

PRISON OF TIME BOOK-LENGTH NOVEL by EANDO BINDER

15

DYNAMIC SCIENCE STORIES

APRIL
May

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MAGAZINE



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I am at present working at Radio Service part time. Thanks to the Sprayberry Course (for which I would not take anything out any price) I am now making on an average of from \$10 to \$25 per week net in spare time work, and if this keeps up, I may go into full time Radio Servicing and Sales."—Walter Davis, Balto, Md.



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With This Sensational Method You Can Learn Radio—Quickly Make Good Profits—Soon

You get real PROFESSIONAL EQUIPMENT to handle money-making spare time jobs

I Actually Set You Up For Your Own Business

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EXPERIMENTAL OUTFITS GIVEN

These will enable you to carry out additional interesting experiments that will further make the theory of Radio crystal-clear to you. Don't forget . . . what you learn by working with your own hands, you always remember.

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DON'T DELAY! ACT NOW!

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City State

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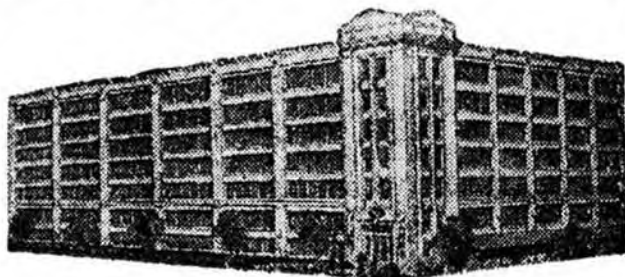


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Look in the box at the right. See the big money reported by others.

These exceptional earnings show your big possibilities. I have an even better proposition to offer you now. Why, even housewives have reported fine big earnings just for a couple of hours each day! I'll help you start with good profits at once. No money risk. Be your own boss, free and independent, with the backing of an old established, million dollar company. My remarkable money making Plan has brought quick success to scores of others. Why shouldn't it do as much for you?

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E. J. MILLS, President
9287 Monmouth Ave.
Cincinnati, Ohio



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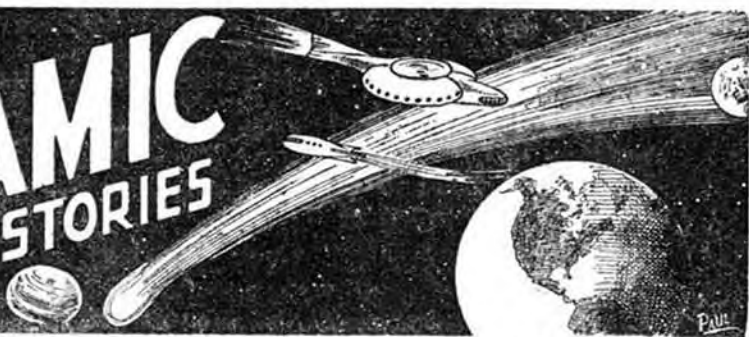
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DYNAMIC SCIENCE STORIES



★ ★ ★ THIS MAGAZINE CONTAINS NEW STORIES ONLY ★ ★ ★

Vol. 1, No. 2



April-May, 1939

★ ★ ★ A THRILLING BOOK-LENGTH NOVEL ★ ★ ★ Page
Prison of Time.....by Eando Binder 12

When Barry Carver's plane was shot down in the Sahara desert, his precious message undelivered to the Allies, it meant the Dictator powers would win the Great War. But that was before Barry found Shorraine, Land of the Mirage, and the demon people of Phoryx, who schemed to enslave all Earthmen—and Sha-tahn, alter-ego of Satan, and spirit of Dictators of all generations!

★ ★ ★ 3 TOP-NOTCH NOVELETTES ★ ★ ★

Ananias.....by L. Sprague de Camp 68

In the war of the future will belligerent nations fight only with scientific machines of destruction? Or will they also use a more sinister weapon—subtle propaganda!

Under the North Pole.....by Ed Earl Repp 80

Hopelessly lost in the frozen Arctic, Anthropologist George Kane stumbled on that strange workroom, deep in the blue depths of a glacier. But he didn't dream he had discovered a mad scientist's ice-palace laboratory—and a wild scheme to bring world-chaos by demagnetizing the North Pole!

The Stronger.....by Fredric Arnold Kummer, Jr. 94

Instead of a space-trip from Venus to Earth, Jim Weston found himself a shanghaied member of a slave-crew, Mars-bound on Saturnian Slane's rocket ship. And when they crashed on the red desert of Mars, this Earthman showed a Saturnian bully that on any planet it's guts, not size, that makes the man!

★ ★ ★ AN UNUSUAL SHORT STORY ★ ★ ★

Insight.....by Manly Wade Wellman 59

What would you do if you had a pair of contact eye-lenses that x-rayed cloth and wood? Perhaps, like Sam Sterrett, you'd find yourself in a kidnappang's kill-trap—with the finger of death pointing at your sweetheart!

★ ★ ★ SCIENCE DEPARTMENTS ★ ★ ★

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The Dynamic Cover

Norman Saunders, who achieved new heights in science-fiction illustration with his cover on the first issue of MARVEL, pictures, as only he could, the climax scene of Eando Binder's novel, "Prison of Time."

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by N. R. I.
Training**

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Why Many Radio Experts Make \$30, \$50, \$75 a Week

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Many Make \$5, \$10, \$15 a Week Extra in Spare Time While Learning

The day you enroll, in addition to our regular Course, I start sending Extra Money Job Sheets; show you how to do Radio repair jobs. Throughout your training I send plans and directions that made good spare time money—\$200 to \$500—for hundreds, while learning.

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**J. E. Smith, President, Dept. 9AK1
National Radio Institute, Washington, D. C.**

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National Radio Institute, Washington, D. C.**

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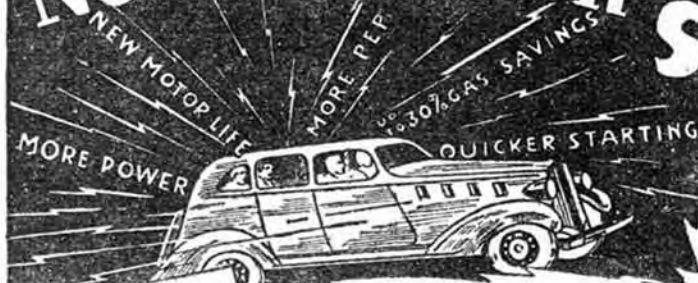
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20x4.50-18	\$2.25	30x3.50-29	\$2.35
20x4.50-17	\$2.25	30x3.50-28	\$2.35
20x4.50-16	\$2.25	30x3.50-27	\$2.35
20x4.50-15	\$2.25	30x3.50-26	\$2.35
20x4.50-14	\$2.25	30x3.50-25	\$2.35
20x4.50-13	\$2.25	30x3.50-24	\$2.35
20x4.50-12	\$2.25	30x3.50-23	\$2.35
20x4.50-11	\$2.25	30x3.50-22	\$2.35
20x4.50-10	\$2.25	30x3.50-21	\$2.35
20x4.50-9	\$2.25	30x3.50-20	\$2.35
20x4.50-8	\$2.25	30x3.50-19	\$2.35
20x4.50-7	\$2.25	30x3.50-18	\$2.35
20x4.50-6	\$2.25	30x3.50-17	\$2.35
20x4.50-5	\$2.25	30x3.50-16	\$2.35
20x4.50-4	\$2.25	30x3.50-15	\$2.35
20x4.50-3	\$2.25	30x3.50-14	\$2.35
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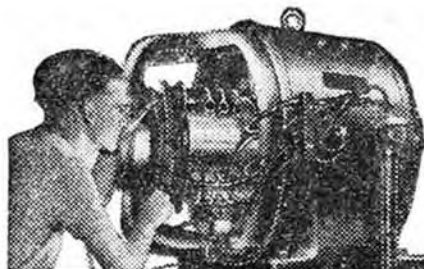
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I didn't dream I could actually learn to play without a teacher. Now, when I play for people they hardly believed that I learned to play so well in so short a time.
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Wouldn't Take \$1000 for Course

The lessons are so simple that anyone can understand them. I have learned to play by note in a little more than a month. I wouldn't take a thousand dollars for my course.

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I am happy to tell you that for four weeks I have been on the air over our local radio station. So thanks to your institution for such a wonderful course.

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JUST name your instrument and we'll show you how you can learn to play it—quickly, easily, in spare time at home. Never mind if you don't know one note of music from another—don't worry about "special talent". And forget all you've ever heard about music's being hard to learn.

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Through the Telescope



Write us your questions on scientific subjects. So far as space permits, all will be answered in these columns. Preference is given to those which seem of the most general interest. Tell us what you think of our choice.

FROZEN UTOPIA (The Cold Truth)

Dear Sir:

Is it possible to produce a temperature of absolute zero?—J. C., Harrisburg, Pa.

For all practical purposes, scientists have reached absolute zero—and strange indeed are some of the experimental results. 79° below zero (on our familiar Fahrenheit scale), recorded in the arctic by Amundsen in 1905, is believed to be the greatest natural cold ever reported. But this, compared to the laboratory efforts of cryogenic or low-temperature experimenters, was but a warm summer day. At the University of California, matter has been chilled to $1/10^{\circ}$ above zero on the Kelvin absolute scale, which is nearly 273° below zero on the Centigrade scale or—button up your overcoat!—minus 459° Fahrenheit!

At this temperature, hydrogen liquefies—and helium defies gravity! Liquefying within two degrees of absolute zero, helium almost completely loses its viscosity, the property by virtue of which fluids and gases resist change of shape. Surface films will then spread over any object brought into contact with the helium, and will even climb out of the liquid and ascend to considerable heights in defiance of gravity!

The world record for low temperature, however, belongs to Holland. Using the same method as the Americans, but more powerful equipment, Dutch scientists have plumbed to only forty-four ten-thousandths of a degree above absolute zero. The ingenious

method is based on the principle that magnetizing matter heats it, while demagnetizing lowers its temperature. Magnetic salts, pre-cooled with liquid helium, are magnetized and the heat thus generated is drawn off with helium vapor. Then the salts are further chilled by demagnetization, and repetition of the cycle literally jams the substance down toward the objective of absolute zero, the temperature at which matter is wholly deprived of heat.

Though the goal may never be reached, even its vicinity is studied with profit by chemists. All chemical reactions obey the laws of thermodynamics, governing the relations between heat and energy. In the region of absolute zero, it is possible to *foretell* whether certain chemical combinations are thermodynamically possible! If not, there is no use seeking a chemical activator or catalyst for an impossible combination. But of much greater possible benefit to mankind than mere time-saving are cryogenic experiments on *living organisms*.

Certain cells—spores, infusoria, bacteria—all of them dry or nearly dry, are actually able to survive temperatures close to absolute zero! In that extreme cold, the organisms go into a state of suspended animation—but resume normal living when thawed out. Cells of higher water content, however, ordinarily die when subjected to this freezing because their internal liquid crystallizes and its molecular structure is altered. But now a way has been found to avoid this damage—and possibilities appear which stagger the imagination.

If organisms are frozen in a split second with liquid hydrogen, their molecules are immobilized before they can change pattern. They become like glass, solid but with the molecular arrangement of liquid. In this way suspended animation has been induced in yeast cells, which may be revived after being preserved 10,000 years—without

(Please turn to page 110)



GEE... I'd sure like to have real HE-MAN muscles!

So would I, but it takes a long while

CHARLES ATLAS
Holder of the title "The World's Most Perfectly Developed Man" won in open competition in the only national and international contest held during the past 15 years.

"Bunk!"
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"I'll Prove in the first 7 days YOU can have a Body like Mine!"

No other Physical Instructor in the World has ever DARED to make the offer he makes in this announcement!

DON'T get the idea that it takes a lot of time and hard work for you to get smashing strength and powerful muscular development! And don't fool yourself into thinking that you need dumbbells, stretchers or any other such contraptions. Both of these ideas are all bunk—and I have PROVED it. All I need is 7 days to prove what I can do for you! And I don't need any apparatus either. In fact, I have no sympathy with apparatus at all—don't believe in it. It is artificial—and it may strain your heart or other vital organs for life!

NATURAL Methods Are All I Need

On this page you will see an actual photo of how I look today. This picture has not been changed in any way. No muscles have been "painted on." This photograph is the camera's honest proof of what I have done for MY body. I myself am ready to prove what my secret of Dynamic Tension can do for yours!

To look at me now you wouldn't recognize me as the same man I used to be. Then I was a physical wreck, a 97-pound weakling—flat-chested, spindly legs, arms like pipe stems.

I was worried—and I had a right to be. I decided to study myself, to do something about my body. Then I made a discovery. I found a new way to build myself up. A way that was simple, natural, quick and sure! "Dynamic Tension" is what I called it. I put this secret to work. And in a short time I had the kind of body you see here—the body which has twice won the title of "The World's Most Perfectly Developed Man."

This Secret Has Helped Thousands

Thousands of other fellows now know this secret, too—and know from their own personal experience what Dynamic Tension has done for them. When they turned to me for advice, they were just as frail and puny as I once was. Now they are life-sized examples of what a man can and ought to be—with mighty energy, tireless endurance, and muscles that stand out like bridge cables all over their bodies.

I have written an interesting booklet, filled with pictures, which tells my story—and theirs. I would like to send you a copy of it entirely free.

Let Me Send You My FREE BOOK

I'd like you to know what Dynamic Tension has done for me—what it has done for others—and what it can do for you! This little coupon will bring you my free book which tells all about it. There is no cost or obligation of any kind—and no one will call upon you.

I just want to put into your hands proof that I can do for you what I have done for so many thousands of others: give you broad, powerful shoulders, biceps that bulge with smashing strength, a chest which stands out solid and muscular, and an evenly-developed body that will make others look like dwarfs next to you.

Will you gamble a stamp to win a body like mine? Then mail this coupon TODAY. **CHARLES ATLAS, Dept. 145-A 115 East 23rd Street, New York.**

FREE BOOK

Gamble a stamp today. Mail coupon for free copy of my new book, "Everlasting Health and Strength." It shows you from actual photos how I have developed my pupils to my own perfectly balanced proportions. Where shall I send your copy? Write your name and address plainly on the coupon. Mail it today to me personally.



THE STERLING SILVER CUP BEING GIVEN AWAY

This valuable cup stands about 14 inches high on a black mahogany base. I will award it to my pupil who makes the most improvement in his development within the next three months.



**CHARLES ATLAS, Dept. 145-A
115 East 23rd Street, New York, N. Y.**

I want the proof that your system of Dynamic Tension will make a New Man of me—give me a healthy, husky body and big muscle development. Send me your free book, "Everlasting Health and Strength,"—and full details of your 7-DAY TRIAL OFFER.

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"Slaves, attention!" Carver yelled. "You are free! Arise and kill your masters!"



WILL THE DICTATORS RULE THE WORLD? LEARN THE

PRISON OF TIME

by EANDO BINDER

When Barry Carver was shot down in the Sahara, his urgent message undelivered, the Dictator nations were about to crush the Allies. But that was before Barry found Shorraine, Land of the Mirage and the demon people of Phoryx, who schemed to enslave all Earthmen—and Sha-tahn, guiding power of all Dictators!



BARRY CARVER groaned. A great light pressed against his tortured eyelids. He opened them and winced. A torrent of sunlight stabbed into his eyes, blindingly. He rolled himself over, spitting sand from his mouth. He raised a hand to the tender lump on his head. How long had he been out? What had happened?

Memory stabbed into his mind, as the sunlight had stabbed into his eyes. The attack, by three enemy ships whose wings bore the black swastika! They had brought his lone ship down—

Carver raised his head and looked through the heat haze that lay over the mighty Sahara. The cloudless blue of sky was clear. They had left, satisfied that he could not have survived both the business-like strafing of their machine-guns and the crash.

Barry Carver grinned. They were wrong. By a miracle he had come through unscathed. Not a bullet had touched him. He remembered nothing of the crash. Obviously his body had been thrown clear, onto the cushioning sand.

ANSWER, IN THIS TIMELY BOOK-LENGTH SUPER-SCIENCE NOVEL!

He looked around.

There his small ship lay, a twisted, shattered wreck that would never fly again. It had come down like a rock. The engine had buried itself out of sight. Rows of bullet-holes, neat and orderly, zigg-zagged across the crumpled wings. Gasoline soaked sand rapidly evaporated in the hot sun. By that he knew he had been unconscious only a few minutes. Why the plane hadn't burst into flame, toasted him to a corpse, was another miracle. Well, he must accept the little finger of fate.

He came to his knees, and suddenly found himself dizzy, almost nauseated. He fought off his weakness. No time now to be a weakling. He must carry on somehow, reach an Allied-held port, deliver his message. It was vital. More vital, perhaps, than any other phase of the Great War that had turned the entire world into an armed camp, in 1942. Scouting over western China, far from where the Japanese-American Front lay, he had spied a secret Japanese army marching southward. If they once smashed through to the coast of India, the Dictator Coalition would have driven its first wedge through the Allies' earth-girdling belt of continuity.

Barry Carver had decided this information must go directly to GHQ, in London. Radio was out of the question, because of the barrage of artificial static made by both sides in the attempt to hinder the other. So he would fly, since he had a long-range scout ship fueled for 3,000 miles. He had had his choice—north or south route. North lay the enemy in full force; too risky. But south, via Arabia and the Sahara, then north to London—that was the safest route.

But of course, as chance would have it, the few of the enemy's devil-dogs patrolling northern Africa had seen him, given chase, shot him down. . . .

VITAL information. Bravely, he set out on foot across the burning sands, equipped with one canteen of water, a pair of binoculars, an automatic and a compass. Young and strong, he refused to be pessimistic about his chances. He would soon find an oasis. Or run into a caravan. He plodded away from his wrecked plane, out into the ocean of sand that heaped endlessly to all horizons.

Three days later, Barry Carver was not so sure of himself. He sucked the last drop of carefully rationed water from his canteen and flung it away. Wearily, he raised the binoculars to his blood-shot eyes. Nothing but sand, sand in all directions. Bitter curses rasped from his parched throat. Vital information. Was he to die with it searing his brain?

That afternoon, under the pitiless sun, his mind began to wander. He fought against it, but hopelessly. He was going to die, out in this sandy hell! All else slipped from his mind, even the Great War that was blasting humanity. He moaned like a wild animal. His blistered feet, burning skin, aching throat were driving him mad, mad!

Then he saw it—the great, spired city ahead of him. He broke into a stumbling run, shouting hoarsely. Saved! The people of the city would give him water. How sweet it would taste!

He stumbled on, but the distance was greater than it first seemed. To inspire his failing strength, he peered at it through the binoculars. How hazy it looked; it wavered! That must be his eyes. But there was water, great fountains of it cascading up in lush patches of greenery. There were even people on one of the balconies, staring at him. He waved, but they stared stonily. Why didn't they come out to help him?

He again took up his tottering lope, cursing at the loose sand that dragged at his feet.

Suddenly, through the fog of his mind, a terrible thought pierced. A mirage—it might be that! No, it couldn't be—mustn't be!

Yet what was such a great spired city doing out in these wastes? Doubts trooped through his agonized mind. It shimmered, that city. It wavered and floated over the sand. It *wasn't* real. It was a phenomenon of refraction, an image cast across miles of desert. A diabolical vision sent to torture him in his last hour of life.

Barry Carver's mind was paradoxically shocked to calm and sanity by the dread realization. His poor burned feet automatically propelled him toward the wonderful vision, his whole body straining forward. But his mind, clear and rational, told him he was chasing a chimera.

Another hour and it would be over. He would sink, drained of strength, to the hot sands. His information would die with him; the Great War go on without him. Perhaps some day a wandering desert tribe would find his bleached bones. His epitaph would be written in the drifting sands.

Stumbling on, refusing to lie down and wait for death, Barry Carver's eyes appraised the city of the mirage with almost philosophical detachment. How real it looked, and yet how unreal. Distorted by heat waves, it seemed like no city ever seen on Earth. Its towers and spires had a slim grace unknown to ordinary architecture. It stretched right and left and back interminably. Yet beyond it, *through* it, he could see plainly the hateful dunes and ridges of the vast desert.

Just a mirage. No, maybe it wasn't! Maybe it was real. He would find out—Lord! Madness stealing over him again. His right hand brought up his automatic. Sweaty fingers gripping the stock, aiming for his temple. Better the quick death by bullet than the tortures

of nightmarish insanity.

He flung the gun away, suddenly.

MADNESS overwhelmed his seething mind. The great city's gates were opening, massive steel halves that swung silently apart on cleverly-devised gymbals. He could see now down into the wide avenues, row on row of buildings. The people were beckoning to him, urging him on! Water! A beautiful, splashing fountain of it. . . .

With voiceless shrieks from his burning throat, the half-dead creature whose name was Barry Carver lurched forward. He fell to his knees and began crawling forward inch by inch toward the mirage-city that seemed to dance tantalizingly just beyond his reach.

Now here was one side of the giant portals. He clutched at the pitted stone, but it was empty air. He pitched on his face and his groveling fingers found only sand, sand. . . . And in a last moment of calm before a black wave blotted out his mind, Barry Carver welcomed death.

It was strange, the awakening.

He was aware of physical lightness, and a queer sense of unreality. But then he opened his eyes and saw substantial things. He was in a bed, under soft, silken coverlets. The room around him was white-walled, curving to a domed ceiling. There were sylvan pictures of haunting beauty, long flowing drapes spectrum colored, carven furniture inlaid with gold, silver and ivory. Somehow, the motif of the room was Oriental—or ageless.

Soft sunlight, not the harsh desert glare, streamed in a window of crystal clear glass. Carver's eyes were arrested suddenly by what he saw over the foot of the bed. A woman, a girl at second glance, seated at a table, writing. Her bronze-gold hair glinted in the sunlight.

Carver essayed a call of attention

that came out as a feeble croak. The girl came forward, instantly, smiling. She wore a rich silken blouse, rainbow hued, tucked in at the belt of baggy trousers gathered at the ankles. Oriental costume, Carver reflected, in keeping with the room's furnishings.

But she herself wasn't Oriental. Blue eyes, rose-white skin, oval cheeks—they were quite Caucasian features. Strongly Irish, in fact. The contrast with her clothing was startling. And her smile was friendly and open, not inscrutable and half-apologetic, as with Oriental women.

"Cairo?" guessed Carver, concerned first of all with where he was. "How was I rescued—caravan?"

"Cairo?" The girl looked puzzled.

Carver repeated his question in his indifferent French, hoping this would be understood.

The girl laughed. "No, I speak English," she said. "I was puzzled because you mentioned Cairo."

"Well, where am I then?" pursued Carver. "Khartoum? Or maybe"—he frowned—"north coast—Tripoli or Tunis, in the enemy's hands. But in that case, how would you, a white girl—" He stopped, wonderingly.

The girl's face had become grave. "I see you don't realize you're in Shorraine," she said slowly. "Well, neither did I, at first."

"Shorraine?" echoed Carver. "Never heard of it. What part of Africa?"

The girl shook her head. "Not Africa, nor any other continent. Shorraine is the—*City of the Mirage!*"

Carver gasped. He stared at her silently for a moment. What reason would she have for lying. Or *was* she lying? "Do you mean that city I saw—the mirage—the big gate—" He finished explosively: "I don't believe it!"

"You will see, soon," returned the girl calmly.

"I'll see now," grunted Carver. He

tried to struggle up on his elbow, ignoring the girl's plea to lie quiet.

"You're weak. You must rest."

But Carver didn't have to be told as a sudden wave of weakness turned his muscles to rubber. He slumped back and a tide of darkness again buried him.

WHEN next he awoke, hunger gnawed within Barry Carver. The girl was again there, and turned at his call. "I'm hungry," he told her without preamble. "Incidentally, I'm Barry Carver, of the United States air-force."

"I'm Helene Ward, also of the United States," she smiled.

"But you still insist this is the City of the Mirage?" he said half mockingly. "Right out in the middle of the Sahara? A dream city that floats, ghost-like!"

She turned from a cupped wall instrument into which she had whispered a few words. "I won't try to explain now. After you've eaten, put on those clothes over the chair. I'll meet you outside and—show you."

The door opened and Carver gave a start that shook his whole bed. The figure that entered, bearing a silver tray loaded with steaming dishes, was squat and hulking shouldered, with thick bowed stumps of legs. His abbreviated costume of sleeveless shirt and kirtle revealed an ape-like hairness. The features were brutal—thick, flaring nose, protruding lips, receding brow.

But docile-like, without a sound, he set the tray down on a taboret beside the bed and retreated, with a brief bow of his thick neck toward the girl.

"Good Lord!" breathed Carver. "I don't know much anthropology, but that was a *Neanderthal Man!* What—"

"I'll meet you outside," said the girl, slipping out.

The tempting odors arising from the tray clipped short Carver's amazed con-

jectures. He sat up, finding himself considerably stronger than the other time, and satisfied his inner cravings.

The food was exotic, strangely spiced, but tasty. He recognized no single ingredient of it. But that it was nourishing he had no doubt. He could feel new strength pulsing through his veins. At last, he reflected, he was no wraith, if this was the City of the Mirage. But he hadn't made up his mind about that. It would require indubitable proof for belief. Yet, if it were some Oriental earth city, what was a perfectly natural white girl doing here? And that Neanderthal Man!

Barry Carver put the dishes aside hurriedly, eager to get the mystery over with. As he swung his feet out of the bed, he noticed they were cleanly healed of any sign of his terrible trek across the desert. Either he had been unconscious a long time, or had had expert medical care. Probably both. He tasted faintly a drug that might have kept him asleep.

The costume fitted his stalwart frame perfectly. An ornate sleeveless coat narrowed trimly at the hips. A broad leather belt held up baggy trousers similar to the girl's. For his feet there were sandals of some soft hide. He stepped before a full-length mirror, chuckling whimsically at the bizarre contrast to his blond, wavy hair, light grey eyes and typically occidental face. Yet he had the swarthy skin of an Oriental, burned almost mahogany by the three days of fierce Sahara sun.

On a small table he found his binoculars, automatic and compass. He picked up the gun and tucked it into his belt, somehow feeling better for it. He found a pocket for the compass. He carried the binoculars in his hand.

He strode to the window, but couldn't see much because of a high sill. He turned to the door. It opened magically at his approach and as he went past he

detected the faint photoelectric eye at the side. In a short hall stood the girl, Helene. Smiling, she led him to another door that gave access to an open balcony hanging like a crow's nest from the tower. From this vantage, Carver saw the full sweep and extent of the incredible city.

SHEER depth greeted him that took his breath away. He was very high in some tower, nestled among a forest of similar spires. Far below lay lower, flatter buildings and moving figures in winding avenues. Dotted the expanse of metal and stone were numerous areas of green sward, parks whose meandering lanes were bordered with trees and flowers.

Barry Carver knew there had never been such a city on Earth, save in tales of the Arabian Nights. Was the girl right? Was this the City of the Mirage?

"But it's so solid, so real!" he objected aloud, as though they had argued. "The mirage I saw was shimmering, ghostlike—as unsubstantial as an air-castle!"

"Shorraine exists in a different dimension," explained the girl. "In this dimension, Shorraine is real and Earth is ghostly. Look!" She grasped his arm and turned him part way around. "Squint your eyes and stare straight out."

He did. Back of him, the sun's brilliant shafts speared through the city. And suddenly he saw a quivering, unreal scene of endless hills of sand hovering below and all around. It was like a superimposed view, the desert faintly occupying the space the city lay in. He opened his eyes wide and the illusion vanished. Shorraine reared solidly around him.

Carver felt shaken at the weird optical effect. An axiom of physics rose in his mind. "Two things cannot occupy

the same space at the same time," he stated flatly. "How do you explain that?"

"I can't," Helene admitted simply. "They tried to explain to me, but I understood very little of it."

"Who's 'they'?"

"The ones who rule this city." The girl shook her head at his open mouth, ready to issue further questions. "You'll meet them later. I'll tell what I can. The huge front gate to Shorraine encloses the 'spot' at which Earth and this world contact. When anything of Earth reaches the Spot, it passes on through to this dimension."

At his wry smile, she said sharply: "I'm trying to be as clear as I can. You approached the Spot, attracted by the vision of Shorraine. We saw you, dimly, as you saw us."

"Then there *were* people waving, beckoning to me!" interposed Carver, remembering.

"Yes. We opened the gates for you. You stumbled at the end, but fell within the influence of the Spot. You had entered our dimension. We picked you up, unconscious from your experiences," she explained.

The girl looked at him sympathetically. "You must have suffered a great deal. Your feet were masses of blisters. You were feverish. Your throat was so constricted we feared you would choke to death, lying senseless. But Shorraine has miraculous medicines. You were quickly treated and brought to this tower for rest."

"How long has it been since I arrived?"

"Two days. You were kept in a drugged sleep, to hasten your recovery."

"Two days!" echoed Carver. He looked down at his healed feet again, reflecting that the medicines of Shorraine must indeed be efficacious. And the vigor that flowed through his body,

when so recently he had been a half-mad, racked creature more alive than dead! It had been a toss-up, probably, whether he would fall within the gates of Shorraine, or through death's doors.

HELENE Ward was watching him. "Do you believe now—about Shorraine?"

"What choice have I?" sighed Carver. "Though it's all like a fairy tale. A city in a mirage—another dimension—a Neanderthal Man—complete cures in two days!" He shook his head. Then he swung on the girl. "And you—you're a mystery. Tell me about yourself."

She blushed a little, at his stare. "There isn't much to tell. My father led an archeological expedition west from Khartoum, and never returned. That was a year ago." Her face was grave now, saddened. "I set out in search of him, in an airplane. It cracked up—bad air currents. The pilot was killed, in the crash. A miracle saved me. I was alone, then, and set out across the desert."

She shuddered. "It was terrible! Finally I saw the mirage—Shorraine. The gates opened for me, too. I've been here a year."

"A year?" Carver looked at her. "You like it here? You've never tried to leave?"

Before the girl could answer, there was an interruption. A young, eager-faced man strode from the door of the tower. He nodded to Helene, and gripped Carver's hand warmly.

"Heard you were up and about. I'm Tom Tyson, of the good old U.S.A. air squadron. By the look of the togs you arrived in, I'd say you're an airman yourself?"

Carver's eyes lighted. He introduced himself and went on: "What Front were you on? Jap, European, or South American?"

"Hold on!" Tyson stared at him queerly. "There was only one main front in my time—Flander's Field."

"You mean—" Carver choked on the words.

"World War," nodded Tyson. "Strangest thing, how I got down here. I was doing scout duty with a fast ship and plenty of gas. Fog came up at night; compass went wrong. I saw water below once or twice and figured it was the English Channel. Next thing I knew, at dawn, I was over the damned desert. I had crossed the Mediterranean!"

"You did a Douglas Corrigan," smiled Carver briefly.

"Exactly," agreed Tyson. "Anyway, I ran out of gas over the desert, with no idea where I was. Forced landing. Then the mirage, the gates opening, and here I am in Shorraine. Been here since 1918."

"But you're just a young man—about twenty!" blurted out Carver, as the astounding thought struck him.

Helene and Tyson glanced at one another. Tyson spoke. "I guess you've heard so many mysteries, one more won't hurt. People don't age in Shorraine!" He was about to say more, but compressed his lips instead.

Carver stared helplessly. Could this be some mad dream from which he would eventually awake?

"I was nineteen when I came to Shorraine," continued Tyson. "I'm still nineteen, physically. But I know what's been going on since then. I know about your war. What's the latest development?"

The thought of the war suddenly swept all other considerations out of Carver's confused mind. "The latest development," he muttered, "is a move on the enemy's part—a secret Jap army trying to cut through to the Indian Ocean. And I think I'm the only one knows about it. If they succeed,

they'll sever our overland connection between the European and Japanese fronts."

HE drew himself up. "I haven't time to waste. All these mysteries by the board, I have to leave Shorraine. Get back to—civilization. Warn headquarters of the Jap move. Do you suppose I can get some help here, to cross the desert?"

Carver saw again a look exchanged between the two and wondered what it was this time. His heart sank in anticipation, even before Helene spoke.

"You can't leave Shorraine," she said softly.

"Why not?" snapped Carver impatiently. "Nobody can stop me. If I came in the Spot, I can go out again."

The girl looked at him as though warning him to prepare for the greatest shock of all.

"Remember when you were staggering into the city gates?" she said. "You must have wondered why we didn't come out to help you. You saw us watching. We *couldn't* come out. The Spot only works one way!"

Tom Tyson nodded soberly. "You can come in from the Earth side easily enough, but going back is impossible. It doesn't work. Or else I'd have left here long ago."

"Good Lord!" groaned Carver. "You mean there's no way back? And I have priceless information for headquarters! It should be delivered soon. In another month, that Jap army—"

"There's no way back!" murmured Tyson.

Carver grasped at straws. "Is there any way of communicating with the outside world. Radio, for instance?"

Tyson shook his head. "Radio also works just one way—into Shorraine. We know much of what goes on in the world by radio. But no radio waves can go the other way, to Earth."

Carver bit his lip. What a mad, impossible situation! Trapped in a mysterious "dimension" from which there was no return. A dismayed feeling clutched his heart, and not only at the thought of his untransmitted information. He must continue to live here in Shorraine, in a strange, almost alien environment. In a city of witchcraft, to judge by what he had heard and seen so far.

Barry Carver whirled suddenly. "Listen, there must be a way back to Earth," he protested. "Have you ever tried the Spot?"

"Well, no," admitted Tyson. "But they've told us—"

"They've *told* you!" Carver mocked. "Why not try it?" He had never taken anybody's word for anything, when the issue at stake was vital.

"All right," agreed Tyson. "We'll try it right now."

He led the way off the balcony into the short hallway, at the end of which was an elevator that took them down at a sickening pace. They traversed another hallway, passing other people. Carver stared at them curiously. Were all of them unaging, as Tyson was? How long could they be kept so? But he would find out such things later. At present, his only thought was departure from Shorraine.

They stepped out into the sunlight, on a broad flat roof. Tyson spoke low words with an attendant and then jumped aboard a flat-decked craft built like a half egg-shell. Carver followed and helped Helene aboard.

Tyson stood before a pedestal whose top surface held dials and levers. As he manipulated them, a soft hum arose from below deck and the craft glided into the air smoothly. Carver hung on the rail around the deck, thunderstruck by the fact that there was no propellor whirring. He flushed as he caught Tyson's half-amused glance.

"Little different from the kind of things we piloted, eh?" grinned Tyson. "Works on an anti-gravity principle. Apparatus below produces a field of force that neutralizes gravity. Power comes from a central broadcast station."

CARVER swallowed his amazement with difficulty. It was becoming apparent to him that Shorraine was a city of more than common science. Neutralizing gravity was no small feat and so far ahead of Earth science that they laughed at it as an optimist's dream. Broadcasting power through the ether, though long sought, still evaded engineering efforts on Earth. Both of these had been achieved here and combined in a craft that soared magically.

Sailing high above the spires, Carver had a panoramic view of the city's expanse. A circular stone wall, a hundred feet high, completely surrounded it. Beyond was wild-looking land, apparently uncultivated.

"Where is food grown?" queried Carver, mystified.

"It isn't grown," informed Helene. "It's *made*—here in the city, by scientific processes." She smiled. "But don't ask me how. The wall around Shorraine is to keep out—beasts."

Tyson slanted the ship down toward the ponderous gates and landed it on the wall next to a small housing. The gatekeeper, a hawk-nosed fellow, stared at them quizzically.

"Open the gates," commanded Tyson.

"But why?" asked the gate-keeper, turning to peer with squinted eyes beyond the city. "There is no one approaching from the Earth-dimension."

"No, but we wish to try going through the Spot, back toward Earth, just for our own satisfaction," spoke up Carver. "There's no harm trying, is

there?"

The gate-keeper grinned at him in recognition. "You're the man who arrived recently? There is no return to Earth. Others have tried it—countless others."

"I want to try for myself," insisted Carver stubbornly.

The gate-keeper scowled. "All right," he said grumbly, after a moment. "Go down below. But do not go too far outside the gate. I saw one of the big beasts roaming around before."

Tyson led the way down winding stairs to the base of the wall. Carver was in a fever of impatience to attempt the return, despite the repeated pessimism against its success. Finally the massive halves of the metal gate swung outward, without a whisper of sound.

The three waiting stepped forward, out toward the dark wild wastes. Squinting his eyes, with the sun in back of him, Barry Carver could see the "mirage" of Earth before him, the vast ocean of the Sahara. It hung over the other scene like a dancing image. Was there no return to it?

