ASTOUNDING

SCIENCE FICTION

20 CENTS

APRIL 1939

A STREET & SMITH PUBLICATION

WORLDS DON'T CARE by NAT SCHACHNER

IS IT *Magic*— IS IT A MIRACLE?

Amazing Luster-Foam "Bubble Bath" gives Super-cleansing in delightful new way

MIRACLE? Magic? Strong words, these, but research men say Luster-Foam deserves them. Even more important, thousands of everyday women and men agree. We hope that you will also, when you try the new formula, Listerine Tooth Paste, supercharged with Luster-Foam detergent.

The new, different way Luster-Foam detergent cleanses the teeth is due to its amazing penetrating power . . . its startling ability to go to work on remote and hard-to-reach danger areas where some authorities say more than 75% of decay starts. You know them—areas between teeth, on front and back of the teeth, and on bite surfaces,—with their tiny pits, cracks, and fissures which retain food, acid ferments and bacteria.

To these danger zones, and other areas, comes the fragrant, foaming bath of Luster-Foam. There it does these three things gently and safely:

1. *Quickly sweeps away food deposits and new surface stains.* **2.** *Attacks film which dulls the natural luster of the teeth.* **3.** *Aids in preventing dangerous acid ferments which hasten decay.*

While such complete cleansing takes place, you are conscious of a feeling of delightful freshness in the entire mouth—and that freshness lasts!

If you want luster that dazzles, start using the new formula, Listerine Tooth Paste with Luster-Foam. In two economical sizes: Regular 25¢, and Double Size, 40¢, actually containing more than ¼ lb. of this new, mouth stimulating dentifrice. Lambert Pharmacal Co., *St. Louis, Mo.*

MORE THAN 1/4 POUND OF TOOTH PASTE IN THE DOUBLE SIZE TUBE 40¢ REGULAR SIZE TUBE 25¢

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FOR nearly a year, he was "just one of the men" in the plant. He did his job well — but it looked as though he'd be doing the same job well, at the same pay, the rest of his life.

One day he started to think — about himself, his work, his future. He asked questions. He "figured things out." And then — he enrolled with the International Correspondence Schools.

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• • •

It's easy to blame "the breaks" when you don't get ahead. But it's almost as easy to TRAIN YOURSELF FOR SUCCESS the I. C. S. way. I. C. S. texts have been adapted by scores of leading colleges (including 25 state universities). I. C. S. instruction is personal and individual. I. C. S. methods are proved by the achievements of thousands of former students in highly paid positions. Send coupon for complete information.

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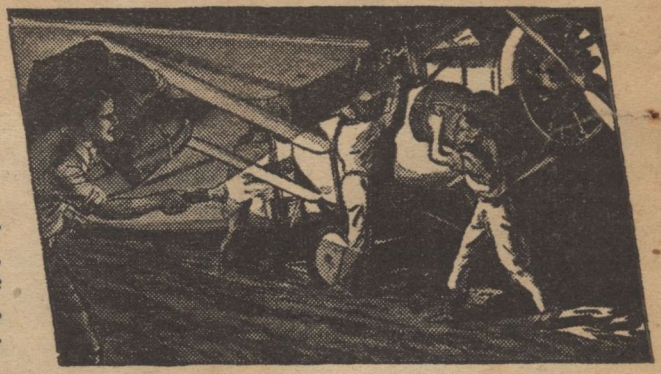
Flying Blind—4 FEET *from* DEATH

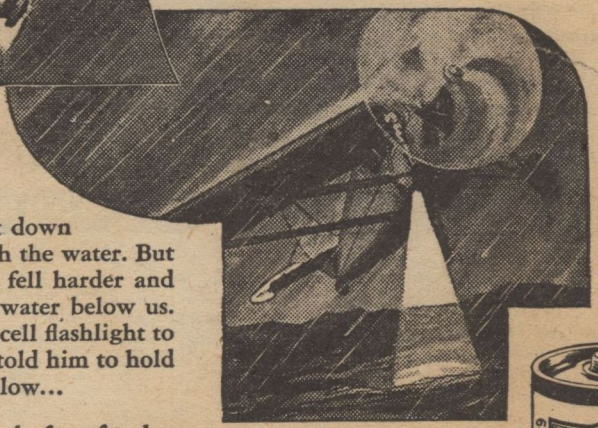
TROPIC DOWNPOUR BRINGS ADVENTURE TO ROUTINE FLIGHT

OLEN V. ANDREW



1 "I had flown four friends over to Lihue, on the island of Kauai, for a weekend of camping on the beach," writes Olen V. Andrew, P. O. Box 3295, Honolulu, T. H.

2 "We broke camp at three o'clock Monday morning, packed our dunnage in the plane and crawled in for the 100-mile hop back to Honolulu, all of it being over water. There was no moon, but the night was clear when we started. Five minutes later...



3 "...we ran into a driving rainstorm. I couldn't fly over it, I didn't have proper instruments for flying through it, so the only thing to do was to get down low and keep visual contact with the water. But it kept getting darker, the rain fell harder and harder, till we couldn't see the water below us. I handed my big 'Eveready' five-cell flashlight to the fellow in the co-pilot's seat, told him to hold it out the window and flash it below...

4 "...and there was the sea, only four feet below us! Those long Pacific rollers were almost lapping at the wheels! My heart skipped a beat to think how I had brought five people within inches of their doom! Certainly it was the power of those 'Eveready' *fresh* DATED batteries that saved us all, and that kept us safe above the sea for the next half hour till the storm lifted. You can take it from me, I don't fly without 'em.

(Signed) Olen V. Andrew"

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Unit of Union Carbide UCC *and Carbon Corporation*

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STREET & SMITH'S SCIENCE-FICTION

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SHORT STORIES

READERS' DEPARTMENTS

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JACKPOT!

The recent announcement, that uranium can be made to undergo a new type of atomic transformation, was not an addition to a rapidly widening field of knowledge; it was the announcement of a new field. Dr. G. Hahn, atomically speaking, hit the jackpot; previous investigators had been collecting pennies, nickels, and an occasional dime.

The fundamental difference lies herein: the atomic slot machine accepts various types of slugs, and pays off in various denominations—electrons, positrons, protons, neutrons and alpha particles. Generally speaking, the more massive the particle discharged, the more energy involved in the change. An alpha particle, being made up of four massive particles, two protons and two neutrons, is the heaviest discharge heretofore obtained—and is a helium nucleus, helium being the next lightest element existent. Radium discharges alpha particles. Some of the artificial radioactive elements and isotopes do the same; others pay off in pennies (electrons and positrons) or nickels (protons and neutrons).

Shooting neutrons into stable atoms usually leads to an instability and a discharge of some sort. Shooting rifle bullets at granite leads to flying splinters that are definitely dangerous.

Dr. Hahn has discovered that the addition of a neutron to uranium produces a higher element. This one does not pay off in nickels; it doesn't discharge a few minor particles and get comfortable again. It shatters utterly with a violence unimaginable; it discharges two immense atomic particles with a stupendous, furious energy. Instead of chips such as helium nuclei, a complete barium atom and a complete atom of the rare element masyrium blast out. The energy of this explosion appears to be about 200,000,000 electron-volts. For pure, concentrated violence, that represents the fury of ten mile-long lightning bolts crashing out of a single atomic diameter!

That is a reaction as different in importance and meaning as the difference between the unusable but easily produced static electricity and the mighty drive of current electricity. One, the Greeks knew; current electricity is the basis of our own age. Dr. Hahn has discovered the first of an utterly new type of atomic reactions. Already other men are seeking for other members of this class of terrific explosions.

In the June 1938 Astounding, I said that the discoverer of the secret of atomic power was alive today, doing his work today, publishing his papers. But that we could not, now, name him.

Dr. Enrico Fermi first tried the feat of firing neutrons into uranium. Dr. Hahn first interpreted the results.

Can we, perhaps, put a name to the discoverer of the secret of atomic power?

The Editor.

I WILL SEND MY FIRST LESSON FREE

It Shows How I Train You at Home in Your Spare Time for a

GOOD JOB IN RADIO

J. E. SMITH, President
National Radio Institute,
Established 1914

The man who has directed the home study training of more men for the Radio Industry than any other man in America.

Clip the coupon and mail it. I will prove I can train you at home in your spare time to be a RADIO EXPERT. I will send you my first lesson FREE. Examine it, read it, see how clear and easy it is to understand—how practical I make learning Radio at home. Men without Radio or electrical knowledge become Radio Experts, earn more money than ever as a result of my Training.

Get Ready Now for Jobs Like These

Radio broadcasting stations employ engineers, operators, station managers and pay up to $5,000 a year. Fixing Radio sets in spare time pays many $200 to $500 a year—full time jobs with Radio jobbers, manufacturers and dealers as much as $30, $50, $75 a week. Many Radio Experts open full or part time Radio sales and repair businesses. Radio manufacturers and jobbers employ testers, inspectors, foremen, engineers, servicemen, and pay up to $6,000 a year. Automobile, police, aviation, commercial Radio, loud speaker systems are newer fields offering good opportunities now and for the future. Television promises to open many good jobs soon. Men I trained have good jobs in these branches of Radio. Read how they got their jobs. Mail coupon.

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

Radio is young—yet it's one of our large industries. More than 28,000,000 homes have one or more Radios. There are more Radios than telephones. Every year millions of Radios get out of date and are replaced. Millions more need new tubes, repairs. Over $50,000,000 are spent every year for Radio repairs alone. Over 5,000,000 auto Radios are in use; more are being sold every day, offering more profit-making opportunities for Radio experts. And RADIO IS STILL YOUNG, GROWING, expanding into new fields. The few hundred $30, $50, $75 a week jobs of 20 years ago have grown to thousands. Yes, Radio offers opportunities—now and for the future.

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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I send you special Radio equipment; show you how to conduct experiments, build circuits illustrating important principles used in modern Radio receivers, broadcast stations and loud-speaker installations. This 50-50 method of training—with printed instructions and working with Radio parts and circuits—makes learning at home interesting, fascinating, practical. I ALSO GIVE YOU A MODERN, PROFESSIONAL ALL-WAVE, ALL-PURPOSE RADIO SET SERVICING INSTRUMENT to help you make good money fixing Radios while learning and equip you with a professional instrument for full time jobs after graduation.

Money Back Agreement Protects You

I am so sure I can train you to your satisfaction that I agree in writing to refund every penny you pay me if you are not satisfied with my Lessons and Instruction Service when you finish. A copy of this agreement comes with my Free Book

Find Out What Radio Offers You

Act Today. Mail the coupon now for sample lesson and 64-page book. They're free to any fellow over 16 years old. They point out Radio's spare time and full time opportunities and those coming in Television; tell about my training in Radio and Television; show you letters from men I trained, telling what they are doing and earning. Find out what Radio offers YOU! MAIL COUPON in an envelope, or paste on a postcard—NOW!

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

Here's Proof

Service Manager for Four Stores

"I was working in a garage when I enrolled with N. R. I. In a few months I made enough to pay for the course three or four times. I am now Radio service manager for the M——— Furniture Co., for their four stores."—JAMES E. RYAN, 1535 Slade St., Fall River, Mass.

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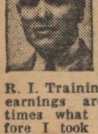

Earnings Tripled by N.R.I. Training

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GOOD FOR BOTH 64 PAGE BOOK SAMPLE LESSON FREE

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Dear Mr. Smith: Without obligating me, send the sample lesson and your book which tells about the spare time and full time opportunities in Radio and explains your 50-50 method of training men at home in spare time to become Radio Experts. (Please write plainly.)

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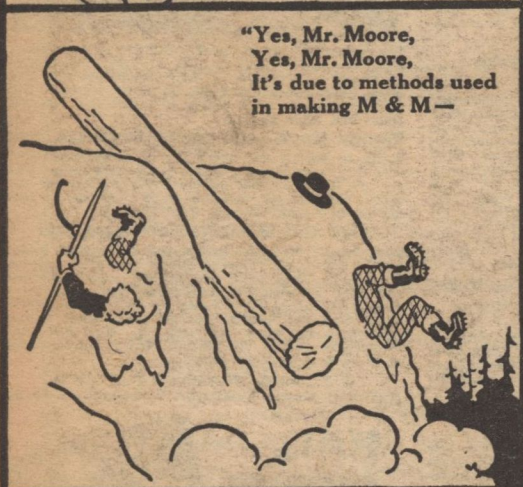
The Tested WAY to BETTER PAY

Mr. Mattingly & Mr. Moore fall into a fine whiskey value!

"Oh, Mr. Mattingly,
Oh, Mr. Mattingly,
It's no wonder on the
world I fairly beam!

"I'm not being ostentatious
When I tell you: 'Oh, my
gracious,
M & M rides high in popular
esteem!'"



"Yes, Mr. Moore,
Yes, Mr. Moore,
It's due to methods used
in making M & M—

"Slow-distilled in ways old-fashioned,
It still costs but little cash and
It brings folks mellow flavor
at a price that pleases them!"

PEOPLE everywhere are singing the praises of Mattingly & Moore—because it is *tops* in mellow flavor, but *low* in price!

M & M is ALL whiskey, too—every drop *slow*-distilled! More—M & M is a *blend of straight whiskies*—and that's the kind of whiskey we believe is best.

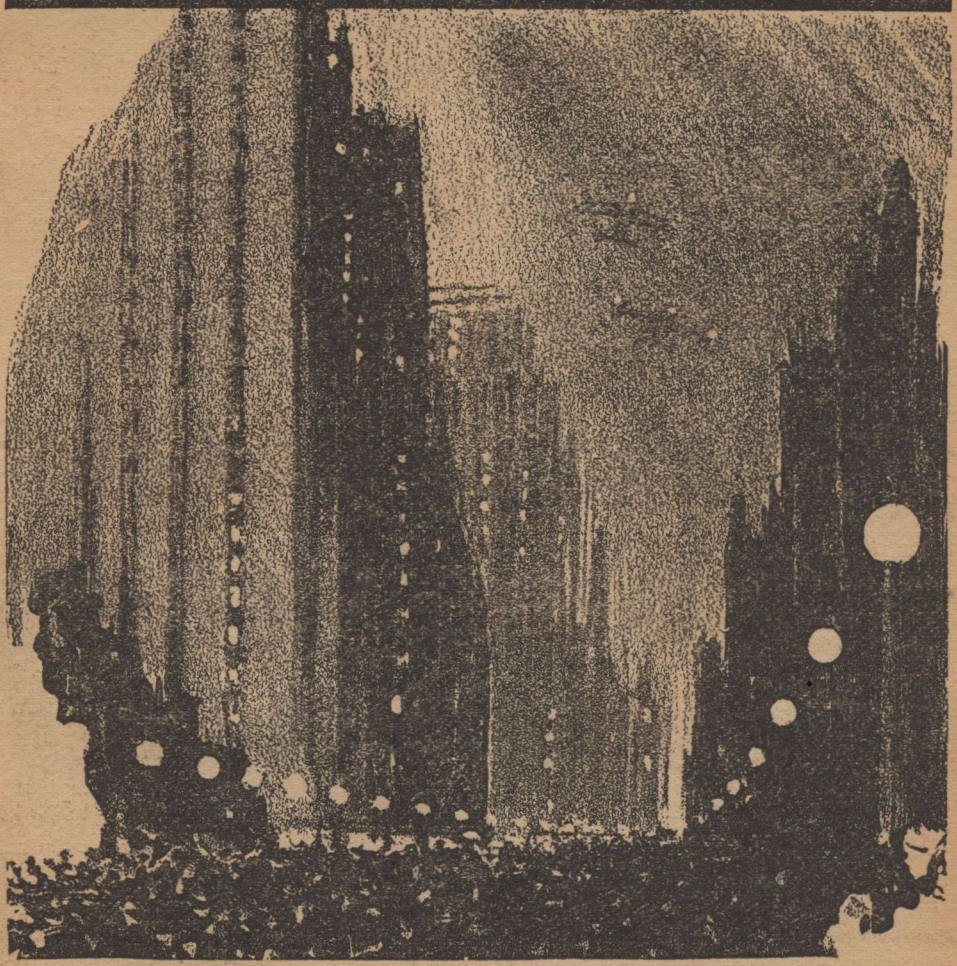
Ask for M & M, *today*, at your favorite bar or package store. You'll be delighted at what a fine, mellow whiskey it is... and you'll be amazed at its really *low* price!

