass was something he could sink his teeth in. Dr. Maudlen had paid taxes promptly on this farm for the last three years; if strangers had squatted on Maiden Hill he had an owner's privilege of doing something about it.

Now, as he remembered it, there was an old wagon track a short distance ahead. The wagon track skirted the base of Maiden Hill to Penner's Lake, also Maudlen's property, where he had fished as a farm boy. Thoroughly aroused, he drove rapidly up the roadway with Ruth clinging silently to his arm.

It wasn't a wagon track any longer. It was now a road paved

with concrete from the farmhouse all the way to Maiden Hill. The farmhouse, he saw now, was illuminated. There were trespassing figures up there, too. He decided to drive up to the hill first to see what the two gun shapes were before he drove these people off his property.

As the car approached the base of the hill, a blond figure clad in breeches and khaki shirt stepped across the road and showed Maudlen the flat of his hand. Maudlen stopped the car.

"SCRAM, POP!" called the young man, resting his knuckles on his hips. "I thought I told you reubens to stay off this property. Hey?"

"I beg your pardon," retorted Maudlen icily. He poked his head out of the window of the sedan and prepared to get out. "I happen to be the owner of this farm. Will you stand aside, please?"

"You the owner?" jeered the young man in breeches. "That's a good one. Professor Anton Cojol is the owner of this farm, pop. If you know what's good for you, you'll pedal out of here in a hurry. Beat it now!"

Maudlen emerged from the sedan and slammed the door smartly behind him. He and the young man faced each other belligerently. He could see those two shapes very plainly now. They were cocked slantwise, heavenward, at the lowering moon. Like colossal cannon, they made up in girth what they lacked in length. The ground was trembling delicately, and the air was filled with a high, thin, mosquitolike whine.

"And what," asked Maudlen gently, "will happen if I don't—er, beat it?"

"We'll give you a tickler." The young man smiled. "Orders are to tickle off all trespassers—Cojol's orders. Scram now!"

He seemed a little concerned at Maudlen's persistence. The red illumination that fell from the sky was not yet pronounced enough for him to make out anything in the interior of the car.

If he had seen Ruth there he might not have done what was a fairly startling thing. He had been holding a shiny cylinder in his hand, resting it against his hip. Without moving, he caused this cylinder to shoot a beam of sharp light full into Maudlen, who was not five feet distant.

When the light struck Maudlen, the doctor tingled smartly from head to foot, as if he had inserted his finger in a light socket. It felt like an electric shock. Maudlen jumped helplessly. He uttered an ejaculation of astonishment, but he was more angry than frightened or hurt.

"What was that, you young pup?" he exclaimed.

"That was the tickler." The young man grinned. "Feel it?"

Ruth sprang out of the car behind Maudlen. Her little fists were clenched. She stalked furiously up to the young man and smote him briskly across his lean jaw. He drew back warily.

"What's your name, you?" she demanded.

"Why, it's Chester," he said.

"What do you mean by doing a thing like that to my father?" she asked angrily. "What are you people doing on this property? My father owns this farm, no matter what this Cojol person says. You'd better clear out of here before we call the police. Then you'll see!"

The young man's permanent grin faded a little. "Sorry, lady," he

said apologetically. "My orders are to tickle any one who snoops around the hill, even cats and dogs. 'Round here, we don't like strangers even a little bit. They might get hurt."

"What's the meaning of the structures up there on the hill?" demanded Maudlen. He flung up an arm at the oblique metal shapes.

These things looked like howitzers which had been mounted on the rock instead of on trucks—siege guns. Each consisted of a central barrel of large caliber, had fluted sides of numerous smaller barrels. From the mouths of the two guns issued a pale, thin radiance that quickly disappeared aloft in the glowing sky. The guns were swiveled on enormous metal blocks that were built into the rock, so that they could be turned in any direction.

Figures of men moved about on these metal bases and turned wheels with handspokes, keeping the guns, or search beams, trained on their moving target, the moon.

Chester glanced back, nodded with approval as he raised his eyes to the red moon. He faced Maudlen and said insolently: "Great days! It looks as if we're cooking the moon, doesn't it?"

"Cooking the—— Look here, young man," snapped Dr. Maudlen, "I've had just about enough of this nonsense. I haven't the slightest idea what you folks are up to on my land, but I feel certain it's no good purpose. Don't you realize that you're trespassing? I demand an explanation at once. You spoke of a man named Cojol—where is he?"

The young man nodded toward the farmhouse, which lay two hundred yards off in a hollow. Without another word, Dr. Maudlen and his daughter reëntered the sedan; Maudlen turned the car deftly on the broad concrete wagon track.

Chester, still grinning, called a warning after the car: "He's going to be sore at interruptions to-night!"

The young man balanced the "tickler" in his hand. It was shaped something like an ordinary flashlight, with no flare in the cylinder, and had an extension wire that trailed away behind him up to a power socket on the hill. It was the same power source that fed the two guns. The tickler was one of Cojol's toys, which the men used for protection. Maudlen had simply grounded a shaft of ionized light. Smart man, Cojol!

Two yellow eyes glared at the young man from a hazel bush. He turned the tickler on them. A prowling cat was discovered, which leaped high in the air with the most frenzied yowl, its fur standing stiffly erect and snapping with beads of blue light. Smart man, Cojol!

"Hey, Chester!" a voice called down the hill. "Lay off them damned cats—them yells give me the willies!"

COJOL! Maudlen scraped his brain for some memory of this man's identity as he approached the farm. He would find out soon enough. That was the man, probably, standing in the open, lighted doorway of the house—as if the house belonged to him! Much as the whole affair annoyed Maudlen, he could not help noticing grudgingly how the run-down farm had been improved—save that it was scarcely a farm any longer.

Maudlen didn't know what to call it now, it was so changed—some kind of power plant, no doubt. Over there was a thing that looked like a giant battery. A kilnlike

building had been newly erected, and its slitted top proved it to be a small observatory. Wiring everywhere, with stacks of disk insulators.

Maudlen halted the sedan, walked boldly up the fresh stone steps to the doorway with Ruth on his arm. The calm, formidable figure of a black-haired, foreign-looking man barred the way. Maudlen gave this man a level stare.

"Three years is a long time to be away," the doctor said, "but I am still paying taxes on this property. My name is Maudlen. This, I believe, is the Maudlen farmhouse, which I inherited when my father died three years ago. Are you Cojol?"

"Professor Anton Cojol," corrected the other without moving. "I suppose you can prove your own identity?"

Cojol was sparring for time. It was ironical, he felt, that Maudlen should turn up like this at the eleventh hour. He knew that Maudlen never would have permitted his work to go on if he had appeared earlier in the game. Maudlen in turn noted Cojol's faint accent—Russian mixture, perhaps Georgian. Cojol showed a clear, eager gleam in his eyes that the doctor had encountered in geniuses and madmen. Sometimes those two classes of men were indistinguishable.

"Stand aside," suggested Dr. Maudlen. "I am taking possession."

"Indeed, you are not," said Cojol. "Three years ago I tried very hard to find you. Where were you then, Dr. Maudlen? Your daughter, Ruth, I suppose?"

"How do you do?" said Ruth coldly.

"I was prepared to purchase this farm," said Cojol, "at a fairer price per acre than you could have got from any one else. You were not to be found."

"My practice was in Philadelphia," said Maudlen. "I could not leave it at the time my father died. Still, I hold title to these acres. You are trespassing. May I pass?"

"The title of this house," said Cojol with a faint smile and his faint accent, "this house, the concrete road, and Maiden Hill has passed to me, I think, through what you call squatter rights, and that is all of the property I want. Is it not?"

"It is what we call a sharp practice," said Ruth. "A slight difference in terms. Surely you don't think you can do this?"

"Mankato," said Maudlen, stepping down from the doorway, "is only a short drive from here. My father's attorney still lives there. I am sure he can settle the point for us, perhaps even furnish a few uniformed assistants who will drive you hounds out of here."

"Surely not!" Cojol smiled. He suddenly pushed open the screen door. "Let us come in and speak of it calmly. I am, after all, honest, and I am still wishing to purchase this land from its owner at a fair price."

Maudlen gave Cojol a stony look as he and Ruth passed into the living room. Everything was changed here—nothing as he knew it. Familiar objects had vanished, and the room was barren of everything save what Maudlen would term scientific junk. One wall was banked with large and queerly shaped glass bulbs that glowed faintly. An enormous converter stood half in the room and half in a shed outside. In the middle of the room stood a frame of glass plates the size of windows, all covered with some kind of metal foil. Transformers, devices for fil-

tering current, large and small electrical gadgets without number choked the room.

Maudlen could not make head nor tail of all this apparatus, save that the power lines running from the house to the hill indicated that this was the control room. The only object he recognized was the radio in the corner which he had given his father.

"It is unfortunate, Professor Cojol," he said, "that this property has not been offered for sale, is not being offered now. If I cannot prove my own title, it will be a mere matter of form to swear out a warrant against you for breaking and entering."

From his wallet Cojol produced a check which was filled in with the exception of the date. He dated it for the following day and passed it to Maudlen. Maudlen looked at it and tried to return it.

Cojol refused it, saying: "That was made out when I first desired the rental of Maiden Hill. You will be wise in accepting it, Dr. Maudlen, since it will be offered to you this once only."

"You can't argue down the sentimental value which this farm has for me," said Maudlen bluntly. "I have abandoned my practice. My daughter and I intend to settle here in my father's house."

"I can trick you," said Cojol; "but I shall not. My work here is finished to-night, with your pleasure. To-morrow I shall depart, with the thing accomplished at last, and you may have your farm back again. If you do not accept my money, you will have nothing to show for my having destroyed some of the sentimental value of your property. You see, I admit having done you this damage, and I am sorry."

DR. MAUDLEN glanced at Ruth, at Cojol, and pocketed the check after considerable hesitation. He felt uncomfortable, as though this act had made him a partner in what he instinctively felt was some kind of incredible outrage. The redly illumined landscape through the windows had brightened, and a muggy breeze moved through the room.

"Professor," said Maudlen, "I still feel that you owe us a full explanation of what is going on here. What are you doing out there on the hill?"

Cojol lifted his hand in a gesture of listening, cocked his head toward the radio in the corner. The raw voice of an announcer broke into the room, filling in a station interval given over to happenings in the day's news.

"Well, folks," said the announcer, "here's some more wind from the observatories. Mount Wilson still won't talk. I guess none of us know what it's all about, at that.

"It's a red moon, ladies and gentlemen of the radio audience. They can't dispute the fact that it's a red moon, but they don't know where to go from there. Can't say that I blame them very much. For those who didn't hear previous announcements, the full moon to-night suddenly turned red, and it's throwing down heat. It's the same old moon we've been writing songs about all these years, but it's got heated up some. We don't know how. The report from the observatory at Wells University, which I have here in my hand, reads as follows:

"At approximately nine seventeen, Eastern Standard Time, the full moon visibly reddened and began to throw off measurable heat. Since that time the light and heat of the lunar body have intensified according to a definite mathematical

table. The observatory cannot hope to reply to the multitude of inquiries concerning the reason for this phenomenon, but Dr. Harvey Busch, chairman of the staff, offers a not untenable theory for public consideration.

"The moon is a dead satellite. Since its present light and heat are appreciable and undeniable, Dr. Busch suggests that our moon has been struck from behind by a large comet or vagrant planetoid. Dr. Busch suggests that the curvature of incidence of this unknown comet was such that its approach was rendered invisible up to the moment of collision. It came from outer space in an orbit coinciding with that of the moon, and approached in such a direction that it was constantly in eclipse behind the moon. If Dr. Busch is correct in his assumption, we are at present experiencing the light and heat resulting from the collision of this unknown comet with our own moon. Considerable heat is to be expected from such collision; it is reasonably safe to assume from the moon's appearance that it has been bombarded with large meteorites in past ages.

"There is little cause for alarm over the present phenomenon. The only effect on the earth, at most, even should the moon reach a stage of incandescence, will be widespread personal discomfort. While the moon appears to be considerably larger than in the past, such is not, in fact, the case. The moon maintains its orbit about the earth at a mean distance of roughly two hundred and thirty-eight thousand miles. The apparent increase in its size is due largely to the interesting fact of the lunar corona. A celestial body appears to be larger when it is incandescent than when it is dead and merely reflects light.

"Well, folks, that's all, I guess," said the announcer. "Stand by for further station announcements until we find what this is all about."

"Does that explain my position to you?" inquired Cojol. "It is no comet, of course. Dr. Busch has written interesting texts, but I am afraid his comet theory is rather nimble."