They trudged forward. Out of curiosity, Carver took out his compass and glanced at it. The needle, pointing away from the city as north, suddenly spun wildly as he walked along. A few feet further on it was pointing into the city, in a queer reversal that was like an ill omen.

Altogether, they walked forward a hundred yards, but the Earth-mirage did not become real.

"You see?" said Tom Tyson, but with disappointment himself.

"I had been hoping—a little," murmured Helene.

Carver looked back baffled. He could see the outline of the Spot, like a round bluish tunnel in the air, filling the space between the gate posts. They had walked right through it. It offered no return to Earth. He was convinced of

it now. He shrugged and turned to go back.

"Oh!"

IT was a gasp from Helene. Her fingers dug into his arm. He looked in the direction she indicated and gasped himself. Out of the dark land was charging a monster of scales and spines, rearing twenty feet from the ground. Rooted in surprise, Carver recognized it. A Tyrannosaurus, from the Reptilian Age of the dim past! It thundered down on them, a juggernaut of bone and muscle.

"Run!" shouted Tyson. They fled for the gateway, but Carver felt futile despair. They would never make it before the monstrous killer caught up with them. He jerked out his automatic and emptied it at the creature, though he realized it would have as little effect as tossing pebbles.

Fifty yards to go! Carver pushed the girl before him and glanced over his shoulder. Giant jaws, edged with rows of horrible teeth, were almost within striking distance. Death at his very back!

And then—from the top of the wall stabbed a crimson beam, hissing through the air. It caught the beast squarely and burned smokingly through armored scales. Screaming shrilly, it spun about and raced back the way it had come, with a thunder of its ponderous feet.

Safe within the gates, trembling and panting, the three watched the great portals swing together.

"A dinosaur!" growled Carver. "What else have you got in this crazy world?" He was more angry than astonished, for his sense of surprise had become dulled with repeated revelations.

When they had climbed to the top of the wall, the gatekeeper was shoving a wheeled weapon back to its niche in the

guardhouse. Carver could see an intricate group of tubes, coils and wiring behind a mesh-screen, connecting to a shiny convex mirror. It was powered, probably, from the ether broadcast lines and shot out raw heat energy as a beam. Again an example of advanced science.

"Thanks, Proxides," said Tyson warmly. "We owe our lives to your sharp eyes and quick action."

The gate-keeper grunted. "These eyes that are trained to watch for the demon-people's slinking shapes cannot fail to see a mountain of flesh before the nose. And in the old days"—his eyes flashed slightly—"one had to learn quickness in the hand-to-hand battles with the Persians. Ah, in those times —"

The buzzing of a wall instrument intervened.

Carver turned to see a square panel glow with prismatic colors that suddenly flew together to form a face. Television—and far clearer than the images cast by the latest 1942 models on earth!

A bearded, sharp-nosed visage peered out of the visi-screen.

"Proxides," he barked, "for whom or what reason did you open the gates?"

"For the new man, sire, who did not believe there was no return to Earth."

"I see." The eyes shifted to meet those of Carver and he felt as though he were looking into pools of endless depths. "I will explain to him sometime, when I am not so busy." The image faded.

"Who's he?" asked Carver.

"Chief scientist of Shorraine," said Tyson. "If you want a scientific explanation for everything, Val Marmax is the man to give it."

"Then let's see him right away!" demanded Carver.

"Can't, while he's busy. But I'll arrange for you to see him as soon as possible."

"AND right now," spoke up Helene Ward, "you're going back to your room, and bed. You're still a convalescent. Too much excitement at one time."

"I feel fine," Carver protested.

"Doctor's orders," said the girl firmly. "You're not as well as you think, yet."

"You're taking pretty good care of me," smiled Carver.

The girl's face tinted and she lowered her eyes without answering. By the time they had flown back to his room, Carver realized she was right. A strange weakness had stolen over him, an after-effect of the drugs, he surmised. In bed, he fell instantly asleep, too tired to conjecture over the amazing riddle of Shorraine.

For the next three days, while his full strength rapidly returned, Barry Carver lived a strange dream. Helen and Tyson, who spent most of his waking hours with him, had obviously entered a conspiracy to explain little or nothing. Tyson assured him that soon he would be told all things, by one more qualified to make it clear, Val Marmax, the scientist.

In fact, in the many hours they spent on the balcony conversing, Helene and Tyson asked the most questions. They were pitifully eager, almost, to hear of events in their former life. They drank in his words, the picture of rapt attention.

"We hear much of what goes on in the world, by radio," informed Tyson. "But it's dry, second-hand. And we can't ask the announcer questions. Since the war's been on, we've heard less, because, I suppose, of stiff censorship. We hardly know what *is* going on right now."

Carver's eyes went bleak.

"It's the greatest conflict in human history," he murmured. "With science

let loose as a ravening brute. It all began with the assassination of Hitler, over a year ago. It was a mistake. He became a martyr, in the eyes of his world-wide followers. Two months later they rose in attack, inflamed by the other leaders. Every nation became involved, on one side or the other. If the enemy wins — dictatorship all over Earth!"

He jumped up and began pacing, hands clenched. "I keep thinking of that Jap army. It must be stopped! Why did I have to fall, or crawl, into this damned trap?"

"You wouldn't be alive if you hadn't." reminded Helene gently.

"Well, you're right," admitted Carver. His shoulders sagged helplessly. "I'll have to make the best of it."

He saw an exchange of looks between the other two, as though they too at one time had come to such a conclusion.

Tyson took them flying at times, over the city. He taught Carver the technique of handling the controls, and it was with some pleasure that Carver maneuvered the ship at breathtaking spurts and spins. It was far superior in manipulation to clumsy propellored ships. He thought vaguely of such craft in the war on Earth, and what a tremendous advantage they would be in any aerial battles.

The second day, high over the city, Carver noticed a break in the horizons, beyond, which elsewhere was an unbroken expanse of dark wilderness. Faintly, he seemed to see the spires and serrate outlines of another city.

"Is it a city?" he asked.

Tyson nodded, his lips tightening a little.

"Well?"

"It's a city of—other people," vouched Tyson reluctantly.

CARVER stared at their averted eyes.

"You two are keeping a lot from me," he accused.

Helene touched his arm. "You've only been here a few days, Barry," she said softly. "You can't learn of everything at once. Val Marmax will explain better than we can."

Carver let it rest at that, though his impatience and wonder grew hourly. His two guides took him through the various industries of Shorraine. Robot machinery, almost unattended, made the necessities of life, including food. All raw material came from simple rock molecules, by processes of transmutation. Power to run all machines, as with the aircraft, came wirelessly from a central power-station. This gigantic plant was crammed to the roof with busily humming cyclotrons. Carver vaguely understood it as the generation of atomic energy.

And here was all this science in full-bloom, cooped up in some isolated "dimension!" It was the science of Earth's future. But how wonderful to have it now, if only Earth *could* have it.

The people of the city interested Barry Carver the most, however. Though dressed uniformly in the colorful costumes of their style, they were of all races, including a sprinkling of Chinese and Negroes. The predominant white, in turn, was of all different types, from almost black Asiatic Indians to pink-white Nordics. The main bulk, however, seemed to be an olive-skinned, sharp-nosed people.

Ethnologically, the citizens of Shorraine were a mixed group. And Carver sensed too that they were divergent in a subtler way that he couldn't define. Snatches of conversation that he overheard mystified him. There were references to the past that puzzled him. But most amazing of all, when he stopped to think of it, was the widespread use of dozens of different languages. And particularly when he no-

ticed a swarthy Indian talking German, a Chinese using French, a blonde Nordic rolling off the difficulties of Greek!

It was always with a queer shock that Carver came upon the silent, unobtrusive Neanderthal Men. They served as well-treated menials, apparently. Their little, dull eyes reflected the muddled mind of a creature half-way between man and ape. Earth anthropologists would mortgage their souls for one of them.

On the third morning of his awakening, Helene informed him, in a rather subdued voice, that he was to be received by the "Queen."

"Your ruler?" asked Carver.

"No. She was a Queen, in her former life, and out of courtesy the title remains. She makes it a practice to welcome all newcomers to Shorraine." Helene turned away with a strange hunch of her shoulders. She turned back suddenly. "If you wished, you could pass it by."

"No, I'll see the Queen," said Carver, interested. He quoted: "A royal invitation is a command."

Tyson joined them and together they soared to a tower of elaborate design, frescoed and studded with blocks of sparkling stone. At the landing terrace, a bowing hawk-nosed attendant ushered them into a room hung with gorgeous tapestries. Statuettes gleamed in wall niches. Perfume lingered in the air. On a couch of silks reclined a woman in a clinging robe of white.

"Her Majesty, Queen Elsha!" announced the attendant solemnly, withdrawing.

CARVER stared almost rudely. He had never seen a woman quite like her before. Raven-black hair ran smoothly over the ears to outline an olive-tinted face of dark, heavy-lidded eyes, thin aristocratic nose and lips crimsoned artificially. One hand, with

gold-tinted nails, toyed with the ears of a woolly dog curled beside her. The languorous lines of her figure were a study of artistic perfection.

She was staring at him, a faint smile on her lips.

"You are Barry Carver, most recent pilgrim to Shorraine," Her voice was low, husky, melodious. "You will tell me about the outside world that I have not seen for—a while?"

"Anything you want to know, Queen Elsha," assured Carver, flushing a little at her direct gaze. He felt himself being appraised, weighed, almost analyzed, and seemed to see a gleam of approval in those slumbrous eyes.

She glanced at the others. "May I not be alone with my guest?"

Carver saw Helene dart a veiled glance at the woman, and then turn away with that same little hunch of her shoulders. Tyson managed to whisper a word in Carver's ear before he left, with a cynical grin: "Dynamite!"

Alone with the creature who seemed the essence of Oriental womanhood, Carver felt at a loss. He could feel his ears burn.

"Sit down beside me, Barry Carver," she invited. Her English was fluent, natural. "Tell me about yourself."

He did, briefly. Then he asked: "What were you queen of, before you came to Shorraine?" He reflected it must be some comic-opera principality, perhaps in Asia Minor.

Her eyes lighted. "Of a great land. But that is no more." A fiercer expression shone from her dark eyes, then. "I should still be a rightful queen. But they have taken my power away, in Shorraine." She peered up at him. "Will you help me regain what I have lost, Barry Carver? You are a leader. I know that at first glance. You could do much—for me."

Carver stammered a negative, startled at the sudden appeal.

"No?"

Her arms were suddenly around his neck, drawing his lips to hers. The exotic perfume of her hair hypnotized his senses. But a word flashed through his mind: "Dynamite!"

"I have to go," he said firmly, pulling himself away. He left without a backward glance, and soared away in his ship.

Helene was waiting, at his tower. "Well?" she said, with a trace of coldness.

"Well, what?" he countered.

"You were there a half hour," said the girl pointedly. "When the Queen welcomed me, it only took five minutes." She turned with that queer hunch of her shoulder.

Carver laughed, and drew her to him. "I love you, Helene," he said simply. "From the first moment."

She resisted him. "You've only known me three days. How can you know—"

"Three days, three minutes, three years—what's the difference? Helene—"

Carver was determined, sure of himself. He hadn't been sure of it before. The episode with Queen Elsha had served to crystallize his own attitude to the sweet, attractive girl who had been nurse and companion for three days.

SHE held herself stiffly as he slipped his arms around her, but suddenly relaxed in surrender, sought his lips eagerly.

"Oh, Barry, take me away from this place—back to Earth!" she half sobbed, after a moment.

"I'll certainly try," he promised.

"Tomorrow," she whispered. "Tomorrow Val Marmax will see you. You'll hear the full story." She shuddered. "Then you'll know!"

In the morning, Tyson was on hand. "Val Marmax is waiting for us, Barry.

He says he will explain many things."

"Good," nodded Carver. "So far I've seen things that need plenty of tall explaining." He set his lips grimly. "If I'm to be stuck in Shorraine, I want to know the why of everything. Coming along, Helene?"

She slipped her hand in his. "I think I want to hear what Val Marmax has to say, too. I've been here a year, Earth-time, and it's all a mystery to me."

"Why do you say 'Earth-time'?" asked Carver, having heard the expression several times. "Is there a different time-system in Shorraine?"

"Let Val Marmax explain," said Tyson, shortly.

Their flat-decked ship arose, smoothly, and darted in the direction of the city's gates. A short distance before them lay a long, low building in the shadows of sky-piercing towers. Landing on the roof, the way led down winding stairs. Finally, before a door of burnished metal, Tyson pressed a button. Soft lights flashed in their eyes—Carver guessed it to be a vision scanner—and then the door opened.

Not unfamiliar with laboratories, Carver recognized the room beyond immediately as such. But little of the paraphernalia strewn about on benches and shelves was that of Earth-science. The aspect of the place was foreign, strange and somehow, age-old. Carver's heart beat faster, for some indefinable reason.

Val Marmax was seated at a desk before an instrument whose rotating metal scroll made some kind of record. But the scientist was neither speaking nor writing. He was just staring at a small humming globe over the machine. In a flash of insight, Carver knew he was recording his thoughts directly on the scroll.

The three stood silently, waiting.

Finally the scientist's thin, sensitive hand flipped a switch at the side and the

machine's hum ceased. He looked up. Carver met his eyes. Far more than the vision screen had showed, that other time, they were orbs of dynamic intensity. They seemed filled with the wisdom of ages, shining forth like a steady beacon. Yet behind this, Carver sensed a deep weariness. For the rest, he was an average man, about forty, somewhat portly, with a lofty brow, pointed beard and full lips.

At a querulous glance from the scientist, Tyson gave Carver's name.

"The things of Shorraine mystify you, Barry Carver?" spoke the scientist in a deep, grave voice. "I will answer your questions. I am Val Marmax, chief scientist of Shorraine."

"From where are you?" queried Carver first of all, unable to place the man's precise accent.

"From Atlantis."

"Atlantis?" Carver looked blank. Then he gasped "*Atlantis!*" again, sharply. It took him a few seconds to regain his lost voice. "But you can't mean the mythical island of prehistory—" He stopped, looking at his two companions, but they showed no surprise.

Val Marmax nodded with a faint smile. "That same ill-fated land of twelve thousand years ago, Earth-time!"

CARVER tried to rationalize. He could accept offhand the one-time existence of Atlantis, though in Earth history it had always been a fable. But must he accept Val Marmax's statement at face-value? An impulsive laugh that he couldn't control shook him.

"You're not twelve thousand years old," he objected. "You mean you're a descendant of that race."

"No, I am an original Atlantide," asserted the scientist. "Proxides, at the gate, is a Greek from the time of Alexander, 330 B.C. There are people in

Shorraine from all times and periods, from the days of Atlantis to the present."

"Remember, Barry," came Tyson's voice, "I told you people do not age in Shorraine!"

Tyson, of course, was an example himself, Carver reflected, though he hadn't followed through the reasoning before. He had simply taken it for granted that some miraculous scientific process, like a Fountain of Youth, kept him young and would do so for a limited time. But this survival of Val Marmax, through centuries, was a different matter. It was immortality!

Carver forced himself to be calm. "Is there no such thing as death here?" he asked quietly.

"Only by violence, and occasionally by disease. Never by what is known on Earth as old-age." The scientist went on. "Our science has conquered most disease, which is really a death by violence, through the attack of germs. Actual violent death, however, we cannot control. If that Tyrannosaurus outside the gates had caught you, one snap of his jaws would have ended your life as certainly as on Earth."

"But old-age!" remonstrated Carver. "How do you escape that?"

"We are in a different time-world than that of Earth," responded the Atlantide. "It is hard to explain, in terms of your orthodox modern science. In a sense, time does not pass here in Shorraine's world. Or, rather, call it *biological* time. Old-age is a wearing down of the body-machine, measured by biological time. And biological time stands still here. There is no simpler explanation."

Carver's eyes rested on Helene. "What of your children? Good Lord, if death is so rare, how have you kept the population from choking itself by sheer pressure of numbers?"

Helene looked back at him queerly,

sadly, Carver noticed and he suspected the answer. The stunning thought occurred to him that he hadn't seen a single child, in three days!

"There are no children in Shorraine!" Val Marmax was looking at the floor now. "There can be none. Birth and growth are processes dependent on biological time, again. We have no senile old dotards, ready for the grave. But neither have we children to grow up at our sides. That has been the price of immortality in Shorraine!"

Carver broke a strained, depressed silence. He sensed that Val Marmax, and perhaps all the others of Shorraine, would willingly exchange this immortality for normal life.

"The pathway back to Earth is closed, as I know," he said. "But have you tried, with your science, to open the way?"

Infinite weariness suddenly came over the Atlantide's face.

"I have tried, and many others, for these thousands of years. It seemed impossible. The Spot can be simply negotiated, from Earth to Shorraine. But the return is barred as though Earth were in the remotest galaxy. And therein lies the whole story of Shorraine."

HE settled himself back. His eyes faded as though he were plumbing the depths of time with his vision.

"The world of Shorr—which in our tongue means 'mirage'—lies in a different universe than that of Earth. There are different stars and different dimensions. The two do not conflict, though they lie wrapped in one another. They are in different time-sectors. And as your Einstein has shown, partly, two things can exist in the same space, *at separate times.*"

He waved a hand of dismissal. "Having studied the problem for so long, I could show you the formulae.

But they are too involved for ordinary discussion."

Carver nodded. "Skip it," he said. He realized that the riddle of Shorraine was something Earth science's rigid dogmatism hadn't made allowance for.

The Atlantide resumed.

"Shorr, however, does have contact with Earth, at the Spot. To give an analogy, it is something like a two-dimensional flat world touching a three-dimensional globe. They would contact at one point. Thus, since time began, there has been this path from Earth to this world—one-way.

"As a result, creatures of Earth blundered through the Spot, into this dimension. All other conditions, save time, being strangely alike, they lived. In the dim past, millions of years ago, the great reptiles came through, during their era of predominance. The Sahara, in those remote times, was not a desert, but a rich, prolific hotbed of life, and by the laws of numbers alone, though the Spot is so small, many dinosaurs entered. In my idler moments I have soared over the dark lands and catalogued Triceratops, Brontosaurus, Stegosaurus, Trachodon, etc. They, too, were unable to die of age, but their numbers have been depleted by their mutual depredations. The Tyrannosaurus you saw is the only one I've known of in fifty years. He may well be the last of his species in Shorr."

Carver heaved a sigh. The pieces of the puzzle were falling into place. And in a less crazy pattern than had at first seemed possible.

"Eventually," continued Val Marmax, "man came on the scene. Perhaps, through a period of fifty thousand years, all the sub-species of near-man wandered in. Before the dawn of true man, the Neanderthals particularly entered the Spot. Terrified, bewildered by the new world, they did not venture

far from the Spot, and established a cave community exactly on the site of later Shorraine. They managed to eke out a living by hunting.

"We found them here when we came—we of Atlantis."

The scientist's voice became tense, vibrant.

"Fifteen thousand years ago Atlantis and Mu achieved a cultured, scientific civilization that lasted for three thousand years. Then came catastrophe, as your fables relate. The seas rose, the lands split, and the fires of the underneath erupted. Atlantis and Mu were doomed—"

Something of the terror and agony of that long ago disaster shone from the speaker's eyes. Carver felt sympathy.

"Some of the scientists of Atlantis knew of the Spot, knew that it led to a livable world, as they could faintly see in 'mirages.' While there was yet time, we gathered as many of our people as we could, led them into Shorr. Better a chance for survival in an unknown world than certain death on torn, twisted Earth. Some few of Mu, from half way around the world, were also saved. Queen Elsha—was queen of that great land in the Pacific."

CARVER started a little, thinking of his visit with Queen Elsha and her strange conversation.

Val Marmax sighed.

"Thus we began life anew. With our science, we founded the city of Shorraine—Mirage City—on the site of the Neanderthal cave-home. The few surviving Neanderthals we trained as our servants. Life was not unpleasant in Shorr, but we soon longed to return. Particularly when we knew at the immortality that denied us children. Then we found—that we could not return!"

The furrows in the scientist's brow—sharpened by twelve thousand years

of life and thought—grew deep.

"Though we prided ourselves as being the masters of nature and all its mysteries, we could not solve the problem of the Spot. Life went on. In the past twelve thousand years, others have wandered into the Spot, from later times than ours. When the Egyptian empire flowered, thousands of them came to Shorraine. Later, men from all lands—Sumerians, Persians, Greeks, Romans, Crusaders, Arabs, and the European adventurers. Not in great numbers, of course. Only by chance, sometimes only one a year. Since the days of Egypt, when the Sahara became a death-trap, only doomed men whose half-maddened minds saw the mirage of Shorraine as possible rescue, have stumbled in, as with yourself."

"Are all the mirages of the Sahara," asked Carver curiously, "caused by Shorraine?"

Val Marmax nodded. "All mirages, so-called, are reflections of our city, from different angles. Or views of the rest of Shorr. Earth eyes have dressed them with many fanciful details, but they would have noticed, by comparison, that it was one and the same general scene each time."

"And that," mused Carver, "explains one of the oldest of historical phenomena."

He looked at the Atlantide's studied face. It was hard to believe that this man had lived three hundred lifetimes. That the city was filled with other people whose lives had gone past the Biblical three-score and ten.

Carver was suddenly appalled. "How have you filled the time?" he whispered. "All those centuries and centuries—"

"We have managed to occupy ourselves," smiled Val Marmax. His smile was mirthless. "The repairs and running of our machinery, beautifying our city, and the pursuit of hobbies. Earth history has particularly absorbed us,

collectively. Each new visitant to Shorraine, when he had become settled in the new life, was set to work writing down all he knew of his times. We have written records that would be priceless to Earth—detailed accounts of early history lost to your times. Another popular avocation has been to learn different languages. Almost every person in Shorraine can speak fluently in dozens of languages. It takes time—but Ishtu knows, we have enough of that.”

Carver saw now, though he had taken it for granted before, why everyone in Shorraine seemed to know English thoroughly. They had studied it over the radio, as they had studied all other modern languages. They had probably spoken it longer than Carver himself! Like that Greek, Proxides, who had been born a thousand years before the rudiments of the modern English language had been set down! Everything in Shorraine was topsy-turvy. It was all queer, queer!

“I suppose it’s been interesting in a way,” remarked Carver. “Living on and on, learning many more things than normal humans ever have a chance to. But which would you rather have—this life or life on Earth?”

THE visage of Val Marmax suddenly unmasked itself as an incredibly old, senile, wearied face behind its ageless lines.

“Earth!” he said instantly, his eyes glowing. “We would welcome release from this deathless prison. I have lived twelve thousand years in Shorraine. I would exchange it for 12 years of Earth life. Life is a meaningless Purgatory here. Immortality is ashes. Twelve years back on Earth would be fuller, richer, grander—” He stopped, helpless to express himself. “You will find out, Barry Carver, when you have watched the slow years parade by endlessly, endlessly—”

“I don’t intend to find out,” said Carver rebelliously. “There must be a way out of the Spot.”

Val Marmax’s sigh came from his soul.

“I have chanted those same words for twelve thousand years,” he said. He became suddenly fierce, scornful. “For twelve thousand years I’ve tried—and my science has failed. And you say childishly it can be achieved, as though it were a tent-flap one could toss aside!”

Carver took the rebuke in silence. Beside him, Tom Tyson stirred. “If there only *were* a way!” he murmured. “I’ve only been here twenty-four years. But I’d take a day on Earth for another twenty-four. Even an hour, in a dog-fight against enemy planes, knowing I couldn’t escape them!”

The war! Carver had almost forgotten about it. He jumped up and began pacing. “It’s all so ironic!” he complained in a mutter. “You people would gladly go back to Earth, and Earth could use your great science. Your atomic-energy process, wireless power transmission, chemical food, robot machinery. And your marvellous anti-gravity ships and beam-weapon, in the war! If we had your help, we would *win!*”

Val Marmax nodded. “I have thought of that myself. I have followed your war, by radio reports. What puny guns and methods you have! I could rout an army with ten of my ships!”

Carver whirled.

“Suppose the Spot *were* open!” he demanded. “And you could go out. You would have to choose a side. Which side?” He almost held his breath, waiting for an answer.

“That would be up to the Council,” returned the Atlantide non-committally. “Five of my fellow Atlantides rule Shorraine, but they would call a Council for a decision. The Council would consist

of one member from each kind of race, time and nation. The Five have ruled wisely that way, through the voice of the people."

"Democracy!" cried Carver happily. "You have it here yourself. They would vote to help the Allied Democracies!"

"Perhaps so." Val Marmax's eyes were dull. "But foolish talk. It will never come to pass. Are you still thinking of conquering the Spot, Barry Carver, when I have failed in twelve thousand years?"

Carver felt the crushing force of that statement. His eager thought of Shor-raine's help in the war evaporated, leaving bitterness. He felt Helene's eyes on him and looked at her. She had hope! She seemed to be telling him she believed in him, believed he could do something, against all reason.

Carver's pulses stirred. He faced the Atlantide.

"Just what *is* the Spot?" he asked. "Why is it so impregnable?"

VAL MARMAX spoke dejectedly. "It's a time-warp, in brief. Passing through from the Earth side, all electrons within the countless atoms reverse their spin, which throws them into the new time dimension. But to force the electrons back to their original motion, seems impossible. It involves attaining a high potential. I have tried the titanic powers of atomic-energy, without avail. It is an irreversible equation, apparently, of time—"

"Magnetism!" interjected Carver, thoughtfully.

"What?" asked the Atlantide.

"It must be a magnetic phenomena," Carver related his experiment with the compass, when passing through the Spot.

"Magnetism—compass? What are those?" Val Marmax looked puzzled.

Carver stared, his thoughts whirling. Could it be possible that this master

scientist knew nothing of magnetism?

"How do you generate electricity?" he demanded.

"By conversion of disrupted atoms into pure energy."

"You don't use a generator—an armature, copper wire, magnetic field?"

The Atlantide shook his head, still puzzled.

"Good God!" exploded Carver. A blinding light seared his mind. "*Too much science*, that's your trouble!" he hissed. "You've been playing around with your anti-gravity, atomic-energy and what-not, without realizing there are such simple things as magnetic fields, rotating coils, and plain ordinary two-plus-two! I'll bet the key to the Spot is so simple, you'll cry like a baby when you find it!"

Val Marmax rose in red-faced anger, glaring at the younger man. For a moment he stood thus, haughty, proud, wrathful, in a pose that might have been a picture of a long-distant past, when he and his fellows were lords of civilization. But suddenly he relaxed.

"This magnetism," he asked. "What is it?"

Barry Carver launched into an explanation, and halting though it was, he knew he had put the idea across. An utterly dumbfounded look had frozen on the Atlantide's face.

"Ishtu!" he gasped. "That's it! The vital clue. At my fingertips all the time. If the polarity is reversed, the electrons must spin the other way—"

Radiant with hope, the four looked at one another.

Then suddenly, Carver felt a queer sensation. Something dark and shadowy seemed to be in the room. It hovered over him and darted down suddenly. He felt strangely light-headed, and something was prodding in his mind, like a mental gimlet. It burned, agonizingly, as though his brain were on fire.

Instinctively, he brushed at the shadowy thing around his head, trying to knock it away. His hand felt nothing save a tingling—and the burning, torturing, probing feeling continued.

The other three had been staring at him, frightened.

"Don't think!" barked Val Marmax. "Make your mind a blank. Carver, you're in danger—think of nothing, nothing—"

While he spoke, he ran toward the wall where a row of gleaming switches lay. Carver, bewildered and half-panicky, tried to obey, tried to make his mind a blank. He pictured sheep jumping over a fence. One sheep—two sheep—three sheep— He noticed the burning in his brain lessening.

And then suddenly it vanished altogether. He was free. Val Marmax had thrown a switch, followed by a deep humming sound that seemed to fill the room with an intangible force. The black shadow rose to the roof, and vanished, with a soundless scream.

HELENE was in Carver's arms, then, clinging to him wordlessly. He looked down in her face and saw horror. There was something else in Shorraine, or Shorr, than these other mysteries. He disengaged her gently.

"What was it?" he asked, frowning at the dull ache that remained in his head.

"The demon-people!" Helene murmured.

The demon-people—the city beyond Shorraine—vague snatches of things he had heard failed to dove-tail in Carver's mind. He looked quizzically at the scientist.

"I haven't told you the full story of Shorr," confessed Val Marmax. "Shorr, of course, is a separate world from Earth. It has its own—creatures. We of Shorraine are outlanders, invaders, in that sense. The higher life-forms

have achieved civilization—of a sort. Their largest city is just fifty miles away."

"What are they like?" Carver queried.

He saw the quick looks of loathing in their faces. "They aren't—human in form," answered the Atlantide. He seemed reluctant to continue the topic.

"You mean this shadow-thing was one of them?"

"No. They have definite form. But they have a strange science, tangent to ours. They are able to project astral forms. One of them, the shadow-thing, was sent here to probe your mind—to read it!"

"For what?" Carver was astonished.

Val Marmax shook his head. "I don't know. But I suspect it was to find out what you knew of magnetism. You see, they too have a Spot, connecting with Earth! I didn't mention it before, but Shorr and Earth impinge at two points, according to their axis of rotation. We built Shorraine around the one, but the demon-people kept control of the other."

Carver whistled. "I'll say you didn't tell me the whole story. In fact, only half. This complicates matters considerably. What of the Earth-people who have wandered into *their* spot?"

"Poor devils!" It was Tyson who spoke, somberly. "Having to live, on and on, as slaves of the demon-people. Suicide is probably the way out for many of them."

"The demon-people, I take it, are bitter enemies of mankind?" Carver suggested.

"They are different in all ways," informed Val Marmax. "Their forms, minds, aims, science—everything. If they once had the chance to invade Earth, through their Spot, they would trample down civilization ruthlessly. We must be careful, in our work on Spot-penetration, that they don't steal

the secret. I have this laboratory protected from their astral-spying, however, and we can safely go on."

Carver wanted to ask more questions, still quite hazy about the enemy, but Val Marmax waved an impatient hand. "I will tell you more some other time. Right now"—his eyes were charged with exultant hope—"you must show me how to build a simple magnetic circuit. From that I'll learn about this unbelievable phenomenon—one that has somehow escaped all the science of Atlantis!"

Carver was already rolling up his sleeves. "Where's some copper wire?" He smiled whimsically at the thought that he was going to show a twelve thousand year old scientist, who could blow mountains to atoms, how to make a magnetic needle twist like a live thing.

The following week in his new, strange world, was a busy one for Barry Carver. He spent long hours with Val Marmax, imparting to the scientist all he knew about magnetism. The Atlantide caught on quickly. His trained mind leaped the gaps of understanding at an accelerated pace. In a week, Val Marmax had learned as much about magnetism as it had taken Earth science a century to uncover. Carver was already out of his depth, but continued to help, as laboratory assistant.

CARVER had less time than he wished to spend with Helene and Tyson. The girl particularly. In his eyes, she grew more lovely every day. And for that reason, Carver was almost rude to Queen Elsha, who dropped in the laboratory at almost any odd hour. Carver, alert, began to wonder what game she was playing. She was not the sort to do things aimlessly.

On the third day, she ran across the annoyance of Val Marmax, intent and nervous as he was in his work.

"Elsha, may I ask you to leave?"

She drew herself up haughtily, heavy-lidded eyes insulted. "You forget I am a Queen, Val Marmax!" she purred dangerously.

"Were a queen," reminded the Atlantide tactlessly. "And never mine anyway."

Carver saw her quick, humiliated flush, and had an inkling of her feelings. He almost pitied her. Once proud queen of a great people, in a glorious era, and now a common member of a democratic society, surrounded by an indulgent pretense of her former royal authority. It must hurt—especially through twelve thousand years of memory.

Perhaps she saw the sympathy in his face. She turned to him. "I'll leave. But will you dine with me, tonight, Barry Carver? Sometimes I am so—alone."

At the point of refusing, Carver fell under the hypnosis of her eyes. They were pleading. He was surprised to hear himself say "yes."

She swept her cloak about her glorious figure and left.

Val Marmax shook his head. "She's a queer case," he confided. "She saw much of the destruction of her land, Mu. She almost lost her mind. For a year, in Shorraine, she brooded and even tried suicide. But she came out of it, and since then has created a new empire—of lovers. She has had the pick of men, from the lowest to the high."

Carver glimpsed a dreamy look in the scientist's eye, but said nothing, smiling to himself. The things of Shorraine, if ever the world heard about them, would fill many libraries.

Ushered into the queen's presence that evening, Carver's heart beat faster. She was a dream of brunette beauty, clothed in sheer robes, with soft, strategically placed lights to bring out her loveliest charms. Almost, he retreated.

But again a subtle magnetism gripped him. Perfume mounted headily to his intoxicated mind.

She told him of Mu as they ate, a heavenly land in a golden era. It was a spell of enchantment, with her low, husky voice lulling his senses. A rich, synthetic wine more delectable than any he had ever tasted in Earth, did more to confuse him till he had forgotten all but her witching presence. Dimly, in the back of his mind, he thought of her past, her real age, but it was a lost voice.

The food cleared away, she sat close beside him on the couch.

"Kiss me!" she commanded softly.

Carver gripped himself. "You're a queen," he tried to say casually.

"Not tonight," she whispered. "Tonight I'm a woman—a lonely one. I—"

Carver, leaning toward the alluring lips, caught something in the corner of his eye. A black something. His confused mind tried to snap alert. That black thing was—danger!

With a cry, he leaped erect and pulled from his belt the hand-projector that would spray high-frequency waves through the room. Val Marmax had given it to him, as a protection against astral visitants. The black, formless shadow, about to envelop his head, quivered and puffed soundlessly into the ceiling, passing through matter as though it didn't exist.

CARVER snapped off the instrument. The shadow-things, of all the queer things in Shorr, decidedly appealed to him the least.

Queen Elsha did not seem too disturbed. "It is nothing new," she said. "Sit down, Barry."

"No." The spell had been broken, and Carver realized how close he had been drawn to something unworthy. "I won't be next on your list, Queen Elsha."

She flushed angrily. "You think you

love that Helene child!" she blazed.

"I'm going to marry her," said Carver.

"You prefer her to me, wretch?" It was the Queen of Mu talking, imperiously. "She has washed out eyes, skinny limbs, a simpering smile. What can you see in her, fool?"

"Youth," said Carver, brutally frank, turning to leave. He had one glimpse of her face before he left—a blaze of fury. What was that expression about a woman scorned? Carver laughed, and forgot about the Queen of ancient Mu.

The following day, Tom Tyson brought the news that Carver was to be given an official welcome to Shorraine by its "rulers."

Carver smiled. "After I've been here ten days, picked its number one beauty as my future wife, and started collaboration with its chief scientist!"

"What is time in Shorraine?" murmured Tyson, with a reflective air that betrayed the middle-aged maturity behind his boyish face. "Once, through an error, an Italian of Columbus' time lived in Shorraine for a century before the Five heard of him. His entrance-date, corresponding to 'birth' in Shorraine, was never fully settled in the records."

The headquarters of the Five were contained in the central and highest towers of the city, a combination of palace and business office. Here were hundreds of clerks and administrators, conducting the daily affairs of Shorraine, and its million inhabitants. It was a smooth-running organization, long since brought to perfection, as nearly as man could achieve.

The receiving room of the Five was bare, simple, a symbol of their own cognizance that they did not "rule" Shorraine autocratically. Dressed no different than the rest, the five Atlantides were old, patriarchal in appearance.

Their eyes shone, as Val Marmax's had, with calm, cool wisdom. They looked at Carver as though weighing him on the spot, as they doubtless had so many others in their long past.

One of them stepped forward.

"Welcome to Shorraine!" he said, in the perfect English Carver had come to expect. But he started a little as the Atlantide thrust out his hand in a gesture that likely had never been known in Atlantis. Carver gripped it warmly. Tyson grinned.

"I taught them that," he whispered in an aside.

"Since there is no return from Shorraine," spoke the Atlantide, "you, Barry Carver, were a citizen of our city the moment you arrived. As such, you will respect and obey the laws of Shorraine, and the common good. We are not your rulers. We are a living Constitution, never ourselves deciding the application of fundamental articles laid down ten thousand years ago, when this government was founded. You understand?"

REALIZING there was no stilted formality in this, Carver nodded and then asked, "What of the first two thousand years?"

"Evolution of government," smiled the Atlantide, nodding as though commending the question. "During the building of the city, everyone worked with a will, to found a lasting home. Then came the thought of government. In two thousand years, many forms were tried. At times"—his eyes grew a little sad—"there was even struggle, revolution. Also, for a century, a despot ruled and there was near chaos. He was assassinated, finally. Anarchy, too, prevailed for a while. But the light shone through, and at last we found the happy combination of personal liberty and communal cooperation that prevails today. It has lasted ten thousand years."