Mattingly & Moore

Long on Quality—Short on Price!

A blend of straight whiskies—90 proof—every drop is whiskey.
Frankfort Distilleries, Incorporated, Louisville and Baltimore.

WORLDS DON'T CARE



By NAT SCHACHNER

BASE NO. 1 was a hive of activity. The great spaceship rested in its cradle, its nose pointed upward to the stars. The flood lamps sprayed the ground with their blue-white glare. Within the cleared space a stumbling stream of Martian men, women and children were passing into the interior of the ship. A common apathy of despair pinched their faces into suffering masks. They seemed like cattle herded to the slaughter.

Sam White tried to blink the pity out of his eyes and remember that he was a reporter with a job to do. He lifted his pad and began to scribble. But somehow the words his shaking fingers formed didn't make sense. They were blurred at the edges, wavering, incoherent; just as those poor people were to his smarting eyes.

He shut the pad with a snap, thrust it angrily into his pocket. "Damn it, doc!" he said with an unsteady gesture to the man who stood next to him, the caduceus of the medical service glowing on his visor. "I can't stand this! I feel like a heel watching those poor scared folks being torn from everything they've known and loved all their lives, and thrown out into space like a pack of infected rats."

Dr. Aylesworth looked unhappy. "Don't think I feel any better about it than you do, White," he grimaced. "But there's no other choice. Either they go, or we all stand a chance of being wiped out. Look what's happened to Mars."

Sam scowled. "Yeah, I know!" He didn't have to tell Aylesworth what everyone knew—that he, Sam White, roving reporter for Universal, had been the only Earthman to come out alive from that unhappy planet with news of the strange plague that had made it into a shambles.

The horror of what he had seen still clung to him—that horror which he had been able to communicate only too effectively to the other peoples of the System. Even now, as he thought of it, he couldn't repress a shudder.

Ever since he had first taken to the spaceways he had loved that queer, gentle, dying race. There were not many of them, compared to Earth standards. A bare million, all told. They huddled in the long valleys where the scarce air still lingered and the brown-red vegetation with its leathery covering furnished them with food, drink and the tough, heat-inclosing textiles that made life possible.

The Martians were a tall, albino race of almost ethereal beauty—far different from the ancient concepts and imaginative writings before space travel made contact possible. The weak sunlight made pigmentation unnecessary; the slight gravitational pull gave them slender, wavering bodies of the type immortalized in the early paintings of El Greco and Arthur B. Davies, and the slighter atmosphere puffed out their chests so that expanded lungs might drink in greedily the precious oxygen.

Sam would never forget that first day in Tari-Gor, the inclosed city erected especially for the benefit of Earthmen with their weaker lungs, when the plague had struck without warning. He had seen the bright-red spots come swiftly to the fair, almost snow-white pallor of the Martian face. He had seen them stagger and run screaming through the streets, their long hands clawing at their throats. He had seen the swift putrescence of their flesh, the lightning suddenness with which they had dropped in their tracks.

They had died by the hundreds before even the first doctor could go to the rescue. But the Martian doctors themselves caught the infection, and dropped beside their patients. A handful of Earthmen, there on tours or on business, and medically trained, had taken over.

For several Martian days they worked heroically, seemingly immune to the mysterious ailment that threatened to wipe out the more delicately organized natives. They found no cure, but they managed to discover the cause. It was incredible!

Life molecules, elemental ultravirus forms, had drifted like a huge meteoric swarm into the Solar System from God knew what focal point of origin in the depths of the universe. Immune to light, heat, or the blasting effects of ray

bombardments, they pervaded every nook and cranny of interplanetary space, of the worlds that composed the System. They attacked the nucleoplasm of the cells, dissociated it into gaseous, toxic compounds which swelled swiftly and burst open the cell walls. Death followed literally from numberless interior explosions.

But only the Martian nuclei, with their unpigmented basic genes, seemed affected. Neither Earthmen, nor swart Venusians, nor the green folk of Callisto, succumbed to the invading virus.

That, at least, had been the first report of the heroic Earth doctors on Mars. The Martians died by the hundreds of thousands, but the rest of the System was immune.

A FEW DAYS after the first onslaught, however, something happened. Sam White, the only nonmedical alien to remain on Mars, saw it happen. One after another, the hitherto-immune men from Earth caught the contagion, sickened, and died. The last young martyr in Tari-Gor gasped out the last frightened disclosure of his tests before he, too, turned over, shuddered convulsively, and was still.

Earth's immunity to the ultrauniverse virus extended only to its original form. But after it attacked and destroyed the Martian nuclei, the molecular structure of the virus was itself slightly modified in the process. In its new form, it proved equally virulent to Earthmen.

"In other words," whispered the dying doctor, "the Martian acts as a host. Should one of them come in contact with the people of our world, he could spread the plague so as to depopulate the entire planet. There is no cure." He tried to lift himself. "Tell them . . . tell them—" Then he died.

But Sam White knew what he had wanted to say. He had fled from the silent shambles of Tari-Gor in his one-man speedster, had catapulted back to Earth to spread the warning. And this was the result.

Yet now, as he watched these poor people stumble into exile, he was almost sorry for what he had done. For most of these Martians had lived all their lives on Earth. Some of them were the descendants of those who had emigrated to the more abundant planet generations before. This was their home, their world. They knew no other.

But the dying doctor had said that the presence of even a single Martian was sufficient to cause original infection, and by the modification of the disease molecule, produce secondary infection among the otherwise immune peoples of Earth.

Therefore, by the inexorable decree of the Council, every Martian residing on Earth was to be quarantined immediately and shipped by closely guarded rocket cruiser away from Earth. At first the decree had read to Mars. But this cold cruelty was too much even for the fear-maddened multitude. Accordingly, the decree was modified to include any satellite in the System that would receive the hapless exiles.

"But damn it," Sam White had exploded, "nobody will touch them with a hundred-meter wave!"

Warna Metsu, Head of the Council, shrugged. "We're leaving that part of the business to the discretion of Captain Garth," he said with a gesture of dismissal. "He is an experienced space officer. He will know what to do."

And now Johnny Garth, in the gaudy sky-blue that marked his rank, was standing a little to one side of the entrance port, watching the hunted cattle being driven into his care. He was an imposing figure of a man. Big and burly of body, his arrogant face tanned a dark red by the ultraviolet radiations of space, his eyes implacable and cold.

"Yeah, *he'll* know what to do, all right," Sam thought bitterly to him-

self. "He'll scuttle them in space with as little compunction as any pirate of the Spanish Main in the old days. A bruiser, tough as hell, and without a soul. A swell guy for a job like this!"

Obviously, Sam White did not like Captain Johnny Garth of the Interplanetary Line.

DR. AYLESWORTH had moved away. Garth had called him for a final check of the medical records. The herded unfortunates were still streaming into the hold. They presented their identification tags at arms' length as they went in. The guards at the entrance checked them against lists in their hands, but stood as far away as possible from the doomed people. Everyone was jittery. In spite of previous inspection, it was impossible to say when the dread red spots might break out suddenly on one of them. The swarm of plague virus was moving toward Earth—but its limits were vague.

Sam sighed, fished for his reportorial pad. He had a job to do, and he might as well get it over with. Millions of listeners would await his newscast of this scene. He scowled horribly. Damn 'em! They'd expect him to lay it on thick—sob stuff, personal touches, interviews with the unfortunates on how it felt to be kicked out of the System. He'd be damned if he'd pander to the multitude's flair for vicarious thrills. He'd—

A Martian was standing dejectedly at the end of the long queue that waited its turn for entrance into the exile ship. The reporter's eyes lifted as he scribbled, flitted over the crowd, fastened on the man. He stopped writing. There was something in that young Martian's expression that didn't quite fit.

He was not much more than a lad, pale and delicate as all of his race, though his chest was more nearly according to Earth standards. But there was an intensity in his eyes, a violence of despair, that shocked Sam. He seemed to have made up his mind to some desperate resolve.

A speed car came roaring over the field toward them. A minor official, no doubt, with last-minute instructions for Captain Garth. It started to slow as it came within the reserve space that surrounded the cradle.

Then it happened!

The Martian flung himself forward suddenly, directly into the path of the still-speeding car. The streamlined nose hit him with a sickening crash. His body turned crazily, fell underneath. The oversized wheels passed over him.

Something snapped in Sam as he raced forward. The great landing field swirled with commotion. The juggernauting car had braked to a halt not twenty feet beyond; a shocked-looking official sprang out. People were running.

But Sam reached the body of the suicide first. He was dead, his head crushed by the thundering wheels beyond all recognition. The reporter bent over quickly. Poor kid! He would never have to face exile now. His peaked cap had been thrown clear; so had the aluminum identification tag he had clutched tightly in his hand before the end.

Obeying a sudden instinct, Sam picked them both up from the soft earth and stuffed them into his pocket. Then a swarm of horrified spectators descended upon the scene. The minor official was crying to all who would listen: "I couldn't help it. He deliberately threw himself in my way. You all saw it, didn't you?"

Sam saw Dr. Aylesworth rush over, accompanied by Captain Garth. An ambulance plane lit lightly on the field. The place was black with people.

Sam moved away. He felt a little sick. In a way he had been responsible for the unknown Martian's death.

If he hadn't brought that story back from Mars—

Yet he had been right in doing it; and the Council had been right in exiling these people. If one of these poor devils should catch the plague, the billions of Earth people might be wiped out in turn. Yet the Council needn't have been quite so hysterically brutal in its methods. Two days before, Sam had brought the warning; today the unsuspecting Martians were being bundled off into space, without adequate preparations, without knowledge even of where they were going. The official orders were vague. The final destination was left to the discretion of Captain Garth. Sam laughed bitterly. Everyone knew Garth's reputation; even that wretched Martian who had sought the quick way out. Once that hard-bitten space dog had cleared Earth—

Swiftly, Sam acted. He flung his dark slouch hat with its newscaster's trumpet to the ground; jammed the peaked cap he had salvaged on his head. It was a trifle large and the peak cast a shadow over his face. He yanked the identification tag out of his pocket, thrust himself into the apathetic line close to the front. Even the death of one of their own had not shaken the lethargy with which the average Martian met misfortune.

Sam knew now what he wanted to do. He'd get on board the *Ellie May*. The confusion attending the suicide would help him. Though the Council had strictly forbidden newscasters on the trip, he felt confident of his ability to get away with it. He knew the radio operator. Once the ship had started, he'd get human-interest stories from the outcasts, radio them back to Earth. Daily messages. Propaganda. The people of Earth, the Council itself, would cool off. Hysteria would give way to normal kindliness. More definite measures would be considered for the resettlement of the exiled Martians until the plague danger had passed. Sam himself had certain suggestions to make. He had brought trouble upon this gentle folk; he'd help them now.

Sam moved with the line abreast of the guard. The peak rested almost on the bridge of his nose. He held out his tag, straight-armed. The guard took it gingerly, compared it with his list.

"Inside, Atshir Jones," he growled. "Next!"

THE *Ellie May* was an old tub of a cargo boat, built for capacity rather than for speed or luxury. Its last trip had been a charter to carry actinium ore, blasted from an obscure asteroid, back to Earth; now its mission was to dump two hundred-odd unwanted Martians somewhere in space.

Its crew were tough old space rats, assembled from the dives of half a dozen planets, blacklisted by every other company whose ships traversed the spaceways. But they suited their captain. Sam remembered Johnny Garth as the commander of a spruce luxury liner to Mars. A competent navigator, without the shadow of a doubt, fanatically devoted to his profession; but a slave driver and a man without a soul.

In fact, it was Sam who had been responsible for his degradation. He had obtained the inside story of a mutiny on one of Garth's ships and dramatized it for the delectation of billions of listeners. The ensuing wave of indignation had blasted Garth into the command of a humble freighter. Naturally there was no love lost between the two.

The *Ellie May* took off in a rumble of infolding gases. The vibration penetrated the stout metal sheath and jarred the hapless passengers to an awareness of their position. A child began to cry.

That touched them off. The women wept, and the men swore. Helpless creatures, torn from their surroundings; carried away to an unknown destination.

Through the visor ports Earth fell

beneath to gain a swift convexity. The sun side was shielded, and on the other blackness yawned, sprinkled with the glowing dust of innumerable stars.

But soon even that first ebullience of resentment died away. Once more the crowded hold relapsed into the apathy of hopeless despair. The men sat holding their heads and the women swallowed their sobs. Only the children, with the resiliency of youth, began to perk up and take notice. Tears dried, they stared curiously around them, tendered timid friendship toward each other, and began to play.

Sam thought it was time to get busy. Each individual in this mass had a story in him; it was his business to get it out. He got up and fished for his pad.

Just then the communications door that led to the working quarters of the ship flung open and Captain Johnny Garth, attended by two hard cases, stalked in.

In the very center of the crowded quarters, built rather for cargo than for human freight, he paused, straddled his solid legs, hooked thumbs in the belt of his trousers, and surveyed the huddled passengers with bright, bold eyes. His look was as arrogant as ever, yet Sam noted that his fingers were close to the vicious little Allertons that studded his belt, and that his guards handled their guns with significant gestures.

"Well," he demanded finally, "anyone sick yet?"

There was no pity in his tone, no realization that he had in his care a group of hapless people, pariahs through no fault of their own. Sam felt a sharp stab of indignation at his heartless brutality. He almost jerked forward in protest. Then he realized his position, and bent his head under the peaked cap. There was no sense in disclosing his identity now.

No one had answered. Instead, frightened glances sought the faces of their fellows, each searching fearfully for the telltale spots. Suspicion had been sown in their bosoms by the tactless question.

The captain's face grew heavy with anger. "I'm not talking to myself," he snapped. "Answer me! Are any of you sick?"

A tall, slender man, white-faced, his puffed chest heaving with unendurable burdens, jerked up from the narrow berth into which he had flung himself. "Go on," he screamed. "Laugh at us; mock at our misery. I wish to God I had the plague so I could give it to you and all Earthmen who are as heartless as you are. You don't care what will happen to us. You think only of yourselves. Where are we going? What are you going to do with us?"

His yells awoke his fellows from their apathy. They started up, screaming, shouting, crowding around Garth. The long fear that had held them submissive burst like the weakened wall of a dam.

Captain Garth pulled out a brace of Allertons. Their cone-shaped orifices could spread flaming death over a wide-angled area.

"Back, every one of you!" he shouted. "Or, by God, you'll never reach your destination. If I had my way, I'd dump you all in space to make sure your rotten blood doesn't infect honest people. But the Council went soft instead. Back, I say!"

THEY fell back from his threatening weapons, panting with fear and ill-suppressed hatred. Garth grinned. It was the superior grin of a tamer of animals. Sam felt a surge of hot anger. He lost his head.

"You presume too much on your authority, Captain Garth," he said sharply. "Once before you tamed a mutiny by methods of your own, and look what it got you. The command of a lousy freighter. These poor people have a right to know where you are taking them."

But even as the hot words poured from his lips, he realized that he had given himself away too soon.

Garth had swung to his voice. There was black wrath on his countenance. Sam dropped his head quickly, shading his face—but it was too late.

"Who dares speak to me like that?" Garth roared. Then he stopped. Wrath turned to bewilderment, and back again to explosive fury.

"Sam White! What the hell are you doing on my ship? There's a Council order against scum like you on this trip. Who slipped you in?"

Further concealment was useless. Sam lifted his head, stared boldly back at the enraged captain. "No one, Garth. I just walked through your guards."

Garth whirled on the man to his left. His voice was soft, yet deadly with menace. "Jellins, you watched the entrance port. Speak up, man! How did this blasted snooper get in?"

Jellins cowered. "I didn't see his face. He had a cap that covered his eyes. And he gave me his identification tag. It checked against the list. The name was Atshir Jones."