Maudlen shook his head. Some terrible change was taking place in the heavens, a phenomenon for which he began to realize Cojol was responsible. He began to feel frightened; he took Ruth's hand as she sat beside him on the lounge.

Cojol smiled benignly on them; he shrugged, then decided to tell his story. He was mercilessly calm. The thing he had set out to do was practically accomplished. The volcanic eye in the heavens was his doing. Anton Cojol was the man who had turned the cold mass of the moon into a blazing sun.

Cojol was formerly connected with the State university, and it was there that Maudlen had first come upon his name. Maudlen had taken his own first degree from Minnesota. Cojol had means, quit his post for private research. He had discovered a natural principle which he did not wish to share with his colleagues. He made an indefatigable search through the State for a suitable spot to set up his apparatus, at last chose Maudlen's farm for a very particular reason. While Cojol spoke Maudlen watched him as if he was listening to the specious argument of a madman.

Cojol said flatly that what he had discovered was a controllable force which would render the moon incandescent. This infiring was to be accomplished through the agency of the two guns which Maudlen had

seen on the hill. The guns threw charged beams of light, not projectiles in the ordinary sense of the word. The two beams of light amounted to continuous lightning bolts, the power of which Cojol had stepped up infinitely through a booster arrangement of his own. The plates in the room and the batterylike mass in the yard were both parts of this booster device. The guns, Cojol explained, were full-sized duplicates of those models with which he had killed birds in the air, set trees afire. It was a kind of double death ray.

MAIDEN HILL was chosen because it was solid rock. In experimenting with his models, Cojol had discovered that they were subjected to tremendous recoil, a phenomenon that he could not overcome. He computed mathematically the size of the two guns he would have to build to fire the moon and ran into the problem of finding ground which would support such apparatus. He investigated Maiden Hill when he had heard mention of it, found it to be a practically barren hill of granite.

Minnesota shows numerous outcroppings of such granite matrix. The Maiden Hill formation extended deep into the earth, an inexhaustible quarry ground. Bed rock made this an uncommonly poor farm, but at the same time it was a rock table that would support any conceivable weight and take any recoil from the two guns. Cojol paved the road to the hill, trucked in his tons of metal and apparatus, mounted the two guns on the hill of exposed rock. This was the work of nearly a year. In the meantime he tried to find the heir to the farm, but was unsuccessful.

The hill supported the mass of the guns easily. The recoil he was attempting to block was not only constant, a continued pressure, but was sufficient with guns of any mass to sink any artificial piles or supports into the ground. It would wreck any apparatus he set up. Maiden Hill was solid rock and stood isolated from curiosity seekers.

The Northern States Power Co. agreed to run a spur line to the hill, for a price. Cojol paid a tidy sum for erecting the steel towers that straddled over the farm to the hill, frames that carried high-tension cables down from the north. Cojol had assistants whom he trusted. A former student, Chester Howell, was the one who had encountered Maudlen and telephoned Cojol from the hill, warning him of his unwelcome guests even as Maudlen drove up to the door.

"Let me explain, if I can," said Cojol with an air of condescension. "The moon, as our friend the announcer said, is a dead satellite. It is a kind of celestial fossil which one supposes to consist mostly of rock—a celestial boulder. My problem was to ignite this boulder, as it were, to render it molten or gaseous without exploding it. I can explode it if I like, you see.

"Stone is not combustible, of course, but such a mass of stone if given initial heat throws off that heat, with light, for an indefinite length of time. For years I have desired to creat another sun to light the earth by night. We shall have *two* suns——"

"Why?" Maudlen interrupted.

Cojol ignored him, warming in his explanation. "The significant thing about matter in a state of chaos," said Cojol, "is that such a mass of matter gives off energy in the form of light, heat, and cer-

tain forms of power. We have not yet commanded all these forms, controlled them for use on earth. Some still remain undiscovered. The sun, for example, is such a source of power; it loses some of its mass in the endless cooling process, though the average man does not think of the sun in such terms. Energy, whether it is light, heat, or whatnot, is what makes life on earth possible. Energy is a form of matter and can be weighed. I have weighed light.

"I cannot hope to explain to you the phenomena that takes place in the creation of a sun. You are a layman. But you have no doubt heard of the tremendous, inexhaustible power released in the disintegration of the atom, and it is that principle with which I am working.

"Let us think of the moon as lifeless matter—dead, static elements. If we can free these elements somehow, we reduce those elements to chaos and have another sun. If we bombard the moon with free particles of matter, the physical elements of the moon may be freed partially, also. Do you follow me?"

"Why do you want to do this, Cojol?" asked Maudlen.

"*Professor* Cojol," said Cojol, frowning. "Experiments have been performed with a cathode ray produced in a bulb, with interesting results. When the ray is turned on a rabbit's ear the hair turns white, then the ear is denuded. Acetylene gas under this ray is transformed into a deposit of yellow powder, an allotrophic form which does not lend itself readily to analysis.

"All this is beside the point. I have a considerable store of power at my disposal here and have increased it a thousandfold with the booster apparatus which I have invented. I have mounted those two guns on the hill at the cost of a small fortune. With them you might say I am electrocuting the moon. One represents the cathode, for all practical purposes, and the other the anode. Regard them as electrodes.

"They are not exactly guns, of course, but you may as well think of them as such. A positive flow of free particles of matter is thrown at the moon from one gun—a beam of ionized light such as the flash Chester turned on you. A negative flow goes out from the other gun. These light beams meet at the moon and complete a circuit through the moon's mass. These free particles of matter bombard the static, dead particles in the moon's mass and gradually free them. The moon is being returned to its natural state of chaos. I am afraid I am only confusing you."

"You are," said Maudlen. "I don't understand this thing, but I can believe that you have done it. Why?"

"Are you incapable of appreciating the miracle I have accomplished?" Cojol asked. He gave Maudlen an irritated scowl. "Think of it, Maudlen! I have erected a cosmic gun, which, instead of using visible projectiles, fires a constant stream of ionized matter which is reducing the moon to a molten mass. Ah, if we could only see those lunar mountain ranges sliding down into a sea of boiling rock! I am giving the earth two suns. Think of it!"

"I can have you sent to prison for life," said Maudlen angrily. He stood up.

"So?" said Cojol. "I have been wasting my time. What crime do you accuse me of?"

"Treason!" Maudlen exclaimed.

"Treason!" shouted Cojol, laughing. "You'd have difficulty proving

that, my friend. Anyhow, what good would it do you now? It will be impossible to return the moon to its original state. Even I could not do that."

MAUDLEN looked through the windows. The moon showed a scarlet brilliance that was slowly whitening. In another hour or two the moon would give off the white light of the sun. The heat was oppressing.

"Professor Cojol," pleaded Ruth, "shut them off, for me. Please stop it! Please stop those terrible things on the hill! Don't you see what you are doing?"

"Two suns in the sky!" Cojol chanted. "I've dreamed of it. I hate the night! My dear, don't you realize how much crime is committed under the protection of night? Don't you realize what a boon I have conferred on agriculture? I have destroyed winter. I have opened the golden age. Some day men will call Anton Cojol the benefactor of mankind."

"With no moon and no night," said Ruth slowly, "there is no romance left in the world. I don't suppose you have thought of that, Professor Cojol?"

"Romance!" Cojol sneered.

"There will be periods of night, of course," Maudlen said. "The orbits of the sun and moon are staggered. You know that, surely."

"Of course," Cojol said. "There will be a few nights in the year hereafter, and then for limited areas. There will be periods of excessive cloudiness, times when parts of the earth will have neither sun nor moon. If the earth had another satellite, I might be able to give the earth ideal day."

"Night is the time of sleep," suggested Maudlen. "We are only human, Professor Cojol. Even you must sleep."

"Dogs sleep in the sun," said Cojol. "Why can't we?"

An assistant entered the room. He nodded to Cojol and walked swiftly to a switchboard, made a few alterations, vanished.

This, then, was the beginning of the brief, terrific "age of light." Two suns in the sky! It was daylight at two in the morning, daylight under a blazing moon, when Cojol cut the power in the guns on Maiden Hill. There was nothing to do about it now.

Maudlen felt physically sickened as he drove up to Minneapolis under that abominable moonlight. The sun rose before the moon set. The heat was unbearable, and Ruth cried during the whole journey. Maudlen could be excused for feeling that Cojol had done him a personal injury, an irreparable one to all mankind. Could not that madman see what the consequences of this thing would be?

For three years Dr. Maudlen tried to have Cojol arraigned for criminal action in the Minnesota courts. At last he became so involved in proving his own clear title to the Maudlen farm that he gave it up as a bad job. He had expended almost all of Cojol's check in lawyers' fees. Three years of it, that age of light, while Anton Cojol was becoming the best-hated man in the world.

It was an obnoxious thing. There was no thinking mortal who did not regard what Cojol had done as incalculable harm. What had been accomplished? Nothing! Anton Cojol had merely proved that man could play cosmic pranks if he wanted to.

Because of its distance and its size, the moon fairly approximated a duplicate of the sun—two suns of

practically equal intensity. Cojol had shut off his power at the time he figured the moon would give approximately the same amount of light and heat as the sun. Like magic, and seemingly overnight, the earth teemed with nameless mischief of all kinds. Men were incapable of bearing the heat of two suns; excess of actinic rays began to produce monstrous changes in nature. The polar ice caps were receding by the month.

A bright statistician figured that the normal span of man's life would shorten appreciably, then probably lengthen over a period of centuries. Man's stature would increase. Experimenters had proved early in the game what an excess of violet rays could do with the stature of dogs and chickens. Chickens could be made to lay eggs night and day.

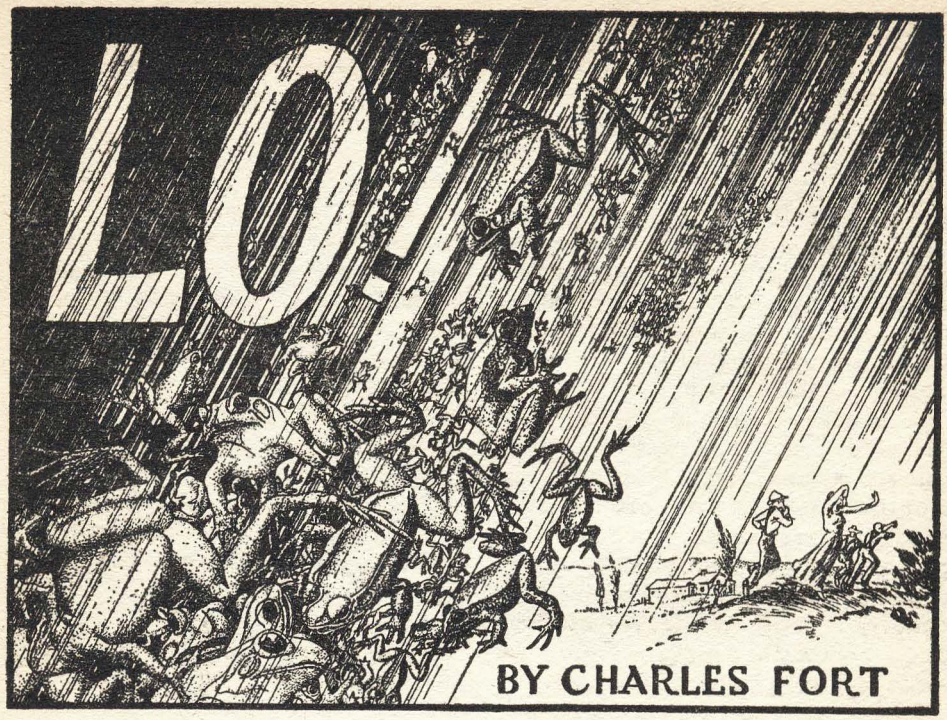
In the great and spreading American desert, the potent suns' rays produced a monstrous race of gilas; at the end of the year it was reported that the inhabitants of Salt Lake City were killing these animals in the streets. A hitherto-unknown plague swept around the globe with terrible swiftness, and then burned itself out in a month or two.

Cojol died of this plague, which was simply a disease like a violent summer cold. Notable among the freaks reported were scorpions as large as rats, mosquitoes the size of bees whose bite was fatal. A scientist cultivated in the laboratory a genus of microbe that could be seen easily with the naked eye, but which was no longer deadly. The wealthy made a practice of following "night" around the earth for its coolness. Three mastodons floated to the surface of the steaming Siberian swamps and were eaten.

TWO SUNS in the sky—the death of the seasons—storms. It was scarcely the golden age which the mad Cojol dreamed of, those three years. The seas dropped from their accustomed level, and when the skies were not an unbroken bank of clouds for weeks at a time, the surface of the land blistered into deserts. Men were subjected to the extremes of tropical storms and desert heat, and then this world-wide laboratory of mischief was ended in an instant, as it had begun.