"Democracy!" stated Carver.

"It is nearest to that in your time," agreed the Atlantide. "But—superior."

Carver couldn't doubt that, of a form of government that had been matured four thousand years before the Egyptians on Earth had broken away from tribal rule. He realized that if the Spot were conquered, one of Shorraine's most magnificent contributions to Earth civilization would be a perfected model of government, tried by the fire and sword of time. And without dictatorship!

"And now," the Atlantide resumed, "we have been informed of your work with Val Marmax." His grave eyes shone eagerly. "We hope you succeed in penetrating the Spot. In that event, perhaps many of our citizens will prefer to go back to Earth. But some will remain, and there will be intercourse between Shorraine and Earth. We have long awaited the day."

Carver looked at their five faces.

"I think we will succeed. Val Marmax is hopeful." He paused. "There is a great war out there, today, as you must know. Would Shorraine help the side of the Allied Democracies, against the threat of dictatorship?"

"The People's Council would decide." The Atlantide's voice was non-committal, but Carver read much in their glances at one another. "When the Spot is definitely penetrated, a Council will instantly be called. If our intervention in the war is voted upon, the details of ships and armament will immediately be settled."

"Good enough," said Carver.

On the way to Val Marmax's laboratory, in their ship, Carver thought again of the Japanese force he had spied striking into vulnerable Allied territory.

"How soon could Shorraine," he asked, "send out an aerial force?"

"Quicker than you think," Tyson spoke excitedly. "I've been thinking it

over a lot, since you and Val got together. There are at least ten thousand light, fast ships. Mounted with the beam-gun, they'd be a match for ten times their number of Earth ships—at least the World War kind. Top-speed, 500 miles an hour. Can turn on a dime, with gravity-brakes. Beam's range—a mile. Power-source, one cabbage-sized atomic-motor. Fuel, one hatful of sand, lasting 48 hours. How does that stack up with your modern ships?"

"Okay," asserted Carver. "But I'd need more. You can't stop an army with that. You need bombs to blow up and cut off all ground lines of communication and reinforcement."

"All right. How about one thousand ships, big ones, used around here for hauling building material. They could carry all the bombs you could load on the deck. Atomic-bombs—one would make a mountain fold up!"

CARVER grunted in approval. "But how long to turn out all that? The Jap army I want to stop, if possible, will smash through in three weeks."

"Robot machinery," reminded Tyson. "Overnight, practically." His eyes glistened. "Boy, the chance to bring a few more Boches down! You have more than Boches in this war, but the enemy's the enemy. I'll finish up where I left off in the last war."

"If we get through the Spot." Carver was suddenly pessimistic. Perhaps the Spot was impenetrable, and all his hopes built on sand. Was it possible for his simple suggestion of magnetism to unlock the door to Earth, when Shorraine's super-science had battered against it in vain for twelve thousand years? It almost seemed too much to hope for.

It was just a week after Carver's first visit with Val Marmax that the scientist set up his experimental apparatus within the Spot. The giant gates of Shor-

raine were open. Tyson and Helene were there, and Proxides was on guard against beasts, but no others. The general populace had not been informed. Some few watched, idly, from the nearer avenues and windows, unaware of the importance of what they saw.

Carver had helped set up the tripod, upholding the apparatus. A small, powerful electromagnet, keynote of the instrument, hummed as Val Marmax sent power hissing through it from a nearby atomic-generator. The scientist indicated the slow twist of a magnetic needle.

"When it points straight out toward Earth, the way should be open." He washed his hands in the air nervously. "Anything thrust through the magnetic field should reverse the spin of its electrons—enter the normal Earth dimension. Ishtu be kind!"

Finally the needle pointed quivering straight through the Spot, like the finger of Fate. The machine sang as its energies battled the strange time-structure. The space through the field-coils of the magnet turned from blue to soft yellow. The glare of the Sahara? Carver crossed his fingers in hope.

Val Marmax, drawing a breath, tossed a ring of metal through the magnet, out toward the mirage of Earth. They ran to the other side. The ring was not there! The Atlantide lighted a peculiar handflash in whose circle of strange rays the sands of Earth stood out clearly. He played the ultra-light around till suddenly the metal ring leaped into sight.

It had gone through the Spot safely. It rested now in the time-dimension of Earth.

Val Marmax stood motionlessly, then, staring as though he couldn't believe. Carver wondered what his thoughts must be, he who had striven ceaselessly for twelve millennia to accomplish this miracle. The scientist

turned suddenly, to look at Shorraine. It was the glance of a man who sees release from an age-long prison.

Tyson broke the silence.

"If that space was big enough, I'd crawl through right now!" he threatened.

Carver swept Helene Ward into his arms. "You're going to get your church wedding, darling!" he declared. "Any church you want—on Earth!"

"On Earth!" echoed the girl happily.

"I suppose I should wish you two every happiness?"

THEY turned, startled. It was Queen Elsha. They hadn't seen her come up, from the shadow of the wall. She gazed at them a queer mockery in her eyes, as though they were children who amused her. Apparently, Carver thought, she bore him no animosity for their last meeting.

"Thanks, Queen Elsha," Carver acknowledged, but realized that she had not actually given the wish.

Her dark eyes turned interestedly on Val Marmax's Spot-penetration apparatus. "The way is open—to earth!" she murmured. "At last!"

And this sentiment came in a rising murmur that wafted from the towering city at their backs. Up on the wall, Proxides had yelled into his televisor. With the swiftness of light, the news went around the city. Faces began to peer from all windows, roofs, from ships that darted gracefully near. A city of immortals raised its voice in thanks, to a hundred different gods, that the adamant walls of the prison of time had fallen.

Val Marmax gripped Carver's hand.

"You showed me the way," he said with frank honesty. "It is done. The time-warp can be simply negotiated back to Earth."

"I want ships to go through the warp," said Carver, practically.

"Armed ships, to help my side in the war—our side. Can you build some kind of large magnet for that purpose?"

"No, there is a better way," returned the scientist thoughtfully. "I'll have individual units made, spraying out the magnetic force, to be mounted at each ship's prow. They will sail right through the Spot, then, into the Earth dimension."

"Good!" Carver was jubilant. "But work fast. A fleet of ships must leave within two weeks. Every minute counts!"

The scientist smiled. "I have lived for twelve thousand years. Now, suddenly, every minute counts! It is as though Fate's threads had all suddenly gnarled. Strange! But I'll work out the individual units tonight," he promised. He went on a bit proudly. "Your science gave me the key I needed, but I will in one night work out what any of your scientists would take a year to devise."

"Can I help?" offered Carver.

"No, but I think Helene can. She knows shorthand. She has helped me before. I'll dictate all data, specifications, and plans for their manufacture to her. Tomorrow, the factories will begin turning them out."

Carver suddenly whirled, jerking out his high-frequency pistol. He sprayed its forces over the Spot apparatus. A black shadow that had been slinking around its contours swirled off into the sky.

"An astral spy!" exclaimed Val Marmax. "The demon-people are trying to steal the secret. We must be on guard. My laboratory is protected from them. But tomorrow, when we begin manufacture of the units, we will have to guard the factories." His face was pale. "Better that we never had found the way than that the demon-people should invade Earth!"

Barry Carver spent a busy evening.

First he went to the Five, informed them of the experiment's success, and asked for the Council on war. They readily agreed to call it the following day. Then, with Tyson, he had written down tentative plans for a war fleet, to be presented to the Council. When Tyson left, Carver called the laboratory. Helene's sweet face ghosted into the visi-screen.

"Busy, darling?"

"Yes, but happy!"

"I keep worrying about those damned black shadow-things," Carver muttered. "Are you sure you're safe there?"

"Perfectly!" assured the girl, half chidingly. "Val Marmax has taken the added precaution of having his whole laboratory surrounded by guards armed with beam-guns, in case the demon-people tried to spy around in person. Now don't worry, and get some sleep. You've been driving yourself too much all week."

CARVER hung up with a restless feeling. Now that events were coming to a climax, his mind seethed with vague fears. He stepped out on the balcony, looking over the city of mystery. It lay like a tinsel fairyland, in its own towerlights, incredibly beautiful, age-old, weird. He looked up. There was no moon in Shorr's skies, only a firmament of strange, fiery stars. Perhaps the native people of this world had charted them into constellations of their own. His hand unconsciously gripped the butt of his wave-gun as he thought of the demon-people, and their eerie astral wanderings.

He heard the buzzing of his visi-phone and went to answer it. The face of Elsha, Queen of Mu, greeted him.

"Barry Carver," she pleaded, "I want to see you. It's important. Please come over right away."

"No!" snapped Carver.

She argued, and all the while her eyes

were on his. He tried to fight their influence but again a subtle hypnotism cast its spell. Agreeing finally, he reflected vaguely, as he went to the ship terrace, that mere man could not fight the magnetic allure that the woman had built up in twelve thousand years of practice. But he promised himself savagely that he would tell her once and for all to give up the chase. Pointed insults would repulse even her.

He stepped into the witchery of her presence, and the straight-laced words he had thought up came out haltingly. She smiled through it all, though he sensed the suppressed fury behind her lidded eyes.

"All right, Barry Carver, I understand," she said calmly. "I drink to your happiness—with the woman you choose."

Carver did not think of her odd use of tense in the words till he had drunk half his glass, in relieved courtesy to the toast. He set the glass down.

"What do you mean—choose? I have chosen already."

He glared at her, but suddenly his eyes swam. His brain reeled. He staggered to the couch, almost falling. Elsha was close now, peering into his eyes—waiting. The thought hammered in Carver's mind that the drink had been drugged.

"The woman you—chose!" repeated the Queen of Mu. "And you choose me. You love me, Barry!"

And suddenly it was all clear to Barry Carver. He loved her, the Queen of Mu. Of course! She was a glorious, desirable woman. How had he ever thought Helene Ward was the one? His head sank to her shoulder. Babbling words of devotion came from his lips. His voice seemed to come from somewhere outside of him, from a vast roaring distance.

Then hers, though in his confusion he could scarcely understand what she

said. "I will be queen again! A queen needs a king beside her on the throne. You will be my king, Barry, beloved. More than any other man, in twelve thousand years, you are my choice. We will rule Shorraine, you and I, even after the Spot is opened. They have promised me that."

Carver's head came up, dizzily. "King? Rule?" he mumbled. "I don't—understand." Dim instincts of warning worked within him. He staggered to his feet.

"Yes, go now, Barry," she said. "Go back to your room and sleep. Tomorrow, it will be clearer to you. You will come to me in the morning."

MUTTERING, Carver stumbled to his ship. Elsha's servant quietly piloted him back to his quarters. In bed, Carver's thoughts were a dizzying turmoil. He was sure of only one thing—that he loved Elsha, Queen of Mu!

He awoke with a hand shaking his shoulder frantically. It was still night, with dawn about to break. Tom Tyson's boyish face, aged now by some urgency, peered down at him.

"Get up, Barry!" His voice was hoarse. "Something's happened. I just got the call from Proxides, and came over to take you along."

"What happened?" demanded Carver, fully awake.

Tyson's lips worked. "Val Marmax is gone! Taken by force! By—"

"Yes?"

"The demon-people!" Tyson's young face looked haggard.

Carver dressed hurriedly, and in a short while their ship descended to the great gate's parapet. Proxides came forward, nursing an arm whose bicep was a torn, bloody mass that he had hastily bandaged.

"Just touched me as they went by," he growled. "Jove curse them—"

Carver stopped his flow of Greek invective. "The whole story, from the beginning!"

"I saw the ship slant down to Val Marmax's laboratory. I seldom sleep at night; time enough in the day. It landed on the roof. A few minutes later I saw a flash of a guard's beam-gun, on the roof. The ship swung up, and some blasting force from it laid the guards out like sticks. As it slanted past me, I took a pot-shot at it, and got this." He touched his arm. "It was the demon-people. I saw their devilish eyes."

"But why didn't you sound the alarm when you first saw the ship?" groaned Carver. "And the guards—they let them get into the laboratory!"

"It was Queen Elsha's ship!" returned Proxides.

Carver gasped, looking at Tyson.

"That's the only reason they succeeded," said Tyson. "Queen Elsha is allowed to go anywhere she pleases, at any time, without question. She has always done so. *She must have helped them!*"

Confusion rose in Carver's mind. Could she have done such a traitorous thing, leagued herself with the demon-people? And last night—had she drugged him, perhaps to make sure he wouldn't interfere with the abduction? It was a horrible indictment against the woman. He was unwilling to believe it.

"There's one other thing, Barry," Tyson spoke slowly. "Helene—was taken too!"

Carver shook. For a moment he stood stiffly, conquering a wild rage. Then he motioned to the laboratory. They descended to it. On the roof lay the bodies of the slain guards, bloodily torn as though by some internal bomb. Tyson explained, from what he had heard, that the demon-people's weapon was a telekinetic disrupting force.

Down below, they found a group of bewildered guards conversing. The laboratory was a ruin, obviously blasted by the force-weapon. Not one scrap of Val Marmax's scientific labors on the Spot-penetration was left. The guards' story was the same as that of Proxides. No one had bothered to watch who or what came out of Queen Elsha's ship, in the darkness of the roof. Suddenly they had heard noises, screams. By the time they had arrived, from their various posts, the ship was gone, the damage done.

"IT'S all plain," muttered Tyson. "Queen Elsha led them below. They worked fast, secretly. And now the demon-people have Val Marmax in their hands. They'll force the Spot secret from him—invade Earth!"

"Come on!" cried Carver. "We're going to see Queen Elsha about this."

"If she's there," said Tyson. "She may have gone along with them—"

But they found her in her apartment, weeping loudly. Even her tear-strained face was incredibly beautiful. On the floor lay her servant, in a pool of blood from his own shattered skull.

"I know something terrible has happened!" she sobbed. "An hour ago the demon-people came here and took my ship. They killed my servant, tied me." She pointed to strips of silk on the floor. "I just worked free. What did they do with my ship?" She stared at them with innocent apprehension.

The two men looked at one another. If it was acting, it was magnificent. Tyson's lips writhed.

"Pretty thin alibi, Queen Elsha," he snapped. "You know very well that Val Marmax and Helene Ward were abducted, guards killed. You were there!"

The woman gasped, as though the news stunned her. Then she rose with outraged dignity. "Dog! How dare

you!" she spat at Tyson. "Did you see me there? Did anyone see me there? How can you make such unfounded accusations!"

Tyson growled. "Yes, some of the guards saw you!"

Carver waited to see the effect of the bluff, for any guards that might have seen her were dead. For himself, he was in a quandary. He had seen no sign as yet of guilt in her words or attitude. She might be the picture of innocence she presented.

Queen Elsha tilted her face haughtily, ignoring Tyson. She turned the full power of her glorious eyes on Carver. "Barry, this boy is insulting me. But you aren't suspicious of me, are you?" She held out her arms. "You haven't forgotten last night—kiss me, Barry!"

Carver made no move, except to shake his head. "Last night—what a fool I was!" he murmured.

For the first time, the woman's eyes showed perturbation. "But you love me!" she declared.

"No," denied Carver. "I don't know what kind of drug you gave me last night, but I know that the effects have worn off. I—"

He was interrupted by a sharp cry from Queen Elsha. Her hand went to her mouth and she fell back a step. Some violent emotion worked within her—disappointment, frustration, then hysterical rage.

"They tricked me!" she raved. "They told me it would last for years—forever!" She was sobbing again—genuinely, Carver sensed—and rapidly going to pieces.

Carver leaped forward, his own face working. He grasped her by the shoulders and shook her. "Who's *they*—the demon-people? Out with it, woman, or I'll—" He raised his hand threateningly, determined to get the truth out of her.

She didn't wince at the gesture.

Something else forced her to speak, within herself. "Yes, the demon-people! Oh, what have I done?" Her tones were almost a shriek.

Carver forced her back on the couch and slapped her face lightly. "No hysterics," he ground out. "Why did you do it?"

Composing herself with an effort, she looked up at him.

"For you!" she murmured unhappily. "And for my—kingdom! I wanted you from the first, Barry. No man, in twelve thousand years, has ever stirred me more. And your resistance, your scorn, drove me—mad!"

SHE swallowed and went on, in a dry defeated voice. "They came to me in astral forms. I made a bargain with them—for a love-philtre! The demon-people have a strange science, almost a sorcery. The philtre would give me your love. And in return I would help them abduct Val Marmax. Also, I was to help them conquer—Shorraine! Among the men who man Shorraine's defenses, I have many devoted—friends. They would do my bidding, let the demon-people's ship past, to attack the city. In return for that, after the conquest, I would be made Queen of Shorraine. Even later, of part of Earth!"

Carver listened with incredulous amazement. Monstrous bargain! Yet dimly he could understand. It had rankled in her mind for twelve thousand years that she had once been a queen. And she had never before been balked in love, most likely. In a mad moment, she had seen the chance to attain both her desires, bargained with the enemy, sold out her people with cold-blooded indifference.

"Good God, woman!" groaned Carver. "Do you realize what a horrible thing you've done? I don't know much about the demon-people, but you've

given them the chance to invade Earth. If they worm the Spot secret out of Val Marmax and then kill him, we won't even have a chance to warn the outside world!"

The proud Queen of ancient Mu hung her head. "It was madness!" she moaned. "If I could only undo it!"

"Too late now," growled Tyson. His eyes reviled her. He turned to Carver. "Something has to be done."

Carver was pacing the thick rug, frowning in thought. "There's only one thing I can see. Attack the demon-people—now! Stop them from going on. Destroy them completely if possible!"

Tyson shook his head. "Afraid it wouldn't be so easy, Barry. They're well armed, the city fortified. Shorraine has had battles with them before, trying to rescue the poor souls they've enslaved, arriving through their Spot."

"But surely the science of Shorraine is superior to theirs?"

"They have their own weapon and ours!" returned Tyson gloomily. "Through the centuries, they've managed to steal scientific secrets, with their damned astral spying. They even have robot machinery, modeled after ours. In a drawn-out war, they'd have the superiority of numbers, too. We *might* win, though, even against those odds." He shrugged fatalistically. "I suppose it's the only course left."

"Wait!"

Carver whirled on the Queen of Mu. "When are they supposed to attack Shorraine?"

The woman looked up spiritlessly. "Tomorrow."

"And they don't know—" Carver suddenly jerked out his high-frequency pistol. A black, shapeless shadow had slithered into the room. It puffed away with its peculiar telepathic scream as the wave-gun hissed.

"They must be suspicious," resumed Carver. "But they don't know that Queen Elsha has told her story. Shorraine will meet them tomorrow with full force. Let them wear down their forces a little, attacking. Then Shorraine can attack." He went on rapidly. "In the meantime, you and I will go to the demon-people's city!"

TYSON stared. "We'll be killed or captured. What—"

"Queen Elsha will take us," Carver said tersely. "As converts, friends to their cause, or something. Anything, just so we get into their city safely. We have to try rescuing Val Marmax, and Helene!"

It was a wild scheme, Carver knew, but every moment that Val Marmax was in their hands counted against Shorraine—and Earth. And Helene—he wouldn't have a moment's peace till he saw her again, stood at her side, no matter under what circumstances.

"I'm game," Tyson said simply.

"Will you do it, Queen Elsha?" queried Carver. "Get us into their city on some pretext?"

She started as though coming out of a worried dream. "Anything you say, Barry," she agreed tonelessly. "Anything to—atone!"

Before the Five, a short time later, Carver gave the full details in brief phrases. The alarm had rung through the city, over the abduction, but none had known the full story. The Five looked with terrible scorn at Queen Elsha and she shrank visibly.

"Elsha," said the spokesman, "you have done an incalculable harm. Five hundred years ago you fomented a minor revolution among your—friends. You gave a promise afterward never to again raise trouble, which you've broken now. Your punishment—"

"Never mind that!" snapped Carver. "Now that it's done, the important

thing is stopping the enemy. She has to take us into their city. We'll do what we can to rescue Val Marmax. In the meantime, protect Shorraine from their attack tomorrow. And then attack them—whether we come back or not!"

The Atlantide nodded. "We will have the Council place us on an immediate wartime footing." He glanced at Carver. "You are a brave man, Barry Carver. We wish you luck, for your own sake as well as for the good of Shorraine—and Earth!"

A few minutes later the craft bearing the three soared up and darted over the spires of Shorraine. Wild looking land, unearthlike in aspect, flew beneath them. Strange slinking monsters crept in the shadows of mushrooming vegetation. Far in the distance, once, they saw the hulking shape of some earthly dinosaur. Carver shuddered. Shorr was a forbidding, depressing world. Small wonder that the immortals of Shorraine would eagerly leave it, at the price of death.

Phoryx, the city of the demon-people, climbed over the horizon like a black, cubistic monster. Copied partly from Shorraine's slim grace, it was a twisted parody, as though insane minds had been the architects. The building material was all of blacks and hideous blues and purples. The demon-people likely saw lighter colors only as greys.

When they had approached within a mile, Tyson brought the ship to a halt, hovering on its anti-gravity plane.

"We're liable to get shot down if we go any closer without being expected," he explained.

Carver saw a black astral shape materialize over their heads. Queen Elsha shook her head as he was about to draw his wave-gun. She was more composed now, and waited calmly as the mysterious thing settled about her head, like an intangible vampire.

She seemed to listen for a moment

and then spoke aloud. "I wish to see Sha-tahn. It is important." Again a pause. "They are friends of mine—and of Phoryx. I have a plan, relating to them, for Sha-tahn to hear."

THE astral body hovered for another moment and then darted up from her head. It floated to the prow of the ship and moved forward, as though guiding the way.

"Follow it," the Queen of Mu said to Tyson. "It is well so far. We will have an audience with Sha-tahn, ruler of all the demon-people. I'll contrive to find out from him where Val Marmax is kept prisoner."

"And Helene," added Carver. He looked at her grimly. "We're taking a big chance with you, Queen Elsha. If you try to betray us—" He patted the heat-gun in his belt suggestively.

Tyson took a breath and moved his levers to follow the astral guide. It led them slanting down to an immense building facing a great gate of dull metal. The other Spot! Through it, if they had the chance, the denizens of Shorr would swarm, toward Earth.

They landed on the roof. Carver noticed with a wry grin that the building's several towers all leaned. Poor structural engineers. Their ghostly guide led them into the gloomy interior. The halls were so dimly lit that they could barely see their way. The demon-people hated light, Carver conjectured. He saw several dark forms, solid ones, but couldn't make out their shape. He hadn't as yet seen one of the enemy and wondered what they'd be like.

They finally brought up against a corrosion-stained metal door. The astral being went through but the visitors had to wait till it opened. The chamber beyond was more lighted and Carver strode in, with the feeling of walking into a lion's den.

He stopped short after a few steps,

his lower jaw dropping. He stared at the creatures gathered in a little semi-circle. They were satyrs! The satyrs of mythology, with furred bestial bodies, hind hooves, arched tails. From the waist up they were faintly human, with manlike arms, hands and shoulders. The faces were satanic—pointed ears, flaring noses, protruding jaws and lips, and tiny horns at the temples. Repulsive, alien, inimical.

Carver would have been less surprised to see creatures with five legs or two heads. But satyrs, out of the pages of mythology—coincidence or not? He felt himself at the verge of a blinding revelation.

He tore his eyes away from their gargoyle countenances, to look around. His heart leaped as he saw Helene, at the side, held firmly by the arms. She called his name, but he had to ignore her, playing his part. He tried to tell her with his eyes that he was supposed to be a renegade helper of Queen Mu in the plot against Shorraine.

Queen Elsha, playing her part, spoke: "These are two men who have grievances and will help fight against Shorraine."

One of the black-skinned satyrs, set off from his fellows by a mitre-like hat, leaned forward in a carven seat, rolling his redly gleaming eyes over them. He smiled slowly. It was evil incarnate.

"You lie!" he stated, in hissing English. "I read your mind, before, with my astral projection. We are masters in such things. The big man is Barry Carver, here in the attempt to rescue Val Marmax!"

SO suddenly and completely exposed, Carver's instinctive reaction was to jerk out his heat-gun. But two of the demon-beings had already leaped like deer and wrested it out of his hand. Then they held his arms in viselike grips. Tyson was similarly disarmed,

beside him.

Queen Elsha stood in mute dismay. Carver saw that now, clearly, she understood how she had been duped and led on by the enemy, to her own undoing.

The leader of the satyrs thrust his brutal face forward.

"I am Sha-tahn," he announced, "ruler of Phoryx. These are my lieutenants"—he pointed down the line—"Zoroaster, Belial, Beelzebub, Python, Asmodeus, Merizim, Apollyon, Astoroth, Mammon. You have heard the names before, Earthman?"

Carver gasped. Those were the names of all the evil "gods" in man's religious history. And Sha-tahn—was that *Satan*! What mad riddle was this, more baffling than anything else in Shorr?

The satyr ruler answered, in part. "We have been able to project our astral images into Earth—by a psychic science you would not understand—and in some manner sway the lives of men, in the past. But soon we will sway them completely. You, Barry Carver, have made it possible, with the secret of magnetism. Look!"

He swept an arm and some of the satyrs stepped back. Beyond them, as Carver peered closely in the dim lighting, he saw Val Marmax for the first time. He reclined on a couch, eyes closed, breathing slow. Around his head, almost obscuring it, was an astral-shadow, pulsating like a mental leech feeding. And it was! Nearby, scribbling busily on thick slates, a dozen satyrs recorded the telepathic messages from the astral prober.

Carver lurched forward angrily, but the satyrs held him back. He realized what they were extracting from Val Marmax's mind—the secret of Spot-penetration!

Suddenly the satyrs stopped writing. The astral shadow vanished as one of

them punched a switch on a panel. Val Marmax sat up, dazed. Agony leaped into his eyes, mental agony. He spied Carver, started, and then shook his head.

"They have the secret, Barry!" he groaned. "I tried to resist—" He began sobbing brokenly.

"Yes, and from the girl we have already extracted another secret," spoke Sha-tahn, "relating to the Earth war—that a Japanese army marches to the Indian sea!"

Carver jerked. Did these devils—literal devils!—plan to help the Dictatorship Coalition?

Partly reading his thoughts again, Sha-tahn nodded.

"When we have penetrated the Spot, we will smash all opposition to that army. We will bring victory to their side, helping in other campaigns. It will be an easier way to gain dominance of Earth—our long-awaited aim. We will bargain with the Dictators and become Earth's new—religion!"

He was leaving much unsaid, Carver sensed. Something unspeakably horrible lay behind his matter-of-fact plans. Rage shook Carver. "You have no right to meddle in Earth's affairs!" he shouted. "You don't *belong* in Earth!"

Sha-tahn grinned evilly. "We have had more to do with Earth's affairs than you know. Have you ever heard of a man possessed of the devil? Possessed of our astral projection! Many of your conquerors of past history were guided by us, in that way. But they always fail, at the last. This time, they won't!"

He waved his arm to another dark corner of the chamber. Carver saw a line of men, humans, standing stiffly. Their eyes were wide, unblinking, lips straight, features emotionless. A word flashed in Carver's mind—zombies! Mindless, dominated creatures—possessed of the devil! Poor unfortunates who had staggered through the Spot

from Earth into evil Phoryx.

CARVER'S eyes flicked down the line and then stopped on one figure. Angular face, lick of hair over the forehead, small mustache—Hitler! No, he must be wrong, mad to think so! He looked again and knew he could not be mistaken. Carver staggered in the realization. The demigod whose assassination had precipitated the great conflict on Earth—alive here in Phoryx! Madness!

Then Carver remembered the peculiar circumstances surrounding the former dictator's assassination. His plane, flying over the Sahara on a visit to newly gained African colonies, had been attacked, shot down, in a deep-laid assassination plot. But when the wreck of his plane had been located the next day, all bodies were accounted for except his! Obviously, he had survived the crash, staggered away and reached Shorr, exactly as Carver had.

"You see?" said Sha-tahn. "I have military Earth minds for leadership in the campaign, to bring about a smashing victory for Dictatorship. Beside the man you know stands Genghis Kahn, from the past, who, unknown to your history, was exiled to the desert and reached Shorr. And those others—generals and conquerors all. They will rule Earth, and we of Phoryx will be its—religion!"

Carver's mind rebelled. It was all such a frightful maze, involving Earth's past, present and future. Phoryx, a literal hell, whose spawn of evil would soon burst out over Earth like a poisonous tide!

And, in the final analysis, Carver himself was to blame.

"But enough!" barked Sha-tahn. "Take the prisoners away. We will check the Spot-penetration data. If it works, they will be killed. We will have no more need for them. They are

dangerous alive." He turned. "As for you, Queen Elsha—"

"You deceived me!" she shrilled. "You told me the love philtre would give me his devotion till the end of time. Its effects were over the next morning. That is why I betrayed you!"

Carver had to admire her sudden defiance, in the face of a probable death sentence.

"Rash creature!" said Sha-tahn calmly. "I wanted to test you. I can make the philtre to last longer—weeks, years. I will give you another chance, Queen Elsha. Go back to Shorraine and reduce its defenses. It must still be destroyed."

The queen's manner changed instantly, from fear to wild hope. "And Barry Carver will then be left alive—for me?" she demanded.

The being known as Sha-tahn hesitated and then nodded, but with a hidden mockery in his eyes that Carver saw. He thought of warning the queen against trusting a—devil. But he shrugged. He knew the queen's treacherous nature wouldn't listen to reason. Besides, it wouldn't make any difference to him, in any case.

The Queen of Mu looked at Carver, with a rapt, eager gaze. Then she whirled, on her way back to further betrayal of Shorraine.

"Witch of hell!" hissed Carver.

Queen Elsha stopped, glanced at him once, then went on, leaving the room.

Carver looked around. Was it hopeless to think of escape from these fiends? He caught Tyson's eyes, saw the question in them and the spirit of daring. They had come in the attempt to rescue Val Marmax, against odds. Why not try it now? Carver winked slightly.

AS their captors pulled at their arms, to conduct them away, Carver braced his feet and jerked free. Tyson

did the same and the two launched themselves at the guards holding Helene and Val Marmax. Carver jabbed at the nearest satyr's ugly face, evading his clutching hands, and was grimly satisfied to see him rock on his heels. Then he swung from the floor and knocked him cleanly off his feet—or hooves.

"Take that, you black—" The crack of Tyson's hard fist on an unprotected chin supplied the rest. Tyson continued to revile them, punctuating his words with lightning jabs.

The satyrs fought back clumsily, crowding around. They were inordinately light, despite their bull-like build, and knew nothing of the art of fist-fighting. Squealing and shouting, they milled about, exposing themselves to stiff-arm punches that made their necks snap back.

Carver felt a grim pleasure as his powerful blows found their marks. Human brawn was decidedly superior to the demon-people's futile efforts. With their sudden, unexpected onslaught, the two Earthmen were able to clear the space around Val Marmax and Helene.

"Come on!" panted Carver. "To that side door—" He grabbed the girl's arm and leaped in that direction.

"Look out—guns!" screamed Helene.

Some of the satyrs had drawn wicked looking tubular weapons and were aiming them. Then Sha-tahn's bull-voice roared out:

"No! Take them alive!"

Carver had not stopped running. Just as he had figured, they would be safe from weapons. Sha-tahn would not kill them before he was sure the Spot-penetration had been solved.

The four Earth-people reached the wide, open doorway and dashed through into the corridor beyond. Carver had no idea where it led to, but they must keep their freedom and hope for a

break. When they were half way down the hall, figures came at them from ahead. But human figures!

Dull-eyed, moving stiffly, they blocked the passage. And from behind came the sound of hooves beating against the hard floor, in pursuit. Caught!

Carver peered narrowly at the men blocking the way. Slaves of the demon-people, they were. But they were humans behind it all. "You men!" he barked at them. "Help us!"

They did not answer, hardly seemed to hear. They had the look of hypnotized automatons. They made no move to clear the way. In fact, they crouched forward menacingly.

"Surely you'd help us rather than your masters!" raged Carver, but they stared stupidly, uncomprehendingly.

"No use!" cried Val Marmax. "Their minds are enslaved!"

"Then here we go through them—" Carver lowered his head and charged, Tyson following promptly. There were six of them but they offered little competition to the two berserk fighters. By the time the satyrs had come up from the rear, their party was through.

"Poor devils!" panted Tyson. "Hated to hit them. Like striking dumb animals."

They ran fleetly down the dim hall, with the satyrs close on their heels. A large circular chamber opened before them, with several cross corridors leading out again.

A satyr stood at the wall, speaking into one of a series of small horns set among numerous studs and switches. From the several corridors, at the same time, came more of the mind-dominated human slaves. Carver's mind, sharpened by the danger they were in, clicked with lightning inspiration. He leaped at the lone satyr, who turned with a snarl, and rammed his fist against his chin with all the power of his shoulders.

The satyr slumped against the wall and sagged like a stuffed dummy, his head lolling from a broken neck.

THEN Carver thrust his face before the same horn into which the satyr had been speaking. "Stop!" he yelled. "Do not harm the Earth-people!" Exultantly, he saw, out of the corner of his eye, that the men rushing at them had obediently stopped. They were under his control, through an amazing instrument that somehow ruled their minds!

Thus, when the satyrs came up, they were met by their own slaves, in battle, as Carver rapidly gave orders through the horn. Tyson yelped in pure joy. "That's holding the fort, Barry! Now, if we can find a way—"

He stopped and choked.

Carver whirled and saw something black and tenuous around his head. One of the astral shadows! Then three more darted down from the roof. Carver reached for a wave-gun that wasn't there in his belt, and then tried to beat off the shadow that crouched down on his head. His hands passed through the astral shape, unhindered.

And then he felt his brain on fire as something dug into it with mental fingers. Helene and Val Marmax stared at him in hopelessness. They could not fight off that which had no physical being, nor could they shake their minds free. Carver tried, with all the will at his command, till the sweat started out on his brow. But the weird psychic force threw a suffocating cloud over his mind. He relaxed, numbly.

Sha-tahn's voice came to them, through the astral contact, with the sheer clarity of telepathy. "You have amused me in your efforts to escape. I've used the astral force as a last resort. You will not escape Phoryx. Go now, to your prison."

Under the dominance of the astral

force, which firmly gripped their centers of will and locomotion, the four captives stepped into one of the corridors. Like robots they marched along, with the black shadows perched over their heads like incubi. Carver felt the bitterness of defeat. He tried to step close to Helene, touch her hand comfortingly, but even that was denied him. Phoryx, he realized, was truly a—hell.

Imprisoned together the four humans looked at one another in despair. Val Marmax sat with his head bowed. Tyson strode up and down, cursing under his breath. Helene shuddered in Carver's arms. He mechanically patted her back, but his mind was elsewhere. It seethed tortuously with the incredible revelations of Phoryx, city of hell.

"I can't believe it!" he muttered. "Have these demons been behind all the devil-worship and mal-practice in human affairs since history began?"

Val Marmax nodded.

"Their science has delved deeply into mental phenomena—telepathy, telekinesis, astral projection, clairvoyance. They were able to reach men's minds, even through the Spot, and play havoc at times. The Babylonian devil-cults, pagan religions, Medieval supernaturalism, your own Salem witchcraft debacle—all were manifestations of their intrusion into Earth's affairs by their psychic science. The alchemists, astrologers and other pseudo-scientists often worked under their domination. The love-philtre, with which they bribed Queen Elsha, is a strange formula of theirs somehow able to upset human emotions. Evil by nature, they can only think of creating evil on Earth."

"IT'S a sort of scientific explanation," mused Carver, "for all the unexplainable things in human history." He thought of something. "They're perfect satyrs of Greek mythology. What's

the connection there?"

"They once invaded Earth directly," the Atlantide admitted. "Some unknown genius of theirs penetrated the Spot, about three thousand years ago. Some hundreds of them went through. We of Shorraine attacked, blew up the machine and its inventor with it. Those in Earth tried to build up a great pagan religion, but it died when they died, and survived only as mythology.

"But no bones of their have ever been found," objected Carver.

"Their bones don't ossify," returned the scientist simply. He went on. "All other tales of vampires, ghosts, gnomes, specters, demons, genii, and various supernatural monsters are a result of their astral projections roaming earth, in strange shapes and forms."

"But what has been their purpose?" puzzled Carver, trying to rationalize. "It seems rather—pointless."