"You nincompoop!" Garth raged. "You let the lousiest damn reporter in the System into the ship. Where is this Atshir Jones?"

"You won't find him, Garth," Sam said quietly. "He's beyond your power forever. He took the easy way out. You saw him yourself, lying on the ground, his head crushed in. As for me, I don't mind if you *do* radio a Council patrol ship to take me off. I've got enough material already on hand to rip the hide off this rotten mess. Go ahead and put through your call."

The captain's eyes narrowed on the brash reporter. Then he smiled. There was something in that smile that made Sam's heart sink suddenly.

"So you think that I'm going to send you back to Earth, my friend?" Garth said softly. "You are very much mistaken. You have adopted an identity of your own free will. Sam White, reporter for Universal, is not on board. Here we have only Atshir Jones, Martian." His voice took on an edge. "You chose to cast your lot with these people, Jones. Very well then; I'm seeing that you go through with it. And remember, Jones, any attempt to stir up trouble on your part, and I'll shove you through an exit port—without a space suit. Understand?"

The door closed quickly behind his harsh laughter.

Sam sat down on the edge of his berth. He had to think this thing out. Around him the wave of rebellion, the curiosity evolved by his passage with the captain, had already subsided. The exiles had fallen once more into their apathy of fatalistic despair. None of the adults spoke to each other; each sat with drooping head and listless mien, immersed in the vacancy of his private thoughts. There could be no possible revolt among weaklings like these, even if the armament of the crew had not forbade all hope of such an attempt. The Martian strain was gentle, pliable, bending to suffering rather than opposing it.

Slowly, the implications of what Garth had said seeped into Sam's brain. On board the *Ellie May* the captain was supreme. His crew was hand-picked—blacklegs, outlaws who would take orders from Garth and from no one else. The radio room was at the other end of the ship. He could never get to it. Even if he could, the radio officer would now refuse to take a message from him. No one on Earth would ever hear of his plight. No one would ever know what had happened to him. Sam had no illusions about the probable fate of these outcasts with whom he had cast his lot on the spur of sudden emotional pity. What planet in the System would accept them, and risk the chance of the

plague? Let but a single red spot appear on any one of these foreheads, and all would be callously thrust out into space.

The sweat began to bead on his forehead. Garth had waited for a chance at revenge upon the reporter who had brought about his degradation. And now he, Sam White, had deliberately given him his opportunity. Atshir Jones he was on the ship's list, and as Atshir Jones he would disappear.

He started up, choked with helpless rage. He didn't even have an Allerton or a needle gun upon him. He was trapped!

ON THE fifth day out they intersected the orbit of Mars. The reddish planet, with its long, streaked valleys, was ominously silent. No messages had come from their sending stations for the past three days; no answers were returned to the deluge of inquiries from the other planets. That much Sam had been able to wheedle from a surly guard; no more.

He stared out of the view port at its fast-receding bulk. The plague had seemingly wiped it clean of life. His eyes burned. That gentle, wavering race, doomed eventually to extinction, had died en masse, in a single holocaust. Perhaps it was better so; perhaps—

Monotonously the door would open, and food be thrust into their midst. Monotonously the ship doctor would inspect them at a safe distance for signs of the dread spots. Monotonously the *Ellie May* fled through space to an unknown destination.

For the first few days, Sam had demanded at every opportunity that he be taken to the captain. Every time the door opened, every time a guard or the doctor appeared, he repeated his insistent request. But they only laughed at his protestations that he was Sam White, ace reporter of Universal; and they ignored, as well, both his threats and his attempts at bribes. Garth obviously had his crew well under control.

Then he turned his attention to his fellow exiles. But a few more days convinced him that the job of arousing them was hopeless. The Martian strain, even though they had lived long on Earth, dominated their mental makeup. They looked at him with lackluster eyes and returned to their passive despair. Even the children began to sink to the general level of fatalistic resignation.

Something of the constant example began to sink into Sam himself. Fantastic schemes had revolved in his active mind. He would overpower a guard when he came with food, and seize his weapon. He would storm through the ship until he found Garth; and at pistol point force him to turn the ship around. He would seize the radio room and—

But now he began to sit and mope on the edge of his berth, like the others. The guards kept warily out of reach—they always came in pairs—and Garth had never put foot in the hold since the first day out. In the privacy of his own quarters, Sam thought helplessly, Garth was mocking him; planning his revenge for that single damning newscast which had tumbled him from his arrogant estate.

Then one day, hope suddenly flared. They had left Mars long behind. They had cut through the wide belt of asteroids, and had turned sharply toward Jupiter. The huge planet, with its long, parallel streaks and mysterious Red Spot, loomed slowly to the left. It was a grand sight, majestic, awe-inspiring, the most beautiful of the inhabited universe.

Not that Jupiter itself was habitable. No one had ever dared penetrate its swirling envelope of poisonous ammonia and methane; nor dared risk the incredible storms that raged beneath. But two of its swinging satellites had been colonized. Io and Europa, the closest of the larger satellites. Both Ganymede and Callisto, though larger in size, were mere chunks of frozen ice and carbon-dioxide snow. Their densities were approximately that of water. But Io and Europa had mineral cores, and daring colonists, lured by the store of precious metals that lay close to the surface, had entered the honeycomb of caves with which they were pitted, to establish stations. There they found a curious green folk, not far removed from savagery,

who had managed to seal in a sufficiency of air and water to keep life going.

The hope deepened. For the ship swung over to intersect the paths of Jupiter's moons. Through the view port Sam could see the chunky mass of Europa quite plainly now. There were hundreds of unexplored caverns criss-crossing the inhospitable satellite. This, then, was their destination.

It would be a hard life, doubly difficult for the soft-bodied exiles. Pioneering conditions of the roughest sort on the very edge of the System. Well, it would be temporary at most. As for Sam himself, a journey to the nearest colony would give him access to the radio and communication with Universal back on Earth. He would do his best to ameliorate the condition of these unfortunates; and as soon as the plague waned—

THE *Ellie May* sharp-angled its course. The looming satellite swung in a tight arc to the left. Jupiter rushed across the void, thrusting its great orange disk out of sight.

"Hey!" Sam shouted involuntarily. "What's that fool Garth doing?"

But no one answered him; no one responded.

Obviously, they were quitting the vicinity of the mighty planet and its moons after coming so close. But why? Why?

The question hammered in Sam's brain for hours unsatisfied. They had come to the outermost limits of human venturing in the System, to the last colonizable satellites, and now they were turning away. A sudden elation pounded in his veins. Had Garth received a message from the Council to return? Had the plague burned itself out in the three weeks of their journeying? Had Earth repented its harsh decision?

The door opened and a guard thrust in hastily their usual platters of concentrated foods. He was about to close it again when Sam called out: "Hey there, Soule! I thought we were going to land on Europa."

Soule hesitated; then growled: "We were supposed to. But that's a tough crowd down there. They sent us a message that they wanted no part of us. Council order or no Council order, if we tried to land with this bunch, they'd blast us back into space again. And they meant it."

"How about Io?"

"Same business; only they used worse language."

Sam tried to still the beating of his heart. "Then we're returning to Earth?"

Soule looked frightened. He averted his head and started to close the door. "Naw . . . that is . . . say," he began angrily, "I ain't got no time to answer fool questions."

Sam sprang across the intervening space in a single leap, caught the startled guard unawares. His fingers gripped on the man's tunic; his other hand darted down for the swinging gun.

"By God," he exclaimed fiercely, "there's something screwy about this! You'll tell me the truth, Soule, or I'll—"

"You'll what, Mr. Jones?"

In back of the struggling guard another figure loomed suddenly. Tall, burly, his granite face sarcastic, Captain Garth stood there, a deadly little Allerton snouting in his hand.

Sam let his hands drop. Soule rubbed his shoulders, began an apology.

"Get back to quarters, scum," the captain interrupted with a roar. "I'll tend to *you* later." The wretch fled hastily, quaking in anticipation.

"You'd do what, Mr. Jones?" Garth repeated with deadly politeness to Sam.

The reporter faced him boldly. "I demand to know where we are going," he said in clear, even tones. "We've just swung away from the last habitable outpost of the System. Your orders were to land on one of Jupiter's moons.

You've let the colonists override the Council orders. What next?"

Garth examined him with glinting eyes. "You've managed to pick up a lot of information here in the hold," he retorted. "That means Jellins and Soule must have talked more than was good for them." His eyes narrowed. "Now I'll give you some more information, White. It's information that you'll never be able to use. I had additional orders from the Council; sealed ones that none of the crew knew anything about. Io and Europa had a right to send us away. I don't blame them myself. I'd do the same thing if I were in their boots, Council or no Council."

Sam did not like the captain's smile. It boded ill. Yet he pretended not to notice. "Then, of course," he said with assumed lightness, "we're going back to Earth—or maybe Venus."

Garth shook his head. His smile broadened. "No, my fine snooping friend. We're not turning back. We're going on."

Sam started. "You're crazy," he protested. "There's nothing beyond Jupiter but glacial planets that no man has ever attempted to reach."

"There is always a first time," Garth pointed out. "We are going to combine business with pleasure. Since the known System won't take you, we'll have to find new worlds for you. At the same time, I'll have a job of exploration to my credit that will bring me a higher rank even than the one from which your damned newscast dropped me."

Sam clenched his hands. "You mean you're going on to Saturn?"

"At least that far," Garth agreed. "There's a fuel ship slanting up right now from Europa to restock our supplies." He fixed the reporter with a malignant glance. "We'll see how you like a Saturnian moon for what is left of your life, Mr. Atshir Jones."

THEN he was gone; the steel barricade slammed tight in Sam's face. Sam went back to his bunk; sat down. His fists were still clenched, and the nails dug unheeding into the palms of his hands.

So *that* was it. The Council, in its panic fear, had determined to rid the System thoroughly of these possible foci of infection. And Garth, in his avid desire for personal rehabilitation and further glory, welcomed the hazardous mission.

Saturn! Approximately twice the distance of Jupiter from the Earth. A planet of mystery and incredible rings. A swirling mass of noxious, frozen gases. A temperature utterly incapable of supporting life. Satellites of which practically nothing was known. Wastes that no man had ever dared venture into before. They might as well, he thought bitterly, have dumped us through the ports into the void. It was murder, one way or another.

For the thousandth time he stared speculatively around at the hapless outcasts. They sat, as always, looking vacantly ahead, crushed by their misfortunes. Speech had died progressively until it was now but an infrequent matter of monosyllables. They ate what food was given them with listless appetite; they lay in their berths and fixed their eyes on the smooth, blank ceiling. Sam had tried again and again to stir them to activity, to resentment over their fate. There was no answering spark in them. They might just as well have been sheep on their submissive way to the abattoir for slaughter. If anything was to be done, Sam would have to do it unaided.

But there was nothing he could do.

The days turned into weeks. The *Ellie May* did not seem to move. Yet Sam knew they were traversing the uncharted deep at a steady clip of several hundred miles per second. The rockets had kicked them into the required

velocity, and now they were coasting along on momentum. Only occasionally the stern rockets blasted off to overcome the diminishing pull of the far-distant Sun.

Jupiter fell steadily away, and became once more but a star in the blackness of the void. Saturn burned with a slowly increasing luster. It was frightening—that tremendous jump into the unknown.

Even the members of the crew felt the tension. The doctor snapped irritable commands on his daily inspection of the exiles for signs of the plague. The guards, who brought their food, growled sullen monosyllables to all Sam's attempts at conversation, and withdrew with all possible haste. The tainted passengers fell into an even deeper stupor. It seemed even difficult for them to swallow the food. And Sam sat on, day after day, trying to figure out some plan of escape until his brain would ache with utter futility, and he would fling himself exhausted across his bunk to fall into uneasy, unrefreshing slumber.

Sometimes he thought of the dead lad whose identity and fate he had assumed. It had been a sudden impulse on his part; an impulse that would very probably cost him his life. At times he raged at himself for having been a blithering, romantic fool; then the sight of his fellow exiles, their tragic faces wavering before him, stirred something inside of him, and he grinned mirthlessly. He supposed he would do it all over again, if the occasion arose.

THE WEEKS passed, and Saturn began to assume a commanding position in the illimitable waste ahead. It grew on the sight until it became the dominating factor in the immensities. It was incredibly beautiful. Even the lackluster outcasts began to revive; to crowd around the view ports for the first time in weeks. They began to talk again. Ripples of excitement invaded their speech.

Tension mounted throughout the vessel. Those few members of the crew who came in contact with the untouchables lost their gruffness, their abrupt aloofness.

For one thing, Dr. Semmes announced joyfully that all his cultures taken from the outside of the *Ellie May*, as they swept through space, had been negative for the past five days. Which meant that they had passed beyond the area of the terrible subvirus molecules and there was no longer any chance of infection.

For another, the thrill of having come to a hitherto-unexplored planet, where no human being had ever ventured before, gave a feeling of camaraderie to all engaged in such an overwhelming journey.

And Saturn was a sight that hushed all human differences in the glory of its marvelous beauty. The planet was tilted to them so that the full splendor of the rings was exposed to view. Saturn itself was a pearly disk, shot through with parallel bands of delicate mauves and blues and pale reds. But the rings were a flashing, scintillating halo that whipped swiftly around the equator, shifting their colors through the entire gamut of the spectrum, blazing with an eerie iridescence that reminded the breathless reporter of the tints to be found in the depths of a magnificent fire-opal.

In the grandeur of that picture, never before seen so close or in such precious detail, he forgot his situation and the fate that awaited them all. He was a discoverer, a worshiper at the shrine of a tremendous spectacle.

He was rudely awakened, however, to a sense of the realities of the occasion. Captain Johnny Garth did the awakening. He stalked into the prison-hold, sure of himself, superior, arrogant. Three guards followed him, well-

armed, wary. They no longer feared infection, and they were prepared for any possible mutiny.

Garth stared around at the astonished exiles, flicked Sam White with scornful glance.

"Get your stuff together," he growled. "We're landing within the next half dozen hours."

"Where?" Sam demanded. Inevitably he was the spokesman of these frightened people. He could feel them shrink once more within themselves; he could see the swift relapse into their former lethargic state.

"On Titan. I'm giving you all a break. It's the largest of the Saturnian satellites, solid to the core, and our electro-scanners have found evidences of pocketed depressions and black shadows in the rock that indicate the presence of caverns."

"How about air? How about water?"

"You want a hell of a lot," Garth sneered. "What did the first colonists on Europa find? Water and air indeed! You're too damn soft. You'll find plenty of ice, and plenty of oxygen-bearing rocks. You'll do what every interplanetary pioneer has done. You'll seal yourselves in, melt the ice, and crack down the sulphates, carbonates and aluminates to release a breathable air. The Council has been damn good to you. They've furnished you with complete space outfits: spacesuits, small atomic furnaces, blasting and cutting arcs, food, clothing and supplies to keep you going on your own for a year. Seeds, too, for grain to be grown in pulverized rock. If you don't make a go of it, you don't deserve to survive."

Sam slid his gaze around the hunched, delicate bodies of these compulsory colonists. What he saw sent cold shivers through him. They did not have the stuff that made pioneers. They'd just huddle and die as soon as the oxygen tanks in their spacesuits gave out.

Anger burned in his veins. Not so much for himself, as for these poor victims of a fear-psychosis. He shook his fist at the imperturbable captain. "It's murder, pure and simple," he shouted. "You know that as well as I do."

Garth shrugged his shoulders. "Bah! I could make a go of it. So could any group that has guts. Let's see what *you* are made of. Remember, we land in six hours." He left the room.

THEY SPIRALED close to the overwhelming round of Saturn to make the landing. Then they slid down to the bleak, stony face of Titan in a series of ever-narrowing circles, braking steadily with the forward rockets to slacken their tremendous momentum.