THE NEW COMET was called Busch's comet, after its discoverer, Harvey Busch. At the end of the third year this comet flashed through the sky with a cataclysmic, avalanchian roar and pulled the earth appreciably out of its orbit. There were numerous minor earthquakes.

But the most remarkable consequence was that Busch's comet stole the moon, literally. The mass of the earth was too great to suffer greatly, though unprecedented tidal waves were reported. The moon was pulled off into space, and was observed to join the comet, which phenomenon resulted in a blast of light that could be easily seen by day. Like a cosmic stage trick, a good-natured heavenly prank, the earth suddenly had but one sun again and no moon at all. The brief age of light had ended.



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PART FOUR

VIII.

UNKNOWN, luminous things, or beings, have often been seen, sometimes close to this earth, and sometimes high in the sky. It may be that some of them were living things that occasionally came from somewhere else in our existence, but that others were lights on the vessels of explorers, or voyagers, from somewhere else.

From time to time, luminous objects, or beings, have been reported from Brown Mountain, North Carolina. They appear, and then for a long time are not seen, and then they appear again. See the *Literary Digest,* November 7, 1925. I have other records. The luminosities travel, as if with motions of their own. They are brilliant, globular forms, and move in the sky, with a leisureliness and duration that exclude any explanation in meteoric terms.

For many years, there had been talk upon this subject, and then, in the year 1922, people of North Carolina, asking for a scientific investigation, were referred to the United States Geological Survey. A geologist was sent from Washington to investigate these things in the sky.

One imagines, but most likely only faintly, the superiority of this geologist from Washington. He heard stories from the natives. He contrasted his own sound principles with the irresponsible gab of denizens, and went right to the investigation, scientifically.

He went out on a road, and saw lights, and made his report. Forty-seven per cent of the lights that he saw were automobile headlights; thirty-three per cent of them were locomotive headlights; ten per cent were lights in houses, and ten per cent were bush fires. Add that up and see that efficiency can't go further. The geologist from Washington, having investigated nothing that he had been sent to investigate, returned to Washington.

I don't know in just what degree my accusation, in these matters, is of the laziness and feeble-mindedness of scientists. Or, instead of accusing, I am simply pointing out everybody's inability seriously to spend time upon something, which, according to his preconceptions, is nonsense.

In *Knowledge,* September, 1913, Count de Sibour enjoyed his laziness, or incompetence, which a merciful Providence, bent upon keeping us human beings reconciled to being human beings, made him think was his own superiority. He told a story of foolish, credulous people, in North Norfolk, England, who, in the winter of 1907-8, believed that a pair of shining things, moving about the fields, could not be explained as he explained them.

We are told of a commonplace ending of this alleged mystery: that in the end a gamekeeper shot one of these objects and found that it was a common barn owl, phosphorescent with decayed wood from its nesting place, or with a fungous disease of its feathers. According to other accounts, these things were as brilliant as electric lights. But a phosphorescent owl could not shine with a light like an electric light. So De Sibour described the light as "a pale, yellow glow," such as a phosphorescent owl could shine with.

De Sibour knew nothing about this subject, from his own experiences. We go to the same records to which he went. Like him, we find just about what we want to find. In the London *Times,* December 10, 1907, and in following issues, are accounts of these luminous objects, which were flying about the fields of North Norfolk, having been reported by Mr. R. W. Purdy, a well-known writer upon biologic subjects.

AMONG other attempts to assimilate with the known, or among other expressions of a world-wide antipathy to the finding out of anything new, was the idea that owls are sometimes luminous. The idea came first, or the solution of the problem was published first, and then the problem was fitted to the solution. This is said to be a favorite method of ratiocination with inmates of a home for the mentally deficient, but I should think that one of these inmates should feel at home anywhere. De Sibour and others fitted in a story that a luminous owl had been shot. I think that at times there may be faintly luminous owls, because I accept that, in some circumstances, almost anything may be luminous. *English Mechanic,* 10-15 —case of a man with a luminous toe.

Shining things, flying like birds, in the fields of North Norfolk continued to be reported. The brilliant things looked electric. When they rested on trees, everything around them was illuminated. Purdy's de-

scriptions are very different from "a pale, yellow glow." Upon the night of December 1st, he saw something that he thought was the lamp of a motor cycle, moving rapidly toward him, in a field, stopping, then rising several yards, moving higher, and then retreating. It moved in various directions. See the *Field,* January 11, 1908.

De Sibour was uncareful in his mystery-squelching story, his bobbed story, a story that forced a mystery to a commonplace ending. No gamekeeper shot a luminous owl, at this time, in North Norfolk.

But somebody did say that he had conventionally solved the mystery. *Eastern Daily Press.* Norwich, February 7, 1908—that, early in the morning of the 5th, Mr. E. S. Cannell, of Lower Hellesdon, saw something shining on a grass bank. According to him, it fluttered up to him, and he found that it was the explanation of a mystery. It was a luminous owl, he said; and, as told by him, he carried it to his home, where it died, "still luminous."

But see the *Press* of the 8th—that Mr. Cannell's dead owl had been taken to a taxidermist, who had been interviewed. Of course a phosphorescence of a bird, whether from decayed wood, or feather fungi, would be independent of the life or death of the bird. Questioned as to whether the body of the owl was luminous, the taxidermist said: "I have seen nothing luminous about it."

In zoölogical journals one frequently comes upon allusions to these things, or beings, of North Norfolk. No gamekeeper killed one of them, but the story of the gamekeeper who had killed a luminous owl is told in these records that are said to be scientific. It is not necessary that a gamekeeper should kill a luminous owl and so put an end to a mystery. A story that he did will serve just as well.

The finding, or the procuring in some way or another, of the body of an owl did not put an end to the mystery, except in most of the records that are said to be scientific. There were at first two lights, and there continued to be two lights. The brilliant things continued to be seen in the fields, flitting about, appearing and disappearing. The last observation found by me, May 3, 1908, is recorded in the *Trans. Norfolk and Norwich Naturalists' Society,* 8-550. Purdy records an observation upon the two lights, seen together, more than a month after the date upon which Mr. Cannell said that his owl had fluttered right up to him.

Something else was reported, in this region. In the *Eastern Daily Press,* January 28, 1908, it is said that, at night—moon bright—"a dark, globular object, with a structure of some kind upon the side of it, traveling at a great pace," had been seen in the sky, by employees of the Norwich Transportation Co., at Mousehead. "It seemed too large for a kite, and, besides, its movements seemed under control, for it was traveling against the wind."

I am here noting only a few of the many records of unknown, seemingly living, luminous things that used to be called will-o'-the-wisps. They come and they go, and their reappearances in a small region make me think of other localized repetitions that we have noted.

London *Daily Express,* February 15, and following issues, 1923—brilliant, luminous things moving across fields, sometimes high in the air, at Fenny Compton, Warwickshire. They were "intense lights," like automobile headlights. Sometimes

these luminous things, or beings, hovered over a farmhouse. It was a deserted farmhouse, according to the London *Daily News,* February 13. About a year later, one of these objects, or whatever they were, returned, and was reported as "a swiftly moving light," by several persons, one of them Miss Olive Knight, a school teacher, of Fenny Compton. London *Sunday News,* January 27, 1924.

The Earl of Erne tells, in the London *Daily Mail,* December 24, 1912, of brilliant luminosities that, from time to time, in a period of seven or eight years, had been appearing near Lough Erne, Londonderry, Ireland, "in size and shape very much like a motor car lamp."

In later issues of the *Daily Mail,* the Countess of Erne tells of these things, or creatures, "like motor car lamps, large and round."

New York *Herald Tribune,* August 29, 1929—a traveling light in the sky—about four hundred miles off the coast of Virginia. It was reported by Thomas Stuart, third mate of the steamship *Coldwater,* of the South Atlantic Steamship Line. "There was something that gave the impression that it was a large passenger craft." It was traveling at an estimated speed of one hundred miles an hour, in the direction of Bermuda. There was an investigation that "failed to reveal any transatlantic or Bermuda flight."

BEFORE I could find out the date, and look the matter up, I came upon several humorous allusions in English newspapers to a time when there was a scare in England, because of moving lights in the sky. And all the excitement was about the advertising scheme of an automobile manufacturer, who had sent up an imitation airship, with lanterns tied to it. There was a lesson in this—presumably other alleged mysteries could be explained in similar, commonplace terms.

I was doing one of my relatively minor jobs, which was going through the London *Daily Mail,* for a period of about twenty-five years, when I came upon this:

March 25, 1909—that, upon March 23, at five-ten o'clock in the morning, two constables, in different parts of the city of Peterborough, had reported having seen an object, carrying a light, moving over the city, with sounds like the sounds of a motor. In the Peterborough *Advertiser,* March 27th, is published an interview with one of these constables, who described "an object, somewhat oblong and narrow in shape, carrying a powerful light."

To suit whatever anybody should prefer, I could give data to show that only lights and no object were seen, and that no sound was heard; or that a vessel, carrying lights, was seen, and that sounds, like sounds of a motor, were heard.

It is said, in the *Daily Mail,* May 17, that many other stories of unaccountable objects and lights in the sky had reached the office of the *Mail.* If so, these stories were not published. The newspapers are supposed to be avid for sensational news, but they have their conventions, and unaccountable lights and objects in the sky are not supposed to have sex, and it is likely that hosts of strange, but sexless, occurrences have been reported, but have not been told of in the newspapers. In the *Daily Mail,* it is said that no attention had been paid to the letters, because everything that was mentioned in them, as evidence, was unsatisfactory.

It is said that the object reported at Peterborough was probably a kite

with a lantern tied to it. On May 15, a constable at Northampton had sent to headquarters a written report upon lights that he had seen in the sky at 9 p. m.; but Chief Constable Madlin had learned that a practical joker had sent up a fire balloon.

The practical joker of Northampton, amusing himself at nine o'clock in the evening, is an understandable representative of his species; but some other representative of his species, flying a kite and lanterns, at Peterborough, at five o'clock in the morning, limiting his audience mostly to milkmen, though maybe a joker, could not have been a very practical joker. He must have been fond of travel. There were other reports from various places in England and in Wales. There were reports from places far apart.

Daily Mail, May 20—that a man, named Lithbridge, of 4 Roland Street, Cardiff, Wales, had, in the office of the Cardiff *Evening Express,* told a marvelous story. This story was that, on May 18, about eleven p. m., while walking along a road near the Caerphilly Mountains, Wales, he had seen on the grass at a side of the road, large tube-shaped construction. In it were two men, in heavy fur overcoats. When they saw Mr. Lithbridge, they spoke excitedly to each other in a foreign language and sailed away. Newspapermen visited the place and found the grass trampled and a scattering of torn newspapers and other débris.

If anybody else wants to think that these foreigners were explorers from Mars or the moon, here is a story that of course can be reasoned out quite, or almost, satisfactorily.

AT ANY RATE, still more satisfactorily it may be said that no foreigners of this earth were sailing in the sky of Great Britain. In the *Western Mail,* Cardiff, May 21, is published an interview with Mr. C. S. Rolls, the motorist, and the founder of the Aëro Club, who gave his opinion that some of the stories of a strange object in the sky were hoaxes, but that not all of them could be explained so.

Chiefly for the reason that there was no known airship of this earth, with such powers of flight, the reported observations were discredited, at least sometimes, in all newspapers that I have looked at.

In the London *Weekly Dispatch,* May 23, the stories are so discredited, and it is argued that to be seen so often, without having been seen to cross the Channel, an airship would need to have a base in England, to which, in view of the general excitement, it would certainly have been traced—a base where it would be seen, "especially during the tedious preliminaries of ascent." Then, in the *Weekly Dispatch,* are listed reports from twenty-two places, in the week preceding May 23, and nineteen reports earlier in May and in March.

But then came an explanation.

Upon May 26, it was told in the newspapers that the mystery of the lights in the sky had been solved. A large imitation airship had "come down" at Dunstable, and the lights had been upon that. It was an advertising scheme. An automobile manufacturer had been dragging the thing around in England and Wales. There had been reports from Ireland, but Ireland was omitted in this explanation. We are told that this object, roped to an automobile, had been dragged along the roads, amusingly exciting persons who were not very far advanced mentally.

With whatever degree of advancement my brains may possess, I sup-

pose that such a thing could be dragged slowly, and for a short time, perhaps only a few minutes, because it was a hot-air-inflation, along a road, and perhaps through a city or two, with a policeman, who reported lights in the sky, not seeing a rope going up from an automobile; but I do not think any such successful imposition possible in about forty large cities, some of them several hundred miles apart.