"Pointless?" echoed Val Marmax. His eyes went bleak. "Short is a poor world. Earth is rich. They have been trying, all that time, to find some way of making the astral projections gain substance and live on Earth. Earth alchemists and so-called necromancers were unwittingly helping them all the time. It follows closely some of the actual Earth literature about demons in another dimension. Incantations and exorcising were an attempt to gain the Earth dimension through strange psychic-laws our science doesn't reveal. Luckily, it was not so easy to give their astral projections actual Earth life. The closest they came to it was from absorbing freshly split human blood. Hence their instigation of wars—and the institution of human sacrifice in pagan religions!"

Carver felt stunned, nauseated.

The Atlantide resumed. "But the few astral projections who did gain substance died quickly, or were killed. Here in Shorr, their method of repro-

duction is of that type—totally non-sexual. They send out astral forms. These wander over Shorr, absorbing the blood of newly slain animals. Years later they are 'matured'—have substance. But on Earth, they have always failed, since their astral projections through the Spot were weakened. Yet they want Earth. They would even accept its death-cycle, because they could increase their numbers limitlessly—at the expense of human lives."

"So our penetration of the Spot by magnetic means falls right in line with their plans," muttered Carver. "They will invade Earth—in person. They'll multiply, murder off humans—" He stopped, appalled at the stark picture.

He shook his head. "Good God! I brought all this about! Why didn't I die out there on the desert—"

"Barry!" Helene's cool, soothing voice cut off his half fevered recriminations. "Certainly you can't be blamed. If it's anyone's fault, blame Queen Elsha!" She shuddered. "I'll never forget her blazing eyes, there at the laboratory, with the demon-people at her back. She said rather than kill me on the spot, for stealing your love from her, she'd let me be a slave in Phoryx!"

Val Marmax ground his teeth, coming out of his apathetic stupor. "She's more evil," he pronounced, "than Shatahn himself, for betraying a whole world!"

"And now she's gone back to Shorraine," Tyson hissed. "In one way or another she'll weaken its defenses. The demon-forces will attack. With Shorraine out of the way, they'll be free to conquer Earth. Then, with their puppet dictators in power, they'll gradually wipe out the human race! And all because of a woman!"

CARVER said nothing. What could one say of a beauteous creature

who dared all for love? Helen of Troy, Cleopatra, Madame DuBarry, all faded into insignificance beside her. History repeating itself, in the rise and fall of empires. Only this time it might be the final chapter in human history. She had destroyed the most.

But Carver couldn't forget her final glance at him, there before the satyrs. Nor could he interpret it. It had been a strange mixture of yearning, promise, even remorse.

They felt themselves close to madness in their dark prison. It was a dank, stone-walled room, lighted dimly by what seemed to be cold phosphorescence in a ceiling globe. In its feeble rays Carver could see that there was no opening save the door—a solid block of metal. He pushed against it futilely. Barred outside.

"We might as well be at the bottom of a mountain," shrugged Tyson hopelessly.

Hours passed, as they waited for death. As soon as the demon-people had made a successful Spot-penetration, they would come to kill them. Carver too, despite Sha-tahn's mocking promise to Queen Elsha. Carver laughed hollowly at the thought. What a joke on her!

A sound came from the other side of the metal door. They were here now, to kill them! But strangely, the sound was a dull hiss, like the bite of a heat-beam. A spot in the metal door glowed cherry red and finally broke through. Lock mechanisms jangled apart.

Carver sprang forward and shoved at the ponderous door. It swung open and in it was framed—Queen Elsha! Back of her, in the corridor, lay two satyrs, guards whose gaping wounds still smoked.

With the opening of the door, a rush of sound had filled the sealed room.

Sounds from outside and above—dull boomings and the crackle of unleashed forces.

"Battle!" shouted Tyson. "Above the city—"

"Yes, battle!" cried the Queen of Mu, above the bedlam. "Shorraine has attacked. You can escape, in the excitement. Follow me—to my ship!"

Quickly, she handed them each a beam-pistol. Carver stared at her a moment, wonderingly, then took the lead. A black figure appeared at the end of the corridor. Carver fired. Though he had tried the pistols before, in practice, he was amazed at the powerful charge of infra-heat that blasted into the satyr, charring half his body.

Obviously, excitement reigned in Phoryx. Black figures darted down the corridors, not even noticing them. Those that did, and turned, met the harsh blast of heat from Carver's ready gun.

"Up these stairs!" shrilled Queen Elsha. At the head, Carver felt the sinister hum of telekinetic forces past his ear. He rayed a demoniac black face, but another appeared, aiming straight at him with his tubular weapon. A soft hiss from Helene's gun, at his side, charred the black hand that threatened Carver. Tyson's gun spoke from the rear, as a satyr charged up from that direction.

They had gained the roof, then. Three satyrs, peering in the sky, had no chance as five beam-guns belched at once. Queen Elsha's ship lay close by and they ran for it.

LOOKING up, Carver wondered how they would get free of the elemental furies being hurled about there. A hundred flat-decked ships of Shorraine, widely separated, were pouring down a hell of withering rays whose touch turned metal to water. Atomic-bombs, plummeted down, blasting

buildings and filling the crooked streets with jagged debris.

Up from the city, in turn, stabbed equally powerful heat-beams and the humming, invisible telekinetic forces. The surprise of the attack was over. Ship after ship blossomed into flame, or ripped apart and dropped like a stone. It was vicious aerial warfare such as Carver had never seen on Earth.

"Hurry!" screeched Queen Elsha. She grabbed Helene's hand and pulled her to the deck. Carver lifted Val Marmax bodily as the portly scientist stumbled.

Tyson was already at the controls. As the ship rose, three satyrs rushed from below, firing. A section of the deck-rail next to Carver splintered and whirled off. Carver, aiming deliberately, picked off two. The third crumpled as the gun in Queen Elsha's hand spoke.

Tyson yelled a warning to hang on and the ship rocketed up in a wide, weaving arc. Guns roared below them. How many times a heat-beam or telekinetic blast slashed near them they did not know. But at last they were high out of range. Below, the few remaining Shorraine ships kept up their grim attack. Black, round ships now arose from another part of the city, to give chase, but Tyson grinned in derision as he set a straight, swift course for Shorraine. They had enough of a head start to be safe.

"Saved!" breathed Helene. Phoryx, city of demons, dwindled rapidly. They had all crowded together behind the wind-breaker at the prow.

"I guess that's the word," agreed Carver, looking at Queen Elsha. "And I think we have you to thank, Elsha!"

The Queen of Mu seemed suddenly drained of strength. She leaned weakly against the bulwark, her face pale and wan behind its rich olive tint. Carver put an arm around her shoulders, steadying her. He could feel her

tremble at the touch.

"I have in part—atoned!" she said. Her dark, lidded eyes reflected a calm joy. "I fooled Sha-tahn. Back there in his chamber, when he offered me another chance, I took it. But only as a chance to save you, Barry, and Val Marmax!"

Carver knew now what her final glance to him had said—"Trust me!" He felt shame inside of him, for having doubted her.

The Queen of Mu went on. "Back in Shorraine, I went immediately to the Five, told them the story. They thought it another trick at first, but I convinced them. A fleet of a hundred armed ships, Shorraine's standing force, was sent to the attack. But I went first, ahead of them.

"My plan worked. I landed and gave Sha-tahn the 'warning' that Shorraine was attacking, still playing the part of his ally. He did not think to use an astral-prober, in the excitement. Thus, as they set about hurriedly to prepare defenses against the surprise attack, they did not watch me. When the battle started, I made my way to your prison—the rest you know."

SHE drew her breath in a half sob, betraying the strain she had been under when any false move would have meant failure, and death.

"Suicide squad!" murmured Carver, thinking of the brave men going to certain doom. He looked searchingly at the queen. "And you, Elsha—regardless of what you did before, you risked your life to save ours—"

"It wasn't just your lives!" she cried, a little angrily. "I was thinking of Earth. With Val Marmax in their hands, the demon-people had the secret of Spot-penetration for themselves. They could invade Earth, with Shorraine helpless to interfere. That was the issue at stake, burning in my mind

—” Then suddenly her voice changed. “Oh, Barry, I did it just for you—to save you!”

She looked up into his face, standing close. “Kiss me, Barry!” she demanded.

Carver stared, startled. Was she still playing a game, serving her own desires? Hoping to win him by what she had done? Confused, he glanced at Helene and was more perplexed to see her nodding slowly, almost commandingly. He had not seen the glances between the women, nor would he, a man, have understood the signal exchanged.

He bent to kiss the Queen of Mu. Her lips touched his burningly. For a moment they stood together, the man and woman of ages twelve thousand years apart. Then she broke away. “Our first kiss,” she murmured, “and last!”

She moved back. Carver did not realize what she was up to till she stood at the edge of the deck where the railing was torn out. Her raven hair blowing in the head wind, she looked at them all, smiling quietly. Then she leaned backward.

Carver sprang forward with a hoarse cry, but it was too late. Her white-robed body tumbled from the ship, turning over and over as it plunged to the ground, three thousand feet below. Carver turned away, sickened.

A gasp of horror had come from the others. “It was the only thing she could do,” said Val Marmax then. “Death with honor. Her sentence later, for her original crime of betrayal, would have been death anyway.”

Tyson grunted. “She had nerve, if nothing else.”

Helene was weeping softly. “Barry,” she whispered, “let’s think kindly of her. She loved—and lost!”

Carver nodded slowly. His memory of her would be kind. She seemed purified by her last act. For one hour she

had been noble, sincere, self-sacrificing, so that he could forget what she had been for twelve thousand years. They were all silent for the rest of the journey, thinking of the Queen of ancient Mu.

The slim graceful spires of Shorraine brought a surge of joy to Carver’s pulses after the oppressive sojourn in dark, evil Phoryx. A hum of activity rose from the great city, as it prepared for the coming struggle with its age-old enemy. On factory roof-tops, men swarmed about rows of ships, outfitting them for wartime pursuits. Along the city wall’s broad lip, giant anti-aircraft guns were being wheeled into position, against the event of attack.

Carver went directly to the Five, with his party. They were in a large room outfitted with hundreds of flashing television screens, directing the city-wide preparations. But they came forward with eager smiles of greeting.

“You have succeeded in bringing back Val Marmax,” said the spokesman. “Barry Carver, you have done Shorraine—and Earth—a great service!”

“But only with the help of Queen Elsha,” Carver went on to give the details, briefly.

THE Atlantides bowed their heads silently for a moment, at news of her death. “It is not for us to judge her,” murmured one. He looked up. “But now, other problems confront us.”

“Yes,” said Carver grimly. “If the demon-people have the right Spot-penetration data, they’ll apply it as quickly as they can. Earth is menaced. How soon can we attack in full force?”

“Our facilities have been geared to full capacity,” responded the Atlantide. “Turning out guns and mounting them on all ships available. All of Shorraine works on the project, with a will. One-third of our forces will be ready tomorrow.”

row, one-third the next, and the next."

"Then we'll attack tomorrow," declared Carver. He hesitated. "Who will lead Shorraine's forces?"

"You, of course," said the Atlantide matter-of-factly. "We had already decided that, if you returned, after we had looked over your plans for a fleet to enter the Earth warfare. You and Tyson are most versed in aerial battle. Tyson will be your second-in-command. Do you accept?"

The two young men looked at each other. "We do!" Tyson tried to say casually, but it was close to a shout.

Carver turned to Val Marmax. "In the meantime, you will work out the Spot-penetrator units and have the factories turn them out, as we originally planned." Despite the coming war within Shorraine, Carver still thought of the outside war, and the Jap army he hoped yet to stop. The Earth war was larger in scope, more slow. The war in Shorraine promised to be swift, and deadly.

"I'll have some of the units ready in a few days, and will equip all the ships within two weeks," promised Val Marmax.

"One other thing," said Carver. "Have a ship sent out to pick up Queen Elsha's body. She ought to be given a decent burial."

The Atlantide nodded. "It will be done. Her people of Mu will give her burial in their ancient ceremonial manner."

The next morning, as dawn cast a crimson glow over the dark lands of Shorr, the first fleet of Shorraine hummed into the sky, bound on its grim mission.

The flagship rode at the van of 4,000 ships, in rows of ten. Carver looked back at the mighty armada. Concentrated destruction was at his command, more than any other leader in history had ever had. He thrilled at the

thought. But the enemy was strong. How strong he had yet to find out.

But how queer to think of the men in back of him—men from all times and lands united in this venture. There were Egyptians who had fought wild barbarians before Europe was civilized; Indians and Chinese whose dynasties had once been supreme; Persians who had quailed before Alexander's conquest; Romans who had stood in their solid phalanxes; knights who had once jostled and shivered lances; mercenaries who had marched in Napoleon's *Grande Armee*. All alive here, by the queer timelessness of Shorr, to fight together now with the superweapons of Atlantean science.

Did he have a unified fighting force, so important in warfare? Carver was sure he had. He had addressed them all before the departure. They had cheered lustily. Regardless of origins and times, the demon-people were a common enemy. Satan, and all his dark astral forces, had plagued mankind from the beginning. And now, when they might soon ravage out into the world, they must be stopped. Carver knew this burning thought was in every man's breast. They would fight as they had never fought before.

"FROM what I've heard," said Tyson, also sweeping his eyes over the fleet enthusiastically, "this war to the finish, with Phoryx, has been building up for all the twelve thousand years of Shorraine's existence. It just needed an event like the Spot-penetration to light the spark. Barry, this is *history!*"

Carver's lips tightened as the dark outline of Phoryx climbed the horizon. The enemy did not send out a fleet, though they must know of the attack, through scouts. Strategy, perhaps—letting the city's defenses protect itself and saving the fleet for later, when Shorraine's forces were weakened. All

right, thought Carver, it would work both ways. The sooner the city was destroyed, the better.

Two miles in the air, just as the edge of the sprawling mass, Carver barked into his microphone. Radio carried his commands to all the ships. The fleet spread out in a long, curving formation, ten deep, and dived for the city. The anti-aircraft guns below suddenly awoke. Flame belched into the sky. One ship's prow sagged and then the metal burned like paper. Another ship split in half as the ravening telekinetic force blew a hole through it.

The battle was on!

Carver's fleet, at his orders, blasted out with their heat-beams at the bottom of a sweeping trajectory, raking over the nearest line of towers. The hellish force of atomic-energy toppled three of them. Molten metal dripped to the streets. The last line of ships, bombers, dropped their deadly loads. With terrific roars that seemed to shake the whole universe, the atomic-bombs converted their targets to twisted, smoking ruins. Titanic destruction!

Yet at the top of their swooping climb, when the fleet reorganized its formation, Carver looked below and saw that the damage was tiny compared to the city's extent. And he had lost six ships. It would be a long, costly job. . . .

The fleet of Shorraine dived, again—and again. Hours passed while holocaustic energies were hurled between the belligerents. At times, tired of just watching, Carver took the place of one of his ship's gunners. He took satisfaction in running a heat-beam down the face of a building and splitting it open like a pod. Now and then he saw tiny satyr figures running about madly, though most of the buildings had probably been evacuated.

When night fell, Carver called a halt. He looked below. A charred

wedge had been added to the darksome city, but how much remained to be done! And he had lost 500 ships.

"They won't surrender, of course," Tyson said. "We'll just have to batter the whole city down—if we last!"

"Yes, I'm wondering myself," Carver muttered. "But it's all we can do. This is a war of extermination!"

On the second and third days, Barry Carver led out successively greater fleets. He smashed at Phoryx from five different points, working inward. The black cancer of their annihilation crept steadily forward.

"They haven't sent one ship up against us," Carver mused thoughtfully at the end of the third day. "That means they are confident of Spot-penetration and don't care about the city. They are saving their ships for—Earth! I don't think we can destroy the city fast enough to stop them. We've got to get control of their Spot!"

"And that's just where they'll have their main forces concentrated," Tyson returned dubiously.

"We'll have to try," Carver ground out.

HE sought out Val Marmax. The scientist, with a staff of helpers, was busily adjusting a battery of robot machinery.

"How soon will you have the first units ready?" Carver demanded.

"In two days."

"No sooner?" grunted Carver. "We must gain control of their Spot, *on both sides*. When our first ships go out, we can send them to the Earth-side of their Spot—bottle them up. In the meantime, we'll try blocking them on this side."

The attack the next day, concentrated at Phoryx's city-gates, ran into full resistance from the enemy, true to Tyson's prediction. Anti-aircraft guns sent up a terrific barrage that downed

Shorraine's ships like falling leaves. And for the first time, the demon-people's black, circular ships rose to battle.

Obviously, the enemy was determined to hold its Spot. Just as determinedly, Carver hurled his forces at them relentlessly, hoping to smash through. He didn't.

And late in the day, when the aerial battle had been carried high, he saw a line of ships sail low and straight for the Spot.

"They're going through!" gasped Tyson.

The first ship had faded suddenly, entering the area of the Spot enclosed by the great gates. It became a dim shadow and then winked out entirely, as though it had been swallowed up in thin air. One after another, the rest followed. Carver counted more than a hundred.

Tyson looked around soberly. "They beat us to it, Barry. They had a day's start on Val Marmax, since he had to start all over devising the unit, on paper, when he got back to Shorraine. They have the same robot machinery. They beat us to it!"

Carver groaned. "And tomorrow—"

When they sent out their first test ship through the Spot, the next day, it came back hurriedly, with half its prow shattered. The enemy waited out there.

"They have us bottled up!" muttered Tyson. "We can send out only one ship at a time. Suicide!"

"The battle has to be finished here in Shorr!" Val Marmax stated solemnly. He went on croakingly. "And they will outlast us. They are stronger numerically. They can draw recruits from outlying settlements of theirs. We of Shorraine—are limited!"

Gloom settled over them at this inescapable fact. Carver's mind strove for a way out. It was the old axiom of warfare, in a dragged out struggle—

manpower was the deciding factor. Lacking that, what could Shorraine do to swing the tide? They had already lost two thousand ships and twenty thousand men. In another week, their drained manpower would leave Shorraine easy prey to attack. The shadow of doom lay over them like a blight.

Carver turned to Tyson and suddenly asked a queer question. "Have you still got your old flying togs?"

"Yes," Tyson said, surprised. "I put them away carefully when I came to Shorraine. Sentimental, I guess. Why?"

"YOU'RE going to wear them," stated Carver, eyes narrowed. "And I am going to wear mine. Tonight a ship is going to secretly land us outside Phoryx's gates. Tomorrow morning, we'll enter Phoryx—as wanderers from Earth!"

"I see!" gasped Tyson, at the daring plan. "But what can we do—"

"What any other spy or sabotage agent does in the enemy's camp," said Carver grimly. "Work for their downfall." He whirled on Val Marmax. "That apparatus with the speaking tubes, that we saw—do you think it might control *all* the enslaved Earth-people in Phoryx?"

"It likely does!" cried the scientist, a flash of understanding in his eyes. "It would correspond to a telepathic central switchboard. There are about 20,000 human souls in Phoryx, under that domination. If they were freed—"

"Barry!" Ielene threw her arms around Carver's neck. "You can't go back there. I can't let you. I can't!" She clung to him tightly.

Carver spoke gently. "This may hurt, dear, but suppose your father were one of them. He was lost in the desert, too. I have a chance to free these people and help Shorraine at the same time, don't you see?"

The girl fell back, her face wild.

Then she gripped herself and nodded. "Go, Barry!" she breathed.

Shivering in the cold night breeze, Carver and Tyson watched as a crimson dawn splashed over the wild terrain of Shorr. They crouched beneath Phoryx's great gates, where they had been landed an hour previously by a silent, dark ship. In their Earthly uniforms of airmen, they looked the part of men who had just wandered into the Spot from the Sahara Desert. Their faces had been disguised, by skilled touches of cosmetics.

"We'll have to wait at least two hours," whispered Carver. "We're supposed to have seen Phoryx as a mirage, and mirages don't appear too early in the morning."

Tyson nodded, his teeth chattering, though not from fright. Both of them were calm. It was a desperate game they were playing, but it offered one chance of bursting the prison bars of doom around themselves and all Shorraine.

They heard the busy hum of the city, this evil, powerful city which would soon be master of two worlds if fate so willed. Along the curve of the wall, they could see pacing sentries, black satyrs whose hooves clattered loudly on stone. At times they saw scurrying human figures, carrying burdens, doing the bidding of their cruel masters. Carver dug his nails into his own palm. Such would be the lot of all humans if the demon-people won.

High overhead a black ship circled, watching for attack from Shorraine. It would come soon. Carver had arranged for the attack at about that time. The subsequent excitement in Phoryx would increase the two men's chances of accomplishing something without being too closely watched.

But before Shorraine's forces arrived, the huge gates suddenly swung wide.

Carver could peer in at an angle. A line of ships darted from the large building which was Sha-tahn's central headquarters. Carver gasped. Standing stiffly at the deck of the first ship was that familiar figure, with the lick of black hair over his forehead, and the small mustache. Beside him stood the short, squat yellow man, cheek scarred, lips cruel. Hitler and Genghis Kahn, two of history's most ruthless conquerors, and under the domination of a yet more evil nature—Sha-tahn!

THE ship winked out before their eyes, as it entered the area of the Spot. It continued as a ghostly shadow, on into the Earth dimension. One by one, the others followed.

"Another hundred!" hissed Tyson. "And evidently these are being sent out into the world already. Sha-tahn is confident of victory here in Shorr!"

"Let's go!" said Carver.

They straightened up, hugged the wall till they came to the Spot area, and then boldly walked through it, into Phoryx. They simulated attitudes of astonishment and fearful wonder, twisting their heads around.

A satyr came running up. "You are from the Sahara Desert?" he asked in perfect English.

Carver and Tyson nodded wordlessly, as though too astounded to speak. They tried to show as much of stark fear as they could, putting themselves in the place of men who saw all this for the first time.

"You are in Phoryx, city of Shorr, which is another world," explained the satyr briefly. "You cannot escape. You will not be harmed if you do as we say: Come with me!"

The two Earthmen stepped forward, as though too mentally numbed to remonstrate. The satyr walked at their side, watchfully, with a hand on the butt of his gun. It was evidently the

usual method of introducing newcomers to Phoryx, terse and abrupt, without giving them time to think or object. Carver was grimly satisfied to note that they were heading for the great, towered building just opposite the gate, which he knew from the last time to be Sha-tahn's headquarters.

The satyr motioned toward a door and herded them down the dim-lit corridors. What were they being led to? Carver tried to orient himself in the building. Vaguely, he knew that the telepathy-control room was off the ground level and toward the rear. Somehow or other they must get there.

Finally they were taken into a large room. Against one wall stood a large apparatus of indefinable purpose. Two other satyrs looked up, spoke a few words with their captor, and then turned to the machine. Moving levers brought it to humming life. The first satyr motioned to a flat wide bench that lay under a frosty globe.

"One of you will lie down there," he commanded.

"What do you mean to do?" asked Carver, in false terror, playing his part. At the same time he did want to know what the machine was for. "What is this all about? What—" He stopped, swallowing.

The satyr leered evilly, obviously taking their bewildered discomfiture as real, and enjoying it.

"You will be in Phoryx a long time," he promised, licking his lips as though he relished telling this. "But as slaves! You cannot escape it. Be warned that this gun I have"—he drew it—"can blast you to instant death, if you resist. Under the machine, an astral-force will penetrate your brain and lodge in the cortex, center of will, suppressing it. After that you will obey all commands, by word or telepathy, without the slightest power to resist. Now you, the big one, get on

that bench. Or if you choose to die, attack me. We are not so much in need of slaves anymore, as soon we will have all Earth to pick from. Well?"

Carver glanced at Tyson. Once under the apparatus, they were lost. They would be mindless, bereft of will, flesh and blood robots. But on the other hand, they were menaced by a gun whose telekinetic forces they knew only too well as a blasting death.

Carver tensed. It was do or die. The satyr brought up his gun sharply.

SUDDENLY a loud bell clanged in the corridor, and echoed from several other directions. Carver knew it must be the general alarm, that Shorraine's forces were attacking. At the sound of the bell, the satyrs had involuntarily looked around. And at that moment, the two Earthmen leaped.

Carver caught the satyr with the gun in a flying tackle that knocked him off his feet and sent his weapon clattering against the wall. The Satyr struggled wildly, kicking with his hard hooves and curling his prehensile tail around Carver's waist. Carver wasted as little time as possible. He grasped the creature's neck and banged his head against the floor with all the force of his earthly muscles. The satyr went limp, his skull crushed.

Carver sprang up, whirling. Tyson, cursing, was battering away with his fists at one satyr. The other was leaping for the door. Carver grabbed up the weapon in the corner and stabbed at the side button. The gun gave a little kick. The satyr, with a choked scream, went down. The telekinetic charge had torn his throat out. Tyson knocked his adversary with a final uppercut.

Carver stepped to the door and looked cautiously down the hall. Although several satyrs passed in various cross passages, none seemed to notice

what had occurred in the room.

"The attack came just in time, for us," panted Tyson.

"Now's our chance, in all this hub-bub," said Carver rapidly. "If we can find that telepathy room. Let's go. We can walk along the halls as though we were human slaves of theirs, on some errand." He stuck the gun in his belt.

It seemed hours that they wandered through the huge building, though they knew it was only minutes. Minutes that were tense, nerve-wracking. At any moment they might be challenged, apprehended. But luckily because of the bustle of the attack, the satyrs who passed barely glanced at them. The two Earthmen shuffled along with heads half bowed, like the mind-slaves of Phoryx.

They ascended steps and worked their way upward. Somewhere up here must be their destination. Tyson grunted suddenly. "This looks familiar. Yes, this is the hall leading to Shatahn's chamber! The next cross corridor must lead to where we were trapped last time—"

"You're right!" Carver headed down the hall, knowing the way now.

Soon they came within sight of the central room with its many branching corridors. From here, evidently, groups of human slaves were assigned to various duties, guided by telepathic commands. Standing against the wall, Carver could see five satyrs in the room, giving their commands into the row of horns.

"Five—and all armed!" said Carver grimly, moving forward with his gun in hand.

"Wait!" hissed Tyson. "Satyr coming down the hall."

He hurried up, glancing at them, but without suspicion. As he went by, Carver deliberately aimed his weapon. The humming charge cracked the side of his head open. Almost before the body had

fallen, Carver jerked his gun from its holster and handed it to Tyson.

Then, tight-lipped, they crept to the central room.

One of the satyrs, turning, looked them full in the face as they reached the doorway. He shouted hoarsely, pulling out his gun. He fell, his chest torn, as Carver's gun spat viciously. The other four whirled, jerking at their weapons. Two more went down, as the Earthmen fired together. Carver ducked, as a gun swung at him, but felt his left arm go limp as the charge ripped into his shoulder. His return shot was more accurate, and the one remaining satyr died with a strangled gasp as Tyson fired.

THEY had done it! Carver told himself that with a surge of triumph. Now if only the rest would work out as he hoped, and wanted. His lips twisted with the pain of his shattered shoulder, but that could wait.

"Quick!" he barked to Tyson. "Close the doors. Lock them if you can. Then keep watch. Keep them out for the next five minutes, come heaven or hell, while I—"

He stepped before the wall apparatus, looking it over with keen, searching eyes. Under each horn was a series of studs, some pressed down. That must be the "on" position. Rapidly he went down the row, shoving all the studs down. A deep, rising hum came from behind the panel. Telepathic forces of some sort, broadcast through all the city! Attuned in some intricate way to the will-less minds of Phoryx's human slaves! Wild conjecture? No, he must be right—he must!

Carver stepped back, drawing a breath. Then he yelled out:

"Slaves, attention! You are free. Arise against your hated masters. Wherever you are, whatever you are doing, arise—and kill your masters!"

Carver stopped. "Tom," he said fervently, in lower tones, "if you ever prayed before, pray now, that this works!"

Carver repeated the message. Was his voice, translated to telepathic impulses by the machine, impinging in every human slave-brain in Phoryx? Were they straightened up, released from a previous command—free and seething with vengeance? Some of the people must have been here thousands of years. How strong must be their hatred against the satyrs!

Carver forced himself to think more rationally. How much could they do before the satyrs finally destroyed them all? If just enough pandemonium and chaos could be created to let the attacking forces of Shorraine get a foothold, a vantage—

Carver barked out again, stentorianly:

"Slaves of Phoryx! Arise and kill your masters. Take all weapons you can. Those of you near anti-aircraft guns, take them over. Do not shoot the ships of Shorraine. Blast those of Phorox. Those of you near the Spot area converge on the defenses at that point. Take over all guns and positions you can. Shoot down the ships of Phorox. Fight, slaves, fight—for freedom. And for Earth!"

"Here they come!" cried Tyson. The doors which he had closed and locked by a bolt mechanism rang with repeated blows. Blasts of telekinetic force ripped out gaping holes.

Carver aimed his gun at the telepathy-machine's panel and swept its charge down the line, blasting out the studs one by one. His last command to the mind-slaves would be the last they would hear for a time to come. Back of the panel, the throbbing ceased as connections broke.

Then Carver turned, waiting calmly for the demon-people to blast their way

in. There was no chance of escape this time. He only wished he could know, before he went, whether success had rewarded his efforts.

Suddenly a wall screen spangled into a television view. Sha-tahn's dark, evil face peered out at the two besieged Earthmen. He leered satanically, as Earth mythology represented his astral alter ego.

"As I thought," he spoke, peering sharply. "Barry Carver, despite the disguise. You will die for what you have done—horribly. Not by gun, no." He gave a command at the side, then turned back. "No. You shall suffer slowly, for weeks, perhaps months. A little astral being will perch in your brain and keep screaming, screaming, till you go mad. But then it will keep on!"

THE noises outside the door ceased. And down from the ceiling darted a black shadow. Carver knew there was no use running. The shadow enveloped his head, probed with its psychic forces, and a faint scream sounded within Carver's brain. It kept on steadily. Carver knew it would drive him mad, but before then he would—

He gasped. He tried to raise his gun to his own temple, but some force prevented him. He could not will his own death!

"You see?" snarled Sha-tahn. "You will suffer, and—"

At that moment, shouts sounded. Strange wild shouts that seemed to come from all directions. Human shouts! Sha-tahn's face vanished from the screen, with a startled look upon it. At the same time, the astral tormenter over Carver's head disappeared.

Tyson had sprung to the door, looking out of a gaping rent.

"The slaves!" he shouted, joyfully. "They're out in the hall, fighting the

satyrs. Barry, it worked—”

Carver leaped for the door, opened it. The satyrs were backed against the wall, shooting it out with a party of men swarming down the corridor. It was over in a moment and with blood-curdling screams of triumph the Earth-people surged toward Sha-tahn's room.

“Let's get in on that!” cried Carver. He was only partially aware of the blood dripping down his sleeve, from his torn shoulder. He and Tyson were with the party when it swarmed into Sha-tahn's presence. A withering barrage of gun-fire met them. But the rest crowded forward eagerly, madly, screaming revenge. Carver realized that very few of them were sane. He had loosed a pack of demented monsters among the demon-people, who had made them so. Somehow, it was divine justice.

Sha-tahn's party retreated. Then piercing cries from the back of them and they were trapped between two fires. In desperation, they made a break for it, past Carver's party. Somehow, Sha-tahn was there across sights. He pressed, and watched the ruler of Phoryx fall, a corpse.

Carver was in a daze. His shoulder pained agonizingly. Was it possible that he had just killed the monster who for thousands of years had worked his way into Earth history as—Satan? Was this all a mad dream? He was so confused, and so weak. It couldn't be true. It was all a terrible, impossible dream. And then a tidal wave of darkness swept him off his feet. . . .

BARRY CARVER stood at the prow of the sleek ship as it rose gracefully over Shorraine. He had one arm around Helene. The other was in a sling. His shoulder wound had nearly healed.

They had told him later of the full destruction of Phoryx, after his delir-

ium and fever were gone. How the uprising Earth slaves, obeying his telepathic commands to the letter, had demoralized Phoryx's fighting forces. They had stormed every position, wrested away guns, shot down the demon-people's ships. Shorraine's aerial forces had been able to land within the city and take over more guns. Before the end of that day, the enemy was isolated in various sections, besieged. Most of their great fleet was destroyed.

In three more days, the city had been practically leveled. Those of the satyrs still alive had raced to the dark lands. Their power was broken.

CARVER'S ship, piloted by Tom Tyson, maneuvered into the Spot. At its nose, a magnetic machine thrummed powerfully. They felt a slight wrench, no more. The bluish light around them gradually faded into a soft yellow glare. It brightened to tropical harshness as the sands of the Sahara spread to all directions.

Earth! Carver took a deep, satisfied breath.

He looked back. One after one, ships followed. The line began to stretch out like a string of beads, over the hot desert. Five thousands ships were his to command. Armed ships, superior to any fighting force of Earth. Carver thought of the Jap army and gripped slowly, in anticipation.

He looked further back, at the dancing, shimmering image of a ghostly city suspended over the rolling sands. Shorraine—City of the Mirage! It had been the scene of incredible adventure, fantastic from start to finish. He would never forget a minute of it. Nor would time mist his memory of the enigmatic, lovely creature who, unwittingly, had assured the destruction of Phoryx.

The ship sailed on, into the wide skies of Earth. On its prow was the legend: “Elsha—Queen of Mu.”

INSIGHT

by
**MANLY WADE
WELLMAN**

I NEVER claimed to be a genius, not even when I was a know-it-all sophomore. Of course, I got a Phi Beta Kappa key, but so does ten per cent of all Columbia graduates. Now I had finished school, I knew that key was

The eye-pieces, of course, x-rayed not only Marjorie's clothes, but also the portiere the gangster was hiding behind



What would you do if you had a pair of contact eye-lenses that x-rayed cloth and wood? Perhaps, like Sam Sterrett, you'd find yourself in a kidnap-gang's kill-trap—with the finger of death pointing at your sweetheart!

worth only its little weight in gold. It wouldn't get me a job, and I wanted a job—and Marjorie.

Just the thought of Marjorie made me feel all moonlighty and spiritual instead of two hundred pounds and red-headed and blocky-jawed. With her in my mind, I could forget that I owed a

year's tuition, and that Coach Lou Little had told me for three autumns straight that I was the most exasperating varsity tackle he'd ever failed to teach football rudiments, and that I'd have to wear a cap and gown in tomorrow's heat, and that I was only Sam Sterrett of the truck-driving Sterretts, and that Marjorie's dad—J. Barton Cannon of the Wall Street Cannons—had promised to skin me alive if I didn't leave his daughter alone. I almost forgot my invention, the one thing I had to show for four years of hard grubbing at electro-physics.

BUT I couldn't forget that, because it lay on the dressing table in my little room in John Jay Hall. Or, rather, they lay, because there were two of them. Two little bits of clear glass, about the shape and size of acorn cups. Not perfect, I knew, but a step in a new direction.

The idea—I'd better explain in the beginning—came to me in high school. I saw how glass could modify and mix light; a prism broke it up into the spectrum, a lens focussed it to a point of heat, a mirror flashed it back at an angle, a flaw distorted it, and so on. That year, for the first time I'd read understandingly about X-rays. I began to dream, then to plan, something that would do away with all the mechanical fuss and cumber—a simple glass modifier, that would absorb instead of giving off the rays, would be a lens instead of a reflector, would, in short, achieve the transparency without use of power, artificial light or a shopful of accessories.

And now, after four years at the university, I had this to show, this pair of crystal shells that came to the problem's fringe but no closer.

I picked up one. I had made it like those little spectacle-things that fit right over the eyeball. Though almost as

thin as paper, it contained five distinct layers. Between two of these was a tiny vacuum chamber, with microscopic X-ray devices—cathode, anode and anticathode—but made, I say, to absorb and not to produce. No induction coil, but certain metals that, fused properly in the glass, supplied power enough . . . never mind which metals, that's my secret. . . . I dipped the shell into a crucible of boric acid solution, then spread apart the lids of my right eye and let it snick into place there. Colorless, snug, it would be almost completely unnoticeable. Then I dipped the other shell and fitted it to my left eye.

This was my first try of the complete lenses and, though my early experiments had prepared me pretty well, I gloomed all over again. When I looked at my fingers, they were just fingers—healthy, meaty, freckled—not a shadowy rind with bones showing through, as in a real X-ray. The device was only half effective, couldn't see through living organic tissue, only thin layers of inanimate non-minerals.

Gazing at a cardboard box on the dresser, I felt a little better. Through the lid I could make out my shirt studs, my cuff links, and the medal I won for winning the discus throw. I had achieved the beginnings of success, maybe enough to build on for perfection. Meanwhile, I'd better hustle over to Riverside Drive. This was the afternoon that Marjorie had promised to slip away from her swagger college upstate and see me. That college was run like a girl's reformatory, but in the last month we'd been able to meet twice, through the help of Miss Wheatland, a new substitute instructor. She'd helped Marjorie to slip away. I thanked heaven that one teacher, at least, had a heart. So I left John Jay, still wearing my lenses; I planned to amuse the ladies by counting the coins in their purses and so on.