It was, Sam thought as he stared down at the dizzily turning landscape, going to be a tremendously difficult affair. Titan's surface was puckered into gigantic folds. Huge, spiked mountains tumbled in every direction; intersected with deep ravines and twisting gorges. Nowhere could Sam see any level spot where the ship might level off and land in cushioning gases. Garth was an experienced and skillful navigator, Sam had to acknowledge, but this task—

Seven times the *Ellie May* circumnavigated the inhospitable moon before the level plateau was spotted. That is, it was level compared to the rest of the terrain. On Earth it would have been a desert intersected by gullies, ditches and dotted with mesas.

Why the devil doesn't he try another moon?—Sam thought resentfully. There were plenty of them around, spangling the black heavens where Saturn didn't take up the picture. "Heartless brute, that's what he is," he raged. "He had determined on Titan, and Titan it would be, no matter what happened."

The *Ellie May* shivered with the thunder of the retarding exhausts. It

slanted downward, leveled off to a lesser angle. Flame smothered the ship, obscured the view ports. They were going to land.

There was a small, popping sound. Then a sundering crash that jarred the freighter from stem to stern. *Clang—boom—bam!*

The next moment there was a greater crash. Sam was flung headlong across a suddenly static hold into a tangle of screaming people and flying equipment.

They had made a forced landing that might well prove disastrous.

DEATH stared them all in the face. Death for the exiles, and death for the officers and crew of the *Ellie May*. They huddled in the still-intact recesses of the motionless freighter, no longer untouchable to each other, bound together by the common fate that threatened them all.

Outside, the bleak and frozen terrain of a dead planet mocked them with a scenery that outpaced the eeriest fantasies of a Doré. A stony waste of incredible heights and depths, sharp-rimmed in perpetual semitwilight. Saturn whirled over canyons and peaks like a tremendous jewel, and the Sun journeyed swiftly across a circumscribed horizon like a minor star.

For three short Titanian days the engineers had worked, without ceasing, to discover the cause of the *Ellie May's* sudden crash. Then Chief Engineer Green broke the tragic news. His face was grim underneath its load of grease and fatigue.

"It's the firing pin of the main stern rocket chamber, sir," he reported to Garth. "It cracked and blasted off just as we were about to land, sir." He shook his head. "I've never seen it happen before. Those pins are guaranteed for the life of the ship."

"Then put in a new pin, you idiot," Garth yelled. "What are you holding us up for?"

Green's face tightened. "Sorry, sir, but we haven't any spares. They're made of the rarest element in the System—miraculum. The only known source of supply is on little Phobos, the Martian satellite. It's more expensive than radium-superX." He grimaced. "That's why the owners thought the *Ellie May* didn't need a spare."

"Can't you make a new pin of some other material?"

"Nothing that would last a minute in the new fuel we're using. Those temperatures'd crack wide any other metal."

Garth stood rigid. "Then you mean," he said slowly, "we can't take off from Titan until we locate a vein of miraculum ore, and that in all the System only Phobos is known to have a supply?"

"Yes, sir."

Everyone had heard it. Everyone knew what it meant. They were marooned on Titan—exiles and crew alike. The equipment and supplies, estimated to last a year of Earth time for the outcasts, would have to take care of double the number. And Garth himself had been compelled to face the realization that Titan was not another Europa. The satellite was sheer granite—a solid block without any of the characteristic veinings and striations that disclose a mineral content; without any of the clayey deposits that could be worked up into a usable soil. Titan was utterly sterile, unfit for the hardiest or boldest of pioneers. Nor could the *Ellie May's* radio equipment bring help. Saturn and its rings blanketed surrounding space with a strong magnetic field which made long-distance transmission impossible. No one would ever know what happened to them.

Sam's harsh laugh rose jaggedly above the stunned silence. "Welcome, Captain Garth," he jeered, "to our little Paradise. Surely *you* can make a go of it. Didn't you tell us softies that not so long ago?"

Garth purpled, but he did not answer.

"All right, Green," he said to the engineer. "We'll have to find some miraculum on Titan. We'll use the two-man space boat to go scouting. You know, of course, what the ore looks like?"

Green looked sick. "No, sir. The stuff's pretty closely guarded. Very few have ever seen the ore. How about you, captain?"

The purple faded to a curious gray. "Never saw it in my life," Garth said at last. He raised his voice. "Any of you men know what miraculum ore is like?"

No one answered. A dead silence blanketed the marooned people.

Sam White was enjoying himself immensely. The irony of fate, he grinned to himself. First he had been caught in the toils; and now it was the hard-boiled Garth and his gang of tough eggs, who hadn't been at all concerned in the fate of those they had intended to dump unceremoniously on bleak Titan. Let them see how they liked it for a while.

Then his smile faded. The poor exiles would never be able to fend for themselves. Garth and his men would monopolize the supplies, and the fatalistic, physically soft outcasts would die. He stepped forward.

"I've seen miraculum ore," he said quietly.

Garth stared at him. His burly, weather-beaten face was suspicious. "You, White!" He forgot his pretense of Atshir Jones. "Where did you see it?"

"On Phobos, naturally. You don't remember, evidently. I was the reporter who sent the newscast of its discovery throughout the System."

Garth took a deep breath. He remembered it now. "All right," he growled. "Then come with me."

Sam smiled. "I'll make a deal with you, captain. If I help you find the ore, you're to take every one of us back to Earth. I'll take the responsibility with the Council."

Garth's eyes snapped. "I make no deals."

"O. K.," Sam said amiably. "No deal; no miraculum."

Garth took out an Allerton; fingered it. "That's mutiny. Under the space code I have a right to kill you."

"Go ahead. That won't get *you* off Titan."

Garth considered that. "No, it won't," he admitted. "But I have another idea. I'll commandeer all supplies for the benefit of the crew only. Your Martians will be the first to die."

The two men's glances clashed. Sam felt a hot flush of anger at the callousness of the man. But he had no illusions. Garth had both the will and the power to make good his threat.

Sam relaxed. "You win, Garth," he said evenly. "Let's start."

IT TOOK two weeks of steady exploration in the small space boat to convince Sam that there was none of the precious ore on Titan. Two weeks in which the two men, enemies, hating each other's guts, were confined to the narrow limits of the tiny boat, forced upon each other's company day and night.

At the end of that period they returned to the *Ellie May,* compelled to confess defeat. They found on board a strange situation that had arisen in their absence.

Both crew and exiles were mingling, working together on a comradely basis. New life seemed to have been instilled into the hapless passengers; a queer selflessness into the hard-boiled crew.

Under Green's direction even the women and children had forgotten their whining and were toiling at tasks side by side with the men. The atomic motors and blasting tools had been removed from the ship. Clad in ungainly spacesuits that made them look like strange antediluvian monsters, they were engaged in hollowing out the natu-

ral crevices in the rock, enlarging them into livable dimensions, sealing them with roofs of fused granite.

"Just in case," Green explained. "Any luck, captain?"

"Ask White," growled Garth. "He's refused to describe the stuff to me."

"I'm taking no chances," Sam retorted. Then he shook his head. "Not a sign of it anywhere."

Green was taken aback. "Then what are we going to do? We've six months' supplies on tap—figuring everyone." His eyes wandered from the grim captain. His tone was apologetic. "The crew, sir, are beginning to like these people. They insist on share and share alike."

Garth's face seemed carved out of the stone planet itself. "Well?" he asked noncommittally.

"I've tested all the borings, sir. Even with the fertilizer, this pulverized stuff couldn't grow a single seed. Once the supplies are gone—" He shrugged. He didn't have to say any more. They understood.

They were stranded on a planet where no human being had ever come before; where none would come for possibly a generation more. Six Earth months between themselves and death, granting even that the oxygen could be extracted from the refractory rock!

Sam wrinkled his forehead. "I still don't like you, Garth," he said quietly. "But we haven't reached the end of our collective rope yet. There are other satellites of Saturn. The space boat can go that far, can't it?"

Garth looked at the reporter with a thoughtful air. "Only to one and back at the most," he said finally. "There's a slow leak in the hull plates. It won't last much longer."

"Hm-m-m!" Sam considered. "Then even if we find better conditions elsewhere, we can't transport our colony. They've *got* to stay here."

"If you find the miraculum, we could shift you over in the *Ellie May*," the captain pointed out.

"Still no deal about taking us back to Earth?" demanded Sam.

"Still no deal!"

THEY took off for Japetus the following day. Since the little craft would be capable of only one more trip, the choice of the satellite to be visited was a matter of careful discussion.

Japetus was chosen for several reasons. Though farther out, it was next to Titan in size, and its surface in the electro-scanners seemed more regular than any of the others. Furthermore, the high albedo indicated the presence of ice and snow. That might mean frozen water, or at the worst, carbon-dioxide snow. In either case there should be weathered rock underneath, and certainly there was more chance of finding a variety of materials than in the igneous lump that Titan had turned out to be.

The journey across the gulf was made in silence. Mere monosyllables sufficed between the two men. Speech was used only in case of necessity, and even then with considerable reluctance. It was difficult to keep the supply of air at normal density. The metal plates were defective. The precious oxygen breathed out in infinitesimal quantities, but at an inexorable rate. Yet Sam had noted that Garth had refused to take along additional oxygen tanks for replenishment of the failing supply. There was little enough for the use of the marooned colony on Titan, and once gone, it might never be replaced. Granite was a tough material from which to extract oxygen even under favorable laboratory conditions.

On the trip across, Sam asked curiously: "You're not afraid to take me along, Garth? I might knock you down and take the ship away from you."

The captain tapped his Allertons significantly. "While I'm awake I have

these little babies."

"How about when you're asleep?"

Garth stared at him. Finally he said: "I hate your guts, White, for what you did to me. But you're not that sort of a man."

Sam thought it over. Then he said wryly: "I'm afraid you're right. You can sleep easy. But any other time—"

The exploration of Japetus was a different job from that of Titan. A thick blanket of snow and ice submerged the actual surface of the planet, so that it was impossible to cruise over the terrain and search for outcroppings of the ore. Here it would have to be by the more tedious and far more laborious method of haphazard borings in likely-looking rock formations.

They landed on a desolate plateau where the ice upheaved in minor imitation of the precipitous peaks of Titan.

"More chance to find a vein in a surface fault," Sam explained briefly. "That's the way it lies on Phobos."

They got silently into their clumsy spacesuits, picked up the long, spiked rods of the toughest dural-steel. Within their hollow interiors were heating and boring units, so that the rods, placed spiked end down upon the ice, would melt sizable holes within seconds; and then, with the boring unit attached, would grind through the solid rock.

Once outside, they stood momentarily motionless on the slippery surface of the orb. They were in a ravine, and the upended crags of ice glimmered ghostly in the dim Saturnian shine. Already one of Sam's hopes had been dashed. The ice proved to be solid carbon dioxide, without the slightest admixture of water. That meant Japetus, too, would very likely be as uninhabitable as Titan.

But just now he wasn't thinking of that. It was a weird, unforgettable scene at which he gazed. The strange ice boulders, tossed into the ravine as though a race of giants had once heaved them there, the bluish smoothness of their surfaces, hard as rock and unpitted by either heat or wind—just as they had been for unending millenniums. Above, however, was the sight that caught his breath. Saturn was in full cresent, with the rings tilted upward at an angle of almost thirty degrees.

Against the black backdrop of space, against the eerie waste in which they stood, two solitary human beings who hated each other, alone in the immensities, Saturn glowed with an overwhelming effulgence. Vague thoughts stirred in Sam; emotions he had deemed long dead. On such a night as this, in such unfathomable surroundings, one needed a comrade, a loyal friend—

Garth's voice sounded queerly in his space phone. "It gets you, doesn't it?" Then, as though ashamed of himself, he added harshly: "We've got work to do, White. We didn't come here to moon."

Sam gritted his teeth. The spell had been broken. Yet Garth was right. There was work to do.

PAINFULLY, slowly, they moved over the slippery ground. Wherever Sam indicated, they placed their rods, and set the heating units into operation. The spiked tips glowed white-hot, and the ice sizzled into a boiling steam of carbon dioxide that froze in the subglacial void almost immediately back to a fine swirl of falling snow.

Sometimes the rods plunged deeper and deeper into endless ice; other times they hit bedrock within a short distance. Then the boring units started. The rock flew and powdered under the hard, whirling tips. Sam checked personally each sample. He had been careful not to divulge the appearance of the miraculum to Garth. If he ever found it—

But Japetus seemed as sterile of the precious ore as Titan. For three Earth days they lifted the little space craft and set it down again in haphazardly chosen

gullies. It was hard, hopeless work. Sam felt his muscles cry out for rest; the air in the tiny ship was thinning out at a dangerous rate; and the oxygen tubes were running alarmingly low within the heavy spacesuits.

Yet Garth kept going, tirelessly, without a wimper of complaint. Sam set his teth. He wouldn't let anyone, and especially not Garth, outdo him. So he, too, kept on going.

On the fourth day, however, even Garth seemed to realize that this could not go on. There was barely enough air left, with the shallowest of breathing, to take them back to Titan. His black brows were furrowed, and his lips tight, as he donned the clumsy armor. "This is the last time, White," he said. "Either we find the stuff today, or we're through."

Sam shrugged and said nothing. He was saving his breathing. Every cubic centimeter counted now.

All morning the prospecting was but a weary duplication of other days. Nothing but snow, ice and sterile rock. Nothing to show that the rare miraculum existed anywhere in the universe except in that pocket on Phobos.

They stumbled heavily into a deeper ravine than any they had yet seen. The ice lifted like mountains all around. Huge boulders of frozen carbon dioxide strewed the ground.

"Small chance of finding anything here," Garth grunted. "The ice seems a mile thick."

"Maybe," Sam said wearily in his helmet. It was getting harder and harder to breathe. His body seemed a huge, single ache. "But we'll try." His armor-inclosed hand gestured. "You try under that big boulder, Garth. It looks a bit thin there." He poked with his heating rod at a thin glaze that covered an outcropping. "And I'll work here."

About two hundred yards separated them. The space boat was out of sight, around a bend in the ravine.

He saw the dazzle of red in the gloom as Garth started work. He was digging with his tool directly under the overhang of jagged ice. Then he, too, went to work.

The fierce heat scattered the glaze as if it were the thinnest tissue. It sucked up into an invisible swirl of gas, and precipitated down upon him in a frozen drive of snow. Sam brushed it impatiently away, stared dully at the uncovered rock. More of that damned granite! Smooth, featureless, unbroken. Was the whole universe composed of that sterile rock?

He turned away with a hopeless gesture. In the dim distance, Garth was still digging. Endless ice, no doubt. No more success than here. It was no go. Might as well quit, return to Titan before the last gasp of oxygen was sucked in; and wait there for death to come within a period of months.

A fierce rage filled him; a sense of overwhelming futility. Granite! Granite! He began to hate it; even more than he hated Garth. The beginning of delirium; the air was foul within the helmet. He lifted the borer, thrust it against the damnable rock; turned on the boring unit full blast. The instrument would be useless from now on; get rid of it in one grand orgy! The rock glowed and blistered and melted away under the violence of his attack. It gave him a strange sadistic satisfaction. In his semidelirium he personalized the granite; he felt that he was plunging a lethal weapon deep into its shuddering hardness.

The gray rock split and fell away. Deeper, deeper, bit the borer. It drove through as easily as though it were a soft, ripe cheese.

Then, suddenly, the long rod jiggled in his gloved hands; slackened its furious pace. It almost crashed out of his numbed fingers.

Sam wished he could wipe the sweat

out of his eyes. His head was swimming; his brain was on fire. But even in his dazed state he felt that something was wrong. The sharp spike of specially treated steel was guaranteed to go through anything but diamond. His lips opened in a feverish grin. It would be ironic to find on this waste planet a huge diamond embedded in the rock that back on Earth would be worth an incalculable fortune; but here was just so much crystallized carbon.

Nevertheless, he edged the cutting tool through the surrounding rock that overlaid the strange, hard substance. Around and around, uncovering its roughened surface more and more. His senses were whirling; it was harder and harder to breathe. A mad whim to uncloak this mighty gem seized him.

Hot sparks showered around him. Something loosened, dropped out upon the frozen ice beneath. He blinked at it. An irregular mass, metallic gray in texture, streaked through with a curious network of fine red lines.