No one at Dunstable saw or heard the imitation airship come down from the sky. An object, to which was tied a card, upon which was a request to communicate with a London automobile manufacturer, "in case of accident," was found in a field, on the morning of May 26.

The explanation, as I see it, is that probably the automobile manufacturer took advantage of the interest in lights in the sky and at night dumped a contrivance into a field, having tied his card to it. If so this was only one of many occurrences that have been exploited by persons who had a liking, or a use, for publicity.

The range of the reported observations was from Ipswich, on the east coast of England, to Belfast, Ireland, a distance of three hundred and fifty miles: and, in Great Britain, from Hull to Swansea, a distance of two hundred miles. Perhaps a gas bag could be dragged around a little, but the imitation airship that was found at Dunstable was a flimsy contrivance, consisting of two hot-air balloons, and a frame about twenty feet long, connecting them.

The lights in the sky were frequently reported upon the same night from places far apart. Upon the night of May 9, reports came from Northampton, Wisbech, Stamford, and Southend. In the *Weekly Dispatch,* May 23, it is pointed out that to be seen at Southend about eleven p. m., and then twenty minutes later at Stamford, seventy miles away, the object in the sky must have traveled at a rate of two hundred and ten miles an hour.

The question that comes up is whether, after the finding of the object at Dunstable, or after a commonplace ending of a mystery, lights continued to be seen traveling in the sky.

The stoppage was abrupt—or the stoppage of publication of reports was abrupt.

IX.

IT MAY BE that upon new principles we can account for the mystery of the *Marie Celeste.* If there is a selective force which transports stones exclusively, or larvæ, and nothing but larvæ, or transports living things of various sizes, and nothing but living things, such a selective force might affect a number of human beings, leaving no trace, because it could affect nothing else.

I take from the report by the Queen's Proctor, in the Admiralty Court, published in the London *Times,* February 14, 1873. Upon December 5, 1872, between the Azores and Lisbon, the crew of the British ship *Dei Gratia* saw a vessel and made her out to be the American brigantine *Marie Celeste.* Her sails were set, and she was tacking, but so erratically that attention was attracted.

Whether ships are really females, this one looked so helpless, or woebegone, that all absence of male protection was suspected. The Britons shoved out and boarded the vessel. There was nobody aboard. They could find nothing by which to account for the abandonment. "Every part of the vessel, inside and out-

side, was in good order and condition."

In the log book, the latest entry, having in it no suggestion of impending trouble of any kind, was dated November 25. There was no sign of any such trouble as mutiny. A vial of oil, used by the captain's wife upon a sewing machine, stood upright, indicating that there had been no rough weather. Investigation of this mystery was world-wide.

The State Department of the United States communicated with all representatives abroad, and every customhouse in the world was more or less alert for information of any kind; but fourteen persons, in a time of calm weather, and in circumstances that gave no indication of any kind of violence, disappeared, and either nothing, or altogether too much, was found out.

I have a collection of yarns by highly individualized liars, or artists, who scorned in any particular to imitate one another, who told, thirty, forty, or fifty years later, of having been members of this crew.

London *Times,* November 6, 1840—the *Rosalie,* a large French ship, bound from Hamburg to Havana—abandoned ship—no clue to an explanation. Most of the sails set—no leak—valuable cargo. There was a half-starved canary in a cage.

But I suggest that, with our hints of teleportation, we are on the wrong track. Crews of vessels have disappeared, and vessels have disappeared. It may be that something of which the inhabitants of this earth know nothing is concerned in these disappearances, or seizures.

In the New York *Sun,* April 24, 1930, the French astronomer and meteorologist, General Frederic Chapel, is quoted, saying that aircraft, missing at sea, and seacraft, may have been struck by meteors. That there is something of the unexplained in these disappearances, many writers have felt. But there is no recorded instance of aircraft, flying over land, having been struck by a meteor, and I know of few instances of reported falls of meteoric matter upon vessels, and no instance of a vessel that has been much damaged by a meteor.

The disappearance of the *Cyclops,* a fuel ship of the United States Navy, even though in war time, is considered mysterious—some time after March 4, 1918, after leaving Barbardos, British West Indies, for Hampton Roads, Virginia.

When the *Titanic* went down, April 15, 1912, flotsam was reported months afterward, and there were many survivors: but, after the disappearance of the White Star steamship, the *Naronic,* in February, 1893, two empty lifeboats, supposed to be hers, were reported by a sea captain, and nothing more was seen.

In the report by the London Board of Trade, it was considered highly improbable that the *Naronic* had struck an iceberg. It was said that this vessel was "almost perfect," in construction and equipment. She was a freighter, with seventy-five men aboard. There were life belts for all.

New York *Times,* June 21, 1921—disappearance of three American ships—difficult to think of piracy—seemed to be no other explanation—five departments of the Washington government investigating. In February, the *Carol Deering,* a five-masted schooner, of Portland, Maine, had gone ashore near Diamond Shoals, North Carolina. The mystery is similar to that of the *Marie Celeste.* Nobody aboard. Everything was in good condition.

The circumstance that attracted most attention was that the crew had

disappeared about the time a meal was to be served. A little later, a bottle was picked up on shore, and in it was a message purporting to have been written by the mate of the vessel. "An oil-burning tanker has boarded us, and placed our crew in irons. Get word to headquarters of the company at once." Just how somebody in irons could get a container for a message makes me wonder.

In the London *Daily Mail,* June 22, the finding of another bottle, with a message in it, is told of—from the captain of the *Deering,* this time—that he had been taken prisoner by the crew, and had been put upon another vessel.

After the *Waratah* "mysteriously disappeared," off the coast of South Africa, July, 1909, five bottles, all said to be hoaxes, were found. There is as much complication and baffle-ment in this subject, as in anything that science is said absolutely to have proved. If some of us tire of our existence, and would like to try some other existence, they had better think it over, because anything merrier than ours is hard to conceive of.

Every shipwreck, or any other catastrophe, brings out merry-makers. The tragedy of the *Waratah* was enjoyed for a long time. More than thirteen years later, November 21, 1922, another bottle, said to be a hoax, was found near Cape Town. Still, I am affected just the other way, and am taking on a new pessimism. Heretofore I have thought cheerfully of bottles. But there's a depression from anything, once the humorists get ahold of it. I wonder how comes it that nobody has reported finding an old bottle, and in it a sea captain's account of an impending mutiny, signed "Christopher Columbus."

New York *Times,* June 22, 1921—"More ships added to the mystery list—almost simultaneous disappearances, without a trace, regarded as significant." *Times,* June 24—about a dozen vessels in the list.

And yet such a swipe by an unknown force, of the vessels of a nation, along its own coast, was soon thought of no more. Anything could occur, and if not openly visible, or if observed by millions, would soon be gulfed in forgetfulness. Or soon it would be conventionalized.

In the year 1921, it was customary to accuse the Russians. I think that the climax was reached, in the year 1927, when unruliness of natives in the jungles of Peru was attributed to Russian agents. Still, I suppose that, for years, whenever there is revolt against misrule and oppression, propagandists will tell us the same old yarn of otherwise contented natives, misled by those Russians. In June, 1921, the way of explaining the disappearance of a dozen vessels was by saying that it was thought the Soviet government was stealing them.

It may be that constructions from somewhere else have appeared upon this earth, and have seized crews of this earth's ships.

IN THEIR book, "The Cruise of the Bacchante," the two young princes, sons of the Prince of Wales, one of them now the King of England, tell of "a strange light, as if of a phantom vessel all aglow" that was, at four o'clock, on the morning of June 11, 1881, between Melbourne and Sydney, reported by the lookout of the *Bacchante.* The unknown appearance was seen by twelve other members of the crew. Whether there is relative, five hours later the lookout fell from a crosstree and was killed.

Brooklyn *Eagle,* September 10, 1891—something that was seen, at Crawfordsville, Indiana, 2 a. m., September 5. Two icemen saw it. It was a seemingly headless monster, or it was a construction, about twenty feet long, and eight feet wide, moving in the sky, seemingly propelled by finlike attachments. It moved toward the icemen. The icemen moved. It sailed away, and made such a noise that the Reverend G. W. Switzer, pastor of the Methodist church, was awakened, and, looking from his window, saw the object circling in the sky.

I supposed that there was no such person as the Reverend G. W. Switzer. Being convinced that there had probably never been a Reverend G. W. Switzer, of Crawfordsville—and taking for a pseudostandard that if I'm convinced of something that is something to suspect—I looked him up. I learned that the Reverend G. W. Switzer had lived in Crawfordsville, in September, 1891.

Then I found out his present address in Michigan. I wrote to him and received a reply that he was traveling in California and would send me an account of what he had seen in the sky immediately after returning home. But I have been unable to get him to send that account. If anybody sees a "headless monster" in the sky, it is just as well to think that over before getting into print.

Altogether, I think that I make here as creditable and scientific a demonstration as any by any orthodox scientist, so far encountered by us. The problem is: Did a "headless monster" appear in Crawfordsville, in September, 1891? And I publish the results of my researches: "Yes; a Rev. G. W. Switzer did live in Crawfordsville at the time."

I'd like to know what Mr. W. H. Smith saw, September 18, 1877, in the sky, moving over the city of Brooklyn. It looked like a winged human form. New York *Sun,* September 21, 1877.

Zoölogist, July, 1868—something that was seen in the sky, near Copiapo, Chile—a construction that carried lights, and was propelled by a noisy motor—or "a gigantic bird; eyes wide open and shining like burning coals; covered with immense scales, which clashed together with a metallic sound."

I don't know what will be thought generally of our data, but in the New York *Times,* July 6, 1873, the writer of "General Notes" tells of something that he considered "the very worst case of delirium tremens on record." This was before my time. He copied from the Texas Bonham *Enterprise*—that a few days before the time of writing, a man living five or six miles from Bonham had told of having seen something like an enormous serpent floating over his farm, and that other men working in the fields had seen the thing and had been frightened.

I suppose that, equally deliriously, inhabitants of the backwoods of China would similarly describe one of this earth's airships floating over their farms. I don't know that this one account, considered alone, amounts to anything, but, in the *Times,* of July 7, I found something else noted. A similar object had been reported from Fort Scott, Kansas: "About halfway above the horizon the form of a huge serpent, apparently perfect in form, was plainly seen."

New York *Times,* May 30, 1888—reports from several places in Darlington County, South Carolina—huge serpent in the sky, moving with a hissing sound, but without visible means of propulsion.

In the London *Daily Express,* September 11, 1922, it is said that, upon September 9, John Morris, coxswain of the Barmouth lifeboat, and William James, looking out at sea, from the shore, at Barmouth, Wales, saw what they thought was an airplane falling into the ocean. They rushed out in a motor boat, but found nothing. In the Barmouth *Advertiser,* of the 14th, it is said that this object had fallen so slowly that features described as those of an airplane had been seen. In newspapers and aëronautical journals of the time there is no record to be found of an airplane of this earth reported missing.

THERE was a series of occurrences in the summer of 1910. Early in July, the crew of the French fishing smack, *Jeune Frédéric,* reported having seen in the sky off the coast of Normandy a large, black, birdlike object. Suddenly it fell into the sea, bounded back, fell again, and disappeared, leaving no traces. Nothing was known of the flight of any terrestrial aircraft, by which to explain. London *Weekly Dispatch,* July 10.

Upon August 17—London *Times,* August 19—laborers at work in the forest east of Dessau, Germany, saw in the sky an object that they thought was a balloon. It suddenly flamed, and something that was thought to be its car fell into the forest. The chief forester was notified, and a hunt, on a large scale, was made, but nothing was found. Aëronautical societies reported that no known balloon had been sent up. It was thought that the object must have been somebody's large toy balloon.

About this time, the fall from the sky of a white cylinder of marble was reported. One of us pioneers, or whatever we are, Mr. F. T. Mayer, looked up this matter and learned that the reported occurrence was upon the farm of Mr. Daniel Lawyer, Rural Route 4, Westerville, Ohio. I wrote to Mr. Lawyer, asking whether the object could be considered artificial. I had an idea that it might, or might not, be a container of a message that had been fired to this earth from Mars or the moon or somewhere else.

Mr. Lawyer did not like the suggestion of artificiality, which he interpreted as meaning that he had picked up something that had been made in Ohio. He said that it was not an artificial object, but a meteorite. For a reproduction of a photograph of this symmetric, seemingly carved cylinder, twelve inches long, weight about three pounds, see *Popular Mechanics,* 14-801.

About 9 p. m., August 30—lights as if upon an airship, moving over New York City—New York *World,* August 31. Aviators were interviewed, but all known aircraft were accounted for. *World,* September 2—that two men had sent up a large kite.