Heading for Grant's Tomb, where Marjorie would be waiting, I tried to figure some profit out of the gadgets. My best chance would be a sort of mind-reading stunt in a theater, and I'd never dare try—I'm not the mental type as far as looks go, and I'm prone to get stage fright, anyway. All wrapped up in thoughts like that, I took no notice of anybody or anything. I was almost run over by cars, buses, people. At last I reached the Tomb, and Marjorie came around the corner of it toward me.

Of course, I always look at Marjorie. So I looked, hard, and I was within an inch of fainting.

There she stood smiling, my dream girl, the one I yearned to marry, without a stitch on! Every curve of her, every pink inch, from her fluffy blonde pate to her manicured toes was revealed to me! And she was saying, calmly and cheerfully: "Hello, Sam, you're on time to the dot. Why, what's the matter? I declare, you're blushing!"

ABOUT that time, my poor simple one-track brain had the answer. The eye-pieces, of course, they'd X-rayed Marjorie's clothes. I hadn't thought of that, simply because I never think of more than one thing at a time. Embarrassed? The word's not one-tenth strong enough. I managed to mumble: "I was thinking, dear, how beautiful you are."

"How do you like my new dress?" she demanded, and when I said I guessed it was okay—it was only slightly visible, like a wisp of smoke—she laughed like a peal of bells. "You don't sound very convincing, Sam darling. If I hadn't mentioned it, you wouldn't even have noticed my dress at all."

By then my face was so red that I doubt if my freckles showed. I wanted desperately to get those infernal things out of my eyes, but I didn't dare, not

with Marjorie looking on. She'd want to know what they were, and I'd have to tell her. Then—gee, maybe she'd never speak to me again. That was too awful to imagine.

But she didn't know, and she was saying: "Miss Wheatland helped me slip away, as usual. I'm expecting her to come along any moment—oh, here she is now. You remember Miss Wheatland, of course?"

I'd met Marjorie's teacher friend twice already. "How do you do?" I began to say, turning to greet her, and gazing into that stern, spectacled face that so belied a heart made apparently of pure gold.

And then I saw the rest of Miss Wheatland, without benefit of the prim dress she usually wore, and I was worse shocked still.

For that maiden-lady face I knew was set upon the body of a man—brawny shoulders, hairy chest, a blotch of tattoo on one corded arm—and on the left side, under the muscle-ridged armpit, lurked something to scare even a football lummock with half-baked scientific ambitions.

SHE—OR HE—was carrying a huge automatic pistol, blue and shiny and lethal looking. I hadn't expected to diagnose anything like that with my X-ray!

"How do you do, Mr. Sterrett," said the voice that I recognized as Miss Wheatland's. "I hope that I find you well, young man. I'm going to take you and Marjorie to tea."

"To tea?" I repeated foolishly, as though I'd never dreamed of such a thing. I was trying to add everything up. Miss Wheatland was in reality a man, disguised as a woman teacher—that meant mystery. He was carrying a gun, a whacking big one—that meant outlawry, violence, crime. He was deeply interested in Marjorie, pretending to

be her best friend—golly, that meant desperate danger to the girl I loved. . . .

"Yes, to tea," replied the casual voice of the Wheatland impersonator. "A friend of mine has given me the key to her apartment, quite near here on Riverside Drive. Come along, it's a lovely place—so restful—"

"Let's be going," chimed in Marjorie, and burrowed her little hand in under my elbow.

"Wait a moment," I began to say, then changed my mind. "All right, ladies. Let's go and have tea, by all means."

Because I realized that I couldn't back out. This Wheatland creature was after Marjorie for something. My X-ray lenses could penetrate his disguise, but not his plan. I had to tag along, protect Marjorie, foil the whole thing.

How?

We walked for several blocks, and I studied desperately every step of the way. I only half noticed that the grass was green or the sky blue, or that Marjorie was chattering happily, or that the Wheatland faker was pretending to be pleasantly philosophical, or that all the crowds of people along the Drive looked to my lenses like a nudist parade. I was full of the knowledge that I had to do something about this mess, and do it mighty quick.

THERE was a cop on one corner—a fine big Irishman, with a faint tinge of blue to the cloudy film that was his uniform, and a badge and night-stick quite plain to view. I almost yelled to him, but did not. What would I be saying? That this quiet-looking old maid was really a gunman, and that I knew because I could see through his clothes? That would settle everything, but then Marjorie would know about the X-ray glasses. And goodbye romance.

We reached the apartment building,

went in and then up in an automatic elevator. Marjorie, standing close to me and all unaware that she looked to me like a very unadorned Greek statue, said: "Do you feel all right, Sam? Your eyes look glassy." I smiled and shook my humming head, but I guess my eyes would have looked glassy even without those lenses. No, they wouldn't, because without the lenses I'd never have known—oh, skip it. I'm a rotten story teller.

We rode up to the top floor, and the Wheatland bandit conducted us down a hall and into a swank apartment. The foyer alone was as big as my room at John Jay. Marjorie bounced on through and sank down on a divan in the parlor, but I paused on the inner threshold. For, at the far end of that drawing room, in a shadowy little nook, crouched a squat, burly man.

He was the greatest shock I'd had yet.

He was nude to my X-ray eyes, of course, but that was no longer a novelty. He held a gun ready in his hand, but I had already spied and dared the gun under the armpit of that Wheatland hoodlum. It was his face that made me shiver and turn cold. I knew that face, as anyone must know it who ever picked up a photo paper. Bald head, heavy black brows, short upper lip, lantern jaw—it was Dillard Harpe.

Right, the one and only Dillard Harpe, for whom J. Edgar Hoover and his G-men were ransacking the country; Dillard Harpe, jailbreaker, killer, kidnapper—there I had it! The whole thing made sense on the instant. Harpe and this Wheatland yegg were out to kidnap Marjorie and hold her for ransom . . . maybe kill her. . . .

"What's the matter?" It was the mock-prim Wheatland voice in my ear. "Is there anything wrong, young man?"

"Why—why—"

"Oh, you're admiring the hanging

yonder. Yes, it's a beautiful piece of Oriental silk print, isn't it?"

That was the first realization I had that the nook was hidden by a curtain of some sort, and that Dillard Harpe was ambushed behind it; or that he would be ambushed if I hadn't come equipped with those X-ray peepers. So I gulped, and managed to agree that the hanging was a perfect triumph of design. The Wheatland phoney didn't tumble, but he did put a chair for me in the corner farthest from Dillard Harpe's hiding place.

Then he touched a button on a desk, and a bell rang. In from the kitchen came an Oriental servant with a tea-cart. He was the ugliest Mongol I had ever seen outside of a war-scare cartoon, and the muscles of his body, revealed to my cloth-penetrating vision, looked tough and wiry and jujitsuy. He wasn't carrying a gun, only a long wavy-edged knife, stuck under a belt of which I could make out only the iron buckle. So there were three in the kidnap gang, all armed, and I began to know a new all-time high of being scared. Three gangsters with guns and knives can put plenty of chill into one science student with X-ray lenses.

The teacups were visible, all right, and I could handle mine; but the sandwiches, being organic and lifeless, looked like a heap of thin fleecy cloud on the plate. I had to refuse with thanks. Wheatland—at last I was thinking of him as a man, not an old witch who had magically changed sex—was keeping up a conversation of fashions and bridge-playing and such woman-topics, and Marjorie, tucked up at one end of her divan, was laughing and chiming in. I didn't say much, and what I did say must have sounded hoarse and absent-minded.

PUT yourself in my place—sitting in the corner of a strange, swanky

apartment, balancing a teacup on my knee; slantwise across the room, my girl, perching unconcernedly and happily, with nothing on but a shadow of gray; two men with guns, watching like hawks; and Fu Manchu's homely brother lurking in the kitchen with a skinning-knife about two feet long. It was the sort of situation that rises in a movie serial, just when the screen flashes out the words: *End of Episode 8. How Will Captain Jack Tumblewater Outwit the Pirate Horde and Rescue Lady Clarissa From a Fate Worse than Death? Return to this Theater Next Week for Episode 9 of HOBOKEN HAMSTRINGERS.* The big difference was that I couldn't wait a week for the showdown. Something was due to break loose any second, and I'd be in the thick of it.

Wheatland finished his tea, and turned to the desk. He picked up a pen and looked across at me. "Will you do a favor for us? . . ." It was still the voice of the old-maid school teacher, austere but loveable, who was bringing two young sweethearts together, and who was entitled to ask favors. I had to say, "Why, of course, Miss Wheatland," and Marjorie beamed at me for being a nice, polite boy.

"I'm going to write a little note," went on the wolf in teacher's clothing. "I was just wondering if I could impose on you to take it out and mail it." A grin at both of us, meant to look kindly. "As a matter of fact, Marjorie, my dear, this is to your father. It is to assure him that I am taking splendid care of you."

"I see," nodded Marjorie. "Thank you so much, Miss Wheatland."

"I see," was my echo, and I did see. This was to be the ransom note, and Wheatland was telling about it going to Marjorie's father to explain the name **J. Barton Cannon** on the envelope. My mind went X-ray, too, for a moment,

and I seemed to have a vision of what the letter would read like—something on this order:

Mr. Cannon:

We are holding your daughter prisoner. Don't try to find her or tell the police, if you want to see her alive again. Draw \$100,000 from the bank, in old bills, and wait for word from our representative.

I let my eyes wander toward the nook where Dillard Harpe, America's Public Enemy Number 1-A, thought he was hidden from view. He was all relaxed now, standing up straight with his arms folded on his chest and the gun dangling by its trigger-guard from one forefinger. I suppose my size had given him a little start at first, but by now he had me pegged down for a dumb college jasper who, instead of being dangerous, was about to oblige by running an errand.

Wheatland had apparently finished the note and was folding it. He did something else, with a sliding motion—that would be to put the letter into an envelope. Then he lifted his hands to his mouth, licking the flap I couldn't see and stuck it down. He opened a drawer of the desk and fumbled in it.

"Here's a stamp," he announced. "Now, Mr. Sterrett, will you please mail this? There's a post-box just outside this building, on the corner.

"Of course I will, Miss Wheatland," I said, getting up and coming to the desk. "Where's the letter?"

"Why, here it is, right before your eyes." And I was able to perceive, in his outstretched hand, a pale oblong blur that must be the envelope. "What's come over you, young man? Something troubling your mind?"

FOR the first time, there was a deadly note in that voice so carefully pitched in old-maid timbre. Wheat-

land was suspecting me at last. It was Marjorie who saved me for the moment.

"Oh, you must forgive Sam," she laughed from the divan. "He's a science student, you know, and very serious. Probably he's turning over some new scientific formula-problem in his mind."

"Yes, yes," I made haste to agree. "That's it, a new formula."

"Indeed?" Wheatland still sounded as if he was on the point of reaching for his hidden gun. "And what, may I ask, is this new formula?"

"Oh, a—a new type of magnetic attraction," I replied on inspiration. "I was reminded by—this."

I put out my hand and picked up from the top of the desk a round, gleaming paperweight, the size of a tennis ball.

"That can't be magnetized," demurred Wheatland at once. "It's made of brass."

He knew the rudiments of science, did that disguised torpedo, but he didn't know the inspiration that had come and was now growing in my brain. Already I was six jumps ahead of that obvious objection.

"This is quite new and startling, Miss Wheatland," I babbled as plausibly as I could manage. "We've been experimenting in secret at the university. Brass can be magnetized to an amazing degree—any heavy object has, of course, certain forces of gravity to be developed and multiplied within it. Our new power, which involves the contact of living flesh, attracts masses of like substance to each other, even at considerable distance." By now I had spied, in front of the arty-looking fireplace, two big brazen andirons. "Let me show you ladies one of our experiments."

Wheatland's suspicions were allayed by now, but he didn't want to see any

marvels of science. He wanted me to carry that letter to the post-box, and leave him and his fellowrats alone with Marjorie. "Later, perhaps," he put me off. "Wait until you've mailed this—"

"But it will take only a few seconds," I pleaded, and Marjorie leaned forward to add, "Yes, I want to see what he's going to do."

"All right, all right," agreed Wheatland, not very graciously. "Go ahead and show us. How does it work?"

"First of all," I said, imitating the lecture-manner of my stuffiest professor, "I shall shut off the magnetic influences from this paperweight." I fished out my handkerchief and knotted the brass lump inside, then laid it on the desk once more. "Next, Miss Wheatland, I shall ask you to help me."

"Help you? How?"

"I want you to hold this." Turning to the fireplace, I picked up one of the andirons. It was wrought all over with cute modern designs, but it was big and heavy. "Let's have you sit where I was. That will give us the length of the room to show off the experiment in."

"This is exciting," squealed Marjorie. Wheatland took the andiron I forced on him, and went and sat in my chair in the far corner.

"What next?" he prompted me.

"Hold your hands at opposite ends of the andiron," I directed, very impressively. "Yes, like that. Now, knead the two ends in your palms. Hard. That's it. Keep doing it."

"What's this for?" he wanted to know.

"We don't quite understand as yet," I replied glibly. "I said that this is a very recent type of experiment, and the power is rather mysterious. Some of the professors think it's the human life-force, which in some ways seems closely related to electricity, communicating itself to the brass. Others say that there is a sort of sub-atomic affin-

ity between flesh and an alloy of copper and zinc—"

"Young man," interrupted Wheatland icily, as he rubbed at the chunk of metal, "I begin to suspect that you are having a rather feeble joke at my expense. Let me warn you that I am a woman who is not used to being joked with."

"Oh, but I wouldn't dream of joking with you," I made haste to say. "We're ready to start now. Keep kneading the ends of the andiron. Faster, Miss Wheatland. Now—"

I PICKED up the paperweight in the handkerchief and walked to where, in the curtained nook, stood Dillard Harpe, concealed from every eye but mine. He had come forward against his hanging, as if to peep through a hole and see what I was up to. I turned around with my back to him and faced the room. Harpe was so close to me that he could have reached out and grabbed me.

"Now," I repeated, "I shall demonstrate this new magnetic force. I shall release this bit of brass from its wrappings, and you ladies will see it float like a bubble, clear across the room. It won't stop until it touches that andiron in Miss Wheatland's lap. Are you both ready?"

"Ready," grumbled Wheatland, and "Ready," cried Marjorie. I smiled as disarmingly as I could, and held out the weight in the handkerchief, so that it dangled at arm's length in front of me.

Then I spun around, as hard and quick as I could. The brass weight swung like a blackjack. It struck the hanging, and rang like a bell-clapper on the skull just behind. Harpe gave a sort of moan and began to collapse.

But I didn't wait to see him finish the fall. I let the spin carry me clear around, facing the room again. Mar-

jorie was shrinking back on the settee, her mouth open as if she was trying to scream. Wheatland was half out of the chair, throwing the heavy andiron from his lap.

I dropped the handkerchief and paperweight, and made two striding leaps. At the end of the second, I had my head well down and my arms out. I left the ground in a flying, diving tackle.

If Coach Lou Little had been there, he'd have been critical. It's illegal—in football—to tackle with both feet off the ground. But it worked beautifully.

My right shoulder smacked just above Wheatland's knees, and back he tumbled, into the chair. The chair went over, so hard did we hit it, and broke into a dozen pieces of kindling. Wheatland struck the floor beyond, with the flat of his shoulders, and for a moment I was standing almost on my head above him. Then I twisted out of what might have been a somersault, and dropped on his belly. I remember wishing that my two hundred pounds was two thousand.

It was working out as I hadn't dare hope. He'd had to scoop that andiron out of his lap before drawing his gun, and so I'd won the moment of time I needed. Wheatland was groggy but game, thrashing around and digging for the pistol, but I kept on top and clutched his right forearm. His left fist smashed up at my face, and I felt my eyes blur as my head snapped back and those X-ray lenses flew free to land on the carpet beside us. But I hung onto his gun arm, even when he hit me a second and third time. With my left hand I tore open his blouse—now that the lenses were gone, I could see his clothing, very prim and old-maidish—and grabbed the gun myself.

I rose to my knees. Wheatland tried to grapple, but I brought down the gun-barrel across his temple. He melted

down like a snow man in a heavy thaw. There was a mouthful of Oriental expletives from the kitchen and the servant rushed from there, his knife whipping out from beneath his white coat. I pointed the captured pistol.

"Drop that toad-sticker!" I yelled. "Quick!" And it tinkled on the floor. "Get your hands up and stand with your face in that corner."

He did as I told him. Now I could spare a glance for his two pals. Dillard Harpe was lying motionless, half out of sight. His head and shoulders were twisted up in the hanging he'd pulled down, and his gun had bounced well out of his reach. Wheatland lay crumpled at my feet, breathing heavily and fluttering his eyelids.

MARJORIE got up shakily from the divan. Now at least I could see that new dress of hers, about \$500 worth of beautifully cut gray silk. "Sam," she was quavering, "what's happening?"

"It's all happened," I reassured her. "These three merry men thought they were going to carry you off to their lair—Look out!" I warned as she came closer. "Don't step on those things, they're valuable!"

I bent quickly and snatched up the two curved pieces of glass from in front of her approaching slippers. "Thank heaven, they aren't broken," I mumbled to myself. "Not even chipped."

Marjorie was staring. "What are they, Sam?"

"Nothing," I made haste to reply. "Nothing at all, Marjorie—just a—a pair of good luck pieces. Now be a good girl and telephone the police while I hold this gun on our friends."

Ninety minutes later I was sitting in the office of the New York chief of detectives. I was smoking a big cigar that I didn't particularly want, but J.

Burton Cannon had given it to me. He'd also said what I'd never hoped to hear—that he would be proud to have me as a son-in-law, and he hoped Marjorie and I would have at least eight sons just like me, and that I must be one of the brigade of vice-presidents at his bank.

The chief leaned across the desk toward me. He had to speak loudly, for in the end of the room a G-man was telephoning to Washington, trying to convince somebody he called "boss" that the Dillard Harpe gang had just been captured by a lone, college boy.

"There was a ten thousand dollar reward out for Harpe," said the chief of detectives, "and five thousand each for Wheatland and that yellow boy with the knife. Considerable potatoes, Mr. Sterrett, and I hear that you can take a banking job if you want it."

"I don't intend to," I assured him.

"I hoped you'd say that!" he crowed, and grabbed my hand. "Look here, Mr. Sterrett, we need young men like you in my department. So if you'll—"

"Thank you, sir," I said, "but I'm going to set up my own office with that reward money. I'm going to be an independent investigator."

He broke off and sank back in his chair. "I still don't see how you man-

aged it. That gang had planned the whole snatch to the last detail. Wheatland's disguise was so good that he even fooled the other teachers; Harpe was completely hidden, and had his gun in hand; the Oriental seemed to be only a servant. Yet you found them out, captured them, and turned them over with full convicting evidence in the form of Wheatland's kidnap letter. What's your method, anyway?"

My hand crept into my side-pocket, and touched two little shells of glass. "It would be hard to explain," I hesitated.

"All I can call it is insight," nodded the chief of detectives.

"Yes, sir. Insight."

In my mind I began to plan my work. I'd keep the secret for a while, use it to detect crime and build up a reputation. I'd have a laboratory, to develop this X-ray gadget and other things. Some day, maybe when I retired, I'd tell the world. . . .

A knock sounded at the door, and a clerk stuck his head in.

"Mr. Sterrett," he called, "Mr. Cannon and his daughter want to know when you'll be ready to go to dinner with them."

Gee! How would I ever tell Marjorie about the X-ray eyes?

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACTS OF CONGRESS OF AUGUST 24, 1912, AND MARCH 3, 1933

Of *Dynamic Science Stories*, published bi-monthly at Chicago, Illinois, for October 1, 1938.

State of New York, County of New York, ss.

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Abraham Goodman, who, having been duly sworn according to law, deposed and says that he is the Business Manager of *Dynamic Science Stories* and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Publisher, Martin Goodman, R.K.O. Bldg., Radio City, New York; Editor, Martin Goodman, R.K.O. Bldg., Radio City, New York; Managing Editor, Martin Goodman, R.K.O. Bldg., Radio City, New York; Business Manager, Abraham Goodman, R.K.O. Bldg., Radio City, New York.

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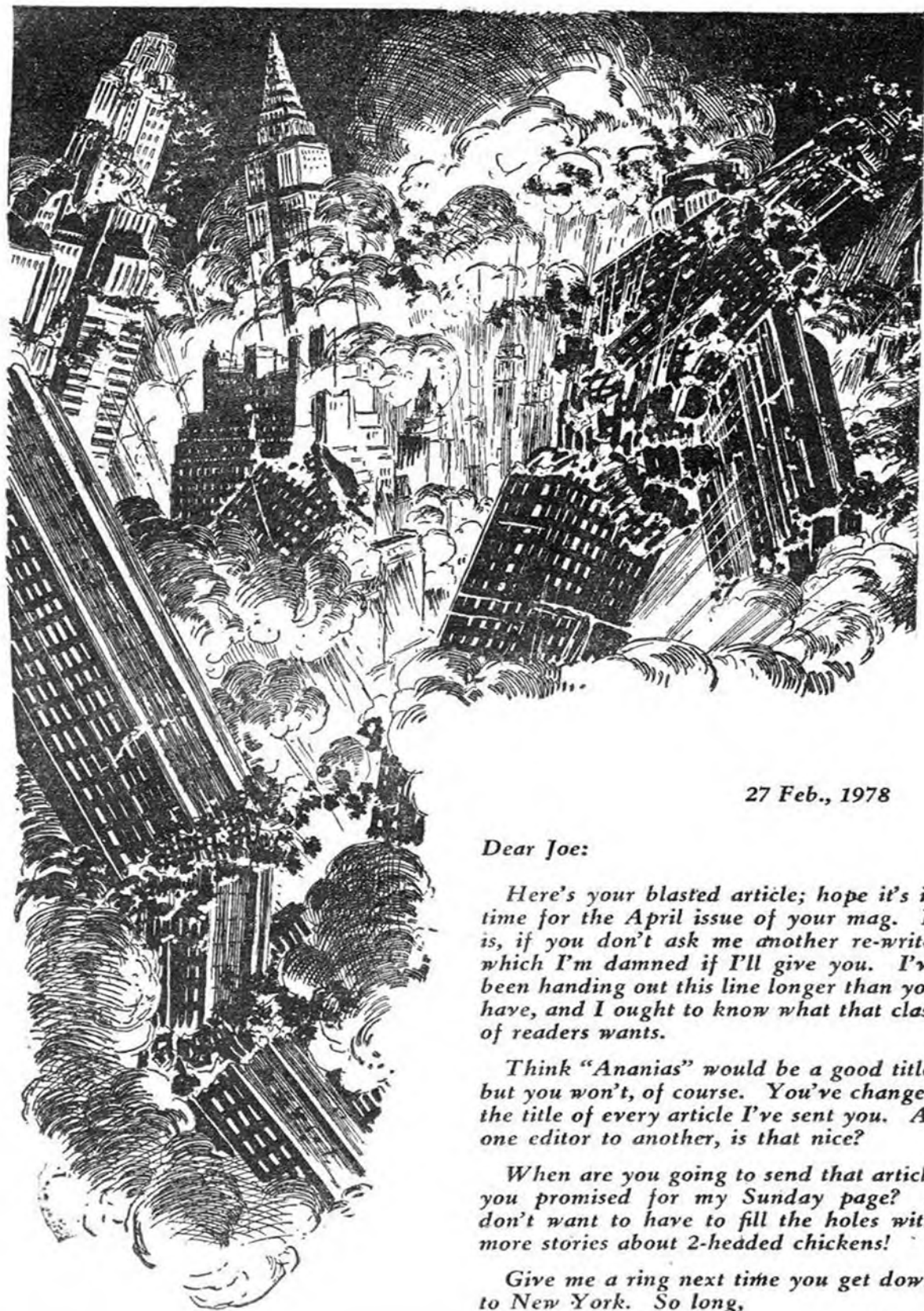
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Sworn to and subscribed before me this 23rd day of September, 1938.

(SEAL)

(My commission expires March 30, 1940.)

MAURICE COYNE, New York Co. Clerk No. 562.



27 Feb., 1978

Dear Joe:

Here's your blasted article; hope it's in time for the April issue of your mag. It is, if you don't ask me another re-write, which I'm damned if I'll give you. I've been handing out this line longer than you have, and I ought to know what that class of readers wants.

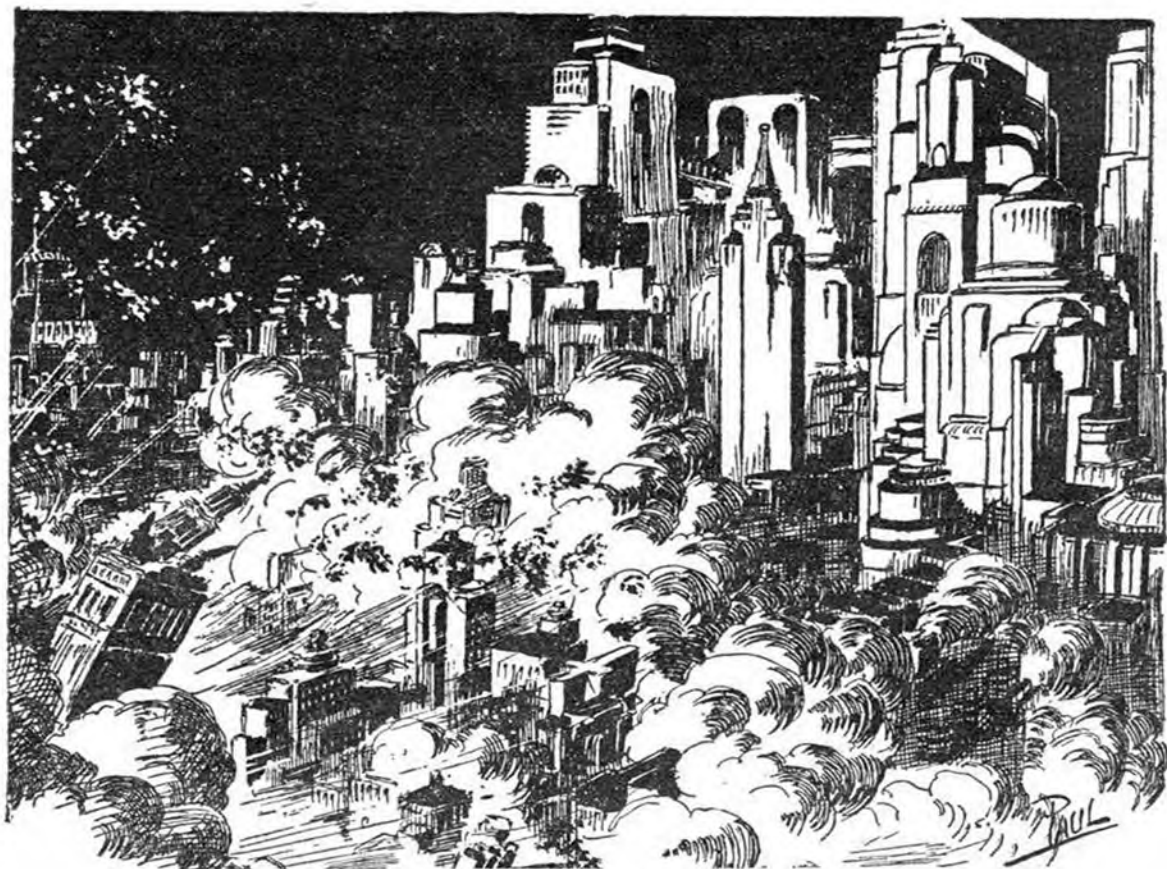
Think "Ananias" would be a good title, but you won't, of course. You've changed the title of every article I've sent you. As one editor to another, is that nice?

When are you going to send that article you promised for my Sunday page? I don't want to have to fill the holes with more stories about 2-headed chickens!

Give me a ring next time you get down to New York. So long,

Walt

WHAT DO TO-DAY'S HEADLINES MEAN TO YOU? THERE IS AWESOME



A red holocaust shattered the buildings of the financial center

ANANIAS

by L. SPRAGUE DE CAMP

Are powerful machines of scientific destruction the greatest strength of a country at war? Or is there a more sinister instrument, known as subtle propaganda?

By Walter Hasbrook

TRUTH, like a gem, has many faces; you do not know it until you have looked at them all. More and still more books on the late war between the Confederacy and the Alliance roll from the presses; if I presume to add further printed matter to this vast and growing pile, it is in the hope of providing one more facet, unique if small, to the gem of truth.

The hope is, I think, reasonable: my position as science editor of the *New York Times-Tribune* afforded me both

a behind-the-scenes entrée and a bird's-eye view of the technical developments of the war. Much of my time is spent burrowing in dusty library files, searching out facts available to all but known to few; again, much is spent in interviews, extracting the facts of tomorrow from the vital minds of today.

ANOTHER big war was foreseen as far back as the Thirties, and the nations had set about grimly preparing for it. The expensiveness of the prepa-

PROPHECY IN THIS SMASHING FEATURE-LENGTH FUTURE-SCIENCE NOVELETTE!

ration may have been responsible for postponing it more than thirty years. The generals would go around to a government and say, "We're in danger of being attacked by countries A, B, and C. Therefore we need such-and-such an armament. You just give us the money, and in three years we'll be ready for any eventuality." The government would groan and say, "*Mon Dieu*, that'll ruin us!" and then give in. The military measures would be taken, and then they'd find that all their neighbors had done likewise, so that they were relatively no better off than they had been before. So the whole business would begin over again.

The ideal solution for any one nation would have been to have a greater armament than all the rest of the world combined, but no nation was in a position to do that—especially since China had ceased to be one nation, and was divided into eastern and western halves, under the Japanese heel and in Russian leading-strings respectively.

In due course two of the future combatants found themselves "ready" at once, and the necessary insignificant excuse was found, and the war was on. Within a year we were in it, despite our good resolutions—or were they good? Since we shall never know what would have happened if we had stayed out, there is no scientific way of settling the question.

I was hired by the Army Intelligence Service as a part-time civilian employee: an employee because modern Intelligence work consists of, besides active espionage, an enormous amount of study and comparison of public or semi-public documents, such as governmental reports, yearbooks, patent-office publications, etc., by which valuable information can be pieced together out of unintentional hints; a civilian, because my work was to be known only to my employers; part-time, because

Intelligence valued my contacts with sources of news that didn't always pass through the Military Censor's hands. I had had plenty of practice at this kind of work in private life.

On the evening of May 4, 1971, Admiral Dahlgren called at my apartment, which was as usual knee-deep in papers—though of course I kept no confidential ones there. After we had talked of this and that, he said: "Young man, your technical friends are driving us nuts again. It was bad enough when they pushed airplane speeds up into the four hundreds and upset all our calculations; but we knew the compressibility-burble point put a ceiling on that and that they couldn't get very far over five hundred. Now they've begun putting these auxiliary rocket-tubes on bombers to enable them to spring away from pursuit-planes, and compressibility-burble doesn't matter; so God knows what they'll do to our figures now. They may go up over a thousand. Hmp. Damn it, where's my pipe?"

"They have," I said.

"What?"

"SURE. Haven't you Navy people heard about it? It's a new Arado that flies on its tubes alone except in taking off and landing, and it's said to do around twelve hundred miles an hour. It's for photography only, because at that speed you can't hit anything much smaller than Manhattan with a bomb. Doesn't even carry a gun, because things go by too fast to aim at them."

"Hmp. If your boys know about it, ours probably do too, only they didn't bother to tell me. Nobody ever tells me anything," he complained. "Damn it, what did I do with those matches. I suppose those dumbunny designers of ours got caught flatfooted, as usual. Hmp. Have to put the screws on them. They've been promising us an effective

rocket-ship for six months, damn it. Ah-h!" The Admiral had found his matches.

"You know, Hasbrook," he went on, "The more I look at this war, the pho-nier the ostensible reasons for it seem. The idea that the members of the Alliance are fighting for needed natural resources has been worn pretty thin by our modern advances in chemistry, agronomy, and so forth. You don't need much resources to support your people nowadays. On our side we talk about saving democracy, but I notice that our line-up includes some very peculiar-looking democracies—the regime of the Argentine cattle-barons, for instance. I suppose, though, that you can't be too fussy about your friends or you won't have any.

"If I were to try to put in words my own feelings, I'd say that we were after tangible things, such as food, clothes, shelter, and entertainment for our folks. We may not know just how to get them, but at least there are such things. The other side seems to be fighting for things that either don't exist such as the purity of their race, or whose existence can't be proved, such as the divinity of their ruler.

"They're also after their national honor, which as nearly as I can make out is the kind of prestige you get by inflicting insult and injury on another and getting away with it. So every so often they have to injure or humiliate their neighbors as a matter of principle, previous promises to the contrary notwithstanding, hmp.

"The Hell of it is that you can get people fighting over these imaginary abstractions, such as honor, if anything more easily than over real objectives, and the Alliance knows it—at least that devil Raiberti knows it." Here my crusty friend exhausted his stock of four-letter words on the Alliance's Chief of Public Enlightenment. "And with

everybody carrying a radio the size of a watch we can't stop him. We can't even blanket these wave-crest modulated sets without smothering all our own stuff at the same time. If your technical friends—"

Just then the world outside was lit up as by a noon sun. Then came a sound—the sort you feel rather than hear; but I should describe it as a vast grunt.

I CAME to lying in a corner of the room. I couldn't have been out more than a second or two, because through my now gaping window came a long-drawn-out roar, made, I later learned, by tons of steel and masonry showering on lower Manhattan.

The Admiral was already up, swearing in six languages. The lights slowly came on again. The roar died, to be replaced by official sirens and gongs. To the South, over the hedge of skyscrapers, a red glow lighted the belly of an immense smoke-cloud. We tried the telephone, but at first it didn't work, and when it did all the numbers we called for information were busy.

As I stepped back to the window, a piece of paper the size of a playing-card fluttered in. Across the top, in 24-point bold-face, were the words "Don't Be a Sucker, Buddy!", and below it one of the cleverly-worded appeals of Raiberti's gang proving that the Alliance really thought the world of us, but that we were misled by our scheming politicians.

There was no mystery about it. The Alliance had sent a radio-controlled rocket a couple of hundred feet long, with a mighty charge of explosive in its nose, across the Atlantic from the Alps. When it was almost over New York, a number of little auxiliary rockets full of these love-notes had been released to scatter their load, while the big one dove into the financial district.

The next day I got a pass to the scene of the explosion. Where the City Bank Farmers Trust Building had been was now a large hole, partly filled with steel beams twisted into pretzel shapes. The skeletons of the surrounding skyscrapers were mostly still standing, but all the masonry had been blown away. Because of the financial district's sparse night population, there had been less loss of life there than was caused by the fall of debris elsewhere. Some of it fell as far north as Times Square.

I was out at Fort Montauk the night the second—and last—of these visitors came. A battery of new guns had been put up so hurriedly that there were footprints in the emplacements where the crews had walked before the concrete was dry. The guns themselves looked incredibly large, but that was because of the water-jackets six feet in diameter (including the cooling-fins) around their barrels. A cooling-unit the size of a box-car, full of blowers and radiators, was required to dissipate the heat developed by their thirty-rounds-a-minute fire.

I descended into the fire-control room, which was full of men unconcernedly smoking while looking at indicators and oscillographs and pushing buttons and turning knobs. The main view-plate was a four-foot glass square, black except for a grid of green lines. The adjutant explained this and that to me, and a buzzer sounded. The operator in front of the main plate said over his shoulder, "Here she comes!" I saw the men tense themselves.

AT the top of the plate a white dot appeared and moved slowly down the glass, leaving a thread of purple light behind it. I held my breath, but you can't do that for ten minutes, and the rocket was still far out of range. The minutes crawled by, the silence complete except for the breathing of

the men and the tiny noises of their instruments.

The dot reached a line a little heavier than the others, and I knew that the rocket was fifty miles out and angling down from the stratosphere. The operator pressed another buzzer. Through the concrete, the firing of the guns came to us as a tattoo of thumps. I was glad I wasn't outside: of all guns, the six-inch is hardest on eardrums, but the eight-inch, which these were, is not far behind it.

Little dots of red appeared on the plate, closer and closer to the white dot until they looked like a cluster of gems. The white dot seemed to swerve slightly, and turned red, meaning that it was dropping out of the plane represented by the plate. The operator spun a handwheel and brought it back to white again. He kept turning, turning, until his altitude dial showed zero. The white dot flickered and disappeared. Somewhere out on the Atlantic a column of steam marked the end of the rocket. It was all over. The defense had caught up with the offense again.