His first thought was one of hazy disappointment. It wasn't a diamond, after all. Strange how his semidelirium had fixed upon that as the goal of his hopes. His second was to peer closer.

He jerked erect. His vision cleared; his sluggish heart began to pump with a mad recklessness; he forgot all his former caution; a wild whoop echoed within the confines of his helmet.

A lump of pure miraculum, such as had never been found even on Phobos! A solid nugget, from which a thousand firing pins could be fashioned!

IN HIS phones Captain Johnny Garth heard that whoop. He jerked his bent back erect, whirled around.

"What's the matter, White?"

Sam cursed under his breath. All along he had been steeling himself for just such an eventuality. There was a certain course he had mapped in the event he stumbled upon the precious element. Now he had spoiled everything with his damned yell.

He knew Garth too well. Garth would know what had happened; with his deadly Allertons and the will to use them, Sam wouldn't have a chance to proceed with his program.

He saw Garth peering at him through the gloom. He was leaning on his boring rod, with the unit still operating. The white-hot glow bit deeper into the ice.

"What's the matter, White?" Garth repeated, his voice edged with suspicion.

Sam grimaced hopelessly. He could pick up the infinitely valuable nugget and run for it. But an Allerton discharge could outpace his ungainly gait. And the space boat was in back of Garth.

"Speak up," rasped the captain, "or I'll—"

There was a blaze of light. The huge overhang of ice tottered—fell with ominous silence. A startled yell came from Garth. Then he disappeared in a foam of hurtling chunks of ice.

For a moment there was silence. Sam stood rooted to the spot. It had all happened with such terrifying suddenness that he was caught off balance. Garth had undermined the precariously balanced overhang. It had collapsed upon him, and buried him under tons of ice as hard and solid as any rock.

Sam took a deep breath, unmindful that his supply of oxygen was perilously low. A miracle had happened; as miraculous in its way as the discovery of the justly named miraculum. Garth, the bully, the hard, soulless commander, was dead. Back on Titan his crew were fraternizing with the unfortunate exiles. Green, the kindly chief engineer, would assume command under the rules. He, Sam White, had the space boat and the miraculum that could take them all back to Earth. He would bargain with the Council by radio. In exchange for a sensible quarantine until the plague re-

ceded, he would lead a new expedition to mine this fabulous bed of the precious metal.

He laughed happily, cradled the heavy nugget in the crook of his arm, and started toward the space boat.

Then he stopped. A low groan had whispered in his earphones. His heart missed a beat; raced again.

Good God! Was Garth alive?

The groan was repeated. "White!" the voice moaned. "My leg . . . it's caught . . . crushed!"

Sam stared through the weird Saturnian shine. It was dark and shadowy ahead. The sputter of the borer had faded. The mechanism had been smashed by the avalanche. Yet he could see the huge ice boulder thrust on its side, and underneath, a prone, sprawling mass that resembled a man.

Sam's first reaction was one of fury that Garth had not conveniently been killed. His second was that it made no difference. In fact, it was a perfect case of retribution. The captain had been callously willing to abandon several hundred men, women and children, innocent of any crime except their birth, to a collective fate more horrible in its potentialities than that to which he had now fallen victim. Let him stew in his own juice. There could be no pity for him. Alive, he meant the death of hundreds; pinned helplessly here on Japetus, he meant life, freedom and future laughter to them all.

Sam's laugh was ugly. "To hell with him!" Still holding the precious find, he started his ungainly, slippery march toward the space boat. He made a detour. He didn't want to see the pinned body, near hear whining pleas for help. All bullies whined when their turn came.

He passed on the other side, along the frowning rampart of the upflung ice. Directly ahead, around the bend in the ravine, he could see the little craft. Once inside, a flick of the controls, and he'd be off to Titan, the bearer of glad tidings. He'd have no trouble explaining the death of Garth. He'd tell the truth, that was all. Such accidents were a most usual accompaniment of space exploration. Nor was Garth so popular that anyone would bother about it. Even if they did, by the time the *Ellie May* was fixed, and returned, Garth would be truly dead. The fall of ice upon him, the crushed leg, would be proof positive of the truth of Sam's story.

AT THE entrance port he paused. It was funny. Since that second groan, Garth had been strangely silent. No whines, no further pleas for help. Had he died then? Or had he just fainted?

Sam placed the nugget carefully on the snow next the boat, and retraced his steps. Might as well make sure. If Garth was dead, that was the end of it. His conscience would be wholly clear.

Balancing himself on the spiked point of the borer he reached the motionless body. He bent to peer down. There was no question that Garth's leg was pinned tight under the tremendous weight of fallen ice. He could never have pulled free, even if alive. But he was—

The goggling helmet turned with infinite effort. Through the clear quartzite Sam saw Garth's eyes staring up at him. They were pools of pain, but the lips were tight and did not open.

Startled, words spilled from Sam. "Then you're alive?"

The wounded man nodded feebly. "Yes."

"But you can't move?"

"No."

Wonder flooded the reporter. "You called for help only once. You saw me go and leave you. Why didn't you beg; call me back?"

A certain grim steeliness replaced the pain in Garth's dark eyes. The words

came with difficulty. "I never beg—especially not from you."

"Yet you know you'll die, unless I rescue you."

"Yes."

In spite of himself Sam felt a compelling wave of admiration for the hard-bitten, tough old space captain. He would die as he lived; showing no mercy; asking none.

"You know I won't help you, Garth. You know the lives of hundreds are endangered if I do."

"Yes."

Sam heaved a sigh. Now that he had his enemy helpless at his feet, the victory tasted of dust and ashes. "I'll tell you what I'll do," he said suddenly. "I'll make a deal with you. The one I offered you before. I'll release you if you agree."

Their eyes locked in the dim light. Garth's face was gray with suffering. His crushed leg must be hurting like hell. His strength was ebbing. But when he spoke his voice was harsh, domineering. "I make no deals, White."

A wave of anger blasted over Sam. "You damn fool," he cried. "You'll die then. I'm leaving you. This is your last chance. Will you promise?"

"No."

Sam sighed. The man was mad; an idiot. Back on Titan hundreds of innocents must die if Garth came back. He lifted his dural-steel borer. He did not recognize his own voice when he spoke.

"O. K., you blasted idiot!" he growled. "You win. You must have known I was a soft-headed sap. Here goes."

He placed the tip carefully over the prone body, set the heat unit.

The ice sizzled and glowed into furious gas. Swinging in long, parallel arcs Sam cut the encumbering boulder swiftly away. Snow piled thickly over the motionless body. Only the helmet was free. There was a soundless split. The ice settled lower on the crushed leg. Garth's lips locked tight to strangle the cry of pain; then his eyes clouded and closed. He had fainted.

Sam worked on with feverish haste. After minutes that seemed uncounted hours the leg was free. He brushed the encumbering drift of reprecipitated snow away. The leg was badly smashed but luckily the plioid fabric of the suit had not been pierced. No air had escaped.

Cursing himself for a fool, the reporter heaved the limp body over his shoulder, staggered to the space boat. There he managed to open the safety lock, thrust the still-unconscious man inside, retrieved the lump of miraculum, and closed the slides behind him.

But before he went to work to restore Garth to life and minister to his hurts, he removed the brace of Allertons from his belt and buckled them to his own.

HALFWAY back to Titan, Sam sat grimly at the controls. Garth lay propped up on the tiny berth, his leg bandaged, his face still gray, watching.

"I've been a hundred different kinds of an idiot," Sam snarled. "I don't know why I went so soft over a lug like you. I've a good mind to kill you right now, Garth. When I think of those poor people—"

Garth shifted slightly. "It's too late now, Sam White," he said calmly.

Sam whirled. "Why is it?" he started; and stopped.

He was staring straight into the cone of a little Allerton, held with rocklike steadiness in the captain's hand. "Why, where did you get that?" he gasped.

"I always carry a spare," Garth smiled. "Inside my shirt. You missed it when you searched me."

Sam stared down at his own weapons, so near and yet so far. "All

right," he groaned. "You win again. Serves me right. What are you going to do now."

A strange grin lit up the wasted face. "I'll tell you, Sam, something I hadn't intended to tell anyone yet." It was the first time he had ever called the reporter by his first name. "I didn't want to raise too high hopes until I got results. Do you remember Doc Semmes' report several weeks out from Jupiter?"

"You mean about the volume of the space plague?"

"Yes. He'd been making careful charts of its presence all the way. It seemed to him, and to me, too, that the horde of ultravirus molecules was traveling in a definite stream through space at a definite velocity. We plotted the course. The graphs showed that within several months at the most the invasion should have passed over Earth and the System, and vanished into interstellar space again. I radioed my findings to the Council, and told them to check up on them. I gave my position, and demanded authority to bring back my cargo as soon as the danger had passed. But just then we hit into the zone of Saturn's interference; and the radio went dead."

Sam stared at him incredulously. "Why the devil didn't you say so, then?"

"I dared not raise any false hopes. My orders were specific. I'm a spaceman."

The reporter exploded. "You blithering idiot! Then why, at least, didn't you tell *me*, when you knew I was leaving you to die on Japetus?"

The big man lifted himself painfully in his berth. "Do you think I'd crawl and beg for my life from an enemy? I'd die first." Then a grin suddenly illumined his craggy face. He dropped his weapon to the bedclothes. "But now, Sam, we're friends. Will you fix up my blasted leg so it'll stay comfortable? You're one hell of a nurse!"

THE COVER

The cover this month, illustrating a scene from "Worlds Don't Care," shows Saturn as seen from Japetus. Done with the help and advice of the Hayden Planetarium astronomers, it represents as great a degree of accuracy as is possible to our present knowledge. Since many facts regarding the satellites of Saturn remain vague, certain details are based on reasonable hypotheses.

Japetus was chosen as a viewpoint—with author Schachner's co-operation—for the following reasons: Only Japetus, of Saturn's larger satellites, is sufficiently out of the plane of the Rings to make possible a view showing the broad expanse of the rings. From all the other satellites the rings are but a thin, brilliant line across the disk of the planet. This choice of position introduced, however, one fortunate limitation. From Japetus, Saturn and the other satellites cannot be shown in the same view. Titan and the other major moons are—since they are in the plane of the Rings—a considerable angular distance from Saturn, and hence not visible in any reasonable picture of the heavens.

The stars shown are about the number that would actually be seen. The character of the surface of Japetus itself is, of course, hypothetical. It may be rock lightly sprinkled with snow, or ice heavily sprinkled with rock dust. In either case, the reflective power as measured from Earth would be about the same—and is our only guide.

The coloration of Saturn is as near to absolute accuracy as a dozen authorities on the subject make possible. Schneeman, in doing this unquestionably excellent job, spent many hours of research in libraries and conferences. I believe the result is a genuine contribution to astronomical art work.

THE EDITOR.

CATALYST POISON

BY MALCOLM JAMESON

CATALYST POISON

BY MALCOLM JAMESON

IT WAS A WONDERFUL IDEA, THE THOUGHT SOLIDIFIER—UNTIL THE IDEA WENT WHACKY!

OH, yes, I knew Eddie Twitterly and I knew Rags Rooney. Come to think of it, I introduced them. And I knew all about their stunt from the very beginning. It's my job to know people and what's going on. How do you think I could hold my job on the *Star* if I didn't?

My paper wouldn't print the lowdown on the Big Day because they thought it was too fishy. That a fellow with literally millions a day income should jump the traces and behave like Eddie did, was just too much for them. It shows you how little some editors understand human nature. There was nothing fishy about it to me, because I knew Eddie so well; knew how temperamental he was.

Eddie was smart as hell. All those degrees he had and the jobs he'd held are proof of that; but he was unreliable. He couldn't stand routine. That's why they kicked him off the university faculty. He didn't fit in the factory atmosphere they have up there, the regular hours and same old grind, month in and month out. Eddie was the kind that gets steamed up over something, goes at it hammer and tongs, day and night, and then all of a sudden drops it like a hot potato. Whenever he reached the fed-up stage, he'd go on a bat; and when I say bat, I *mean* bat. He'd stay blotto for ten days and, likely as not, wind up in a psychopathic ward somewhere.

The psychiatrists said he had an inner conflict. He was part scientist, part artist, and it's a bad combination. His hobby was modeling. Sometimes, right in the middle of a scientific investigation, he'd get the yen to do some sculpting, and off he'd go. It muddled his work in both fields and kept him from being a big success in either. Then he'd get to thinking about *that,* and the next you'd know, he'd be draped across the bar somewhere telling the mahogany polisher all his troubles.

I BUMPED into him one night, shortly after he lost that physics professorship. It was at the Spicy Club, and from the looks of things, Eddie was celebrating his liberation from academic life. I had Rags Rooney with me. Now Rags is an utterly different type. He's a gambler and promoter; backs fighters and wrestlers, ordinarily, but he'll take a part of a Broadway show, or stake a nut inventor, or lay his money anywhere he sees a sporting chance. Sometimes he cleans up, sometimes he loses his shirt, but generally speaking he picks winners.

That night Eddie kept harping on some wild plan he'd just hatched to tie up his science to his art. When we found him, he was already at the talkative stage, and he proceeded to pour it on us. I was surprised to see how interested Rags got, because the whole proposition sounded screwy to me. But, after all, Rags had played long shots before and come out ahead of them, so I began to pay more attention.

Eddie's hunch, as near as I can re-

member it, was to build a machine based on these newfangled notions of the atom. You know the idea; that there is no such thing as matter; that everything is simply a lot of electric charges zipping and zooming around and bouncing off each other. According to him, butter and steel are just different combinations of them, revolving at different speeds. All right, he'd say, if it's electrical, you can upset it by electricity; change one to the other, or to anything else—a brick, or even a pint of red ink.

From that, he went on to tell us that feelings and thought are electricity, too. Brain cells are little batteries, and when you think, currents run back and forth in your brain. I hadn't heard that one before, but Eddie insisted that it's so; said that the current could even be metered. Well, the payoff was that he thought he could hook the two things together. If he had a machine to amplify his mental powerhouse and focus it on something—anything, even air, is always a flock of swirling electrons—he could make the electrons jump the way he wanted them to. Whatever picture was in his mind would form there.

"Just think," he said, "with my Psycho-Substantiator I could model without clay or tools. When my thoughts solidify and I see any faults and want to change them, all I have to do is think the revision. And if it comes out all right, then I imagine the material I want—marble or bronze, or even gold—and there it is! No casts to make, no chiseling, no manual work at all—a finished piece."

It must have been the crack about gold that made Rags sit up and take notice. Whatever it was, before I realized what was happening, they'd made a deal and were shaking on it. Rags was to put up the money, Eddie the brains, and split fifty-fifty on what came of it. I thought then—and I haven't changed my mind—that it was a mistake. I couldn't imagine the two of them getting together on what to do with the machine when they got it built. I spoke to Rags in the washroom about it, and warned him how flighty Eddie was.

"Hell," he said, "I've been handling sporting talent all my life and they don't come any more temperamental. This guy'll be a cinch."

I didn't see either of them for a long time—months. One night, I dropped into Rags' apartment to chin a minute with him and his missus, and the minute I got inside, I knew I oughtn't to have come. There was a first-class family row going on. I tried to duck, but she grabbed me and began laying it into me, too.

"You started all this," she said scornfully, "you and your chiseling boy friend! Thirty thousand smackers is what that no-good souse has taken this poor fish for—and look at what we get!" Boy, she was score.

She dragged me over to the table where there was a little white statuette. It was a comical thing, not bad at all; a potbellied little horse with big mournful eyes, made out of some white stone, but, of course, not good for much except a gimcrack.

Then she started raving again, and I learned more about Rags' home life in the next fifteen minutes than I ever dreamed of before.

"And him sounding off all the time about how he makes his living outta suckers," she snorted, "but if he hasn't been taken for a ride this time, I never saw it done. He's bought a half interest in what that dope thinks about! Imagine! Why, wine, woman, and song is all that poor louse ever thinks about, and you know what a rotten voice he has."

"What's his voice got to do with it?" Rags growled.

She gave him a dirty look. "That's why he concentrates on the other two."