Upon September 21, New York *Tribune,* September 22 a great number of round objects were seen passing from west to east over the lower part of New York City. Crowds stood in the streets, watching them. They were thought to be little balloons. I have records of similar objects, in large numbers, that could not be considered little balloons. For several hours this procession continued. If somebody in Jersey City was advertising, he kept quiet in his bid for publicity.

The next day, at Dunkirk, New York, an object, described as an unknown cigar-shaped balloon, was seen in the sky, over Lake Erie, seeming to be unmanageable, gradu-

ally disappearing, late in the evening. There was so much excitement in Dunkirk that tugboats went out and searched all night. Toronto *Daily Mail and Empire,* September 24—that some one on a tugboat had found a large box kite, which had been sent up by a party of campers and was undoubtedly the reported object.

Mr. A. H. Savage-Landor, in "Across Unknown South America," vol. II, p. 425, tells a story that was told to him by the people of Porto Principal, Peru, in January, 1912—that some years before a ship had been seen in the sky, passing over the town, not far above the treetops. According to his interpretations, it was a "square globe," flying a flag of Stars and Stripes.

Mr. Savage-Landor thinks that the object might have been the airship, which, upon October 17, 1910, Wellman abandoned about four hundred miles east of Hatteras. In newspaper accounts of this unsuccessful attempt to cross the Atlantic, it is said that, when abandoned, this airship was leaking gas rapidly. If a vessel from somewhere else, flying the Stars and Stripes, is pretty hard to think of, except by thinking that there are Americans everywhere, also the "square globe" is not easy, at least for the more conventional of us.

Probably these details are faults of interpretation. Whatever this thing in the sky may have been, if we will think that it *may* have been, it returned at night, and this time it showed lights.

In the New York newspapers, September, 1880, are allusions to an unknown object that had been seen traveling in the sky, in several places, especially in St. Louis and Louisville. I have not been able to get a St. Louis newspaper of this time, but I found accounts in the Louisville *Courier-Journal,* July 29, August 6, 1880. Unless an inventor of this earth was more self-effacing than biographies of inventors indicate, no inhabitant of this earth succeeded in making a dirigible aërial contrivance in the year 1880 and then keeping quiet about it.

The story is that, between six and seven o'clock, on the evening of July 28, people in Louisville saw in the sky "an object like a man, surrounded by machinery, which he seemed to be working with his hands and feet." The object moved in various directions, ascending and descending, seemingly under control. When darkness came, it disappeared.

Then came dispatches, telling of something that had been seen in the sky, at Madisonville, Kentucky. "It was something with a ball at each end." "It sometimes appeared in a circular form, and then changed to an oval. It passed out of sight, moving south."

These are stories of at least harmless things that were, or were not, seen over lands of this earth. It may be that if beings from somewhere else should seize inhabitants of this earth, wantonly, or out of curiosity, or as a matter of scientific research, the preference would be for an operation at sea, remote from observations by other humans of this earth.

If such beings exist, they may in some respects be very wise, but—supposing secrecy to be desirable—they must have neglected psychology in their studies, or unconcernedly they'd drop right into Central Park, New York, and pick up all the specimens they wanted, and leave it to the wise men of our tribes to explain that there had been a whirlwind, and that the weather bureau,

with its usual efficiency, had published warnings of it.

In the matter of the disappearance of the Danish training ship *Kobenhoven,* which, upon December 14, 1928, sailed, with fifty cadets and sailors aboard, from Montevideo, I note that another training ship, the British *Atalanta,* set sail, early in the year 1880, with two hundred and fifty cadets and sailors aboard, from Bermuda, and was not heard of again.

Upon October 3, 1902, the German bark, *Freya,* cleared from Manzanillo for Punta Arenas, on the west coast of Mexico. I take from *Nature,* April 25, 1907. Upon October 20, the ship was found at sea, partly dismasted, lying on her side, nobody aboard. The anchor was still hanging free at her bow, indicating that calamity had occurred soon after the ship had left port.

The date on a calendar, on a wall of the captain's cabin, was October 4. Weather reports showed that there had been only light winds in this region. But upon the 5th, there had been an earthquake in Mexico.

Several weeks after the disappearance of the crew of the *Freya,* another strange sea-occurrence was reported.

Zoölogist, 4-7-38—that, according to the log of the steamship *Fort Salisbury,* the second officer, Mr. A. H. Raymer, had, October 28, 1902, in Lat. 5°, 31′ S., and Long. 4°, 42′ W., been called, at three-five a. m., by the lookout, who reported that there was a huge, dark object, bearing lights in the sea ahead. Two lights were seen. The steamship passed a slowly sinking bulk, of an estimated length of five or six hundred feet. Mechanism of some kind —fins, the observers thought—was making a commotion in the water. "A scaled back" was slowly submerging.

Phosphorescence of the water is mentioned several times, but that seems to have nothing to do with two definite lights, like those of a vessel. The captain of the *Fort Salisbury* was interviewed. "I can only say that Mr. Raymer is very earnest on the subject, and has, together with the lookout and helmsman, seen something in the water of a huge nature, as specified."

One thinks that this object may have been a large, terrestrial vessel that had been abandoned and was sinking.

I have looked over "Lloyd's List" for the period, finding no record by which to explain.

X.

AS TO DATA that we shall now take up, I say to myself: "You are a benign ghoul, digging up dead old legends and superstitions, trying to breathe life into them. Well, then, why have you neglected Santa Claus?"

But I am particular in the matter of data, or alleged data. And I have come upon no record, or alleged record, of mysterious footprints in snow, on roofs of houses, leading to chimneys on Christmas Eves.

There is a great deal in the most acceptable of the science of to-day that represents a rehabilitation of supposed legends, superstitions, and folk lore. Recall Voltaire's incredulity as to fossils, which according to him only a peasant could believe in. And note that his antagonism to fossils was probably because they had been taken over by theologians, in their way of explaining. Here was one of the keenest of minds: but it could not accept data, because it rejected explanations of the data.

In the month of May, 1810, some-

thing appeared at Ennerdale, near the border of England and Scotland, and killed sheep, sometimes seven or eight of them in a night, not devouring them, but biting into the jugular veins and sucking the blood. That's the story. The only mammal that I know of that does something like this is the vampire bat. It has to be accepted that stories of the vampire bat are not myths.

Something was ravaging near Ennerdale, and the losses by sheep farmers were so serious that the whole region was aroused. It became a religious duty to hunt this marauder. Once, when hunters rode past a church, out rushed the whole congregation to join them, the vicar throwing off his surplice, on his way to a horse. Milking, cutting of hay, feeding of stock were neglected. For more details, see *Chambers' Journal,* 81-470. Upon September 12, some one saw a dog in a cornfield and shot it. It is said that this dog was the marauder and that with its death the killing of sheep stopped.

For about four months, in the year 1874, beginning upon January 8, a killer was abroad in Ireland. In *Land and Water,* March 7, 1874, a correspondent writes that he had heard of depredations by a wolf in Ireland where the last native wolf had been killed in the year 1712. According to him, a killer was running wild in Cavan slaying as many as thirty sheep in one night. There is another account, in *Land and Water,* March 28. Here a correspondent writes that in Cavan sheep had been killed in a way that led to the belief that the marauder was not a dog. This correspondent knew of forty-two instances, in three townlands, in which sheep had been similarly killed—throats cut and blood sucked, but no flesh eaten.

The footprints were like a dog's, but were long and narrow, and showed traces of strong claws. Then, in the issue of *Land and Water,* for April 11, came the news that we have been expecting. The killer had been shot. It had been shot by Archdeacon Magenniss, at Lismoreville, and was only a large dog.

This announcement ends the subject in *Land and Water.* Almost anybody, anyway in the past, before suspiciousness against conventions had the development that it has today, reading these accounts down to the final one, would say: "Why, of course! It's the way these stories always end up. Nothing to them."

But it is just the way these stories always end up that has kept me busy. Because of our experience with pseudo-endings of mysteries, or the mysterious shearing and bobbing and clipping of mysteries, I went more into this story that was said to be no longer mysterious. The large dog that was shot by the archdeacon was sacrificed not in vain, if its story shut up the minds of readers of *Land and Water,* and if it be desirable somewhere to shut up minds upon this earth.

See the Clare *Journal,* issues up to April 27—the shooting of the large dog, and no effect upon the depredations—another dog shot, and the relief of the farmers, who believed that this one was the killer—still another dog shot, and supposed to be the killer—the killing of sheep continuing. The depredations were so great as to be described as "terrible losses for poor people." It is not definitely said that something was killing sheep vampirishly, but that "only a piece was bitten off, and no flesh sufficient for a dog ever eaten."

The scene of the killings shifted.

Caven *Weekly News,* April 17—that, near Limerick, more than one

hundred miles from Cavan, "a wolf or something like it" was killing sheep. The writer says that several persons, alleged to have been bitten by this animal, had been taken to the Ennis Insane Asylum, "laboring under strange symptoms of insanity."

It seems that some of the killings were simultaneous near Cavan and near Limerick. At both places, it was not said that any animal, known to be the killer was ever shot or identified. If these things that may not be dogs, be, their disappearances are as mysterious as their appearances.

There was a marauding animal in England, toward the end of the year 1905. London *Daily Mail,* November 1, 1905—"the sheep-slaying mystery of Badminton." It is said that in the neighborhood of Badminton, on the border between Gloucestershire and Wiltshire, sheep had been killed. Sergeant Carter, of the Gloucestershire police is quoted: "I have seen two of the carcasses, myself, and can say definitely that it is impossible for it to be the work of a dog. Dogs are not vampires and do not suck the blood of a sheep and leave the flesh almost untouched."

And going over the newspapers, just as we're wondering what's delaying it, here it is:

London *Daily Mail,* December 19—"Marauder shot near Hinton." It was a large, black dog.

So, then, if in London any interest had been aroused, this announcement stopped it.

WE GO to newspapers published nearer the scene of the sheep-slaughterings. Bristol *Mercury,* November 25—that the killer was a jackal, which had escaped from a menagerie in Gloucester. And that stopped mystification and inquiry in the minds of readers of the Bristol *Mercury.*

Suspecting that there had been no such escape of a jackal, we go to Gloucester newspapers. In the Gloucester *Journal,* November 4, in a long account of the depredations, there is no mention of the escape of any animal in Gloucester or anywhere else. In the following issues, nothing is said of the escape of a jackal, or of any other animal. So many reports were sent to the editor of this newspaper that he doubted that only one slaughtering thing was abroad. "Some even go so far as to call up the traditions of the werewolf, and superstitious people are inclined to this theory."

We learn that the large, black dog had been shot upon December 16, but that in its region there had been no reported killing of sheep, from about November 25. The next data show another scene-shifting. Near Gravesend, an unknown animal had, up to December 16, killed about thirty sheep. London *Daily Mail,* December 19. "Small armies" of men went hunting, but the killing stopped, and the unknown animal remained unknown.

London *Daily Express,* October 14, 1925—the district of Edale, Derbyshire, terrorized, quite as, in centuries before, other regions were by stories of werewolves. Something, "black in color and of enormous size," was slaughtering sheep at night, "leaving the carcasses strewn about, with legs, shoulders, and heads torn off, broken backs, and pieces of flesh ripped off."

Many hunting parties had gone out, but had been unable to track the animal. "People in many places are so frightened that they refuse to leave their homes after dark and keep their children in the house."

If something had mysteriously appeared, it then quite as mysteriously disappeared.

There are stories of wanton killings, or of bodies that were not fed upon. London *Daily Express,* August 12, 1919—something that at Llanelly, Wales, was killing rabbits for the sake of killing—entering hutches at night, never taking rabbits, but killing them by breaking their backbones.

Early in the morning of March 3, 1906, the sentry at Windsor Castle saw something, and fired a shot at it. London *Daily Mail,* March 6. The man's account of what he thought he saw was not published. It was said that he had shot at one of the ornamental stone elephants, which had looked ghostly in moonlight. He was sentenced to three days' confinement in barracks, for firing without proper cause.

Daily Mail, March 22—that about a dozen of the king's sheep in a field near Windsor Castle had been bitten by something, presumably a dog, so severely that they had to be killed. In the *Daily Mail,* March 19, is an account of extraordinary killing of sheep, "by dogs," near Guildford, about seventeen miles from Windsor. Fifty-one sheep were killed in one night.

A woman in a field—something grabbed her. At first the story was of a marauding panther that must have escaped from the menagerie. See the *Field,* August 12, 19, 1893—an animal, supposed to be an escaped panther, that was preying upon human beings in Russia. Look up records of werewolves, or supposed werewolves, and note instances of attacks almost exclusively upon women. For a more particularized account, by General R. G. Burton, who was in Russia at the time, see the *Field,* December 9, 1893.