It had caught up elsewhere, too. The main cities of Europe were buried in sandbags and sheathed with explosion-mats, and ringed with guns that could in a twinkling blast out of the sky any hostile aircraft, regardless of its speed or the weather conditions. On the battlefields, long lines of concealed gun-emplacements peered at each other from behind barbed-wire, concealed pits, fences of railroad-irons stuck upright in the ground, land mines, and every other defense that desperate men could devise. No-man's land was sprinkled with the remains of men and of tanks that had tried to cross the space. The gun-crews groped for each other with sound-detectors, infra-red detectors, and seismographic detectors and fired. When a shot went home, the gun and its crew were replaced, and the war

went on.

Our Turkish friends drove through Thrace for a few miles, and were stopped by the Balkan army under Vacarescu. The Indians were slowly pinched back into Begal by the vast Japanese-officered Chinese armies of the Alliance, with the help of a few Siamese divisions. Things went against us in Uruguay.

As the battlefields became more littered and shell-pitted, and as the contestants dug themselves in deeper, the snail-like pace of the war asymptotically approached a dead stop. But in the minds of men another kind of war was being fought. You bought a pack of cigarettes; the third one that you took out suddenly unrolled into a strip of paper bearing a propaganda message. You called the police, who arrested the clerk, the delivery-man, the dealer, and everybody at the cigarette-factory through whose hands the smoke might have passed. Their unanimous denial of knowing anything stood up under the lie-detectors. You couldn't shoot them all in the hope of getting the hostile agent; you'd have to kill too large a proportion of the population, and besides that was the sort of barbarity practiced by the Alliance, whereas our side was supposed to be more humane.

YOU bought a head of lettuce, and the grocer made out your receipted bill. The bill was normal enough when he stuffed it in the paper bag of provisions, but by the time you got home it had changed into one of Raiberti's *billetdoux*. You had the grocer arrested, again without result.

Admiral Dablgren, looking in civilian clothes more than ever like a Minnesota farmer, was in my apartment one evening when I turned on the radio. I set it for a commercial station, but when I threw the switch a hearty

voice said: ". . . statement by Senator James. Now, folks, we don't like to doubt a senator's word, but when you consider that in 1956 he was held for mental observation in the Des Moines City Hospital, we think it should be taken with a grain of salt. I'm afraid you're being taken for a little ride, folks. If you want to know how he got his dough, I'd suggest you look into the matter of the Oregon timber leases of 1959, and compare that with . . ." The voice was drowned in a blare of dance-music. The commercial station, no doubt in response to frantic official telephone calls, had changed their wave-form to blanket the Alliance station.

"The swine!" barked the Admiral. "I get a lot of inside dope, and I *know* James had nothing to do with that scandal. But they're so damned clever that their biggest lies are of a kind you can't absolutely disprove. Remember the last time they pulled that insanity gag? They said President McRae had been in the looney-bin at White Plains. Then it turned out that a small fire had destroyed that hospital's records, so that no matter what McRae said there was always a shade of doubt in people's minds. Hmp."

Another time he brought up an individual who looked like a neo-vorticist poet, whom he introduced as Dr. Quentin Hoyle, the psychologist. I was surprised: I'd met many psychiatrists, but most of them were men of conservative appearance designed to give confidence to their patients.

The Admiral spoke gloomily of the war. "Same old story, hmp. Trouble on the Ukrainian front. Trouble on the Chinese front—morale. They had a little mutiny in the Chinese Soviet's 52nd Division. Propaganda, of course. Anybody who can beat the Communists at that game is *good*. You probably haven't heard about it; the mutiny

story should have been censored out before it got to you."

"No," I replied, "I haven't, but I have heard about our own morale troubles in the South and the Midlands. Raiberti's song-and-dance has been making headway in the Chicago area."

The Admiral was going through his usual motions of hunting for a match. "Damn, damn, where'd I put them? You know, Hasbrook, our technics are easily as good as the Alliance's, but in this 'public enlightenment' business they make our best advertising men and psychologists—with due apologies, Hoyle—look like children."

THE dreamy-looking Hoyle pulled his long hair, and said: "Repeat a thing often enough, and it leaves an indelible impression on a man's mind, whether he wants to believe it or not. If either of you gentlemen are married you'll know what I mean."

"Hmp, hmp. I am; Hasbrook isn't that I know of. I get you, though, Doc. It sort of wears a path through the mind, doesn't it?"

Hoyle was silent for so long that Dahlgren thought he hadn't heard, and started to repeat. But the psychologist, still looking at nothing, raised his hand. "Wears a path, yes. I suppose one could describe it thus in popular terms. I think you've said something, Admiral. If you have, we may yet hoist the Alliance with their own petard."

"Hmp! What the Hell's a petard?"

"Tsk, and you a military man! It's a kind of bomb used in the later middle ages for seige work, and 'hoist' in that sense means 'blow up.'" With which Hoyle retired into his own rarefied mental atmosphere, refusing to elaborate.

It was a month before the Admiral came around again; the Alliance was giving our Naval Intelligence plenty of overtime work. You wouldn't have

guessed it from the censored newspapers, but I knew that the morale of the countries of the Confederacy was going from bad to worse. In the United States there was sabotage—not by spies, but by disgruntled Americans in Milwaukee, an attempted peace-at-any-price demonstration in Topeka, and a lynching of an Army officer in Georgia. In other countries it was worse: Argentina was practically out of the war, and Australia was cracking.

I didn't wonder. Wherever you turned, Raiberti's propaganda got in your hair. If the ceaseless rain of half-truths, insinuations, and lies got on my nerves, I could imagine how it affected the masses of people, who lacked my inside knowledge. The usual spy-fever was bad enough, but this was something undreamed of in the old days.

The neatest trick that Raiberti's agents pulled was the doctoring of a load of newsprint on its way to the presses of my paper, so that three hours after the papers were printed the original print faded out and Raiberti's messages took its place—just about the time the buyers of the papers were reading them. Almost as good was their placing a miniature phonograph in the microphone that McRae was supposed to use for a broadcast speech. When the President started, we heard what was apparently his voice, complete with Philadelphia accent, go off on a rambling tirade denouncing Congress, the Army, the Navy, the farmers, the workers, and everybody else in sight, the talk being punctuated by frequent hiccups. And all the time poor McRae was making one of the best and most reasonable speeches of his career! It was hardly surprising that the rumors that Raiberti had started concerning the President's sanity revived.

WHEN Dahlgren did come around again he brought a gang. There

was the poetic-looking Hoyle, and a dark man who combined the outlines and manner of an Iowa realtor with a buttery Oxford accent; he was introduced as Colonel Bosh of the Indian Army. The last man, whose name the Admiral said was Mr. Tsung, was an obvious Eastern Asiatic. When I got a good look at him something went "click;" I almost said "Phil!" but stopped at the "ph."

"Tsung" simultaneously recognized me and almost spoke, but checked himself. Then he laughed. "We might as well own up, Walt. The Admiral knows who I am, but he didn't know that you did."

Years before, I had gone to high-school in California with a Japanese-American boy named Philip Okuma. He had—an incredible thing unless you knew him—been elected student-body president. But some local patriotic society became exercised and forced a change in our so-called Constitution, so that poor Phil was eulchered out of his job. The experience hadn't soured him.

Now he mentioned that he was doing Intelligence work. "What else is there?" he asked. "My people have been in this country for three generations, but a lot of good that does me, when every Jap is supposed to be a spy, a saboteur, an emperor-worshiper, and a lot of other things. And in Japan I'd be considered a foreigner who had been exposed to the wicked and impious ideas of the Western barbarians." He laughed again.

The Admiral called the meeting to order. Hoyle handed him a little black cylinder, about the size of the eraser in the end of an ordinary pencil.

"Colonel Bosh," Dahlgren said, "Your job is this: your agents are to introduce these—these things into the electrical communications of the enemy in Burma, without getting

caught. You have, I know, pulled riskier jobs before. I'm having the technical details typed and photo-offset; you'll get them tomorrow. Tsung here—Okuma, that is—is to get the first ones installed in Japan. I'm sorry we had to deprive you of a good molar, Okuma, but I think you'll find that the fake one we gave you to hold the—hmp—capsule works well. The capsule, once installed, cannot be removed without setting off a minute charge of thermite in it that will destroy it. I can't tell you how it works, not even you, Hasbrook, but you can take my word that it does. When it and, we hope, several thousand more like it have been given a chance to work, your general staff will be given the necessary information."

Bosh, who was, I knew, a much more dangerous man than one would have suspected from his aggressively harmless exterior, made a fatuous little speech about doing one's duty for one's paw people, Sir. We talked of this and that, and they went.

IN about a month, my sources began to turn up incredible reports. A Japanese cruiser squadron was caught and wiped out off the Kuriles by a superior Russo-American force. Their commander, fished out of the water and forcibly prevented from committing suicide, babbled that his rear admiral had said to go ahead because the whole battlefleet was right behind him, when we knew that there were no Japanese battleships within hundreds of miles.

In Lithuania, General Czarnewicz* was court-martialed and shot by the Alliance high command for saying that all was quiet on his front, when actually the Russians had broken his line, and he was just about to jump in his car and flee to avoid being run over by his own retreating troops.

*Pronounced char-nyay-vitch

Dictators von Freygang and Botorovic weren't on speaking terms, each swearing that the other had baldly lied to him at their last meeting.

In Bengal, Field Marshall Sato started an offensive with one day's ammunition, after assuring his Supply Service that he had enough for a month. When his Chinese troops ran out of shells and cartridges and the Indians counter-attacked, the results were pitiful. The Indians almost got across Burma into Siam before they were effectively opposed, and their advance was stopped more by the clogging of their supply lines with hundreds of thousands of prisoners than by the frantic efforts of the Alliance armies. I suspected that somehow our buttery friend Bosh was at the bottom of the débacle.

Then one afternoon the Admiral paid me another visit, his last one during the war. "That damn place is noisier than a triple eighteen-inch turret," he said, referring to his office. "Every three minutes somebody pops in with a 'Sir, what do I do with this now?' or a 'Sir, Commander Zilch sends his compliments and wants to know something,' and so on. I've got to get these reports read, so I came up here. Listen, Hasbrook, will you call up on that secret 'phone of yours and arrange to have any important intelligence 'phoned up? Big news is likely to break any minute."

He settled down to his reports. Presently the bell rang, and in walked Philip Okuma. To the Admiral's and my questions as to what in Hell he was doing here, he replied that he'd just been flown over from Siberia, and hadn't found Dahlgren in his office when he went there to report.

"For a while," he said, "I had no trouble installing the capsules, as I had been given the rank of corporal in the Imperial Army and was assigned to

headquarters as a stenographer. But as a result of the operation of the capsules there'd been some bad losses on the Manchurian front, and the first thing I knew I was shipped off to the trenches, leaving my subordinates in Intelligence to carry on the good work with the capsules.

"I soon found that morale wasn't very good in my outfit, the reason being that people at headquarters had been making so many statements that failed to prove true.

"ANYWAY, last week we were ordered to advance across the Sungari. The advance went fine, with amphibian tanks to support it—except that our battalion was on the extreme left of the brigade, and suddenly found that the brigade next to us had simply pulled out, for no apparent reason, and gone home. Of course you never realize just what's going on on a battlefield, but I was chief battalion runner and got a better idea than most of the men.

"With our flank in the air, the enemy—that is to say, the enemy of the army in which I was ostensibly serving—wasted no time, and we had to fall back on the Sungari. We dug in in some marshy ground on the inside of a bend in the river, and waited. Our battalion had only four officers left, a captain Ishii and three lieutenants. We sat in the mud for three days, and ran out of most of our ammunition and all of our food."

The 'phone rang for the Admiral. When he finished listening, he said with a broad grin, "The Brazilian Army has asked for an armistice. Told you something was going to pop. Go on, Okuma."

"As I was saying, we sat there, with Captain Ishii trying by radio to get something done about our precarious position. Finally Headquarters announced that they were sending some

'planes over to drop supplies, and asked our exact location, which was given.

"Pretty soon the airplanes appeared, but instead of supplies a bomb came whooshing down, and we scuttled for our holes like a lot of prairie-dogs. The 'planes dropped three more before the Captain, by frantically waving a Japanese flag, got their attention.

"I could guess what had happened: a capsule had been influencing the operator at headquarters, and he, when given the position of our battalion, had reported it as that of a group of the enemy: The bombs hadn't done much damage because of the softness of the ground, but I still felt that the capsules were working a little too well for my comfort. Having been brought up in this country, I haven't quite the fatalistic attitude about death that a true Japanese possesses.

"After the 'planes had gone, and Captain Ishii had protested loudly into his radio, an amphibian supply-carrier appeared across the river, splashed into it, and pattered over. It crawled out on its tracks, and the driver hove out four large boxes. 'These, Sir,' he said to Ishii, 'Are your food and ammunition.'

"Ishii looked puzzled. 'Why are the boxes marked, "Woolen Mittens"?', he asked.

"The driver answered, 'The Honorable Headquarters did not inform me, Sir,' and drove his machine back the way it had come.

"We hacked open the boxes in a hurry, I can tell you. You can imagine the feelings of those soldiers when the first was full of—woolen mittens. The second and third were likewise.

"Captain Ishii said in a strangled voice, 'Open the remaining box!' We did, and it contained—woolen mittens.

"Just then Captain Ishii spotted Sergeant Wada reading one of the innumerable propaganda leaflets with which the Russian 'planes had show-

ered us. 'Sergeant!' he barked, 'I thought I told you not to read those again?'

"THE sergeant just looked at him, and said 'Sure you did, but I didn't promise not to.'

"Ishii looked as though he were going to have apoplexy. Not only was the sergeant being insubordinate, but he was using the forbidden Fourth Inflection. The Japanese language has four inflections implying different degrees of politeness; ordinarily officers use the contemptuous Fourth to enlisted men, and enlisted men use the respectful Second to officers. The sergeant's use of the Fourth was a mortal insult.

"Sergeant Wada went on: 'Furthermore, I'll do as I damn please. You and the rest of the officers have been fooling us long enough. You've given us every reason to believe that these Russians'—here he waved the paper—'are right after all, when they say that all this talk about the divinity of the Emperor and the glory of the Empire is just a racket. In war you expect people in authority to lie, especially to the enemy and to the masses on their own side. But the members of our High Command lie not only to us, but to each other as well. That bombing this morning, and these mittens, aren't the first of such happenings, but as far as I'm concerned they'll be the last. Nobody in his right mind wants to fight for such crazy people. Who's with me?'

"Ishii whipped out his big old samurai sword and started for Wada, but a big gun went off and the Captain fell with his face in a puddle. We were astonished to see that Lieutenant Tatsuta had killed him. But then, these lieutenants were all pretty fresh from the ranks. The shortage of officers had made it necessary to promote them in a hurry, and they couldn't be expected to

take the samurai code as seriously as the military-academy products.

"Tatsuta said to Wada, 'I'm with you; I think you're right. How about you, Kanzaki?' speaking to one of the other two lieutenants.

"Kanzaki said, 'The samurai code leaves me but one course,' and before anybody could move he had pulled his pistol and blown his brains out.

"'You, Ichikawa?' said Tatsuta to the remaining looey, a nervous little rabbit man. Ichikawa answered, 'We-ell, I suppose I really ought to kill myself too. But a lot of queer things have been happening, and if it should turn out that Wada is right, and the samurai code is actually the bunk, I'd have killed myself for no good reason. And if it transpires that Wada is wrong, it will always be easy enough to kill myself when that time comes. So I think I'll go with you boys for a while and see what happens.'

"We hoisted a white flag, and pretty soon a tank rattled over the nearest rise and up to the edge of the soft ground. A man in a Russian uniform got out and asked us in a strong Mongol accent who was in command.

THAT was embarrassing, because obviously Sergeant Wada was the commander *de facto*, and Lieutenant Tatsuta was the commander *de jure*. They began arguing about it, bowing and hissing politely through their teeth, but the Mongol officer said to skip it, and ordered us to fall in. As we started to march away, one little private asked the Mongol if he was going to have us killed. The officer just grinned, and said 'Why should we? You'll all be good Communists by the time we get through with you!'

The 'phone rang again. When the Admiral had finished listening this time, he was fairly bursting. "Poland has quit! In Italy they've set up something

called a co-operative republic, though how co-operative and how republican it is remains to be seen. Von Freygang has killed himself. The King of the South Slavs fled from his palace in his pajamas, and when last seen was pulling his pants on in the cabin of his private 'plane just before it took off." He paused for breath. While he was getting it, I suggested getting our celebrating in early, before the streets became packed. He said "Sure, sure! But we'd better bring along the man who really did this—you know, the brain guy, Hoyle." So he called the psychologist, and we picked up him and his wife on our way to the hotel.

The steak wasn't up to my idea of a celebration steak, but meat prices were still astronomical as a result of war rationing. We drank enough cocktails so that all the food tasted pretty good whether it was or not, and the Admiral said to Hoyle: "Hasbrook here has been asking me leading questions ever since I had you up to his place, trying to find how your capsule works. I guess it wouldn't hurt to tell him now, especially as he's the most discreet man I know, except maybe Okuma here, damn it."

Hoyle brought his eyes slowly back into focus. "Capsule?" he said vaguely. "Oh, yes, that's what you call my transmitter." He gazed into space for a moment.

"Remember, Mr. Hasbrook, when the Admiral spoke of wearing a path through the mind? That gave me the idea. Every thought, every mental image, every sense-impression, consists essentially of an electric discharge-pattern between millions of neurons in the cortex of the brain. The pattern is so complicated that it is better described as a 'web' than as a 'path'.

"But it's a definite linkage between definite cells, and the passage of electric current quasi-permanently lowers the

resistance of the synapses between the neurons. Therefore one can re-create the pattern at will; or rather, electrically re-activate a pattern already created. This we call 'remembering'.

"In the setting up of one of these patterns by the lowering of resistance through certain synapses, many small discharges are as effective as one large one. Therefore an unnoticed sound that one hears or a sight that one sees daily becomes an integral part of one's personality.

"MY transmitter was designed to be placed in the regular transmitter of any electrical communication system, either wire or wireless, and connected in parallel with the transmitter circuit. It was so constructed that when the circuit was activated, the little transmitter would feed a sound-modulated current of the same frequency as that of the main circuit into it. The added current would carry a simple word-pattern urging the listener to lie. For instance, the transmitters installed in Germany said '*Es ist gut zu lügen—es ist gut zu lügen*' over and over.

"The listener would not actually hear

these words, because they were a mere inaudible murmur superimposed on the conversation of the speaker. But, if he used the instrument often enough, the minute neuron impulses caused by these sounds would in time wear the necessary paths in his brain, and he'd believe it *was* good to '*lügen*'. With these devices installed in the telephones and radios used by the dictators, ministers, and general staffs of the Alliance countries, the result was what we have seen. In other words, we made pathological liars out of them."

He paused again, and I could imagine millions of resentful soldiers taking their destinies into their own hands; of their officers, some yelling, threatening, and being contemptuously shot down, others discreetly removing their insignia and joining their men.

"That's what I meant by saying that we'd hoist them with their own petard. All these men have made such extensive use of that never-obsolete weapon, the lie, and they're all such accomplished liars anyway, that it didn't take as much of this form of suggestion to achieve our object as it would have with more truthful people."

THE END

Test yourself on these questions. Answers and scoring points are given on page 93. In every case tell *all* you can. For example, if the question were "What is a light year?" a full score answer would be "The distance traversed by light in one year, which is approximately six trillion miles." But a partial score would be allowed for either the definition or the approximate figure (within a range indicated in each case).



1. What are diatoms?
2. Which is longer, a solar year or a sidereal year, and why?
3. What is a solenoid?
4. Give the meaning of lunation.
5. What kind of an instrument is a cryometer?
6. What is a vector?
7. Distinguish between asteroid and asteroidea.
8. What are albino and albedo?
9. Explain the planetesimal hypothesis.
10. What is the relation of a chlorometer to chlorophyll?

GREAT NOVELETTE OF A MAD PLAN TO DEMAGNETIZE THE WORLD!

UNDER THE NORTH POLE

by ED EARL REPP

CHAPTER I

In the ice beneath he could see the bodies of scores of men

CHAOS

THE night was clear and moonless, with scintillating star clusters frosting the sombre sky as Sven Hagart stood with legs spread solidly against the wallowing roll of the



When Anthropologist George Kane, lost in the frozen Arctic, stumbled on that strange workroom, deep in the blue depths of a glacier, he thought he had found sanctuary. But he had discovered a mad scientist's ice-palace laboratory—and a wild scheme to plunge the world into chaos by demagnetizing the North Pole!

trawler *Annisquam* harbor bound. His thick, hairy hands gripped the wheel tightly and his strong teeth were clamped on the stem of his short pipe. Behind thick-lensed spectacles his pale eyes probed the darkness. From time to time he screwed up his lips and spat through the open window of the pilot house into the phosphorescent sea.

Over the monotonous throb of the engine came the sound of the crew talk-

ing lazily as they listened to one of them playing melodious chords on a harmonica. Hagart smiled to himself, his weathered face aglow in the feeble light of the binnacle. The day's haul had been good, the crew was in fine fettle and the engine hitting well. The sea was running comparatively calm, with long ground swells. By force of habit he thrust his head through the window and glanced upwards at Polaris

for checking with the compass.

Absently his eyes shuttled back to the binnacle and in the next instant his face became blank with astonishment and his pipe sagged in his lips. Sven Hagart gaped incredulously at the rocking disc of the compass and then his strong teeth were clamping on the pipe stem with such power that it snapped off. "*Ar det mojligt!*" he murmured. "Has the stars gone crazy or iss I asleep!"

He blinked a couple of times, then looked out again. Polaris was only half a point off the starboard bow, shining bright and clear. Again his troubled eyes sought the compass and narrowed. Quickly he becketted the wheel, removed his spectacles and polished them vigorously. Perhaps spray had warped his vision . . . but he sensed differently as he replaced the glasses, setting them into their customary place.

For the third time he stared at the North Star and back at the binnacle again. His face seemed to drain of all color and with a throaty exclamation of alarm and puzzlement he thrust his head through the door and yelled: "Eric! Nathan! Come quick! Something iss . . . I don't know what!"

INSTANTLY the harmonica silenced.

There was a scramble of feet on deck. Sven stood by the binnacle, pointing an accusing finger at the compass. "It says nor'east!" he burst out. "An' the Star is just off the starboard quarter. How can we be goin' nor'east an' nor'-by-west at the same time?"

The seamen crowded about him and stared. One of them rocked the binnacle and the compass rolled lazily past the point it had been holding, farther east. Tensely they watched, expecting it to halt and swing back. But the disc continued to move steadily in a full circle!

Alarmed, the men examined it. Noth-

ing seemed out of whack and there was no metal near to throw it off. But the disc kept on swinging aimlessly through ninety degrees of arc as if immune to the customary magnetic attraction. Sven threw up his hands helplessly. "Iss we crazy or iss it? Or iss the stars just flying around like lightning bugs?"

At exactly that moment all over the northern hemisphere, men were staring unbelievably at compasses which refused to make sense. The captains of great liners flashed messages back and forth asking bearings, afraid to believe their time-tried indicators, and yet afraid not to, puzzled by the strange discrepancies between gyro-compasses and magnetic compasses. Astronomers found their telescopes off as much as one hundred and eighty degrees—according to stationary, exact compasses. They radioed back and forth demanding to know if the same thing were happening at other observatories.

Air-liner pilots suddenly found themselves flying two hundred miles per hour in exactly the opposite direction from what they had been pursuing five minutes before. And even as they watched, the maddening cylinders of their instruments continued to swing about, now registering east, now west, now north, even south.

For three hours the ether boiled with frantic messages from men who were lost at sea, or aimlessly cruising the skies afraid to land, from lighthouse keepers who thought their great, stone towers were twisting on sinking bases. The Naval Observatory spent a desperate hour trying to solve the riddle, and finally gave up and sat with folded hands awaiting the answer.

And after three hours the erratic needles of half the world's compasses gradually moved back and took up the positions they had held for thousands of years—due north. Once more the

stars agreed with the faithful, slender needles of steel or the broad disks of mariners' compasses. Whatever it had been the crisis was over.

And in all the world there was only one man who knew what was happening, and that man was too far away to be of any help. Besides, George Kane was having troubles of his own at that moment. He stood—figuratively and literally—on the brink of death.

* * * * *

For three days after he was separated from the rest of his party on Prince of Wales of Ireland, tall, bony young Kane struggled to find them. There were six members of the expedition sent up by the Smithsonian Institute, and Kane was the youngest of them. But after endless hours of wandering about, he realized he was hopelessly lost.

The young anthropologist, leader of an expedition to investigate rumors of a strange race in the Arctic—rumors they had dispelled—was in the most difficult spot of his life. He had no food, no water.

DESPERATELY, he stumbled ahead. His feet were so nearly frozen that he couldn't move his toes inside the thick boots, nor could he flex his fingers. He lost all consciousness of time, and seemed to see nothing but snow. All his senses were blended into one great, empty feeling of being hopelessly lost. But the flame of hope is unquenchable in man; it kept him struggling ahead long after his strength was really used up.

And then, after endless hours, George Kane suddenly straightened up and listened. His drawn face took on a new intensity. Frowning, he stared at the ground. There was a peculiar pounding beneath his feet. At first he thought he had strayed onto ice and that it was cracking, but soon he realized the sound

was different.

It was steady, regular. It was like an engine heard at a great distance, only this was felt, instead of heard. For a long time he stood and tried to figure it out. Then he looked ahead.

Through a sudden rift in the blizzard he made out a tiny black object like a small tank. He shouted and struggled ahead. When he had reached it he stopped and went up to it. It was a sort of chimney that came out of the deep snow. The top of it was a trap door with a large handle on it whereby it could be opened, he found after scraping away the snow.

Kane was in no condition to wonder about it. He tore at the handle and found he could swing it open. He threw it back, and then stared down. It was dark inside. He dug out a match and struck it. By its light he saw an iron ladder going down the cylindrical wall. He dropped the match, and in the instant before it went out he saw that the ladder went down into dim obscurity.

Now he swung into it, clumsily because of his bulky clothing, and started down into blackness. For long minutes he continued to descend the iron rungs. After a long time he made out some sort of illumination. Looking down, he made out an opalescent glow.

Hurriedly, for all his weakness, the young scientist climbed on. So intent was he on not missing any rungs, that he was unprepared for it when abruptly his feet hit a floor. He swung around. He was in a sort of vestibule. The walls were apparently of slick ice, and the floor the same. Ten feet from him was a doorway cut in the thick ice. He staggered through it.

In the next moment he was standing stock-still, his eyes big with wonderment. The scene before him was like a setting from some unearthly fantasy. He stood at the entrance to a great cavern of ice. The ceiling was twenty or

thirty feet above the floor, and cut like a mighty dome. Polished, slender pillars of ice climbed from floor to roof. The walls were jagged and irregular, curving from where he stood in great semi-circles that met again two hundred feet from him.

The floor was of ice, too, but roughened in a serrated pattern that rendered it less slippery. There was no visible lighting equipment, but walls, floor and ceiling were luminous with a soft, blue light.

Against the ice wall at his left was a monstrous black mass of machinery that rumbled and shook the whole place. It was apparent now where the strange pounding effect had come from. The machinery was compact and powerful looking, and motionless except for a huge flywheel that spun swiftly and silently.

At the other side of the cavern a tremendous coil, like a great corkscrew, wound from beneath the floor into the ceiling. The six-foot-thick coil was of some steely-green material that defied Kane's efforts to place it.

Stunned with the magnitude of the scene, and with finding signs of a modern civilization this far north, Kane shuffled silently ahead. His weary body threatened to fail him completely as this new burden of amazement was put on it. And then, over the rumble of the machinery, a woman's cry echoed down the hall.

"Uncle! Someone's in the door!"

GEORGE KANE'S eyes rushed to the point from which the sound had come. His mouth dropped open. One more marvel had been revealed in this room of miracles—the most beautiful woman the young scientist had ever seen.

She stood only twenty feet away, with her hand against her throat in an attitude of startled surprise. She had

just stepped from behind a pillar of ice which had kept her from seeing him before. Her small, shapely form was clothed in a close-fitting jacket of fine white fur and a flaring skirt of the same material, with short Eskimo boots on her small feet. Against the soft white fur her dark hair was framed in deep waves.

Her lips made a small, surprised "o" and the blue eyes were opened wide.

From a door behind the girl hurried three men. One of them was tall and broad-shouldered, with a short, clipped beard. His face was white and intense, but it was the eyes which drew Kane's gaze. They burned below his craggy black brows like chips of green fire. They were filled with hate and vengeance. Suddenly his hand slid beneath the gray smock he wore and jerked a gun free.

The shocked anthropologist was too startled to move. Through his weary body flowed a sudden flood of inertia, and of the desire to give up. Three days of fighting snow and ice and blizzard, two days without food, had not prepared him for the rapid-fire trend events were taking.

As if time had been slowed down, he saw the black-bearded man's finger tighten on the trigger of the pistol. He stood stoically awaiting the roar of the gun and the smashing impact of a bullet. But the bullet was not fired. Between them a small, white form flew. The girl screamed, "Stop! Maybe he's not—"

Kane swayed a little. He saw the hammer of the gun pull back, inexorably. Then the great cavern seemed to explode, and he was pitching down into blue depths of glacial ice. . . .



CHAPTER II

BELOW THE POLE

AFTER a long time Kane's mind seemed to climb back to the things of reality. He had no desire to open his eyes, for he was tired clear through. When finally he looked around him, he saw he had been moved. The room he was in was small, but carved from ice as the cavern had been. He got one elbow beneath him and forced himself up.

"How do you feel?" someone asked quietly. It was the soft, friendly voice of the girl.

He whirled to see her standing near the head of the cot he lay on. There was deep concern in the depths of her dark eyes.

Kane shook his head. "Weak," he muttered. "And hungry!" He said the last with such emphasis that the girl laughed.

"I was expecting that," she told him. "If you think you can get into the next room I'll fix you all the ham and eggs you can eat."

Ham and eggs! George Kane was dragging himself from the bed in a second, a steaming vision of the food before him. He strode after her into the small dining room. In a few minutes he was seated at a long table stuffing himself with the warm, vitalizing food. He was too starved to wonder at these delicacies as far north as this.

While he ate, the three men he had seen before—including the one who had been intent on killing him—came in and sat near him, watching wordlessly. Kane looked them over while he ate. The first man seemed to have cooled down considerably. His expression was cold and hostile.

The other men consisted of a long, bony individual with a gaunt, white

face, and a short, stocky man with a heavily bearded face and a completely bald head.

The scientist's eyes kept coming back to the thin, cruel face of the man who was obviously the leader. There was a familiar cast to the high cheek-bones and the sunken, green eyes. And the way the dark hair was bushy at the sides and nearly flat on top struck a responding chord in his memory.

When at last he laid down his fork and pushed back his chair, the other spoke. "Be good enough to tell us who you are," he clipped.

Kane shot him a hostile look. "I'm George Kane," he said shortly. "I got separated from my party two days ago, after an expedition to Prince of Wales Island, and I was lucky enough to stumble on this place. Now maybe you'll be good enough to tell me why I was almost greeted with a bullet?"

The other shrugged and a bleak smile touched his lips. "We have enemies," he said simply. "In the surprise of seeing you here, I mistook you for one of them. I must apologize for the rude reception you received. But that is finished." He gestured at the two men near him. "Villers and Cahill, my assistants," he introduced, without turning his head. "I am Henry Cameron, and this is my niece, Sharon."

Henry Cameron! Kane caught his breath. At last he remembered the man. Henry Cameron had received the Nobel Prize three years ago for his work in steel. He had made the first revolutionary discovery in years, the invention of a process by which steel and iron could be magnetized to a point almost unbelievable. His process had outmoded, in a few months, the great electromagnets used in steel mills for carrying great pieces of iron. A piece of his metal one-tenth the size of former magnets could do the work of an electromagnet, and obviate the neces-

sity for expensive current. Cameron had made millions in two years.

CAMERON'S shrewd eyes caught the recognition that lighted the other's face. Quietly he said, "How soon can you leave?"

"Uncle!" Sharon Cameron broke in. "How can you ask that when Mr. Kane has just recovered long enough to eat one meal?"

Cameron's eyes avoided hers. After a moment he shrugged, "Very well. I think after two days you should be sufficiently recovered to go on. The storm will be over by then, and I'll see that you have food enough to carry you to the settlement." But there was a veiled menace in his eyes that the younger man did not miss. He nodded at the girl. "I'm sure my niece will be glad to show you around."

Followed by the other two men, the tall Cahill and stocky Villers, he strode out.

Sharon tried to explain. "My uncle is very—brusque to strangers," she stammered. "I'm sure you'll be welcome to stay as long as you like, after he knows you better."

Kane got up and took a deep breath. The strength seemed to come surging back into his body as the warm food brought a welcome glow to him. He stood tall and erect, a rather lanky figure. His eyes were whimsical as he said, "If he shoots at men when he's being brusque, I'd hate to get him mad! He might not miss, next time."

A smile parted the girl's rich lips. Then, turning, she said, "Perhaps you'd like to see more of this unearthly place you've stumbled into. Come along."

At her heels, George Kane stalked out through a short hall into the immense cavern.

"Tell me one thing," he said earnestly, as he caught up with her. "Just

what and why is all this? Who built it, or carved it, and what does it do?"

"To begin at the first question," Sharon smiled, "the caverns were cut out by a tribe of Eskimos my uncle brought here to do the work. I never saw them, because I've only been here a month myself. Uncle sent for me just after it was finished. As to why this is—it's some big oil scheme he has on. It seems he discovered an immense pocket of oil up here, and he's built his own plant right over it. That's the pump over there," she went on, indicating the bulky mass of machinery. "It's—I don't know how powerful, but it draws up oil from about eight miles down."

"Eight miles!" Kane gasped.

"Yes. The pump is especially built to do the work."

"What's the—coil, or whatever it is?" Kane asked. "Some sort of still?"

Sharon smiled and walked over to the Gargantuan coil of greenish steel or whatever metal it was. It looked like some monstrous enclosed circular staircase that wound down into the bowels of the earth. "That's the one thing I can't quite understand," she told him. "My uncle says it has something to do with distilling the oil."

"It doesn't look like any—"

At that moment a step sounded behind them. Villers stood close to Kane, a crafty smile on his fleshy lips. His squat, ugly body was relaxed in easy self-confidence. "Miss Cameron is right," he said, "it is a special process of Mr. Cameron's for refining the crude petroleum."

A SUDDEN impulse came to the other man to call him a liar. Obviously there was something hidden here Cameron didn't want discussed. He stifled the desire, and asked, "When did Cameron become interested in oil? I thought he was a steel man?"

"Did you?" Villers said, and left it there. "I was afraid Miss Cameron might forget to tell you one thing, so I'll let you know myself. You are at liberty to go anywhere you like in the upper part of the structure, but Mr. Cameron prefers that you don't go any farther past the coil. The machinery in the interior is rather complicated. You might hurt something—or get hurt yourself." With that he strode off.

Kane watched him go, frowning, and then turned to the girl. "If you don't mind," he said quickly, "I think I'll shave and clean up."

Sharon said quickly, "Forgive me for not asking you. The room you're to use is the one we brought you to after this morning. You'll find everything you need there." With unconscious nervousness, she brushed hastily at a curl that strayed over her smooth forehead.

Kane mumbled, "Thanks," and left her.

Back in his room he took a long time shaving, heating the water in a little alcohol stove. His mind puzzled over the strange world into which he had dropped. He was sure Cameron was no more interested in oil than he was, and yet there was little doubt that the machinery in the ice hall was to pump something from the ground. The thought came to him that for a man who had made the remarkable discovery that he had in steel, he forgot it in a hurry.

A glimmer of suspicion came to him that this might revolve about the rumors he had heard not long ago that the new metal was not working out so well. After a year of use, the metal seemed to lose its remarkable magnetic power and require further processing by Henry Cameron's laboratories—at Cameron's own expense. But—they were only rumors. They might be completely unfounded.

At last, shrugging, he decided his imagination was carrying him away. Cameron's explanations were probably true: He was here to drill oil, and naturally jealous enough of his discovery to be quick to challenge any stranger who entered the caverns.

Putting away his shaving things, Kane prepared to explore the place further. Perhaps a look around would justify him in thinking definitely one way or the other. He found that the back door of his room opened on a hall he had not yet been in.