RAGS jammed on his hat and gave me the sign to come along. We went down to Mac's place and Rags threw down a coupla slugs before he said a word.

"Oh, everything's all right," he said in a minute, "only I see where I gotta get tough with the guy. He's not practical. The machine works like he said. What he thinks about comes out. But what the hell good is it if his mind runs to goofy doll horses? I ask you. And it could just as well been a ten-pound diamond. But that's not all. To celebrate, he goes on a four-day binge. I just found him. Two of the boys are sitting with him now in the steam room down at the gym. Soon as they cook it out of him, *I'm* going down and work on him."

I didn't say a word. Eddie's geared for two speeds, full ahead—his own way—and reverse. If Rags was going to put the pressure on him, I figured all he'd get would be a backfire.

They must have compromised things after a fashion. Next I heard, Rags was going around town trying to peddle a statue, a gold one this time, for a price like a couple of hundred thousand. I wanted to keep track of things, because I saw a good story coming up when the secrecy was off, so I hunted him up.

Sure enough, the statue was Eddie's second creation. It *was* gold, but Rags was ready to chew nails.

"The museums won't touch it," he complained; "say it's ugly. But where else will you find so much dough?"

He was right. It was ugly, terrible. A sloppy, bulging, fat, nude woman.

"Rent it to a photographer for the 'before' picture for a reducing ad," I suggested; then, seeing he was in no joking mood, I asked how it happened.

"Live and learn," said Rags, sad-like. "Like a dumbbell, I let him have his way. He was dead set to do statuary, so I says, 'O. K., but be sure to make it outta something I can hock in case the art part misses.' So he says, 'I'll do a Venus,' and I says, 'Shoot, only make her gold.' Well, he's got funny ideas about women. At the start, she was skinny enough to be an exhibit in a T. B. clinic. I kept saying, 'Put some meat on her,' thinking all the time about the weight of it when I went to sell it. He was sore at first, then he got to giggling and did what I said, and how!"

"What the hell," I told Rags. "You're sitting pretty. Go down to Wall Street and look up some of those millionaires that are moaning about the gold standard. The law says they can't hoard, but they can own golden works of art."

He took my advice and found a buyer all right, but getting that quarter of a million so easy was what ruined him. It made him greedy. Rags had made hits before, like I said, but never anything like that. Now that he had a taste of big money, he was hungry for more and hiked the limit to the sky. He was all for quantity production, and since he had plenty of cash, he began to rig for it.

In planning gold by the ton, common sense told him they couldn't go on working in Eddie's third-floor studio. That plump Venus damn near caved the joists in. Rags found a place near the foot of Forty-fourth Street, in the block west of Eleventh Avenue. It was an abandoned ice plant, a big barn of a place with a dirt floor. Eddie had to dismantle his machine and take it down there, then work for two or three months making parts for the new and bigger machine with it.

The day they were ready to ride with the new equipment, Rags asked me to come down and watch it work. The place looked like a cross between an iron foundry and a movie studio. The floor was laid out in grids, four of them, each with molds for two hundred gold bricks. Pointing down at them was a circle of vacuum tubes mounted on high

stands with reflectors back of them. At one side was a sort of throne where Eddie was to sit. Wires ran all over the place. Rags filled up the molds with water, and left a hose dribbling into the header so there'd be plenty of additional water to make up the difference in weight.

Eddie put up a last-minute battle about having to do something as tedious as thinking up hundreds on hundreds of little gold bars, all alike. But Rags couldn't see anything but bullion. He had sweat blood trying to get rid of the fat Venus and he wanted no more of it. At five thousand dollars apiece, the gold bricks were in handy, manageable units, and the sum of them was a fortune. Two million a day is good pay, even if you don't like the work, Rags argued. I have to admit that argument would have sold me. Eddie grumbled some more, but he focused his apparatus on the first bank of molds, put on his metal headpiece, and got on his throne.

As soon as the tubes lit up, the water began to turn pink, then a ruby red. Colloidal gold, Rags whispered. Eddie must have taught him that word. In about two hours, the first quarter of the job was done. All that time, Eddie had sat there, frowning, concentrating on the idea of twenty-four-carat gold lying in neat rows of pigs. He looked pretty tired and disgusted when he finished, but he only stopped to eat a sandwich. He growled at Rags some more, then tackled the next batch. I stuck around. You don't get to see anything like that every day.

In the afternoon, Eddie filled up Grid No. 3. He complained a lot about his head aching, but Rags wasn't listening to him. He was pacing up and down, gloating over the gold, or else sitting in a corner, figuring on the backs of envelopes. Eddie was limp by the time he got to the last set of molds, but Rags kept egging him on, yelling at him like a regular Simon Legree to hurry up, think faster and harder, so it would all be done before night. I felt sorry for Eddie, but all he did was sigh and slip his helmet on and go back to work.

It was about an hour later that things began to go sour. I heard Rags yipping, and went over to where he was. He looked scared. The molds under his feet were full of some gosh-awful, fluffy, pinkish mess.

"That's horrible," he said, sniffing the air. Then he ran over and began shaking Eddie.

Eddie had been sitting with his eyes closed, mumbling something to himself, but when Rags pounded him, he snapped out of it, shut off the juice, and came down to see what the excitement was about.

Eddie was puzzled, too, for a minute, then he began laughing.

"Tripe," he said, "that's what it is —tripe!" and then went off into another fit of laughing.

Rags was glaring at him all the time, wondering what was so funny. "Whadya mean, tripe?" he wanted to know, sore as hell.

"Why," said Eddie, as soon as he could get his breath, "I guess I must have gone nuts thinking about nothing but gold. Now I remember. I got to thinking what a lot of tripe this whole thing is; kept saying it over and over, *'This is a lot of tripe.'* Ha-ha-ha! And that's what we got!"

WELL, they had it round and round. All Rags could see was a million dollars spoiled by sheer inattention, right when his mouth was watering for big money. But after they'd jawed awhile, Eddie agreed to clean up the tripe, make it into gold, but later on, after he'd had some rest. Then I asked Rags what he was going to do with so much gold, when he had it.

"Sell it to the bank," he said, cocky as you please.

When I finished telling him about the gold laws, he was worried.

That night he went down to Washington to find out where he stood. What they said to him, I never knew; but after that, gold was *out*. Rags came back damning the administration like a charter member of the grass-roots conference. But he was already full of new plans. He showed me the schedule—so many tons of platinum, then so much silver, and so on. I warned him he was hunting trouble, driving Eddie like that. I thought it was a miracle that Eddie hadn't torn loose after the tripe episode. He usually did when he was fed up on anything.

"I've taken care of that," said Rags, in an offhand way. "I've got to go abroad. I'm going to Amsterdam to find out how many diamonds the market can take without cracking. While I'm gone, to be sure nothing'll slip, I've fixed it with the O'Hara Agency to keep a guard on the place, so nobody can get in or out. Eddie don't know it yet, but he'll be comfortable enough. I had a bedroom fixed up down there, and a kitchenette, and I hired a Filipino boy to stay and cook for him. He'll have to keep busy, and he can't get in trouble."

"Oh, izzat so?" I told him. "Well, you don't know Eddie. That boy could get in trouble in Alcatraz. When he gets a thirst, he can think up ways and means that'd surprise you."

Rags wouldn't listen to me, and now he's sorry. It was bad enough to lay out all that monotonous work thinking up truckloads of platinum, but to lock Eddie in that way, without even telling him about it, was just plain damn foolishness. I knew Eddie'd hit the ceiling as soon as he found it out; and whenever he did, it was going to be just too bad.

And when it happened, it was exactly that way.

I went down there one night, about a week later. It was drizzling, but I felt like a stroll, and I was worried a little about Eddie, locked up in that old plant practically alone. When I got almost to the door of it, one of O'Hara's strong-arm men stepped out from behind a signboard and flagged me down. I showed my card and told him I was a friend of Rags and knew all about the layout, but it didn't get me by. Yet I did want to know how Eddie was taking it, so I slipped the fellow a fin, and he talked.

The second night after Rags had gone, Eddie came out of the plant and started uptown. The watchmen headed him off and turned him back. Eddie didn't understand at first, and cut up quite a bit. They handled him as gently as they could, and finally shoved him through the door without roughing him up too much. It was when he heard what Rags' orders were that he went wild. He went back inside, but a couple of minutes later the door popped open and Eddie kicked the goo-goo out and threw his baggage after him.

"Tell Rooney," he yelled to the dicks, "there's more ways of choking a dog than feeding it hot butter." And with that he slammed the door and barred it.

That sounded bad to me. I wanted to know the rest, and the O'Hara man went on. The next night, they heard sounds of a wild party going on inside. That was strange, because they had kept a close watch on the place and knew nobody had gone in. But there it was—singing and laughing, plenty of whoopee. And it had been going on ever since!

I listened, but I couldn't hear a thing. Then we could make out a faint groaning.

"Oh," said the operative, "that's all right. Too much party. *You* know. They were fighting last night. At least, we could hear the guy bawling the girls out, and they were crying."

"Girls?" I asked. "What girls?"

"See that crack over the door?" he

said. "We piled some boxes and barrels up and took a squint through there. It was something to see, I can tell you —a perfect harem, like in the movies, only more so. Five or six dames, dolled up like nobody's business, all eating off of big gold platters and passing jugs of drinks around. The only guy in there is this Twitterly, rigged out like a sultan, with a pair of 'em on his lap, handing the stuff to him. What a life! And they pay me to stand here in the rain to keep him in! Where would he want to go? He's got everything. Come on; let's hop down to the coffee pot and get on the outside of some hot chow. This joint don't need watching."

IT WAS raining in earnest by then, so I went back to the *Star* office to file some copy. It must have been well past midnight when I came out. The rain seemed to be over, so I started for the subway on foot. In Forty-third Street, near Eighth Avenue, I saw a crowd standing around the window of a cafeteria, peeking in, and some of them were staring up at the swinging sign out over the sidewalk. There was a ladder against the building and I could make out a cop near the top of it struggling with something perched on the sign. The cop was wriggling and cussing, and whatever was up there was pecking at him and hissing away at a great rate.

Just then the crowd let out yelps. "There's another one!" somebody said, and they all ran out to the edge of the curb, looking upward all the time. On the very end of the sign sat a fuzzy little thing, hardly bigger than your fist, but it had a tail about a yard long that hung down and curled up at the end. Its eyes shone like a cat's. Oh, more than that, they flamed—bright violet, not greenish or orange, the way a cat's do.

"He's already got four of 'em down," a fellow told me, meaning the cop. "They're inside."

I pushed into the cafeteria, and there were some others, sure enough, sitting in a row along the counter. They seemed to be harmless enough, after you got over their looks, but *what* they were was something else again. They may have *started out* to be marmosets, but something sure went wrong with them. One was a bright-lemon color, another heliotrope, one emerald green, and the other a little of everything. They kept flipping out forked tongues, the way snakes do, and hissing. But those violet eyes were what got you. They gave you the creeps.

The cop outside came in, carrying the latest one he'd caught, a sky-blue one, with purple stripes. Two curbstone naturalists were poking at the little animals and arguing about what they could be. In the midst of that, we heard sirens outside and a police patrol car dashed up. A cop got out of the car and came into the restaurant towing a sleepy, bald-headed man who looked like he hadn't quite finished dressing.

"Do you see what I see?" the cop with the blue monkey asked him, soon as he was inside, throwing me a wink.

"Did you get me out of bed for a gag?" snapped the bald-headed man, huffy as could be. "It's a publicity stunt!" And with that he stalked out.

"A fat lot of help that zoo expert turned out to be," the cop that brought him said. "Stay with it, Clancy; the S. P. C. A. wagon'll be here soon."

I'd seen all I wanted to see, so I blew. Down the street about a hundred feet I began to feel something dragging against my shins at every step. It was dark there and I couldn't see very well, at first, but it felt like I was in high grass. I stopped and looked down. I was up to my waist in hairy, palpitating stuff! I could see a lot of little knobs swaying up and down, about the size of baseballs, and each little knob had a pair of pearly lights on it. They

were dim, dim as glowworms, but there was something scary about it.

I must have yelled, because people came running up behind me, but they stopped some little distance away. As they did, the bobbing balls and the grassy stuff spread out all over the street like smoke. The way they heaved up and down and slid sideways at the same time made me sick at the stomach. Then I had a better look. They were spiders! Not the hard-boiled, tough kind of spider, with hair on its chest, but the old-fashioned wiry granddaddy longlegs—except that these must have been all of thirty inches high! I must have been pretty jittery, because the next thing I tried to do was climb a brick wall.

I found that was impractical, so I pulled myself together and began to wonder where they came from and what to do about it. They were scattering all over the street then, going away from me, and the other people were backing away from them, yelling.

Presently the emergency truck came and the boys tumbled off and started to work on the spiders. They shot a few, but soon quit that. It would have been an all-night business; there were thousands of them. Some of the cops began whanging them with nightsticks, but all a longlegs would do when it was swatted was sag a little, then come up for more. Finally, one of the cops began gathering 'em up by the legs, tying 'em in bundles with wire. The first thing I knew, the whole crowd had joined in and were having a lot of fun out of it. In a little while they had most of them tied up in shocks, like wheat. I never thought I'd live to see the day when they stacked bales of live spiders on the sidewalks of New York, but that's what they did that night.

A couple of dozen of them got away and went jiggling out into Times Square, with a lot of newsies chasing them. The cops let them corner what were left, because another call had come in. Several, in fact. Strange varmints had popped up in two or three nearby places. I didn't know what was happening, any more than anybody else. Some thought a big pet shop had been burglarized and the door left open, and some others thought this and that, but none of it made sense.

I went with the emergency truck next to Forty-fourth Street, the other side of Eighth Avenue, where a big serpent was reported to be terrorizing the neighborhood. The moment we got there, we saw the serpent, all right. We couldn't miss. It was big, and it was luminous! I should say the thing was a hundred or more feet long and a yard thick. It was made of some transparent, jellylike substance, a deep ruby red, but inside we could see its skeleton very plainly and a couple of dogs it had eaten.

The cops tried to shoot it at first, but that was a waste of time. The bullets would go through—you could see the holes for about a minute afterward. Then the holes would close up. Three or four dozen slugs didn't faze the thing. They tried to lasso it, but that didn't work either. In the first place, it was slick and slimy, and could wiggle right on through. Besides, the slime seemed to be corrosive. When a rope did stick for a few seconds, it dropped apart, charred shreds.

Next they chopped at it with axes. They picked a place about midway of the snake, or eel, or whatever you want to call it, and went to it, two men on a side. It was like chopping rubber, but they did get it in two. Then the fun began. The after piece sprouted a head, then sheered out and took the other side of the street. Both the original serpent and the detached copy stretched out to full length, and in a few minutes the cops had two snakes to worry about, instead of one.

"Forget the axes," said the lieuten-

ant; "we gotta think of a better one than that."

It was all very exciting to me, but the main effect it had on the cops was to make 'em sore. They had nearly everything in the world on that wagon in the way of equipment, and none of it any good in a case like that. Finally somebody brought an acetylene torch into action, and that was the beginning of the end. That is, the end of that particular pair of monsters. When the flame hit 'em, the parts just hissed, shriveled up, and disappeared. In a little while there was nothing left of them except the skeletons of the two dogs and some charred meat that hadn't been digested.

A police inspector drove up in time to see the finish. "I'm glad you boys found the answer," he said, "because there's plenty more. Everything the other side of Tenth Avenue is blocked with 'em. Let's get going."

"Blocked" wasn't the word; he ought've said "buried." When we got over there, we found the fire department and about a thousand other cops already there. The avenue had been cleared, but the first four or five streets above Forty-second were packed with squirming, bellowing, hissing monsters. In some places they filled the street almost to the second-story windows. Everything that crawls, and a lot more, was all mixed up there. After one look, I knew that gelatin eel was hardly worth remembering. In this jam ahead of me were centipedes a half block long, lizards, snakes, animals that didn't look real, storybook animals, dragons, griffins, and the like. The firemen had snared a thing built along the general lines of a crocodile, but it was covered with mirror scales instead of the usual kind. It sparkled beautifully whenever it'd thresh around.