General Burton had no opportunity to visit the place "haunted by this mysterious animal," but he tells the story, as he got it from Prince Sherincki, who was active in the hunt.

An unknown beast was terrorizing a small district in the Orel government, south of Moscow. The first attack was upon the evening of July 6. Three days later, another woman was grabbed by an undescribed animal, which she beat off, until help arrived. That day, a boy, aged ten, was killed and devoured. July 11—a woman killed, near Trosna.

"At four o'clock, on the 14th, the beast severely wounded another woman, and at five o'clock made another attack upon a peasant girl, but was beaten off by a companion, who pulled the animal off by the tail. These details are taken from the official accounts of the events."

There was a panic, and the military authorities were appealed to. Three officers and forty men were sent from Moscow. They organized beats that were composed of from five hundred to one thousand peasants, but all hunts were unsuccessful. On July 24, four women were attacked, and one of them was killed.

Something was outwitting three officers and forty men, and armies of one thousand peasants. War was declared. Prince Sherincki, with ten officers and one hundred and thirty men arrived from St. Petersburg. We notice that in uncanny occurrences, when there is wide publicity, or intense excitement, phenomena stop—or are stopped. War was declared upon something, but it disappeared. "According to general descriptions, the animal was long, with a blunt muzzle, and round,

standing-up ears, with a long, smooth, hanging tail."

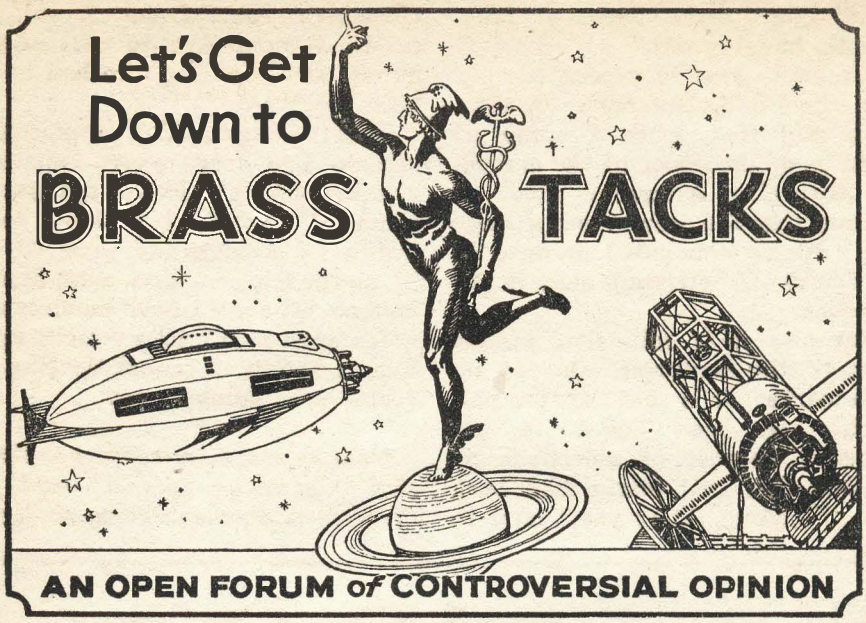
We know what to expect.

In the *Field,* December 23, 1893, it is said that, after a study of sketches of the spoor of the animal, the naturalist Alferachi gave his opinion that the animal was a large dog. He so concluded because of the marks of protruding nails in the sketches.

But also it is said that plaster casts of the footprints showed no such marks. It is said that the nail marks had been added to the sketches, because of assertions by hunters that nail marks had been seen. Writing thirty years later in *Chambers' Journal,* ser. 7, vol. 14, p. 308, General Burton tells of the animal as something that had never been identified.

This is fringing upon an enormous subject that leads away from the slaughtering of sheep to attacks, some of them mischievous, some ordinarily deadly, and some of the "Jack the Ripper" kind, upon human beings. Though I have hundreds of notes upon mysterious attacks upon human beings, I cannot develop an occult criminology now.

Next month, Charles Fort explores this "enormous subject"—and incredible phenomena come to light!



"A Square Deal"

Dear Editor:

Mr. Donald Wandrei's reply to Mr. Alburger's criticism of *Colossus* seems to me to call for some defense of Mr. Alburger. The tone of Mr. Wandrei's letter certainly is not what it should be.

In the first place, I agree with Mr. Alburger that there should be some real science in the stories, by no means in such quantity as to transform the story into an article, but enough to justify including the story in a *science*-fiction magazine. If, as Mr. Wandrei intimates, it is permissible to have the science consist only in the author's theories, invented on the spur of the moment to provide some pretended scientific background for the plot of a western thriller in the guise of science-fiction, then the stories degenerate into fairy tales, or at best can only be called fantasy.

Mr. Wandrei states "there is not a shred of unquestionable, incontrovertible proof that the Lorenz-Fitzgerald theory is final and complete truth." Well, of course there is none. It is impossible to prove anything beyond possibility of future disproof simply because all reasoning rests on axioms that are "self-evident" but unprovable. But, my dear Mr. Wandrei, there was enough evidence for the Lorenz-Fitzgerald equations as far back as 1905 to make Dr. Einstein use them as partial bases of his Special Relativity Theory. Further, there is no Michelson-Morley theory, which is mentioned by Mr. Wandrei. I speak with some authority, being a college student studying physics and mathematics. It is obvious that this gentleman does not know nearly as much science as he would have us believe. Perhaps that is why he defends pseudo-science in stories.

Far more important than any error in science is the attitude of Mr. Wandrei's letter, an attitude of annoyed, angry impatience with a reader who dares to suggest mildly that a little care be exercised by the authors in matters of the science of their stories. Mr. Alburger is not a friend or acquaintance of mine, but I do think Mr. Wandrei owes him an apology. Please print this letter as I wish Mr. Alburger to get a square deal.

There is little more to be desired in Astounding Stories. With few exceptions the stories are excellent and A. S. leads the science-fiction field not merely in quantity but also in quality. (That last sentence was not inserted to pacify the editors after the severe criticism of Mr. Wandrei.) Henceforth I shall be "astounded" every month as long as I can scrape up a pair of ten-cent pieces.—Milton Kaletsky, 1821 University Avenue, New York City.

Back Numbers Wanted

Dear Editor:

Since other readers have asked for reprints, I take it that you have copies of the old stories. I am not asking for a reprint, but I would like to know if it is possible for me to obtain the old stories. The ones that I want are:

1. *Brigands Of The Moon.*
2. *Tanks.*
3. *Dark Moon.*
4. *In The Orbit Of Saturn.*
5. *World Behind The Moon.*
6. *Fifth Dimension Catapult.*
7. *Red Hell Of Jupiter.*
8. *Beyond The Vanishing Point.*
9. *Blind Spot.*
10. *Beetle Horde.*

The March 1933 issue was the first issue of Astounding Stories that I read, but I have read every one since, and I think that the thought-variant idea is the greatest improvement yet.—Edward A. Rinderle, 2415 St. Ann Street, New Orleans, Louisiana.

A Strong Defense of Colossus

Dear Editor:

I really enjoyed your April issue, but May looks like a bunch of the old bunk. Your feature novel, *The Brain Of Light,* is nothing more than a weird, laughable pipe dream. The very ideas set forth have no basis in scientific fact or theory, and I can only characterize it as exceedingly boresome. A thought-variant—sure!—if by that you mean a variation from the possible. Watch your step!

The novelette—*The Long Night*—is much better. Somehow, we are led to believe that it could happen, and so it holds our interest. It seems worthy of a sequel.

Now to take issue with J. R. Alburger in his communication headed "Tripe." I praised *Colossus* for its fresh viewpoint, and now I take arms to defend my praise.

Mr. Alburger should read a little book called *The Mysterious Universe* by a certain nonentity called Sir James Jeans. In this he will find the statement, "The mass of an electrified body can be changed by setting it in motion; the faster it moves, the greater its mass." Later there are a few interesting statements such as, "The *Mauretania* (50,000 tons), traveling at 25 knots, increases its mass only one millionth of an ounce," and "The energy a man puts into a lifetime of heavy manual labor weighs but one sixty-thousandth of an ounce."

The hero in *Colossus* simply made use of this convenient fact. He stepped up his velocity to the point where his mass was sufficient for him to penetrate into the larger universe. His size was increased simultaneously so that the ratio of height to mass remained essentially the same. This is the cleverest means I have ever seen utilized in fiction for producing the desired result. Personally, I congratulate Mr. Wandrei for figuring it out. It is so simple, and still so sound.

How about running an instructional article in each issue? Facts upon which the fiction in the issue is based—if any.

Thank you for patience with my long-winded discourse; I could write more, but print a part—or none of it, as you please. I realize, I hope, a few of the troubles of editors.—Jack Winks, E. E., 7817 East End Avenue, Chicago, Illinois.

Ahem!

Dear Editor:

Upon seeing the May Astounding cover, I must admit that Brown has improved a great deal over the April one, but I have a few corrections coming. Brown did *not* follow the story accurately, for if I am not mistaken the mirror should not have appeared as depicted on the cover.

As for the story itself, *The Blinding Shadows,* in my humble opinion, was not so hot, colloquially speaking. Mr. Wandrei has done much better.

The Wall was well written. As a true scientifictionist, I will not say it is impossible, but I have some doubts. Just the same, call again, Dr. Graham. Illustration O. K.

Succubus was a great story. I enjoyed it thoroughly. Besides being exceedingly well written, it was highly probable. By all means give us more of this author. The drawing was just passable, and could have been much better.

The Brain Of Light was excellent, truly a thought-variant. The first illustration was very good. One good reason being that you could actually see the machinery in the background. The inside illustration was lowered by Mr. Dold's awful portrayal of a destroyed rocket

ship. He should practice up on that. Mr. Dold is your best artist with the possible exception of Marchioni. Therefore I would like to see more than two illustrations per issue by him.

The 100th Generation was good. However, Mr. Schachner should not have reverted to the senile "bombing the villain end." Drawing O. K. Thomson is good in spots.

Lo! continues to hold my greatest attention. I would like to read some hypotheses on the enigmas expounded.

The Long Night was very good, much better than Diffin's previous story, *Land Of The Lost*. Again I think the ending spoiled the story. Diffin maybe thought a novel termination would greatly improve the story, but to the contrary, it did not. It is all right to have Coyne going forward in time by one method, but heavens, to have him coming back, and going forward again, just like that, for no evident reason, is too much!

In conclusion, what about an editorial?

And I think it would be more formal if the editor's name was on the contents page.

Also enlarge Brass Tacks.

Yours supercallifedulisticespiallidosciously (ahem!).—Raymond Peel Mariella, 5873 Woodcrest Avenue, Philadelphia, Pennsylvania.

Suggestions

Dear Editor:

He From Procyon was wonderful and so was *The Brain Of Light*.

It is my habit to write the contents of each publication on sheets and file them away for future use, for I find that they are a great help when I want to look up some particular story to reread. I often reread the good stories before the next issue is published.

Now for a few suggestions.

I know that advertisements must be in almost every magazine but I do not approve of this sex advertising for more than one reason. For one thing it defaces the magazine itself and lowers its standard.

I think that the paper should be cut even on the edges and the cover of a stiffer quality.

I also think that a quarterly should be published as there have been a number of requests.

Please answer the letters of the readers in Brass Tacks.

Why not start a section in our magazine giving a constitution, rules and plans for the forming of Astounding Stories Clubs and publish each month various hints submitted by the readers for constructing a small science-fiction laboratory? In this laboratory the readers could, according to how much time and money they possess, experiment with some of the basic facts given in some stories. I have a small laboratory in the basement of my home in which I make numerous experiments and I will be glad to give any information I can to those who write to me. If the section is adopted I will write a few hints for it and feel quite honored.

I think that a ballot should be printed in each issue listing the suggestions given by various readers so that the readers may vote as to whether or not they wish to adopt them. When the ballot has been filled in and sent to you or to the ballot division the suggestion could be put into effect.—John Rawlings, 6521 First Street, N. W., Washington, D. C.

From The Author Of Crater 17, Near Tycho

Dear Editor:

Yes, I've noted the clean break with the past which has characterized the reborn Astounding Stories. It was this evident shift, this emphasis on new story values, which led me on impulse to submit *Crater 17* to you. Some time ago, before the old magazine passed out, I submitted a manuscript to Mr. Bates, which he returned after a month or so of consideration, with the statement that the story, though fresh and original, seemed to be just a trifle too startling for his taste. That convinced me Mr. Bates had a certain preconceived formula of excellence by which he judged all manuscripts that came before him. The story he turned down, I sent to one of the older science-fiction magazines, where it was promptly accepted and published. This rather surprised me, as I had previously considered Astounding the most advanced publication in the field. I now looked at the magazine from a changed viewpoint, and attempted to see it objectively. For the first time, then, I realized the extreme standardization which

had overtaken it. I never submitted another story to the old Astounding, since I'd rather not write according to formula.