Aimlessly, he wandered down it, until he wasn't quite sure where he was. Seeing a door ajar, he shoved it open and walked in. His mind was so taken up with the mysteries around him that he almost stumbled over Sharon without seeing her. She was huddled in a chair, her arm flung over the back of it and her face pressed into the hollow of her elbow. Her slim shoulders shook with sobs. A soft sound of crying, of miserable, heart-wrung crying, came to Kane.

He strode forward impulsively. He was touched strangely by the girl's grief, more so than he would have imagined a girl's crying could affect him after so short an acquaintance.

"Here, here!" he said warmly. "It can't be that bad!"

Sharon started and jerked around in the chair. Her face was white and tear-stained, her lower lip quivering. "Oh!" she gasped, in a muffled little voice. "I—I—"

Kane went closer to her. His face looked young and rugged, and yet very kindly, but there was a depth of feeling in his expression that was not all pity.

"If it's none of my business," he told her, "just say so, but—if I can help, I wish you'd let me."

SHARON CAMERON looked away and stood up. She went over to

where a small packing bag lay open. For a long time she stared down at it, and then suddenly she turned and burst out helplessly, "I don't know what's the matter. If I did, perhaps I could do something about it. But—" she shrugged despairingly, "I *do* know my uncle isn't here to drill for oil. It's something a lot bigger than that."

Kane grinned, "I'm glad there's somebody else who thinks there's something rotten in Franklin's territory. I thought maybe it was nerves on my part." Then, more seriously, he asked, "Tell me—just what do you know about your uncle's affair here? Do you have any actual reason to fear him, or merely intuitions?"

Sharon glanced at the bag she had been packing. "I've got enough intuitions, at least, to be ready to risk my life getting away," she said decidedly. "I've stood all of this 'unofficial captive' business I can. Just outside the tunnel, in the snow, I've got enough concentrated food tablets I stole from the supply to last a month."

Kane nodded slowly, "If I may use such language of your kinfolk, I think Henry Cameron is trying to pull the well-known wool over our eyes."

"You certainly may," Sharon came back. "I never could understand his wanting me to come here anyway. Lately I've decided why he did it. He probably decided he'd told me too much about his affairs here, and wanted to keep me from telling any more by staying down in civilization. He told me before that he was going to Victoria Island, and now he keeps testing me to find out if I told anyone else. Unfortunately, I didn't."

For a minute Kane looked thoughtfully at her. "Just where are we, anyway?" he wanted to know at last.

"Don't you know?" the girl asked in surprise. "We're on—or under—Boothia Peninsula."

"Boothia Peninsula!" gasped the scientist. "But that means—we're under the magnetic North Pole!"

CHAPTER III

ONE HUNDRED DEAD MEN

"I KNOW," Sharon shrugged. "But I'm sure I don't know what it all means. The whole thing's a mystery to me."

Kane was silent. After a while he said, "I'm thinking the only place we can find the answer is in the part of the cavern we're not supposed to go into. Which adds up to one thing—I'm going in there right now and have a look for myself!"

"Oh, you mustn't!" the girl cried, laying her hand on his arm. Her azure eyes earnestly probed the depths of his. "If he caught you there, he might kill you. There's something—something he's guarding with his life in there."

"Just the same," Kane said finally, "I'm convinced that it's no less dangerous to wait here than it would be to go into the forbidden rooms. But I want your promise that you won't try to escape before I get back. Then, if I find Cameron is as crazy as I think he is, we'll go together."

With the girl's promise still in his ears, he threaded his way to the other section of the cavern in the glacial ice. He chose the narrowest and least used halls to go by, anxious to avoid Cameron or his assistants. Everywhere the light seemed even and soft, leading Kane to suspect some sort of phosphorescent material fused into the ice.

Suddenly, he rounded a narrow turn and came into a hall about half as large as the first. The rounding ice walls gleamed coldly about him. In the spacious room there was a battery of shin-

ing instrument panels down one wall, another wall lined with faintly humming machinery, and a series of doorways on the other two walls.

Kane shot a look about to make sure he was alone, then slid into the room. Swiftly he went to the instruments. He found after a quick look that most of them were unfamiliar to him, consisting of pressure gauges and tachometers.

Then, down the wall, he discovered a frosted glass panel like a scanning screen, set flush with the ice wall. At the lower corner of it was a small red button. Kane hesitated, and then his curiosity got the better of him. His finger went out and pressed against the button.

Instantly the board lighted up. Kane recognized it as a detailed geologist's map. There were various colored strata of ice, earth, oil, and other formations. He bent closer, his lips tight against his teeth as he studied it. He caught a breath.

The labels were frequent—and in the brief words the young scientist read something that made his heart hammer and his pulses throb in his ears. The diagram was accurately scaled, so that he could read it easily. About seven miles down there was a thick layer labelled, "Magnetic Iron Deposit!" Kane's eyes flashed on down to the oil strata. He found that the level of oil in it was indicated by a movable black line, and that certain marks denoted the level on other days. By them, he read that in the last six months the oil had been reduced from a depth of one mile to about a hundred feet!

His mind raced. He saw how thin the layers were between oil and magnetic iron deposits, and between oil and the space below it—which seemed to be merely a bottomless chasm! All at once Kane stepped back and gasped, "Magnetic—why didn't I guess it!"

FOR the whole story was right there on the scanning screen. If all of the oil were drained from below the deposit of iron, the slightest jar would send the two-mile thick layer crashing down far into the bowels of the earth, to come to rest perhaps twenty-five miles below the surface. And unless he was very much wrong, it was that layer of magnetized iron that solved the age-old riddle of why compasses point north! The great body of iron would exert a tremendous attraction as far south as the equator, where some similar deposit must cause the Southern Magnetic Pole attraction.

Abruptly, George Kane whirled from the glowing screen and started across the floor. There was no time to lose. He must now find Cameron and the others and stop them somehow, before their disastrous plan could take effect.

And then, right in the middle of the floor, he jerked to a sudden stop. He stared down at the ice floor with an expression of utter horror on his drawn features.

In the ice beneath he could see the bodies of scores of men! Their features were plain in the light suffusing them. Pain, desperation were frozen into their countenances. Staring eyes struck up at him in a way that froze him with horror, and wide open mouths seemed about to shriek for help. There were at least a hundred men in the ice most of them clutching pickaxes or other tools. All of them were Eskimos.

Before Kane could recover from the shock, a footstep grated in back of him. Someone said icily, "You find the bodies interesting, Mr. Kane?"

The anthropologist whirled. "Cameron!" he jerked. And then, in a flood of anger, "So this is why you wanted no one in here! You wanted nobody to see what became of the poor victims whom you hired to build your ice palace

—and then buried in the ice by flooding the chasm they were digging in!”

Cameron's face was a stolid mask. The green eyes blazed under his shaggy brows, the only touch of emotion in his countenance.

“You are very discerning,” he breathed.

“Yes—discerning enough to know the insane scheme you are trying to work here!” Kane scoured. “You're planning to cause the great magnetic iron deposit that you've discovered to drop so deeply that it will be ineffectual. But why in God's name do you want to do it, Cameron? Why should you want to throw the compasses of the world off, to ruin the most valuable means that man has of guiding him in difficult places?”

“Because,” the steel man grated, “I intend to recoup my losses of the last year and sustain an income no one can ever take from me. It has cost me a fortune to recharge the metal I sold. But since then I have found why it failed. Now I'm going to be paid back. I'll be paid back for all eternity. Because while I am alive the world will have to pay me to sustain a magnetic pole, and after I am gone—the world will have to learn to go by the stars once more!

“Their gyro compasses are useless in most cases. So they will be completely helpless without me. And all because they don't realize a small amount of heat will sustain the metal for years. A thousand degrees would charge it permanently. But they won't know that—because you'll never live to tell it!”

As the full import of the other's words struck him, George Kane sprang forward and crashed against him. Both men were carried onto the hard ice floor. Kane's fists clubbed into the other's face as he sought to overpower him. He felt hard blows rock his head with dizzying pain.

IN the next moment something hard shoved into the back of his neck. Villers snarled. “One more trick and I'll fire!”

The scientist relaxed and turned his head, to see the stocky assistant's glowering face close to his. He got up slowly.

Cameron got to his feet and faced him angrily. “That will earn you a more horrible end than I had planned,” he gritted. “For the present you can reflect on a slow death in a block of ice—with only a small hose leading to your mouth to sustain life—until the ice crushes you. Within a few hours, you will have the doubtful pleasure of experiencing it. But not before you see something you can carry to your death with you.” He gestured to Villers. “Take him to the room.”

Without a chance to raise a hand in his own behalf, he was prodded out of the room by his guard and led away. “The room” proved to be a small cubical space in the floor with a huge chunk of ice for a door to it. Kane was rudely shoved into it, and the door slid back into place. He saw at a glance that there would be no escaping this dungeon. The walls were too slick for him to ascend to the opening. In despair, he watched, through thick ice, the vague form of his jailer moving away.

CHAPTER IV

WHEN THE ICE CRACKED

FOR two hours he was kept there, while he tortured himself with worries and fears. Bitterly he regretted his foolhardy attempt to disarm Cameron, for it had changed his position from that of a tolerated fool to a condemned enemy. The game had been even more dangerous than he

thought; one error had resulted in his being thrown here in this freezing-cold cubicle to await death.

And while he shivered here in the semi-gloom, Cameron and his aides were preparing virtually to enslave a world. Whatever his plan was, Kane knew it was almost at the culmination point. The other's statement that he would not die, until he had seen something he could remember as he died, proved that.

And yet, with a whole world about to be plunged into slavery to Henry Cameron, the young scientist found himself worrying far more about Sharon than he was about the world's millions! He conjured up her face and her trim little fur-clad figure before him, and then anxious fears would change the smiling face to one of terror. What did Cameron have in store for her? He was too suspicious a man to risk letting her tell all she knew about his work. Some stray bit of knowledge she had picked up might give away his secret, might free men from the necessity of his presence in order to process the coil.

Kane's mind rebelled at thinking of what might happen to her. He was far more worried about the girl than he was about himself; he found, during those anxious hours in the dungeon, that she had come to mean a very great deal to him.

After what seemed an eternity, Cahill and Villers returned and swung the block of ice from the trapdoor. They lowered a rope to him and permitted him to clamber out. Cahill stuck his evil, bony face close to his and rasped, "We've got a special treat for you Kane. Cameron decided it would be cruel to make you die alone. He's going to let the girl go with you!"

Kane's heart swam in shock and hatred. He clenched his fists and bit out savagely, "If ever a cowardly, murderous pack of rats lived—"

Villers' fat paw slapped across his mouth, cutting off the angry flood of words. "Save your energy to fight the ice block when it begins to crush you."

Together they hauled him along. Swiftly he was carried back to the great hall in which the pump and coil were stationed. Suddenly Kane realized that the pump was no longer throbbing. He guessed the reason—that the huge oil pocket was empty at last, leaving space for the mass of iron to tumble into the bowels of the earth. Cameron was standing near the coil, by a black box fixed in the wall. Sharon stood near him, a small, frightened figure.

Kane was shoved to her side. Impulsively he reached out and grasped her hand. Her answering squeeze warmed his heart, and gave him the courage to smile. His eyes promised her hope that his lips could never have uttered, for there was only despair in his heart.

Now Cameron strode before them, his face triumphant and cruel. "One small thing remains to be done," he smiled. "And when I press that switch it will be finished. A charge of dynamite now rests far down in our oil line. When I send it off, the iron will drop—forever."

Kane watched his white face, studying the green eyes that burned coldly. "I'm warning you," he began, "that if you go on—"

"Condemned men are in no position to give warnings," Cameron snapped. "In your position, one usually pleads. But you two will not even have the satisfaction of doing that. For I am going to finish my work before your very eyes, and then—then you will go to join those Eskimos you were admiring."

Sharon's eyes flashed to his. "What—what does he mean?" she asked.

GEORGE KANE guessed that she had not been told what was in

store for them. He said: "Nothing that will concern us. Not if he goes on with his plans, at least. Cameron, if you weren't half crazy with ego, you'd realize what you're doing."

"I realize fully," the other chilled. "I haven't spent a year laboring in this hole without knowing what I was about." He broke off and strode to the black box on the wall just beyond the huge green coil. He raised his hand to it. He flashed a bleak smile at the two men who stood at either side of the captives, their guns trained on them. Slowly his fingers commenced pressing the switch in.

Kane lurched forward with a warning crowding his lips, to be brought up by his two guards. "You fool!" he shouted. "You'll bring this whole place crashing down if you go on. You'll kill yourself as well as the rest of us!"

But Henry Cameron's hand continued steadily to close the circuit that would set off the charge of dynamite miles below them. His lips parted briefly to counter, "Your ravings are useless, Kane. I know enough of geology to be sure that the ice layer is far too thick to crack."

The hissing breathing of Cahill was sibilant in young Kane's ears as the bony aide hunched forward. His chalky white face was ghastly in its drawn intensity, making his eyes appear like hollow sockets. At his other side Villers strained ahead, his fleshy lips pursed. And then Cameron's body stiffened as he drove the knife switch home.

In the great cavern of ice not a sound was heard. There was a faint crackling as the current was closed, and then the hall became as soundless as a catacomb. For seconds, the five who waited hung motionless. Abruptly, through the solid floor of ice, a faint tremor was felt. The gigantic coil quivered a little, like a chiming spring that

has been struck. Then a low rumble seemed to sound from walls and ceiling, and the floor quivered slightly.

Over Cameron's face, pale now, came a frown of puzzlement. His hand came slowly away from the switch box. His eyes sought those of the others, but his tight lips uttered no sound.

And then a wave of violent jerking passed through the ice cavern. From the ceiling came a fine mist of ice chips. Long lines of cleavage shot, zig-zagging, through the floor under their feet as the miles-deep ice cracked. Shrill raspings filled the hall as age-old ice was ripped apart.

The cavern in the ice was crashing into ruins!

The tension broke. Cameron shouted something and darted to the coil, braced his body against it as though to stop its mad quivering. Cahill and Villers ran to his side. The three of them, like children who seek to hold back a breaking dam, threw their weight against the tons of green steel that shook and jerked.

Kane turned to the girl, who was frozen with fear. "We've got to get out of here!" he shouted, over the thunder of sliding ice. But within him he held no hope that they would ever climb from the crushing death that was closing in on them.

ACROSS the cavern's floor a white line shot, tracing a path between the man and girl and the three who fought the coil. Down its length a great chasm opened up, ten feet wide. Kane was left on the very edge of it, staring like a sleepwalker into the blue depths that yawned before him. His face blanched as he gaped at the bottomless wedge that slid down through miles of ice. Then he whirled and grasped the girl's hand. "Come on!" he cried. "We've got to make the tunnel before we're cut off!"

He half dragged Sharon with him as he crossed towards the entrance. But even as they started ahead, a deafening roar sounded close behind them. Kane spun about to see what new peril threatened them. His eyes widened as he watched the scene across the chasm.

The coil had torn loose from its base two miles below, and with ominous acceleration it was sinking down. The ice screamed as it ripped through. Cameron and the others reeled back from the jagged hole that had been torn by the coil. Cracks shot through the ice all about them. As one man they turned and ran back towards the others.

Too late they saw the chasm between them and the hope of safety. But there was no other way out for them now. Already the ceiling was raining large chunks of ice down on them, and in a few seconds the whole place would be filled with jagged blocks of crushing ice. With a desperate leap Henry Cameron launched himself over the gaping canyon. As one man, the others flung themselves at the opposite side.

Kane's stomach felt cold and sick as he saw them hurtle over the pit. Cameron's shoulders were hunched, his arms bent, hands clawing, as he stared down at the death miles below. Suddenly his feet struck the other side, barely touching the edge. He tried to take a step, twisted, bent backwards as the slick ice failed to give him footing. His hands clawed madly at the air as his long body teetered back. And then, in a moment, he was gone.

From the cold depths a chilling scream ricocheted up at them, filling the cavern with mad echoes. Before the sounds died, Cahill and Villers crashed to their deaths behind him. Both men were too frozen with fear to utter a sound. Not a whisper came from the dark void after the echoes of Cameron's shriek faded away.

With a violent jerk George Kane

shook off the cold fingers of horror that clutched him. He whirled and swept up the girl in his arms and dashed for the tunnel, just as a thousand-pound block of glacial ice crashed to the floor on the spot where they had stood.

Like a drunken man he stumbled and reeled. The floor heaved beneath him, threatening to throw him down. The slender pillars snapped like icicles. A rumbling sound gave evidence that the oil machinery had dropped through the floor. Kane's whole body was a tight mass of bunched nerves. He fought the terror that would slow his legs down and doom them to a horrible death.

The exit loomed up before him, then he sprang through and was dashing for the iron ladder. The walls were frosty with spider-web lines that betrayed their crumbling. It seemed minutes that he struggled towards the black hole that would mean salvation, though it was only seconds. His ears rang with the rumbling thunder all about.

All at once the ladder was before him. He set the girl down and somehow got her started up it. Swiftly he followed. The ladder seemed a thing alive beneath his hands and feet. Lurchings and shakings threatened to dislodge both of them. But fear gave strength to their muscles and carried them on.

AFTER an eternity of climbing, the trapdoor loomed before them and Sharon's hands thrust it upward. The harsh Arctic light streamed in on them. George Kane followed her out into the snow. Absently he noted the little pile of provisions the girl had brought out early that day.

The rumbling had almost stopped now. Only faint undulations of the ground evidenced the hell that had taken place below. Kane's legs were weak as he turned to the girl. She was crying softly with relief.

Somehow the young scientist's arms stole about her shoulders and drew her near him. "It's all right now," he murmured. "The cave-in won't come any farther. It was just the ice that was affected. With the food you brought out this morning, we can get away from this place and reach Spence Bay in two days."

After a moment the girl's voice, muffled because her face was buried in the hollow of his shoulder and neck, said: "But what happened? I thought he said the ice couldn't slip?"

"It wouldn't have," Kane said, "except that he forgot something—the friction that would be produced by all that slipping iron. The friction created tremendous heat and melted the lower ice. That brought the whole place down. And when that happened—Henry Cameron's plans were spoiled. He failed in what he was attempting."

"You mean—" Sharon's face tipped up to his querulously. "You mean the pole hasn't been destroyed?"

"The original one was, all right. It's about twenty-five miles down, now, and useless. But Cameron told me something before he imprisoned me. He told me he'd discovered that all the metal needs, in order to have the magnetism fixed, is to be heated up to about a thousand degrees. Right now that huge coil of his is slipping down and heating itself far above that! In other words, only a few hours will elapse before the magnetic North Pole is restored for good."

Sharon was silent. After a moment Kane said, with the first smile that had touched his face for hours. "Personally, I wouldn't mind standing like this for the rest of my life, but I'm afraid we'd freeze. We'd better start for the settlement. We've a long walk ahead of us."

The girl's blue eyes smiled up at him, with no trace of the horror that had drenched them a short time ago. "At least," she said softly, "it will give us plenty of time to get acquainted!"

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Answers to Questions on Page 79

1. Microscopic algae, one of the simple drifting organisms that pervade the sea (8 points for either).

2. A solar year is the period (of 365 days, 5 hrs., 48', 46") between two passages of the sun through the same equinox (3 points for definition alone). A sidereal year, the period which the sun takes to return to the same stars (3 points) is longer (2 points) by 20' 30". The procession of the equinoxes shortens the time between successive equinoxes (6 points).

3. A simple form of magnet (4 points), consisting of a coil of wire with a current flowing through it (4 points more).

4. The interval between two returns of the new moon (6 points), therefore equal to a synodic month (2 points more) or 29 days, 12 hrs. and 44 mins. (4 points more, 29½ days or 29 days and 13 hrs. acceptable).

5. Any type of thermometer for measuring lower temperatures than the ordinary mercury thermometer will register (6 points).

6. A symbol used in physics, consisting of an arrow with a shaft of fixed length (4 points), used to express a velocity quantitatively and its direction (4 points more).

7. An asteroid is one of the planetoids or small bodies revolving around the sun in planetary orbits (6 points) in the space between the orbits of Mars and Jupiter (2 points more). Asteroidea is the name of a class of starfishes (2 points).

8. An albino is a person, animal or plant wholly or partially lacking in color because of pigment deficiency (2 points). Albedo is reflecting power (4 points), expressed in per cent of solar light reflected (4 points more).

9. It is a theory that the solar system grew from a nebula of minute bodies called planetesimals (6 points); moving in planet-like orbits, they gradually gravitated together and coalesced without extreme heat (6 points more).

10. None (2 points). Chlorophyll is the green coloring matter contained in plants (3 points), the substance through which, with light, plants manufacture food from carbon dioxide and air (3 points more). A chlorometer is an instrument for detecting the chlorine in a compound (4 points).

by
FREDRIC ARNOLD KUMMER, JR.

THE STRONGER



THRILLING FEATURE-LENGTH NOVELETTE
OF INTER-PLANETARY HI-JACKERS!

C EASELESS rain dripped from the low-hanging clouds, only to rise again in wisps of steam as it struck the gleaming sidewalks. From the fetid green Venusian jungles that encircled the town, drifted brightly colored spores, like bits of confetti, floating lightly in the thick mist. Death to anyone whose lungs they entered, for the spores feasted on human tissue. Multiplying with frightful rapidity, they choked the lungs, the blood stream, causing swift, sure death.

Jim Weston, standing under the overhang of a grey crystalloid building, adjusted the spore-mask that covered

Quick-rooting *jennis* weeds sprouted from between chinks in the sagging masonry, forced apart the massive stones of the docks. A few crystalloid warehouses and grain elevators, a wet, scum-covered administration building, several slatternly, patched-plated tramps, lying like huge grey slugs in the slimy mud of the landing field. The only signs of life about the space-port emanated, in the form of tawdry multiphone music, from a little cafe sandwiched between two warehouses. Jim made his way toward it, pushed open the door, stepped into the cafe's tiny spore-lock. After a five minute soaking in germicide-laden air,

A space-trip from Venus to Earth was what Jim Weston wanted — what he got was a shanghaied trip on a Mars-bound rocket, as a member of Saturnian Slane's slave-crew. And when they crashed on Mars' red desert, to be made captives of the torture-loving Vens, this Earth-man showed a Saturnian bully that on any planet it's guts, not size, that makes the man!

his mouth and nose, eyed the opaque fog with a disconsolate shake of his head. Venus in all its doubtful glory! It made a man feel as though he had been tossed into a giant's-cauldron of stewing spinach. Jim's hands touched the heavy lead container strapped to his belt. Twenty ounces of radium, his pay as chief engineer on the Jovian aqueduct job. Enough to take him to Earth a hundred times over . . . and he was forced to stay in this steaming hell-hole until a terrestrial-bound ship made port! Which might be months, with the Venusian grain trade so slack of late. Two years fighting mud, gravity, and methane gas on the oozy surface of Jupiter, the maddeningly long Jovian-Venus space trip, and now the prospect of months on this green hot-house planet. Jim sighed dismally, set out in the direction of the space port. Perhaps the captain of one of those rusty freighters now unloading at the docks might be persuaded to make this trip to Earth. . . .

The space port was a desolate sight.

he slapped the dead spores from his coat, stepped through the inner entrance.

The tavern was worse, Jim thought, than even the dives of Jupiter. Smoke from a dozen strange narcotics dimmed the light of the *radite* lamps; the too-sweet odor of Venusian *thole* mingled with the smell of Martian *tong* and Terrestrial whisky; pallid, overly made-up women, all but nude in their sheer cellosilk dresses, sat hopefully at tables, sipping apparently endless glasses of *thole*. The men who lined the bar were for the most part space-hands, tiny red-skinned Martians, squat Jovians, and nondescript waifs from the asteroids, the moons of Saturn. Jim stepped up to the rail, beckoned to the bartender.

"Where can I get information on those freighters outside?" he demanded. "I want to ship out of this green hell."

Before the bartender could answer, a heavy hand fell upon Jim's shoulder.

"Ship out?" a deep voice boomed. "You've come to the right place lad. I'm Slane, skipper of the *Astrix*. As soon

as I can muster up a crew from among these rats, I'm leaving for Mars."

Jim glanced up at the owner of the deep voice. The man was huge, nearly seven feet tall and amazingly broad in proportion. His arms were long, gorilla-like, and the sweat-soaked shirt, clinging damply to his skin, revealed great rippling muscles that spoke of inhuman strength. The giant was, to judge from his narrow, reddish eyes, his absolutely hairless head, a Saturnian; his neck still bore the reddish chafe of a Svenson helmet. Most significant of all, his wrists were circled with wide silvery scars, scars that could only have been made by the tightly welded fetters of the Saturnian prison colony. Clearly the big man's past had been a checkered one.

"Well?" Slane's coarse features broke into an expansive grin. "Outward appearances don't hold for ships nor men. You'll find the *Astric* a tidy craft and me a thoughtful skipper. Come, lad, I need men to replace those of my crew who were knocked off by these blasted Venusian spores. You're a bit scrawny" . . . his gaze swept Jim's slender, wiry frame . . . "but beggars can't be choosers. We'll sign articles, all fair and square, and you'll get fifty *thaels* when we land on Mars."

JIM eyed the man narrowly. There was something in his tone, a cunning persuasiveness, that did not ring quite true.

"Mars?" he shook his head. "Earth's my destination. And I didn't figure on working my way. Small difference between Mar's red-hot deserts and this fever-ridden pest hole. What I've been dreaming of these three years is the cool sweet fields of Earth."

"A passenger!" Slane's red eyes became mere slits. "That smacks of money. Earth's none too healthy for me just now, my little friend, but per-

haps for a price. . . ." He picked up his spore-mask from the bar, turned toward the door. "Hardly a matter to discuss in this thieves' nest. Outside on the decks we'll have privacy. Come along."

Jim hesitated, reached for his mask. No harm in hearing the man's proposal. Nodding, he followed the Saturnian through the doorway.

The space port was still deserted, dismal in the steady rain. Some twenty yards from the little tavern Slane paused.

"Well?" Jim's voice was muffled by the thin mask. "What's the proposition?"

"Just . . . this!" Slane's huge fist lashed upward with paralyzing force, caught the earthman flush on the jaw. Jim felt only the merest fraction of a second's pain before he lapsed into dark unconsciousness.

The first thing that Jim Weston saw, on opening his eyes, was a rusty, rivet-studded bulkhead. All at once he realized that he was lying on a rude bunk, that he was held there by some terrible, invisible force. And then an explanation surged through his cloudy brain. He was on a space ship, pinned to his bunk by the force of the vessel's acceleration! Jim lay back weakly, tried to piece together the puzzle.

It was perhaps ten minutes before the ship's speed became constant and the force of acceleration slackened, died away. Jim was just struggling into a sitting position when a door slammed and Slane entered the room.

"Still lolling in bed?" The giant's voice was harsh. "Bah! You earthmen are all weaklings! Up, and get to work!" He seized Jim's arm, dragged him from the bunk.

Weston stood for a moment, unsteadily, shook his head in an attempt to clear it. Suddenly he noticed a heavy lead container strapped to Slane's belt,

a container marked with the initials J. W.

"My radium!" he muttered. "You . . . you've stolen. . . ."

"Ugly word, stolen." The Saturnian laughed mockingly. "The radium's my fee for taking you to Mars. Of course, you'll have to work, with us short-handed. A month's chipping rust'll make a man of you."

Weston stared contemptuously at the captain of the *Astric*.

"Yes," he said coldly. "Just what I'd expect of you. A stupid Saturnian bully, with the brains of a . . ."

Slane's hand, open-palmed, smashed across Jim's lips, sent him spinning across the room.

"Maybe that'll show you who's boss on this ship!" he bellowed. "Go forward, you lily-livered terrestrial scum, and report to the mate! Lively, now, or I'll break you like a matchstick!"

He grinned, hooking his thumbs over his belt, and shot a stream of blue *teel* in the direction of the sandbox. Legs planted wide, chin thrust forward beligerently, he glared at the earthman.

"I'm strong, see," he grated. "Stronger than you or any of these rats aboard! Just remember that!"

Jim Weston looked the big man over, broke into a sudden harsh laugh.

"Sure," he murmured. "Sure. The stronger. . . ." Still laughing, he turned, made his way forward.

The weeks that followed were a cruel delirium to the members of the *Astric's* crew. Rotting food, filthy quarters, long hours of toil . . . and Slane. More than anything else the presence of the captain tortured them. Here a half-starved wretch, pausing for a moment after hours of chipping in cramped positions, would hear sudden oaths, feel the Saturnian's *thorium*-soled boot crash against his skinny chest. Here an emaciated oiler, complaining to his mates of the stinking food, the lousy,

dirt-encrusted bedding, would find himself lifted by herculean arms, shaken until his teeth rattled. And as, whimpering, they begged for mercy, Slane would taunt them, call them cowards, weaklings. Only once had there been a show of resistance to his brutality; a broad-shouldered Jovian engineer, goaded into sudden fury, had turned on him, brandishing a heavy slice-bar. Ten minutes later the Jovian's mangled body, back broken, arms dislocated, had been tossed from the air-lock. And Slane, deliberately bending the slice-bar into a hoop, walked scornfully from the fo' castle. Even in sleep the men feared him, muttering brokenly in nightmares, tossing restlessly about, half-awake, in dread of his voice calling them to new, sadistically conceived labors. Like some huge demon, the captain roamed the ship, distributing his oaths, his savage blows with grim satisfaction.

PERHAPS it was because he knew Jim Weston to be superior to him mentally that Slane singled the earthman out for special attention. The dirtiest jobs, the most killing toil fell to Jim's lot; and when Slane discovered that he could not catch Weston resting or grumbling, his hatred of the earthman mounted. Determined to break Jim at all costs, he devised new and impossible tasks. Cleaning the carbon from the forward rocket tubes, the firing chambers; shifting portions of the cargo back and forth at the captain's fancy; long hours in the near-zero cold of the void, clad only in a light space-suit, patching the plates of the *Astric's* hull. A terrible ordeal, yet somehow Jim stood it.

Just how he kept going, he was never quite sure. His hands were raw with blisters, his body bruised by Slane's well-directed kicks, his every muscle ached in weary protest. There were times when he felt that he *must* lie

down, rest, if it meant his death. Yet always there was something that urged him on, some hidden source of energy that was more of the mind than of the body. Through sheer force of will he kept on.

After what seemed an eternity of grey days and nights, Mars appeared below them, huge, red, ominous, its vast stretches of desert laced by a network of canals. Coasting in on a long slant, the *Astric* sped toward Psidis . . . called by earthmen Acherusia Palus . . . at the junction of the Bactrus and Acheron canals. Jim was polishing the chromium of the control panel as the ship raced toward the red planet. Slane, at the T-bar, was grinning.

"So," he rumbled, "your cruise is almost over. You'll admit, no doubt, that the comforts of our little luxury liner have made up for the high cost of the passage. And if such a ragged scarecrow as you should go to the Martian authorities with tales of robbery and kidnapping, they'd arrest you for drunkenness. Besides, they'll have the word of honest Captain Slane that you're space-crazy."

Jim laughed. That laughter, however, seemed to infuriate the Saturnian more than words.

"By all space!" Slane roared. "None of your impudence!" Lashing out with his huge fist, he caught Jim a glancing blow on the jaw.

Stunned, Weston staggered backwards, crashed into the control panel. Under his weight it buckled, gave way in a tangle of wires, of shattered glass. Blue sparks shot between short-circuited lead-ins; under the fierce heat delicate wires melted, ran.

Like a living thing the ship bucked, lurching crazily from side to side, climbing momentarily, then falling, sickeningly. Slane, his eyes bright with fear, twisted the T-bar desperately. Receiving no response, he ran to the com-

panionway, shouted along it.

"Emergency stations! Open forward rockets, full! Quick, blast you! Lower rockets! Full power!"

Jim Weston, disentangling himself from the wreckage of the controls, peered out of the big glassite observation port. Psidis, the canals, were lost in the distance. The *Astric*, whirling about madly, was dropping like a plummet onto the red, sandy desert. Jim watched the ground leap up to meet them. One second, two seconds, three seconds. . . .

Suddenly the ship steadied herself as the lower rockets burst into flame. For a moment it seemed that there might yet be a chance. The speed of the descent, however, was too great. With a splintering crash, the ship hurtled into the hard-packed sand.

A lump on his head the size of an egg, Jim Weston clambered to his feet. A miracle, it seemed, that he still lived; the ship was a tangled, twisted mass of wreckage, a confusion of bent beams, shattered plates, and sputtering wires. The pilot room, located on top of the ship and well forward, was the least damaged. Jim touched his head gingerly, glanced about. A smothered curse from the other end of the room reached his ears. Slane! Buried beneath a heap of wreckage!

Picking his way across the control room, Jim tore at the scraps of metal. A moment later Slane was staring up at him, helplessly.

"Trapped!" he muttered. "Can't move!"

Jim knelt beside the fallen giant. The massive T-bar assembly was wedged across Slane's chest, pinning him to the floor. Weston grinned, harshly.

"If I was one of your kind," he said, "I'd go on about my business, leave you here. Might even kick you around a bit before leaving."

"No!" Slane's voice was a hoarse whisper. "No, lad! You . . . you can't!"

"No, I can't," Jim said slowly. "I'm not your type! I'll get a lever. . . ."

TURNING abruptly, he descended the companionway to the deck below. The lower part of the ship was smashed to flinders. Jim crawled over and through a crumpled heap of metal toward the engine room. Approaching it, he became suddenly nauseated. The room was a shambles, a slaughterhouse. The other members of the crew, caught below at the moment of the crash, had been reduced to charred, unrecognizable bits of flesh by a bursting firing chamber. Snatching up a long *durium* bar, one of the compression plungers, he started back to the control room. In passing the remains of the storage compartments, Jim suddenly noticed that the floor was wet. Frowning, he dropped the plunger, followed the stream of water through a maze of broken crockery, sacks of space-biscuits, tins of meat. All at once he saw its source and his heart sank. The big water tank, tilted at a precarious angle, was spouting water from a crack in its lower side. Rum-maging hastily among the debris, Jim came up with two quart-sized metal containers, filled them. By the time he had found a third bottle, however, the tank, low after the long weeks in space, was empty. With a shake of his head Jim picked up the two containers, the metal bar, and made his way back to the control room.

Slane stirred at the sound of the earthman's approach.

"So," he muttered, "you've come back. . . ."

"Yes." There was irony in Weston's voice; he slipped the rod under the T-bar assembly and, using a bit of the control panel for a fulcrum, raised the weight.

"Ah!" Slane wriggled free, stood up, once more his domineering boastful self. "Takes more than a wreck to kill a Saturnian! What of the others?"

"Dead."

"Good riddance." Slane chuckled hoarsely. "Weaklings, they were. But where are we?"

Jim motioned toward the observation port. Before them stretched an infinity of flat red desert, baking beneath a hot yellow sky. No hill, no tree, no sign of life broke the straight horizon. Rust-colored sand, hard-packed clay . . . and nothing more.

"Not pretty, is it?" Slane mopped his egg-like head. "Got any water? It's hotter'n mercury."

Jim handed him one of the metal bottles.

"Be careful," he warned. "The tank's empty. Only a quart apiece."

Slane drank deep.

"Looks like we walk," he grunted. "No chance of repairing the radio, call for help. I'll go below, rustle up some food to take with us." He turned to the companionway.

When he came back, Weston was making a rough attempt to shoot the sun. Noting down the results of his observation, he turned to Slane. The big Saturnian, in addition to two packages, of concentrated food, had the heavy radium container strapped to his belt. Jim grinned, sardonically.

"You'll sweat," he observed. "Come on."

CHAPTER II

THE sun beat down like a hammer of brass, pounding the two men, the endless stretches of wasteland. On all sides there was nothing but the faint black line of the horizon, an occasional cloud of flying sand swept

up from the plain by sudden fierce gusts of hot wind. Barren, desolate, interminable . . . a sight that tore relentlessly at men's nerves.

Jim Weston, his face and arms burned to the color of raw liver, his eyes half blinded by the glare, the wind-blown sand, plodded automatically forward. Walking, always walking! Two days, yet they seemed two centuries! That terrible ache in his legs, that buzz in his head as though his brains were a-boil. And the sun, the damned, merciless sun! He glanced at Slane. The giant, accustomed to the cold ice-floes of Saturn, was reeling slightly as he walked. There was a nervous twitching about his jaw and a wild glint in his little red eyes.

"How much further?" he gasped, licking his swollen, cracked lips.