The people in the tenements were awake, and taking it hard. The women and children were on the roofs, or upper levels of the fire escapes. The men stayed lower down, some of them poking at the monsters with curtain poles, bed slats, or anything they had. On the avenue side, firemen had ladders up and were taking the people out as fast as they could. Cars and trucks kept rolling up with more men and equipment. I understood they had sent out a general alarm for all the welding-torch equipment in the city. Soon they had lines of flames working into the cross streets.

I watched them burn and slaughter the creatures for a while, but anything gets tiresome. Daylight came and I was getting hungry. I did think of Eddie several times, and wondered how he was making out, cooped up in that old plant. He was entirely cut off from me, probably surrounded by these monsters, but it never occurred to me to worry about him. I knew he had thick brick walls around him, and only one door, and that barred. I broke away and went back to midtown for some breakfast.

While I ate, I looked over the papers. The extras were not out yet, and there was nothing in them except rather facetious, wisecracking accounts of the marmoset and spider episodes. Then I heard somebody say the militia had been called out, and that the police commissioner had set up temporary headquarters in a shack in Bryant Park. I decided that was the place to go to find out what else'd happened besides what I'd seen myself.

They had already built a stockade or corral there, and in it were a number of the monsters that had been taken alive somehow or other. There was a crowd of scientists hanging around, too, and a funny-looking lot they were. I walked through them, admiring the variety of the layout of their whiskers and listening to their shop talk. Some were taking notes and making sketches and were very serious about the whole

business. Others were scoffing openly and saying it couldn't be, there were no such animals. The rest simply stood and looked. I guess they were what you'd call the open-minded ones. One bird had brought his typewriter and was sitting on a camp stool, pecking away to beat the band. I asked him what he was doing and he said he was writing a book. The title was "Phenomenal Metropolitan Fauna." Pretty good, huh? That's what I call being a live wire.

I flashed my card on the guard at the headquarters shack, and went in. A clerk was handing the commissioner a phone.

"What now?" I heard the old boy say, in a weary tone. Then he threw the phone down and tore his hair. "Pink elephants," he said, to nobody in particular, and I thought he was going to break down and cry. "Three of them, coming up Forty-second Street."

"That's going too far," said the A. P. man, tearing up his notes. "I'm through. Some Barnum is putting over the biggest hoax yet. I won't be a party to it."

I started to leave. I wanted to see how they handled the elephants, but something new was coming in over the phone, so I waited. That time it was the report about the sea serpent. Up till then I hadn't given a thought to the marine aspects of the plague, but I hung on, listening to the details.

A sea serpent had slid into the river a little above the Forty-second Street ferry and turned down the river. The battleship *Texas* happened to be coming up the stream at the time and sighted it. They did some fast work and got a couple of motor sailers over and began chasing it. I will have to check back the files to find out what became of that sea serpent. My recollection of it is that it got away; dived and disappeared somewhere in the upper bay. But the *Texas'* boats stayed with it to the end, and I heard they had a grand time, bouncing one-pounder shot off the thing's head. It had awful hard scales and they couldn't dent it. But it must have been timid, because it kept going as hard as it could and never once tried any rough stuff on the launches. One whack of that tail, and it would have been all over for them.

YOU understand by now, I guess, that those monsters were not really ferocious; they just *looked* bad. They didn't bite, most of them, but they'd jolt you into a psychosis if you were the least weak-minded.

I suppose I seem awful dumb, now that we know what it was all about, not to have guessed earlier what was making the plague of monsters. But there was so much happening, and so fast, my brain didn't work like it ought. I might never have tumbled if Rags Rooney hadn't come rushing in, wild-eyed. He had landed an hour before from a transatlantic airplane and had been trying to get to the plant.

"Where's Eddie?" he fairly panted, grabbing my arm.

"At the plant," I told him, "by your arrangement."

"Can't you see?" moaned Rags, agonized. "He's done it again! The plant is the center of this mess, and Eddie's turning these things out with the Sicco . . . Psy . . . never mind, you know. He's got the horrors, the D. T.'s, like the doctors said he would, if he didn't lay off. We gotta stop him!"

I dragged Rags over to the commissioner and we finally made him understand. He was not what you'd call a quick thinker, but that day he'd try anything. In a minute we had the Edison substation on the line and were telling them to cut the juice off the plant.

"It's already off," a voice said. "The circuit breakers just kicked out, and won't stay in. They must have a bad overload down there, or a short."

That was the worst possible news.

"Gosh," I thought, "Eddie's already put out a coupla thousand cubic yards of assorted animals since midnight, including three elephants at one crack, without blowing any fuses. What *can* be coming now?"

The commissioner saw something was up, so he went with us, taking us in his car. We tore down Forty-second, blasting the air with our siren. About a block west we met the elephants coming along, docile enough, some national guardsmen leading 'em. I'd heard of pink elephants all my life, but you've got to see one to really know. I think it's the peculiar shade.

We had to park at Eleventh Avenue. There were still plenty of reptiles and minor pests packed around the plant, but flame throwers were slowly cutting their way into them.

The eaves of the plant were still oozing a few small snakes and bats, but the big door was down. The elephants had done that, I suppose. Overhead there were several army and navy planes swooping, machine-gunning the vampires, pterodactyls, and what have you that took to the air. To the side of us, a little way off, were a couple of three-inch field guns that they'd sent down in case something really big and unmanageable should come out.

We heard a big noise down at the plant, and when we looked at it again, we saw the roof begin to rise and the walls to bulge, bricks popping in every direction. Everything fell to pieces, and as soon as the dust cleared away, we were looking at the most gigantic, frightful-appearing thing there ever was, not even barring dinosaurs. It was fat and loathsome and hairy. There was no head, nothing but a gaping red mouth, full of bayonetlike teeth, with a ring of octopus tentacles around it. It began groping around with the tentacles and started picking up the small-fry monsters that were within reach. I saw it tuck away a plaid camel with one feeler while it took a coupla turns around a unicorn with another. Then the artillery let loose.

The curator fellow that was writing the book by the corral had wormed his way through the police lines and had been standing close behind us for some time. He pulled me by the sleeve.

"Beg pardon," he chirped, "but did I understand your friend to say that Twitterly was in there operating a machine by which he could telepathically control chemical changes?"

"Something like that," I admitted, not wanting to say too much.

"He was a good physicist, and chemist, too. I am surprised he permitted ethyl alcohol to enter the reaction. It's a very unreliable catalyst. Tricky, *quite*."

IN TIMES TO COME

While yet very much of a long-range forecast, Dr. E. E. Smith sent word the other day that ***Gray Lensman***, his long sequal to ***Galactic Patrol***, was shaping up toward the final chapters. Dr. Smith feels fairly confident that it's an even better story than was ***Galactic Patrol***. Having followed Dr. Smith's work for some ten years now, I think that is fairly certain promise of a story well worth mention—even before I see it!

Our shorter-range forecast, too, has items of interest. L. Sprague de Camp, who, with his one article so far, broke all records for popularity, returns in the next issue with another article—and, at the start, a record-breaker. A continued article! It's called ***Design for Life***, and, illustrated by de Camp and Willy Ley working together, is guaranteed unique and highly interesting. In this, de Camp designs extra-terrestrial intelligent animals on the basis of sound mechanics. One interesting item is that intelligent sea life is very highly improbable.

This article is, I believe, the first time science-fiction has had a reasoned guide to design of life-forms for other planets.

P. Schuyler Miller's ***Coils of Time*** is, perhaps, he biggest item for next month—the long-awaited sequel to ***Sands of Time***. Ross Rocklynne will be with us, and, either next month or very soon, a new author, John Berryman, presents the story of a space-flight with a more convincing reality than any I've seen in more than a year. For either a new or old author, it's unquestionably an outstanding job, with outstanding reality.

The Editor

THE ANALYTICAL LABORATORY

The February issue was voted, generally, as an unusually good number—which, naturally, means that stories making lower places in this issue were facing harder competition than usual. The item getting fourth highest vote rating was Willy Ley's ***Ice Age Ahead?*** Ley—and ***Astounding***—were fortunate in being unusually timely in that instance, as well as in having an unusually strong article. There was, in the current newspapers, considerable reference to the fact that our climate is getting warmer, that the polar icecaps are retreating, and that snowfalls in northeastern United States are lighter.

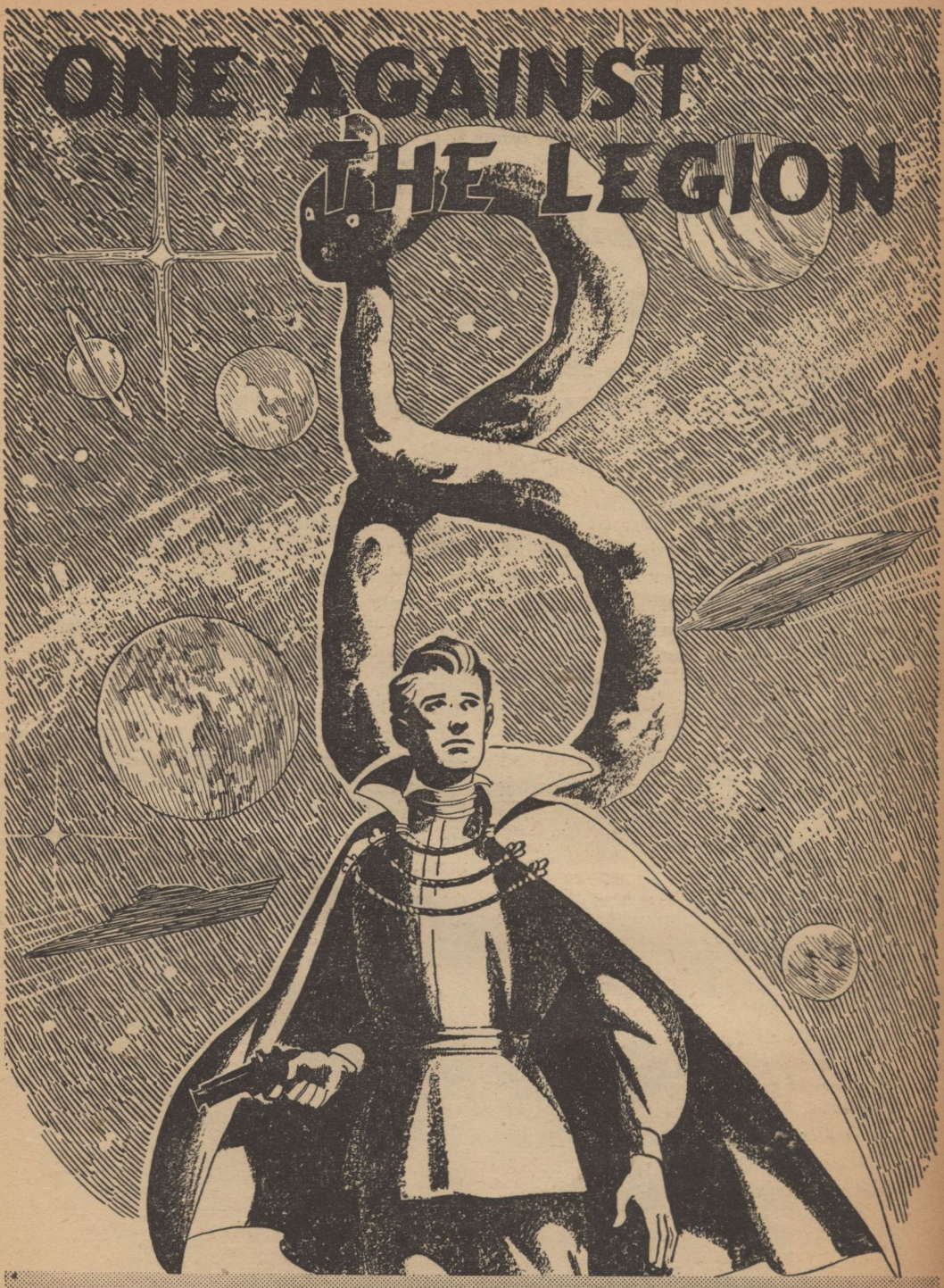
The Russian polar investigators brought considerable attention to this—but it may be remembered that Byrd's last Antarctic expedition was nearly destroyed by the melting and breaking up of the Ross Ice Barrier beneath Little America.

Cosmic Engineers, Simak's heavy-science story, was run, partly, as a test-case to determine whether the general readers wanted such science material. The first installment has been very well received; this issue contains the last installment, and I'm particularly anxious to get letters commenting on it, and on this type of story. Please let me know your stand on the question.

And herewith, the standings of the stories. Ley's article, since it was an article, has been omitted from the calculations.

1.	Crucible of Power	Jack Williamson
2.	Cosmic Engineers	Clifford D. Simak
3.	Palooka from Jupiter	Nat Schachner
4.	Living Fossil	L. Sprague de Camp
5.	Nothing Happens on the Moon	Paul Ernst

The Editor



A GREAT SEQUEL TO "THE COMETEERS"

BY JACK WILLIAMSON

ONE AGAINST THE LEGION

BY JACK WILLIAMSON

THE LONG-AWAITED SEQUEL TO "THE COMETEERS" BRINGS BACK GILES HABIBULA IN A LONG THREE-PART NOVEL.

UNUSUAL. Important. Indubitably dangerous." The low, grave voice of Commander Kalam, without losing its deliberate calm, had emphasized every word. "You have been selected for this duty, Captain Derron, because the legion feels that you have earned implicit trust."

After four grim years, that scene was still as vivid in the mind of Chan Derron as if a red-hot stamp had seared it there. For that strange assignment had turned all his life, out of beckoning promise, into the dark, incredible web of mystery and terror and despair.

"Yes, sir."

Chan Derron saluted, briskly. He stood eagerly at attention, waiting in that huge, simply furnished chamber in the Green Hall that was the office of the commander of the legion of space.

A big man, lean and trim and straight in the green of the legion, he looked rugged as a statue of bronze. His hair, rebellious against the comb, was like red-bronze wire. His skin was deeply bronzed with spaceburn. Even his eyes held little glints of steadfast bronze. His whole bearing held a promise of uncrushable strength that it warmed the commander's heart to see.

Beneath his military readiness, however, Chan Derron's heart was thumping. He was proud of the uniform that had been his for less than a year. Fiercely proud of the golden insignia that he had already won in the amazing grim war with the cometeers. And he wanted desperately to know what was coming next. His breath caught, and he watched the lean dark face of Jay Kalam.

"I have ordered all of Admiral General Samdu's fleet to assist with this assignment—it is important enough to justify that," the commander was saying. "But the crucial duty is such that one ship—and one man, Captain Derron—must be trusted to carry it out."

Chan Derron tried to swallow the little lump of eagerness in his throat. A commissioned captain of the legion—he mustn't tremble like a wide-eyed cadet. After all, he was twenty-two. But the low-voiced question startled him:

"You know of Dr. Max Eleroid?"

"Of course," he stammered. "—if you mean the geodesic engineer? The man who redesigned the geodyne, and invented the geopeller? At the academy, we studied his text on geodesy."

"So you were an engineer?" The commander faintly smiled. "Dr. Eleroid," he said, "is probably the greatest physical scientist living—although he has a dread of publicity. And he has just done something new."

Chan Derron waited, wondering.

"THIS MORNING," Jay Kalam said, "Eleroid came into this office, with an assistant behind him staggering under a box of equipment. He was fright-

ened. He begged me to take him and his invention under the protection of the legion.

"The invention is the most important thing he has done, he said, and the most dangerous. He had decided not to work it out at all, he told me—until the System was placed in danger by the attack of the cometeers.

"He set out to complete it, then, as a weapon. It is a little too late for the war. But he says he is going to intrust it to the legion, as an adjunct to AKKA in the defense of mankind.

"Yesterday, anyhow, he found evidence that an intruder had been in his laboratory—that's somewhere west, in the Painted Desert. And the spy has him baffled and very thoroughly scared. Only two people had been trusted with any details of his work, he said—his daughter and this assistant, Jonas Thwayne. He has no clue to the spy's identity; but he gives him credit for being a remarkably clever man.