Now you have created this new entity under the old name: a different Astounding Stories. And so very different, it is! What a change—probably even you, observing and working toward the transformation from within, haven't as much detached appreciation of the alteration as have your readers. I really believe you have something in the new magazine; something fresh, something keenly alive, something built on the premise that independent thinking is the best guarantee of continued success.

And congratulations on publishing *Lo!* by Charles Fort. It is one of the most unusual features ever to appear in a science-fiction magazine.—Frank K. Kelly, Kansas City, Missouri.

Was The Suspense Worth It?

Dear Editor:

Without a doubt Astounding is the best science-fiction magazine on the market, not only in quality, but in quantity. As far as I can see there is hardly even one of the best authors that you haven't cornered. The thought-variant idea is great; every story published under the name thought-variant has been excellent. Howard V. Brown is a wonderful cover artist. His picture of the space ship on the April cover was truly a masterpiece. Your best interior artist is Elliot Dold. By all means keep him on the job!

And this announcement scheduled for next month! Gr-r-r-r-r, I'm eating my brains out trying to discover what it will be. Is it a quarterly? (Goodness knows you need one!) Are you going semi-monthly? Or what? There ought to be a law about keeping people in suspense! —Arthur Gnaedinger, Brooklyn, New York.

From England

Dear Editor:

Let me congratulate you on the best issue yet.

The stories, being most important, come first:

1. *A Matter Of Size*—Excellent weaving of different plots makes it the prize story of this issue. Get Mr. Bates to write more for A. S.

2. *The Legion Of Space*—It starts off fine. I'll be looking forward to each installment with added interest now (if possible).

3. *He From Procyon*—I was slightly disappointed with Mr. Schachner's story, mainly because it is too similar to *Rebirth.* I don't mean in theme, but the idea of a catastrophe overtaking the human race is not real science-fiction. Probably many of your readers will disagree—but it's only an opinion.

4. *The Atom Smasher*—Now here is the type of short I like to read. It was excellent and what I personally consider a little gem.

5. *The Green Plague*—As usual, Mr. Coblentz handles his satire ingeniously.

6. *The God Box*—Good.

7. *The Tooth*—Soft. Rubbish.

Now, the illustrations. M. Marchioni continues to be your best artist. The illustration for *A Matter Of Size* was the best in the issue. H. V. Brown's drawing for *The Legion Of Space* was very good. When he wants, Mr. Brown can be as good as any one, the cover also being good. I think that Mr. Dold is very good and I should like to see him do a full two-page drawing.

I think you have improved very rapidly, your two best issues being April and January, 1934.—F. Sutcliffe, West Derby, Liverpool, England.

"Absolute Freedom Of Thought"

Dear Editor:

If you would be so kind as to print this, I shall be very grateful. Also, I write to entreat readers to write to me. I promise to answer all letters. Only a true lover of science-fiction can know how it is to be a solitary fan with no one to discuss science-fiction with.

I notice that a reader asks for better characterization. Of course, we all want that, but it will be slow in coming. Even then, there are many tales that stand out for their characters.

I must not forget to state my standing firmly on one point. That is the question that a certain gentleman brings up in the May Brass Tacks. Without disregard to that gentleman's opinion, I claim that he is taking the wrong attitude. Science-fiction is one field where

there should and must be absolute freedom of thought. No matter how dramatically opposite to popular belief a theory is, if it is backed by real reasoning, it should be allowed to come to view. Remember that we know very little. The truths of to-day are the fallacies of tomorrow, and what we hold to be false this moment may be blinding fact.

We of to-day must not let this continue. Through the medium of science-fiction, we must train our young people to take a broad viewpoint of all things. —Robert W. Lowndes, Flagstaff, Maine.

A Slam For Lo!

Dear Editor:

He From Procyon is Nat Schachner's best. Jack Williamson's novel is fine, but I don't see anything particularly entertaining about the ill-founded logic or satire in *Lo!*—J. Altham, San Bernardino, California.

A Rhodesian Enthusiast

Dear Editor:

The old A. S. made a science-fiction maniac out of me, then went and died (the magazine did—not me). Did I cry! However, the new A. S. was born. Let me congratulate you upon the vast improvement in the magazine and thank you most sincerely for dropping that monstrosity, Wesso. Please *don't* let us have him back until he learns how to draw.

As to Hawk Carse and John Hanson, let's have these back by fair means or foul.

With regard to *Colossus*, such a conception of the universe only conforms with my own theory. It seems to portray the idea of infinity better than anything else. The yarn itself was a classic, as a yarn, so congratulations, Mr. Wandrei! However, one thing is not quite clear to my mind. According to *Colossus*, the size of an object increases with speed. According to another story, which I read only half an hour previously, the size of the object decreases with speed, until, at the speed of light, its dimension along the line of motion is zero and its mass infinity. Apparently, it becomes a two-dimensional substance with, perhaps, four-dimensional properties as regard to mass (how is that for a plot?). Can any one tell me whether there is a theory governing this state of affairs, and what it is, if it is?—D. de Woronin, Box 780, Bulawayo, South Rhodesia. Africa.

Sequel Wanted

Dear Editor:

In your January publication of Astounding, you had a story by Donald Wandrei entitled *Colossus*.

This was one of the best stories I have read for a long time and I have waited for a sequel, but it has not appeared.

I believe it would be very interesting. If possible, try to have one written.—F. A. Wessell, Jr., 135 Pinckney Road, Red Bank, New Jersey.

An Ally For Mr. Wandrei

Dear Editor:

Well, here I am again—or yet, as you prefer. Anyway, my writing has to do with the sweet assortment of stories in this number—May. *The Blinding Shadows, The Brain Of Light* and the second part of Jack Williamson's story head the list. The others were all comparatively good.

I liked the way Donald Wandrei answered Mr. J. R. Alburger's assault on his story, which every one seemed to enjoy. I imagine he is pretty well satisfied that Mr. Wandrei can take care of himself. It was a good subject to write on and he handled the plot excellently. Stay right in there, Don, old boy.

The editor is to be complimented on the improvement he has made on the magazine since October. Every issue has been a vast improvement over the preceding number.—Olon F. Wiggins, 2418 Stout Street, Denver, Colorado.

Praise For Lo!

Dear Editor.

This is my second letter to you, but by no means my last. Maybe this one can feel what the good old wastebasket looks like inside.

I was certainly startled to see an article like *Lo!* come out in your magazine. Not only that, but I'm glad to see it. There's food for thought in it; startling, and all that.

Well, your thought-variant stories for May are certainly good, especially *The Blinding Shadows* by Donald Wandrei. It needs must have a sequel!

The Legion Of Space progresses in a very interesting manner. I know it will prove to be a great story.

I did not exactly like *The 100th Generation.* It smacks of an old plot, and could have been written in much more of an interesting manner. Nat Schachner should have done much better.

Succubus is the usual diary of the blind but enthusiastic scientist who is overcome by a laboratory-made horror. But you can't always have perfect stories.—Thomas R. Daniel, 232 Olive Street, Claremont, California.

Mr. Fearn Taken To Task

Dear Editor:

This is the first time that I have written to this magazine, and the only reason is to throw a few brickbats at a certain story writer. *The Brain Of Light* was a good story and very interesting. It had everything that was needed to make a thought-variant story, but why can't John Russell Fearn stick to the truth in the conclusion of the story? When the stronghold of the Light People was removed from the earth, he claimed that radio communication became far better and static was stopped. Static might be stopped as the result of the removal of the heaviside layer, but radio communication would be impossible over a distance of fifty miles. I don't know much about the practical side of radio but I sure know something of the theory of radio. If the heaviside layer was removed from the earth, radio communication would be almost stopped, for wave-lengths above two meters would not be reflected from the heaviside layer, because there wouldn't be any there to reflect the waves. The ultra-short waves from two meters down pass right through this layer and are not reflected. This would happen to all radio waves, and as a result, the waves would only be received by those who were near the station and within the radius set by the curvature of the earth. The long waves that are used by broadcasting stations depend upon the reflecting power of the heaviside layer; without it, stations at a distance could never be reached.

This is constructive criticism, for I really don't see how a person who really knows something of light as Fearn does could be ignorant of this fundamental principle of radio. However, let's forget it now and have some more stories from him.

Succubus was the best story of that nature that it was my misfortune to read, for I could hardly sleep that night. I was afraid that a tree might reach down and pick me up if I happened to pass one. Not that this wouldn't be welcome if the tree happened to be similar to the one in the story.

Keep up the good work, Mr. Editor.—Frank Nochta, West Brownsville, Pennsylvania.

"A Wow"

Dear Editor:

Congratulations on the finest issue of Astounding yet out. The May issue is absolutely a wow!

Charles Willard Diffin is one of the best science-fiction writers. *The Long Night* is my favorite in the May issue. Come on with a long serial, Mr. Diffin. *The Brain Of Light* is John Russell Fearn's best to date. A "different" story. *The Legion Of Space* is coming along nicely. If you knew the suspense you put us in, you wouldn't make us wait so long for the last part. The short stories this time were great. You more than made up for the poor ones in the last issue. How about a sequel, Donald Wandrei? *Lo!* is increasing with interest.

I would like a quarterly issued. A large-size 192-page magazine, containing book-length novels, novelettes and short stories. How about it?

I wish that Chelsea House would put the best-liked serials from A. S. in book form. The best serial ever published in Astounding and one of the best science-fiction stories ever written is *The Pirate Planet,* by Charles W. Diffin.

The lettering on the January and February issues looked much nicer than that used since.—Jack Darrow, 4224 North Sawyer Avenue, Chicago, Illinois.

Smith, Williamson, Schachner, Coblentz, Diffin, Fearn, Wandrei, Vincent, Leinster—In All Four?

Dear Editor:

Please resume publication of Strange Tales. You have improved Astounding Stories, but I do not think you could make Strange Tales any better than it was.

It is a mystery to me why a publishing company of the size of Street & Smith cannot print a magazine with even edges and covers to match. As it is now, it is not possible to stand them in a bookcase without ruining the covers. At least have the lower part even. I now have a collection of 302 science-fiction magazines in my bookcase, including all issues except three of Astounding Stories, and including the seven issues of Strange Tales that were printed.

There is no such thing as a best science-fiction magazine. The best authors write for all of them; so I buy the four of them each month.

Your new feature, *Lo!*, is exceptionally good. Just one more point to mention. Brass Tacks should contain more pages; also the questions asked should be answered.—Harold F. Keating, 34 Arnold Street, Quincy, Massachusetts.

"Coming To Expect It"

Dear Editor:

The May Astounding Stories is as usual the best of the class for this month. We're coming to expect that. It excels in every particular, in illustrations, in size, in story quality, story quantity, and, in fact, in everything else that might be mentioned.

Your idea of thought-variants is a good one. Unfortunately, the stories selected as such do not always come up to the full classification. I refer in particular to *Colossus* by Donald Wandrei. A good story, beyond doubt, but it is not an original idea. It has been advanced before.

Another story that did not come up to full expectations was *The Brain Of Light*. The idea of creatures invisible to normal light existing in a world of the heaviside layer is old. All the rest came more or less up to snuff.

Your illustrations are the best of all the magazines.

I like the two stories of future evolution. *The 100th Generation* and *Short-Wave Castle* are two of the best you've printed. Especially the latter. Get some more of that type.

Lo! was a great idea when you decided to print it.

By the way, why don't you tip off your readers that they can get William Wallace Cook's early novels in the Street & Smith paper back novels? Some of the titles are *A Round Trip To The Year 2000* and *The Eighth Wonder*.

Expecting you to hurry up and bring out Strange Tales and a quarterly.—Donald A. Wollheim, 801 West End Avenue, New York City.

Theories Suggested By Lo!

Dear Editor:

I have just finished reading the second installment of *Lo!*, Charles Fort's amazing collection of strange facts. You know, they say that he devoted his entire life to gathering unexplainable incidents such as are recorded in *Lo!* He was independently wealthy, and collecting weird phenomena was his hobby.

However, I think a great many things Fort relates can be explained by natural forces. Mainly these showers of frogs, toads and fishes he tells about so often. Undoubtedly waterspouts are the cause of most of them. For instance, if a waterspout happened to sweep over a school of small fish near the surface of the water, a number of them would be sucked up into the sky to be deposited later over the mainland as "living rain."