"Another day. Maybe two." Jim laughed, a hoarse cackle. "What's the matter, strong man? Turning soft? You're all alike, you Saturnians. Spoiled by your great strength, by always taking what you want by force. But when it comes to endurance, to a fight against something that's stronger than you are, you're not even close to us Earthmen. We're accustomed to struggling against hopeless odds; we've learned to use our brains. Endurance comes from the mind. Willpower, courage, guts . . . the something that keeps you from lying down and quitting when the going gets tough. And bullies like you are yellow, whine when you begin to feel pain!"

SLANE'S head snapped up at these biting words, as Jim had hoped it would, and he increased his stride. But at the end of half an hour he commenced to reel drunkenly once more, sucking in the thin, hot air with choking sobs. All at once he slumped to one knee, gasping.

"Water! Can't go on without water!"

Jim paused, eyed the shaking hulk scornfully.

"Serves you right. I warned you yesterday about swilling the entire bottle. I've nearly a pint of mine left."

"A . . . a pint!" Sudden desperation shone in Slane's eyes. Lunging forward, he bore Weston to the ground, tore the water bottle from his pocket.

"Ah!" His sun-scorched fingers fumbled clumsily with the cap. "You see who's boss now! You'll die and rot here in the desert, earthling. And I . . . I'll . . ."

"I've been waiting for this." Weston leaned forward, his sunken eyes gleaming intently. "Think a minute before you drink, Slane. Do you know where you are? Do you know which way the Bactrus lies? Aboard the *Astrix* you called yourself captain, but I noticed the mate did all the navigation. All right, *Captain* Slane! Take the water, go ahead! In an hour you'll be walking in circles, lost! And in a day maybe two, you'll be face down on the sand, begging your Saturnian gods to strike you dead! You say you're the boss! Well, boss, find your way out of this!"

Slane hesitated, his eyes on the blazing red expanse of desert. In two days he had seen no change, nothing to vary the awful monotony of the plain. No difference between the place where they stood now and the places they had been an hour before. It was as though they were on a treadmill, walking, walking, getting nowhere. And the sun prodding them with its hot copper beams, and the terrible loneliness, and the mirages that drew you from your path, disappeared as you ran toward them. . . . Water splashed softly in the canteen as Slane's hand shook.

"You . . . you're sure you know the way?" he muttered.

"My first job was working on the Martian canals." Jim wiped his

gummed, rheumy eyes. "We had a chance . . . a slim chance of reaching the Bactrus. Now . . ."

Slane's fingers tightened about the canteen until they threatened to crush it. So Weston knew the way out of this fiery hell! He'd noticed the earthman studying the stars, measuring the shadow of a little stick, consulting his watch. He, Slane, knew nothing of such matters. In space robot pilots charted your course, noted your position. But here . . . All at once the Saturnian dropped the water bottle at Jim's feet, turned away.

"Come on!" he croaked.

Jim picked up the bottle, unscrewed its cap, filled the tiny cup with water.

"Here," he said brusquely. "Meant to split it with you anyhow. It's going to be a tough pull."

It was. Daylight faded into deep, blue-black night and the red desert became a shadowy purple. The fiery sun gave way to the twin moons, two gleaming scimitars, slashing the star-studded curtain of darkness. Refreshed by the sudden coolness, the spacemen plodded forward, weary robots, dimly conscious of their own existence. Not until midnight did they pause for a swallow of water, then pushed on, afraid to rest lest they lack the strength to get up, to continue.

With dawn came the last mouthful of water. By noon Slane was delirious. He complained of faces, horrible, savage faces, swelling until they filled the entire desert, then dwindling away to grey nothingness. Babbling brokenly, he clutched Jim's arm, frightened as a child with a fever. Head bent, eyes on the eternal sand, Weston staggered on. Hours passed. Now Slane was mumbling of green trees, flowers. Jim hung tightly to the giant's arm, did not look up. The Saturnian was going fast. In another hour they'd both be . . .

Suddenly Slane began to shout, to

call for help. Breaking free of Weston's grip, he capered about awkwardly, waved his arms. Jim glanced up, caught his breath.

RACING toward them across the sun-swept wasteland was a cluster of dark dots, sharply outlined against the rose-colored sand. Closer and closer the moving figures came, sweeping across the plain with incredible speed. Wiry, dark-skinned little men, they were, clad in flapping white dust-robots. Mounted on shaggy-coated *thaens*, those ungainly, stumpy-legged beasts of burden which are found only on the Psidian deserts, the nomads made fantastic nightmare figures. Jim Weston, watching them, suddenly recalled tales he had heard at the Terrestrial Club at Mercis . . . tales of the desert men's savagery, of their fierceness in combat. Haunting the ruins of ancient cities, they preyed upon travellers, fighting fearlessly with antiquated heat guns purchased from canal-boat traders. Even the Martian Alien Legion, composed of the toughest fighting men of every planet, respected the wild little nomads for their reckless bravery. Jim remembered snatches of half-forgotten conversations . . . how the desert men, the Vens, had once captured mighty Mercis, sacked it . . . how their cruelty had made them hated by all other Martians . . . their curious customs, their strange language, their inhuman lack of emotion. And now . . .

"You fool!" He turned to Slane angrily. "D'you know who you've called to for help? The Vens, the aborigines of Mars! Torture's their main sport!"

The Saturnian stared at him stupidly, then turned his dull eyes to the desert men once more. They were near now; Jim could see the dust thrown up by the *thatens'* hoofs, the sunlight winking on the Vens' polished heat guns. The

desert men called to one another exultantly, waved their webbed, lizard-like hands. These membraneous fingers and their green bulbous eyes were all that remained to show that the Vens had once been amphibious, part of the mighty race that had ruled Mars before the drying up of the great seas and marshes. Jim gazed at them helplessly. No use in trying to fight. . . .

With fierce shouts the Vens drew rein, forming a semi-circle about the two spacemen. Jim felt nauseated by the overpowering stench of the unclean *thaens*. For a long moment the desert men studied them, fingering the heavy guns that hung from their embossed *molat*-skin belts.

"What . . . what do you suppose they want?" Slane muttered. "Maybe they got water . . ."

One of the Vens, his unblinking eyes cold, snapped a question in an unintelligible dialect. Jim's answer, mumbled in halting Martian, brought no response. Suddenly at a command from their leader, two of the desert men leaped to the ground, extended gourd-like bottles.

"Water!" Slane tilted the gourd to his lips, drank avidly. "They're friendly! Gods of Saturn! I feel alive again! Ask 'em if . . ."

He got no further. A dozen of the little Vens, springing from their mounts, bore him to the ground. For a brief moment Slane struggled, bowling the nomads over with sweeping blows of his fists. Exhaustion, however, and lack of water, had taken their toll; the big Saturnian disappeared under a squirming, savage mass of flesh. Weston, leaping forward to his aid, felt scaly, webbed hands grip his arms, his throat, drag him to the ground. An instant later the spacemen were securely bound, lashed hand and foot with stout rawhide thongs. Grinning exultantly, the nomads threw their captives over the

backs of two of the *thaens*, sprang into their saddles. A word from their leader and the Vens were riding swiftly toward the west.

Neither Jim nor Slane remembered much of that wild ride across the desert. Dust from the *thaens'* hoofs blinded them, and the jogging motion made their tired muscles ache. Interminable hours went by. The sun was just sinking, a bubble of blood on the dark horizon, when the troop of desert men came to a halt, dismounted.

The camp of the Vens filled Jim with a species of awe. The vast and hoary antiquity of the place, the solemn grandeur of the fallen columns, the crumbling walls, were at once impressive and terrifying. Even before the glory of the Canal-Builders, this place had flourished, a great desert shrine to some forgotten god. Among the ruins of the outbuildings, the Vens had pitched their black, dome-shaped tents, surrounding the central structure, a huge, six-sided pyramid. Its massive blocks of stone, in spite of their great age, were firm, geometrically precise, though worn and pitted by the swirling, wind-blown sand. About the base of the pyramid marched half-obliterated bas-reliefs, grey granite ghosts, peering from the stone with blind, evil eyes. Wild, distorted faces, misshapen bodies, half beast, half human, worn by the sand to only faint outlines. At each of the six corners of the building crouched a hideous winged slug, those legendary monsters which, according to the ancients, once haunted the lowlands of Psidis.

BESIDE these majestic, forbidding ruins the encampment was incongruous. Ragged black tents, flickering camp fires, slinking *molats*, the tailless, six-legged Martian hounds . . . a scene of squalor, of primitive savagery. Jim, lying on the ground next to Slane, watched little frog-like women

and children emerge from the tents, gather about the warriors, laughing, chattering, admiring their bravery. The Saturnian's huge bulk seemed above all to impress them; they felt his muscles, examined his teeth, as though he were some strange animal. The triumphant warriors, swaggering, poured down cups of *tong*, bent over tiny braziers, inhaling the smoke of burnt *fale*.

All at once a barbaric beat of drums issued from the great temple. At sound of it a sudden hush fell over the crowd of Vens, the women and children covering their heads, the men kneeling. From the ruined entrance of the pyramid a baroque figure emerged, blinking his goggle eyes in the fading sunlight. Tiny and withered, he was, and dressed in brilliant feathered robes. A tall headdress, bright with jewels, precious metals, covered his hairless head; human teeth, hung in strings, adorned his neck, his wrists. A high priest, Jim decided, or perhaps a chief. Slane swore, straining at his bonds.

The priest glanced at the two captives, grinning, and spoke in a high, quavering voice. Instantly the two spacemen were seized by a score of small, eager hands, dragged into the pyramid.

Inside, the great temple was dark, except where fallen roof stones admitted shafts of light. To Jim it was all a weird, disjointed dream. The green-eyed, scaly-skinned little Vens, the bizarre, evil figure of the high priest, the huge shadowy temple with its bloated, obscene statues, its hideous bas-reliefs. Beside him, Slane swore continually, more to keep his courage up than for any other reason.

After perhaps ten minutes wandering through long, dank corridors, they found themselves in a vast hall, a place of sacrifice in bygone years to judge from the big altar, the grinning idols. Before the altar were two cages, tall

and narrow; the sight of their tough *thaen*-hide bars filled Weston with despair. The heavy strips of leather would bend, certainly, but even Slane's mighty strength could not break them. Disconsolately he stumbled forward, was shoved bodily into the little cage. When Slane had been forced into the other pen, the Vens lashed the doors into place.

Muttering incoherently, the wrinkled priest approached the cages, brandishing a long, curiously-carved, ceremonial spear. With a quick movement he cut his prisoners' bonds, thrust food, gourds of water between the bars.

"Good enough," Slane chuckled. "Kinda like being in the Solar System Zoo back on Earth, but as long as we eat and drink, I don't care. Good food, this." Wolfing down the slabs of meat, the water, he stretched lazily. "It's gonna be tough sleeping when you can't even sit down, but I'm tired enough to sleep standing on my head."

Leaning against the wall of the narrow cage, Slane closed his eyes. As he did so, the grinning little priest lunged forward, jabbed his leg with the spear. Weston watched his companion straighten up with a bellow of pain, and his face went white.

"Good God!" he whispered. "They . . . they're not going to let us sleep!"

CHAPTER III

JIM WESTON sagged against the wall of the cage, his face gleaming with sweat. He was fighting a fierce inner battle against a weary body that cried for sleep. His eyelids, it seemed, weighed a thousand tons; only by the most cruel efforts was he able to keep them from drooping. Squatting by the flickering altar fire, the withered priest eyed him expectantly, his hand on

the ever-ready spear. Through a gaping hole in the roof of the temple Jim could see the big green star that was his home. Earth, with its green fields; its great cities! Here in the deserts of Mars it seemed only a dim dream . . . a dream. . . He caught himself just in time to keep from nodding off.

The priest, however, had not noticed. A howl of pain from the other cage told that Slane had dozed off again. Jim turned to look at the Saturnian. Slane was shaking the bars in madness, offering the container of radium for a minute's sleep. Vaguely amused, the toed-like Ven wiped the blood from the point of his spear. Jim glanced at Slane's legs; they were gory, clotted masses of flesh, marked by a hundred spear-thrusts. The giant's face was waxy in the firelight and his red eyes held an insane glitter.

"Slane!" Jim called. "You've got to stay awake! Got to! I'm trying to work out a plan. . . ."

"Plan?" Slane laughed hoarsely. "What can we hope to do? Why doesn't he kill me . . . kill me before I go crazy! Gods! I could break a dozen of these little devils with my bare hands! But this. . . ."

"Show some guts. The strength you were always boasting about on the *Astric*. Try to act like an earthman instead of a Saturnian bully. I'm going to pretend to be asleep. If I can hold still while he jabs my legs, make him go higher, I'll be able to grab the spear. The carved handle of it is pointed. Maybe. . . ."

"You can't." Slane's voice was a whimper. "You can't stay still while he twists that spear in your legs! The pain. . . ."

Weston shut his eyes, lay back against the wall of the cage. Chuckling to himself the guard thrust at his legs. A trickle of blood ran down his calf, but Jim did not move. Again the spear

flashed through the bars, and again. The muscles of Jim's neck stood out like whipcords. The little Ven nodded. Real sport, he decided, was about to commence. The red blade of the weapon rose higher, cutting Jim's thighs, his waist. And still the earthman did not budge, although his face was like putty.

Now the spearpoint was digging at the tender flesh of his stomach. Weston's arm tensed, its muscles tightened. Suddenly, with the swiftness of a striking *molat*, his hand gripped the spear, drew it back for a crashing blow. The pointed butt of the weapon, with all of Weston's wiry strength behind it, entered the priest's bulbous green eye, pierced his brain.

"Gods of Saturn!" Slane muttered. "You. . . you've done it! Now if we can get out of these cages. . . ."

Jim, his face grey with pain, drew the spear back, hacked the rawhide lashings of the cage door. A moment later he and Slane were running along the shadowy corridors of the temple, groping their way toward the entrance.

"Quick! The *thaens*!" Jim gasped. "The little devils'll be awake in a minute!"

Already questioning shouts, cries of alarm, were echoing through the encampment. Against the pale sand Jim could see the squat silhouettes of the *thaens*, tethered near the temple. The two men ran toward them, unfastened the tether ropes.

"Hold these!" Weston extended two bridles to Slane. "I'll stampede the rest!"

FREED, the frightened *thaens* galloped off into the desert; the spacemen mounted the two remaining beasts, smacked them sharply on the flanks. Dim figures ran toward them and heat guns lashed the air with red beams of light.

The red desert, the crumbling ruins behind them were lurid in glare of the heat guns. A patch of sand beside Slane's mount fused, ran. Jim, marveling at the shaggy beasts' speed, glanced at the stars.

"Slane!" he called. "Keep going! Fast! We're almost out of dan . . ." His words trailed off into nothingness.

Slane glanced over his shoulder. Weston lay sprawled on the ground, very still. The *thaen*, its leg seared away by a heat gun's blast, rolled about, kicking up the sand in agony. Slane shook his head. No sense going back into that inferno of heat rays for a man who was probably dead. Besides, he had the chest of radium, and with Weston out of the way, there'd be no question of ownership. The Saturnian grinned. In a day or two he'd reach Psidis and with a pocket full of radium. Psidis with its tiny, rose-skinned girls, its bottles of *tong*, of *thole*, and he, Slane. . . .

The big man turned once more, glanced back. Weston lay still, surrounded by a blazing red fury of heat blasts. Slane frowned. Somehow he seemed to be back in the narrow rawhide cage, listening to Jim's quiet voice. "Show some guts. Try to act like an Earthman instead of a Saturnian bully." So the terrestrial thought he was better, stronger, than a man of Saturn! That he had more courage! Slane wheeled the *thaen* about savagely.

Bending low, he spurred the frightened beast back into the hell of lambent flame. Pencils of crimson light grazed his arms, his legs, searing them. It required all of his vast strength to force the wild-eyed *thaen* forward now. All at once he was beside the limp, sprawling figure on the sand.

"Slane!" Jim glanced up at him, smiling. "I . . . I knew you'd come!"

"Okay!" The Saturnian muttered gruffly. Leaping from the *thaen's* back,

he bent to pick up Weston. At that moment the *thaen*, mad with fear from the stabbing rays, reared up on its hind legs, raced off across the desert.

Slane, the wounded man in his arms, gazed after the fleeing animal, his face beaded with sweat. Behind them the heat guns had ceased abruptly. The Vens, seeing an opportunity of capturing the two spacemen alive, ran forward across the desert, shouting exultantly.

"Leave me!" Jim sought to free himself from the giant's grip. "Run! Save yourself!"

Slane shook his head stubbornly, staggered on. With each moment his pursuers drew nearer. Glancing over his shoulder, the Saturnian could see their green icy eyes, gleaming luminously in the darkness, hear their hoarse, eager voices. Now the desert men were scarcely a hundred feet away, their webbed feet padding softly on the sand. Weston, slung over the big man's shoulder, sighed hopelessly. There was no escape . . . in another minute, at the most, two . . .

And then it happened. Like a flaming meteorite a sleek rocket plane swooped down, its proton guns hissing. Caught by the deadly blast, a score of the Vens crumpled lifeless to the ground; the others, panic-stricken, took to their heels in wild, insane terror. The plane landed lightly, its *durium* runners gliding softly over the sand.

"The Desert Patrol!" Jim watched four men in the familiar green uniform of the Martian Alien Legion climb from the plane. "Thanks, Slane! You . . . you saved me . . ."

The giant's deep laugh boomed triumphantly across the desert.

"Better than a Saturnian, eh?" he exclaimed. "Less guts than an Earthman? Huh! Like hell!"

Still laughing, he dropped the chest of radium into Weston's pocket and staggered toward the rocket plane.



Let's look back at today.

7000 years from now, no more may be known of today than we know of almost legendary Troy, buried less than half that long, or of the Toltec and Pre-Dynastic Egyptian empires. Civilizations can not be reconstructed from archaeological data alone. And books are one with dust after 7000 years.

What then will they think of us in the great future that is to come? Not surely that each and every one of their scientific, fiction-like wonders had its origin and factual basis in **OUR TODAY.**

Yet that is what we shall find in this first and subsequent Roundabout views of the present, while adventuring in remote time to come.

* * *

Punctually at five minutes to nine on the 2nd of sol, in the year 9193, E.S. Technician Jonz entered the main lecture hall of Tellurian University and, in the only chair with which the auditorium was equipped, seated himself facing the rows of ground glass screens that filled the huge room. His entrance having served as a signal to the engineers in the balcony control room, in a moment the screens were glowing brightly beneath the iridium number plates that surrounded each. Immediately the class began to assemble.

The young Educational Science Technician, his plain but not unattractive features set in their characteristic serious mold, composed himself to wait while in their homes scattered across the face of the globe the thousands of his students bolted their breakfast tablets to be before their televisors on the stroke of the hour. Rapidly their life-size images began to appear on the numbered screens. Soon there were but a score or two of screens still blank, then a dozen, three, one—and still one.

Frowning, the technician regarded

the uncompromising emptiness of the nineteen - hundred - and - thirty - ninth screen. Unprecedented! Twenty-three seconds past the hour and—His frown vanished as a girl's face appeared with startling abruptness on the screen.

The face, as No. 1939 sat back triumphantly from suddenly mastering the enigma of her televisor's tuning dials, revealed itself as that which a forgotten age might have called lovely, giving due heed to shadowed blue eyes and a sweep of soft brown hair, and pert, taking into account an impish turn of lips and a certain uptilt of nose. Young E. S. Technician Jonz characterized it rather as a harmonious combination of plastic surfaces. And yet he felt the description somehow inadequate. . . .

Collecting himself with a start, the Technician took the amplifier from its hook and placed it on his head. It rested there like the outlandish headpieces worn by the ancient kings before the age of Frankness, gleaming points pressing into his scalp over the principal brain centers. Without preamble, then, he began his lecture, and a stir passed through the class visible in the television screens as his brain potentials, led off by a maze of fine wires that wound into a co-axial cable and coiled across the floor to the transformers in the control room, carried his first thought directly into the minds of his far-flung students.

"In opening the humanities section of the 1263rd session of the University," telephoned E. S. Technician Jonz, "I have but one preliminary observation to make. It is at the insistence of the Dean of Students that two-way television has been installed. His belief is that allowing everyone to see everyone else—" the Technician gestured to the silvered wall behind him, mirroring to each student the entire classroom—"will promote a valuable cooperative spirit. For my part I hope that the innovation will not prove a distraction to you in the serious pursuit of higher—"

Somehow E. S. Technician Jonz' eyes had strayed to a certain screen. Strange, how her eyes crinkled when—

Quickly changing the direction of his thoughts he resumed with a sharpness that widened the girl's smile, "The next thing we know, they will be asking us to come together in person, and use our voices—" the Technician's thoughts waves were fairly surcharged with emotional repulsion—"like our more violently insane, or animals in pain!"

"Hmph! So I sound like a sick cow!"

The intruding thought impinged lightly upon Technician Jonz' mind, but somehow he was certain it had originated with the girl in television screen 1939. Instinctively feeling a challenge, he set out to meet it: "It is many thousand years since man has forsaken brute speech for mental communication. Unfortunately, the devastating wars of the third millenium left few traces of such civilization as may have existed previously. And true, the absence of graven records, in conjunction with archaeological artifacts of considerable engineering skill, such as airships, indicates that man in the twentieth and preceding centuries was but an illiterate if gifted savage. But," he concluded triumphantly, "all authorities agree that it is at least ten thousand years since the voice has been used in communication between human beings!"

He darted a glance at No. 1939. Somewhat nettled to find her still smiling in unreasonable amusement, he continued swiftly: "It is our object in this first lecture to obtain a true historical perspective. While man, according to the findings of anthropologists, has tenanted the earth for about one million years, he remained a primitive creature until less than 7000 years ago! I can conceive no better illustration of this fact than one involving the very matter of mental communication already touched upon."

The Technician was on familiar ground now. His thoughts fairly crackled. "It is true, as I have informed you, that long before the twentieth century telepathy had become man's sole method of direct communication. But in how crude a form it prevailed! The proof is in an archaeological discovery in which I had the honor of

sharing while on the Third Brstd Mid-Western Expedition, to the site of the legendary city of Tchaikago.

"Tchaikago—or Chicago—if you recall the story, was supposed to have been utterly destroyed during the twentieth century in a struggle between Fascism and Democracy, which according to some were rival esoteric philosophies of that time. Others would have it that they are merely symbols of Good and Evil, characterizing the opposing forces of Capital and Labor in the Nine Hundred Years War, that pitiful struggle between two archaic and artificially differentiated groups using the power of science to wrest from each other the bounty it could have given both. In any case, digging at a new location, we came upon unmistakable signs of human habitation. It was there, in the first building unearthed, that we made the discovery—a tall, narrow, closet-like wooden box, on its door the nearly obliterated cabalistic symbols: PUBL TEL.

"Later excavations and subsequent investigations convinced us of the nature of this object. It was an aid in telepathic communication! So mentally impotent were the ancients of this day that they found it necessary to seal themselves in these coffin-like boxes—mind you that they had no ventilation—until temperature, pulse, and respiration were violently increased, until perspiration exuded from every pore and a condition of near-coma prevailed—and only then were they able to communicate with each other! . . .

"May I offer a—an alternative explanation?"

There was no doubt, this time, that the interjected thought had originated with the girl visible in television screen 1939. Though surprised, the Technician indulgently consented.

The girl, the screen showing her leaning forward in the chair before her televisor, in whichever of a thousand remote climes she might live, earnestly began: "What you discovered had nothing to do with telepathy. It was a booth—a station—for using a mechanical instrument called the telephone. . . ." She hesitated. "Yes, we—they used their voices to communicate then. But," she quickly added, "they weren't—weren't mentally impotent. . . ."

The echo of his own thought escaped E. S. Technician Jonz—by virtue of his engrossment in a physiological phenomenon. A disproportionate amount of blood had come to the girl's face, as if she were—he sought, and found, the archaic term—blushing. Meanwhile the girl swiftly continued.

"They were well on their way to it, however—telepathic communication, I mean. Extra Sensory Perception they called it then. Psychologists in universities were studying it, to see how it worked and how it could be developed. Other scientists were trying to find out what it was.

"They discovered that the brain is a storehouse of electric energy, released in waves in thinking. They were beginning to identify certain brain potentials with particular states of consciousness and emotion, and different wave lengths with definite areas of the brain and functions of the mind. And in their experiments, they even put contraptions on their subjects like the funny thing on your head to carry the brain potentials to transformers to be built up, so—" the girl concluded with a toss of her head that sent highlights rippling down the sheer silic sleeveless blouse that met trim silic shorts at an even trimmer waist—"I guess there isn't anything now that the twentieth century didn't well start!"

E. S. Technician Jonz' frown vanished with a sudden inspiration. This, beyond doubt, should prove a deadly blow, particularly to a feminine antagonist. He directed his inspired thought to the class. "If there are any of you inclined to agree with the young lady, only regard her clothing. Like your own it is, of course, the universal fabric we call silic, after the silica constituent in the glass of which it is made. It is soft and lustrous, yet it has a greater tensile strength than steel; it is both waterproof and non-inflammable. Compare silica with the straw-like fabrics which the ancients made from course animal hair or the secretion of insect larve!"

He stopped abruptly, feeling rather well pleased with himself, but it seemed he had hardly finished his thought before the girl was replying. "That's not fair. They made synthetic fabrics—rayon out of cellulose, and artificial

silk by forcing collodion through fine apertures, just to begin. And what's more, they made silic!—even if they didn't call it that."

E. S. Technician Jonz' complacency had been slowly dwindling. Now it vanished completely. His frown reappeared and with it a certain puzzlement as the girl added, "I don't know if the process was the same, but I'll bet the results were every bit as good. The thread was made by breaking up glass with steam under such terrific pressure that a twelve ounce bottle would produce a single fiber five thousand miles in length! You might have seen it—I mean, one place where glass fabric and clothing were made during the twentieth century isn't—wasn't far from Chicago—Owens, Illinois."

A pedant Technician Jonz might have been, but not a fool. Beyond doubt there was something strange about this girl. He had not failed to note a certain confusion about time in her mind, alongside her remarkably detailed, if accurate, knowledge of ancient history. Moreover, no archaeological excavation had ever been made at any place called Owens, Illinois.

This last fact he imparted to the class, sitting in his chair, his true feelings hidden to any but the most intuitive observer, then added, "Let us leave until some later lecture the details of our superior achievements and conclude briefly with a more general comparison between today and the twentieth century. I believe all will concede we have made considerable social advances.

"We escape all the crassness of that former age, the hurly burly of large assemblages, the psychic disturbances of individual human contacts. Ours is a more aesthetic life, one that is conductive to creative effort. The power of the cosmos floods into man on his Olympian heights, and"—was there a hint of bitterness in the Technician's glance at screen 1939?—"women is his equal.

"Formerly people came together in groups for diversion, and in couples in response to the animal mating instinct. For our diversion today we need not stir from our homes. The television screen, for example, brings the theatre to us. Or if I wish to relax over a game of chess with one of my University col-

leagues, we play mentally, as I am communicating with you. As for perpetuating the race, for twenty centuries synthesized ova and chemical fertilization have replaced that compulsion on men and women to seek out each other, sacrificing the splendid personal isolation which is the superiority of our social organization."

He concluded with a proud, little-boy defiance and suddenly seemed very much alone as, preparatory to dismissing the class, he rose to his feet in the great hall of numbered glass screens. Perhaps that is why the girl smiled now more with her eyes, grown luminous, than her lips. And perhaps that is why she asked, "Haven't you forgotten that mating isn't all there is to love? There's companionship—"

"And aren't you," sharply interrupted the Technician, "merely rationalizing with some romantic nonsense this obvious inferiority in the social organization of the century you have chosen to defend?"

The girl's smile drained away. Green flecks seemed to appear in her eyes. "Oh, allright then. Let's see if you can take it too. The twentieth century did start chemical fertilization! In fact, in the nineteenth century, sea urchins were produced that way. Later, frogs and rabbits. And finally, though they were satisfied at the start to let it develop only as far as the beginning of cell division, a human ova was fertilized artificially!"

"The class," telephoned E. S. Technician Jonz, "is dismissed!" and snatched the amplifier from his head. Until the television screens were blank again he stood there. Though he may have imagined it, he thought he saw contrition on the face of the girl in screen 1939 as her image disappeared on the fading glow. Then, feeling a vague unrest, he strode out of the lecture hall and left the University.

It was the same peculiar dissatisfaction which made him proceed homeward on foot. From the corridor outside the lecture hall he could have taken the pneumatic tube, which burrowed beneath the city, or the mono-gyro, whose spider-web tracks hung from every tower. No one ever walked. But at no other time would the emptiness of the streets have struck E. S. Technician

Jonz as undesirable. In a brown study he trudged along until—

"Hi! Professor."

Later, Technician Jonz would remember that it had happened exactly as he came abreast Public Airport 312, District.32. But at the moment, there was too much to which he had to adjust himself. Her peculiar salutation: it meant nothing to him and yet it meant everything, for though he did not know the words, the intention was obviously friendly. And she had spoken—or had that been the pealing of a bell?

"I am extremely pleased to meet you—Miss 1939," said Technician Jonz, and was so astounded to find that his own voice had a not unpleasant timbre—or perhaps was so engrossed with blue eyes and smiling lips—that he said nothing more for a moment. Then, as if announcing an amazing discovery, "I had no idea you lived within a thousand miles of here."

"Another disadvantage of television, telepathy—and isolation."

Jonz smiled, and immediately became a much more attractive young man. "Perhaps you are right," he agreed amiably. "Are you going my way?"

"No!"

It was a lie, and Technician Jonz knew it from the inrushing turn of her lips. But his capitulation was complete. "Then will you go my way?" he asked.

"Yes," she replied, more softly.

Several squares later Technician Jonz sighed and ventured to remark that this was most pleasant.

"Then you were lonely," the girl said. "And you do see, don't you, what I meant by companionship. It's not primitive. It's—"

"Yes. But you're lonely too. Where are you from?"

The girl hesitated.

"Never mind," Technician Jonz said firmly. He was a different man now. A man—as an earlier century phrased it—with a maid. "At least you're a stranger here, so there is much I can show you. This afternoon, the energy plants. Tonight, Galaxy Park."

"What's that?"

"An amusement park. You'll see plenty that was never dreamed of in the twentieth century."

"Sure?"

"Well, maybe."

having aged biologically more than one minute! And now for higher organisms—for man!—virtual *immortality* becomes a possibility!

Thus once more is reaffirmed the truly prophetic quality of science fiction. But we need not look only to a distant realization of the wonder of H. G. Wells' "When the Sleeper Wakes." For Utopia—the Utopia of the more eugenically-minded Huxley's "Brave New World"—is already here! Rapidly experiments are being pushed forward in the effort to induce suspended animation in *human spermatazoa*. Once accomplished, love need no longer be an obstacle in scientific mating. And for all time may be preserved the seed of each generation's most gifted men, to the building of a greater, nobler race.

MAGIC IN THE AIR

Dear Sir:

Last summer, while driving through Arizona, we saw a mirage which I would like to have explained. We saw a broad lake ahead. As we drove on, it never came closer but suddenly vanished and appeared behind us.—L. G., New York City.

It appears that this mirage involved nothing more than a stratum of superheated air lying across the highway. Shimmering so that at a distance it seemed opaque from either side, the air itself gave the appearance of water. But ordinarily a mirage reflects, or in some way alters, the image of some *real object*. In such cases, armies are seen marching through the air, ants returning to their sand-heaps are cattle scaling a rocky cliff, and a ship may divide into two identical craft and sail away in opposite directions!

Reflected mirages occur when the superimposition of two layers of air of unequal temperature and density causes their common surface to act as a mirror. While the Arizona mirage was undoubtedly startling—particularly to anyone following the car, which would have seemed to plunge into the lake and submerge!—if it had been the reflected variety the effect would have been still more bewildering. The "lake" itself would have mirrored the surrounding

countryside!

The light rays thus reflected back to earth may come from objects a few or a hundred—even a thousand—miles distant. Thus Peary, in the Arctic, saw mountain tops around the bend in the earth. The "discovery" sent another expedition out to explore—the mirage!

Of this same variety was the mirage of armies marching through the air, seen in parts of the Scandinavian peninsula during the Franco-Prussian War. Even the uniforms of the men fighting hundreds of miles to the south could be distinguished! Most striking mirage of this type, observed recurrently in the Strait of Messina and elsewhere in southern Europe, is the famed *Fata Morgana*—an image, formed in the air, the water, or in both with one inverted, of a harbour bustling with ships of every flag, even water-front houses and streets thronged with sailors of many nations!

While it may amuse us, as has been reported from lower New York harbour, to see the Empire State Building "stand on its own head," mirages formed in the sky are of course not deceiving. But certain types of mirages caused by irregular refraction of light produce disconcerting effects. While it causes no harm to the beholder to see a ship apparently split in two, this same lateral displacement of light forced one aviator, when two mountains suddenly loomed before his plane, to make a disastrous choice between mirage and solid rock!

Similarly, a mirage which distorts size, like that of the cattle which proved to be ants magnified by the burning desert air, can be disconcerting. On Long Island Sound, a huge ship suddenly loomed over a motor boat. Frantically the small boat endeavored to avoid being run down, but the leviathan, its helmsman watching but not seeing, bore swiftly down on it. Collision was imminent, when suddenly the huge ship dwindled and receded to a small cruiser miles away—as the mirage ended!

MORE MOONSHINE

Dear Sir:

A friend, contending that even the most fundamental scientific facts are

too technical for a layman to prove, has challenged me to offer convincing evidence that light has motion. Will you come to my aid—R. E., Chicago, Ill.

The simplest and yet a most effective demonstration of the motion of light is the original one used by Roemer, who discovered the phenomenon. While it is true that most scientific demonstrations demand advanced technical knowledge and elaborate equipment, this one requires only a watch and a pair of field glasses.

On clear nights, if the glasses are turned on Jupiter, they will reveal the planet's four brightest moons, whose frequent eclipses can not be mistaken. The interval between successive eclipses will be found to vary considerably in observations made at different times of the year. That is because the distance between Earth and Jupiter has changed—the distance, in bringing us the sight, which *light must travel*.

By this same method, even the velocity of light can be determined with the sole addition to our equipment of an almanac. Taking the observations when Jupiter and Earth are at opposition and then at conjunction, we find it takes some sixteen minutes more for light to cross the additional space between the nearest and farther approaches of the two planets. That difference in distance is also known; it is of course the diameter of the Earth's orbit, approximately 186,000,000 miles. Divide it by the actual 998 second interval our watch has registered, and we have for the speed of light a figure slightly in excess of 186,000 miles per second.

In other respects Jupiter's moons have long had a way of keeping in the news. These same four used in measuring the speed of light, served a far greater end when discovered by Galileo in 1610. They showed Jupiter as a miniature solar system; hanging in the sky, to all eyes they were a working model of the Copernican Heliocentric (sun-center) system—and a death blow to the Ptolemaic Geocentric (earth-center) system which had long impeded the progress of astronomy.

Not until 1892 was Jupiter's fifth satellite discovered, but the decade after 1904 added four more to his growing family. These were photographic dis-

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discoveries and it was thought that now, with the fifty short-period comets that divide allegiance between Jupiter and the Sun, the roster was filled. But a few months ago, the powerful Mt. Wilson 100-inch telescope turned up two new moons!

The discovery of Jupiter's tenth and eleventh satellites is one to make us remember that the book of our knowledge of our celestial neighbors is hardly begun. Soon, the great 200-inch California telescope and then—What is the mystery of the "canals" of dying Mars? What lies beneath the shrouding clouds of Venus, mature twin to the Earth in age, size, and physical constitution?

And while we seek these answers, a young giant, under the bright auspices of eleven satellites, perhaps awaits the day when all the other planets shall be dead, barren—and Jupiter shall be the home of man!

BURNING THOUGHTS

Dear Sir:

Is artificial fever treatment generally considered safe?—M. D. B., Lubbock, Texas.

Artificial fever, induced by shortwave radiation or incarceration in a hot box for from two to ten hours, has been used successfully in the treatment of arthritis, St. Vitus' dance and other pathologic conditions. It is not known whether the extreme heat—temperatures up to 107° F. are used—directly kills germs or stimulates the body to produce substances that will. But if delirium is avoided by drinking large amounts of salt water to replace the salts lost in sweat, no other ill effects are suffered.

More interesting in its possibilities is an entirely different use for induced high fevers. While they do not injure the brain, they apparently cause some change that **INCREASES INTELLIGENCE!**

Experiments with rats have clearly demonstrated this fact. While it is not known whether the increased intelligence is due to stimulated circulation, sending more fresh blood through the body and to the brain, or is due to some other factor, there seems no reason why this treatment should not be applied to man!

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