A great deal of interesting speculation could be done over those instances he records of slowly falling stones which seemed to fade right through roofs, leaving no trace of their coming. One theory that occurred to me as I read about them, was that the stones came from an entirely different plane than that on which we live. A rift in the fourth dimension, if you please. This would account for their ability to come through solid objects and also would explain their seemingly slow rate of falling, due to the difference of the time flow in another plane of existence. Of course, all this is mere theory of the wildest

sort, but, nevertheless, highly stimulating to the imagination.

However, to get back to earth, I want to hand you a great big orchid for that May issue. It beats 'em all so far. Elliot Dold and Marchioni are the best science-fiction artists on the market today, and it tickles me pink to see that you are using them. How about trying Mr. Dold on a cover? He's really good.

There are four authors I'd like to see writing for Astounding Stories. They are: H. P. Lovecraft, A. Merritt, David H. Keller, M. D., and E. E. Smith, Ph. D. —Robert Tufts, 61 Rathbun Avenue, White Plains, New York.

A Call For Sequels

Dear Editor:

I have been a regular reader of Astounding Stories for three years. However, this is my first letter.

I wish to compliment you on your recent issues of our magazine. With the last three or four issues, you have risen to the standard maintained by the old Astounding. *Rebirth* by McClary was superb because of its originality.

May we expect a sequel to *Colossus* by Donald Wandrei? The story's ending certainly calls for one. Also, please urge Nat Schachner to give us a sequel to *The Time Impostor.*

I hope this letter gets into Brass Tacks.—Earle S. Troupe, 717 Fifteenth Avenue, S. E., Minneapolis, Minnesota.

Back Issues Wanted—Any For Sale?

Dear Editor:

I consider science-fiction the finest kind of reading to be obtained anywhere. It is most thought-provoking.

Could one of your readers supply me with the following back numbers?

1. Any before (not including) January, 1932.

2. Any in 1932 except January, February, March or November.

3. Any in 1933 except the March issue and, of course, the October, November, and December issues.

My best wishes for the magazine.—M. K. Hanson, care of Mrs. Brice, Main Road, Norborough, Leicestershire, England.

"Too Much Science"

Dear Editor:

I have just finished reading the May issue of your fine magazine, Astounding Stories. I am buying it every month and like it very much.

The best stories in the May issue were *The Long Night* and *The 100th Generation.* The stories which I didn't like were *The Wall* and *Blinding Shadows.*

The Brain Of Light was all right, but I thought it had a little too much scientific talk in it. I like stories which are fantastic, and have a fine scientific background, but not so much scientific detail in them. Also, give us more stories about what life will be like in the future. These are always interesting.—Edgar Green, Jr., R. R. No. 1, Beardstown, Illinois.

How About Dold?

Dear Editor:

I've just purchased the April issue of Astounding Stories, and it sure is good. *The Legion Of Space* is best. *He From Procyon* next, and *A Matter Of Size* third. The shorts are all good.

How does Williamson do it? A story in nearly every issue, and now *The Legion Of Space* to enjoy for six more months!

Have you anything on hand by Harl Vincent? He is one of my favorite authors.

Concerning illustrators, Marchioni is easily the best; Brown is fine on covers, but very poor on story illustrations. Wesso is the best science-fiction artist. Why not get him?—William H. Kennedy, 31 Wellesley Park, Dorchester, Massachusetts.

Correspondents Wanted

Dear Editor:

This letter comes somewhat late, but it so happens that I did not read the last two issues of Astounding Stories until now. I am completely in accord with your new policy. New plots! That's what we need! But some of the thought-variants aren't as unique as you think they are.

Rebirth I consider as ranking among

the best science-fiction novels ever printed. It was written in a style the like of which I have never seen before. Let's have some more by that author. *He From Procyon,* though not written in such a novel style, will also be in the top ranks of science-fiction stories.

The Legion Of Space starts off very well, though I am somewhat appalled by the thought of six parts.

About the artists. Marchioni and Brown are the best you have. Brown didn't play up the April cover as he could have. It was a very good cover, as far as it goes, but it doesn't go far enough. He didn't follow the description at all.

I would like to correspond with any one interested in science in general and science-fiction in particular.—Milton A. Rothman, 2500 North Fifth Street, Philadelphia, Pennsylvania.

A Compliment For Lo!

Dear Editor:

I have read Astounding Stories from the first issue. Stories I especially liked were *Rebirth* by Thomas Calvert McClary. He has a depth of vision that very few writers have. *He From Procyon,* by Nat Schachner, was very good as a thought-variant, and shows what will happen to some people possessing unlimited power.

I don't care much for continued stories, because you sort of lose interest in the story by the time the following issue comes out.

I wish to compliment Charles Fort on *Lo!* He has a startling collection of facts. His comments on those facts are interesting.—Irving J. Broun, 233 Normal Avenue, Buffalo, New York.

"Schachner's Best"

Dear Editor:

Congratulations! At last our magazine has returned to its former high standing in the field of science-fiction. Keep up the good work.

The new serial has started fine. I hope the rest of the installments are as good as the first one. *He From Procyon* was the best story in the April issue and the best one Schachner has written in quite a while. The first part of *Lo!* didn't live up to expectations but it may improve.

The other stories in the magazine were all excellent, especially *A Matter Of Size.* More by Mr. Bates, please.

Since January, the covers have all been fine. I hope they remain so.

Mr. Editor, please give us faithful readers some more Hawk Carse stories, or even better, some John Hanson stories. They were the best ones the old Astounding ever published.

I would be very glad to correspond with some fellow science-fiction fans if they would write to me.—Mervyn Evans, 1937 Downing Street, Denver, Colorado.

Sad Tale Of A Golden Idol

Dear Editor:

Was Donald Wandrei hit by a hammer and his shining bulb (brain) dimmed?

Anyway, his stories are falling below standard. In the December issue his *Farewell To Earth* was excellent as far as it went, but why not go farther? And have a series of serial shorts, meaning complete stories, in each issue, but carried on as serials.

When I completed *Colossus,* I at once decided Wandrei was my golden idol, but after I read *The Atom Smasher* and *The Man Who Never Lived,* my idol changed from gold to base lead.

I'm glad to see that you have come to your senses about weird stories, as they seem to lower the par of Astounding.

Dear Mr. Dellenback, has he recovered from the labor of his back-breaking letter which was published in Brass Tacks in April? At least I agree with him in having a stiff argument, but why not have a department which presents an idea or problem? Then what arguments we would have! I forgot to say that I went to sleep reading Dellenback's letter. Tell him.—Kenneth H. Pierce, 1825 Jay Street, Lincoln, Nebraska.

Letters Wanted—But No Fights!

Dear Editor:

Here's a Brass Tack for you. You see, I used to read Astounding years and

years ago, before Street & Smith took it over. I remember when the first issue appeared on the stands. I bought it because the cover appealed to me.

A Matter Of Size sure gave me a laugh. Just the idea of taking one man and making him into just gobs of little ones all the same, and marrying them off to such lovely damsels, with fringed scalps. I enjoyed that story more than any of the others, and shall look forward to more like it.

The God Box was startling. *He From Procyon* was marvelous, although I had figured from the picture of that handsome, yet somewhat effeminate-looking, person that he would do something much kinder than he did.

I would like to have some of your readers write to me. I like to write letters, and promise to answer all that I receive. I note that an old friend of mine, Marianne Ferguson, has a Brass Tack, and that there are three letters from my own city.

I started to read *Lo!* by Charles Fort, and didn't finish; sounded kind of silly to me, so I just quit. I won't tell you what I think of it because if I do I'll just get a barrage of letters from indignant readers who like it. I don't like to fight.

And now that I've rambled along, never hitting the tack just right, I hope you'll give an old-timer a break and consider my letter equal to your column. —Gertrude Hemken, 5730 South Ashland Avenue, Chicago, Illinois.

How About It, Jack?

Dear Editor:

I'm back again, the first time since Astounding pulled out of hiding and reappeared on the stands. Now that you are here, let's try and talk Street & Smith into publishing A. S.'s sister magazine, Strange Tales.

Accept my hearty thanks for stepping out of the worn rut and giving us those thought-variant stories. Just one objection to *He From Procyon* by good old Nat. The story graded A-1, yet it could have been better had the author given us the slightest idea as to what the object placed in the brain was composed of.

Next comes *A Matter Of Size.* Hooray for Harry Bates!

Third, the shortest story in the last issue struck me as being entitled to third place over the other short stories. Donald Wandrei's *The Atom Smasher* does him honor despite the shortness of it.

All stories look better with suitable illustrations, so I'll speak my little word on your staff of artists. Hog-tie Dold. He's a real find. I've never seen a better illustration than the one he penciled for *The Green Plague.*

Marchioni's work is too loosely constructed and he tries to squeeze too much into a picture, many times centering your gaze upon the wrong part of the drawing. Give C. R. Thomson a chance to show his worth. He shows good promise. As for M. V. Brown, his work is pretty coarse; pencil drawing is the wrong medium for him.

I have noticed that Darrow of Chicago has written to different publications stating his admiration for Marchioni's illustrations. I wish he would state what he can see in this person's offerings. As an art graduate, I'm interested. Will exchange art with other graduates.—Henry Lewis, Jr., La Roche, South Dakota.

Criticism—Compliments—Suggestions

Dear Editor:

Lo! is good, but the style is sometimes very confusing. I enjoyed it, though, finding the first installment too short. Fort is leading up to a very large implication in all his anecdotes of frogs and whirlwinds. With Donald Wandrei in his *Colossus,* I almost believe we are merely an accidental by-product of something bigger and more purposeful than mankind itself.

He From Procyon is good, but it is another world-domination story. This story, for me, lacked a vital something which will lock it in my mind for a long time. It was good, but ordinary.

The Atom Smasher was short, but not because of that do I label it punk. It just didn't go over with me. *The Green Plague* was a formula story, of which Stanton Coblentz has written several. They are interesting and well written, but they are old stories with different words. *The God Box* was the best short story of the issue.

All hail Harry Bates, our former editor. From his unamusing little insertions in letters to the old Astounding,

I would not have thought that he would be gifted as a writer. I started the story reluctantly, believing it to be another bang-bang story—but wow! It was real stuff. It was well written and all through there were many amusing phrases.

Now that I've given you my views on the April number, how about listening to a few hints? Have the editor's page each month. I like to hear you tell about the swell stories we're going to get in future issues. If possible, run two serials; it won't be so bad waiting a half year to finish one, then. I understand you are trying to turn out literature—well, secure Dr. David H. Keller! He is writing the only true science literature of the period.

I am not in accord with the readers who demand a science questionnaire. I'm not so wild about a scientific editorial. I wish the magazine was thinner—but then thick magazines invariably attract customers. There are 160 pages in our magazine, but only 150 of them are reading matter. But we've still got more reading matter for the money than any other magazine which has only science-fiction—and at least one other magazine is printing stories that were written a half century ago—stories by Poe and Verne—stories which can be obtained in books containing the works of those authors.—Paul Cahendon, 322 West Fourth Street, Cincinnati, Ohio.

Favorites Of "A Practical Man"

Dear Editor:

Can a prosaic Wall Street worker take issue with some of the opinions expressed in Brass Tacks?

I note, in the new issue, some startling ideas as to what stories are best. I have read Astounding since last year, and like it because it takes me out of the everyday grind and gives me something to think and speculate about. *But*—being a practical person, I naturally like those stories best that are not too wild in plot. There are too many "leaving the earth in space ships" stories. It's possible, no doubt, but improbable. Williamson, Schachner and Wandrei, in striving for the unusual, achieve good writing, but impossible plots.

The Time Impostor was merely silly. *Born Of The Sun* was funny, but good writing. *Colossus* was a fine piece of writing. Fine stories, but *unbelievable. The Flame From Mars* was better. It might be possible. *World Flight* I liked because you could *believe* it, and you began to wonder if Tibet *had* been closed to outsiders because of some such condition. It coincided with newspaper accounts of bringing the dead back to life—also radio accounts.

This sort of story—which was "panned" in this month's issue, as to plot—was the most believable story I have read in Astounding for several months. It had no wild assumptions.

Science-fictionists should remember Jules Verne. He didn't found his stories on wild assumptions. He thought them out on practical lines—and witness what he was the father of!

For me, a practical man, you can give me more like *World Flight*—timely, founded on actual things we know something about. We are not all professional scientists.

I wouldn't know an atom from an electron if they came and bit me on the leg, but I *do* know what stories interest a modern, practical person.—Arthur Sanford, Refferts Boulevard, Kew Gardens, Long Island, New York.