"That's the background of the matter, Captain Derron. And here are your orders."

"Yes, sir."

"We are going to aid Dr. Eleroid with a field test of his invention—it has never been tested, he says, except on the minutest scale—and then, if the test is successful, he will leave it in the hands of the legion.

"You will go back aboard your cruiser, captain, and proceed at once to Rocky Mountain Base. There you will find awaiting you twenty workmen, with atamotored excavating equipment, explosives and building materials. You will take them aboard, and then rise, without delay, in a course for the New Moon. You follow me, captain?"

"I do, sir."

"When you have reached an altitude of two thousand miles," Jay Kalam continued, "you will open this envelope and proceed to the spot designated inside."

Chan Derron accepted a small, sealed green envelope, stamped in darker green with the wings of the legion, and put it in an inside pocket of his tunic.

"You will land at the designated spot, and disembark the workmen and equipment. At a point that you will select, working under your orders, they will dig an excavation twenty feet square and twenty feet deep, seal the walls and floor, roof it, provide it with a stair and a concealed door with a lock.

"This task must be completed by twelve noon, tomorrow, legion time. You will put the men and equipment back aboard the *Corsair*. The cruiser will return at once, under your first officer, to Rocky Mountain Base. And you, Captain Derron—"

Chan Derron caught his breath, as the commander suddenly rose.

"You will remain on guard, near the hidden door. You will keep your ultrawave communicator, emergency rations, and your barytron blaster and bayonet. You will stand guard while Dr. Eleroid and his assistant land, enter the hidden chamber, and test the invention.

"Finally, if the experiment is successful, Dr. Eleroid will deliver his apparatus and notes in your care, for the legion. You will call your cruiser to return, go aboard with Eleroid, the assistant, and the machine, and come back at once to Rocky Mountain Base. Is that all clear, Captain Derron?"

"Clear enough, sir," said Chan Derron. "If you feel that one man is enough—"

"Samdu's fleet will be on duty to see that there is no outside interference," the grave commander assured him. "For the rest, we must rely upon secrecy, precision of action, and division of knowledge. Upon you, Captain Derron, rests the final responsibility." His dark eyes stabbed into Chan's. "This is as great a trust as the legion has ever given any man. But I know you will carry through."

Chan gulped.

"I'll do my best, sir."

"And that is all, captain."

THE MATTER already appeared grave enough, perhaps. But Chan Derron was not used to being depressed by the details of his duty. The mystery surrounding this affair he found pleasantly exciting, and the faint hint of danger was like a tonic to him.

On his way back to the *Corsair*—the trim little geodesic cruiser that was his proud first command—he was humming a song. He had never been to the New Moon, then. But he had seen the artificial satellite, careering backward across the sky of Earth. And soon, with Commander Kalam trusting him with such important assignments as this, he should have a furlough earned—his heart leaped at the promise—on the gay New Moon.

Striding toward the vast spaceport that sprawled brown across the desert mesa beside the Green Hall's slender spire, he kept time to the popular tune, whose age-hallowed sentiments ran:

"Where first we danced,
On the bright New Moon,
Where we romanced,
On the far New Moon,
I lost a million dollars—
But I found you, dear!"

He leaped aboard the slim, silver *Corsair*. He had expected this assignment to take him to some other planet. Two thousand miles toward the New Moon's vividly entrancing face, however, when he came to open the sealed green envelope, the destination he read was back on Earth—a barren point of black granite on the southern polar ocean.

The *Corsair* dropped among shrieking birds. Chan selected a level spot on the highest flat ledge—a hundred feet above the gray unresting sea. The twenty workmen fell to. Humming atomic drills sliced into the living rock. A web of structural metal was flung across the pit. Rock débris was transformed into a six-foot roof of adamantine perdurolith.

Next day the cruiser departed, on the very stroke of noon. Left alone among the settling birds, that soon covered even the hidden door, Chan Derron shuddered to something colder than the bitter south wind.

Beyond this black pinnacle, and the green-white chaos that forever roared about its foot, the polar sea ran empty and illimitable. Low and yellowed in the gray northward sky, the sun glinted on the summits of a few icebergs. So far as they could tell him, he might have been the only man upon the planet. And a sudden bleak doubt rose in him, that even all Commander Kalam's elaborate precautions against the unknown spy had been enough.

Once more, anxiously, he inspected his barytron blaster. Recently perfected to replace the old proton gun that had served so long, its atomic tube projected a powerful jet of "heavy" superelectronic particles. The holster served also as a stock for careful long-range work. A folding bayonet snapped out for use at close quarters.

Chan tried to find comfort in its fine, silent mechanism, in its chrominum trimness and its balanced weight. But the lonely wail of the bitter wind, the empty hostility of the cold sky and the ice-studded sea, set in his heart a queer tense apprehension.

HE SHOUTED with relief when the *Bellatrix*—long, bright flagship of Admiral General Hal Samdu—plunged down through a cloud of shrieking birds. Two men were put off, and a heavy wooden box. The *Bellatrix* leaped back spaceward. In seconds, it had vanished.

Chan Derron had never seen Dr. Eleroid. But he knew the scientist, now, from his portrait in the geodesic text. Eleroid was a big, slightly awk-

ward, slow-moving man, with a red, rugged, genial face. But for his eyes, he might have been taken for a butcher or a barkeeper. His eyes, however, wide-set and seen through heavy lenses, possessed the magnetic power of genius.

He was still afraid. That was obvious from his anxious peering about the islet, from a sudden start when the white-cloaked assistant touched him, from the relief on his broad face when Chan strode to meet him.

"Glad to thee you, captain." His deep soft voice had an occasional lisp. "Where ith the vault? We must hathen!"

Chan indicated the door, disguised with a slab of natural rock, and returned to help the small, perspiring assistant with the box. Dr. Eleroid watched it very anxiously, and lent his own strength to aid them on the narrow stair.

They set the box down in the middle of the bare, square concrete room. The assistant was rubbings at red wheals on his thin hands. Suddenly he began to sneeze, and covered his face with his handkerchief.

Max Eleroid gestured imperatively to ward the stair. "You are to stand guard, captain." His voice was hoarse with tension. "We'll lock the room. I'll call you, by ultrawave, when we are done." His trembling hand touched Chan Derron's arm. "Keep a vigilant watch, captain," he begged. "For the thafety of the Thystem may be at stake."

The massive door thudded shut. Chan moved a little away, and the birds settled over it again. Rock and sky and sea were empty as before. The south wind was more biting, the northward sun feebler. Pacing back and forth, he shuddered again.

His apprehension, he was trying to tell himself, was silly—when something touched him. At first he thought that only a bird had brushed him. Then he felt the fatal lightness of his belt. His hand flashed in a well-trained gesture for his blaster. And he found that it was gone!

He stared around him, bewildered. Rock and sky and sea were ominously vacant as ever. What could have happened to the weapon? The screaming birds mocked his sanity. This meant danger—the operation of some unknown and hostile agency. But what was he to do? Samdu's guarding fleet must be somewhere beyond that bleak gray sky. He would call the admiral—

But his own call was already humming from the little black disk of the ultrawave communicator, that hung by its cord from his neck. He touched the receiver key, slapped it to his ear.

"Help!" It was Max Eleroid. "Thith man—" The lisping voice was queerly muffled, choked. *"Thith man . . . he ith not—"*

An odd little purring hum came out of the communicator, and then it was silent.

II.

THE SAME strange message was picked up by the fleet. When the *Bellatrix* landed, Chan Derron was found staggering aimlessly about the rock.

"My blaster's gone!" he stammered to Hal Samdu. "If it hadn't been taken, I might have been able to cut a way in, in time to help."

"Where is your vault?" demanded the rugged old spaceman. His huge, ugly face was ashen gray, and the anxious gestures of his great scarred hands had already set all the stiff white mass of his hair on end. "We'll break it open."

Chan pointed out the scarcely visible seam.

"It's locked." His voice trembled with the dread of the hour that he had waited. "Eleroid locked it, on the inside. I tried it, after he called. You'll have to cut through the perdurolith."

"Then we will—if we can!" Hal Samdu's battered hands clenched, in

tortured indecision. "If only old Giles were here! He has a gift for locks. But he's off on Phobos, beyond the Sun, eating and drinking himself to death at John Star's board!"

His rugged head shook, baffled.

"I don't know—"

"We can't delay," cried Chan Derron. "You have hand blasters. With them, we can cut a way through. And without danger—"

His voice dropped into the abyss of incredulity.

For the huge legionnaire had bent and seized the rugged projecting knob of rock that served as a disguised handle for the great pivoted door, as if he would break the lock with his own unaided muscles. And the door swung, smoothly.

Hal Samdu straightened, stared grimly at Chan.

"Locked, eh?"

Chan Derron stepped dazedly back, and a black wind of terror blew cold about his heart.

"It was locked!" he gasped. "I tried it!"

But a cold deadliness of doubt glittered abruptly in the blue eyes of the admiral general. His big hand deliberately hauled out his own barytron blaster, and covered the weaponless Chan.

"Hold him, men," he commanded. "I'm going below."

And Hal Samdu and his officers went down into the small, square, concrete chamber. In the garish light of the tube still burning against the ceiling, they found Dr. Max Eleroid and the man in white. They were both sprawled still, and the slighter body of the assistant was already stiffening into the rigor of death.

Rivulets and pools of darkening blood stained the white new concrete. Both men had been stabbed. And the weapon, still protruding from the back of Dr. Max Eleroid, was a service barytron blaster of the legion design—holster stock and bayonet locked in place.

And there was nothing else in the bare, bright-lit room.

The long wooden box and whatever it must have contained were gone!

Staggering and gasping for breath, as if he had been stricken also, Hal Samdu came back up the stair, carrying in his great quivering hand the blaster with a thin red drop trembling on the point of the bayonet.

He thrust it into Chan's bewildered face.

"Captain, do you know this weapon?"

Chan examined it.

"I do," he gulped hoarsely. "I know it by the serial number, and by my initials etched into the butt. It is mine."

Hal Samdu made a choking, furious sound.

"Then, Derron," he gasped, "you are under arrest, in the name of the legion. You are charged with insubordination, gross neglect of duty, treason against the Green Hall, and the murder of Dr. Max Eleroid and his assistant, Jonas Thwayne. You will be held in irons, without bail, for trial by court-martial before your superior officers in the legion. And God help you, Derron!"

Chan was swaying, paralyzed. A great, far wind roared in his ears. The black rock, and the white ships crowded upon it, and this menacing circle of menacing men in green, all spun into dimness. But he clung grimly to awareness.

"But I didn't do it," he gasped. "I tell you, sir, this can't be . . . real—"

But icy jaws of metal had already snapped on his wrist, and the great ruthless voice of Hal Samdu was roaring at him: "Now, Derron, what did you do with Eleroid's invention?"

WHAT did you do with Eleroid's invention? . . . *What did you do with Eleroid's invention?* . . . WHAT DID YOU DO WITH ELEROID'S IN-

VENTION? . . . *WHAT DID YOU DO—*

Chan Derron heard that question a million times. It was shouted at him, sobbed at him, whispered at him, shrieked at him. He ate it with prison food, and breathed it with dank prison air. It was beaten into him with men's hard fists, and burned into his soul with the blaze of atomic lights.

He was commanded to answer it, threatened, reasoned with, pleaded with, tricked, drugged, flung into solitary, starved, promised freedom and riches, picked to mental shreds by the psychologists and psychiatrists—and threatened again.

Of course he couldn't answer it.

Because of that fact alone he was kept alive, when he hungered with his whole soul for the freedom of death.

The court-martial did indeed, when at last the torture of the trial was ended, return a triple sentence of death, on two counts of murder and one of treason. But that was commuted by Commander Kalam, the day he embarked on the great research expedition to the green comet, to life imprisonment at hard labor in the legion prison on Ebron —the asteroid called "Devil's Rock."

Chan heard it, in his cell of pain, with a sense of sick futility. He knew that he would not be allowed to die, any more than he was let live, until that question was answered. And the great, grim prison on the asteroid, as he had foreknown, brought him no escape from it.

The person—even the person of a convicted criminal—was legally safeguarded by certain laws of the Green Hall. And the tradition of the legion was all against cruel and unusual methods. But the safety of the Green Hall was a greater end than the letter of its laws, and the tradition of the legion demanded absolute efficiency toward that end, regardless of all else.

The court-martial had found perfect circumstantial evidence that Chan Derron, tempted to abandon his duty by the hope of whatever vast and unknown power lay in Max Eleroid's invention, had killed the scientist and his assistant, and then, failing to escape with his reward, had somehow disposed of it. The case was absurdly simple. There was only that one question. The whole scientific organization moved as ruthlessly to extract the answer from Chan as if it had been the juice in a grape. Therein the legion failed—but only because the answer was not in him.

Chan was two years in the prison on Ebron.

Then he escaped.

For two years more the legion hunted him.

III.

"NO." Jay Kalam lifted weary eyes from the documents stacked before him, on his long desk in the tower of the Green Hall. "Tell Gaspar Hannas I can't talk to him." His voice was dull with fatigue. "Not tonight."

For he was deadly tired. In command of the great research expedition to study the sciences and the arts of the half-conquered comet, he had spent three strange, exhausting years among those scores of amazing worlds beyond the barrier of green.

For months more at the permanent depot of the expedition on Triton, cold moon of Neptune, he had toiled in charge of the first preliminary analysis and classification of the results of the expedition—recording the hundreds of tremendous discoveries gleaned from those ancient worlds.

Then another, more urgent duty had called him back to Earth. A move was gaining support in the Green Hall to order the destruction of the departing comet with AKKA. But Jay Kalam, in return for the free co-operation of the liberated peoples of the comet with the research expedition, had promised to let

them go in peace. Leaving young Robert Star in command of the half-secret, heavily fortified depot, he had come back to fight before the Green Hall for the safety of the comet.

Now at last the victory was won. The new cometeers were gone beyond the range of the greatest telescope—pledged never to return. And Jay Kalam was slow and heavy with fatigue. A few more reports—secret reports dealing with the weird, matter-annihilating weapon of the cometeers—and then he was going to John Star's estate on Phobos, to rest.

"But, commander—" The distressed, insistent voice of the orderly hummed through the communicator. "Gaspar Hannas is owner of the New Moon. And he says this is urgent—"

The commander's lean face grew stern. "I'll talk to him when I get back from the Purple Hall," he said. "We're already sent Admiral General Samdu, with his ten cruisers, to help Hannas catch his thief."

"But he has failed, sir," protested the orderly. "An urgent message from Admiral General Samdu reports—"

"Samdu's in command." Jay Kalam's voice was brittle with fatigue. "He doesn't have to report." He sighed, and pushed thin fingers through the forelock of white that he had brought back from the comet. "If their man is really Chan Derron," he muttered, "they may fail again!"

SETTLING limply back in the chair behind the crowded desk, he let his tired eyes look out of the great west window. It was dusk. Above the five points of the dead volcanoes on the black horizon, against the fading greenish afterglow, the New Moon was rising.

Not the ancient satellite whose cragged face had looked down upon the Earth since life was born—that had been obliterated, a quarter-century ago, by the mysterious power of AKKA, when Aladoree Anthar turned her secret ancestral weapon upon the outpost that the dread invading Medusæ had established there.

The New Moon was really new—a glittering creation of modern science and high finance, the proudest triumph of thirtieth-century engineering. The heart of it was a vast six-pointed star of welded metal, ten miles across, that held eight miles of expensive, air-conditioned space.

Far nearer its primary than the old, the new satellite had a period of only six hours. From the Earth, its motion appeared faster and more spectacular from its retrograde direction. It rose in the west, fled across the sky against the tide of the stars, plunged down where the old Moon had risen.

The New Moon was designed to be spectacular. A spinning web of steel wires, held rigid by centrifugal force, spread from it across a thousand miles of space. They supported an intricate system of pivoted mirrors of sodium foil and sliding color filters of cellulite. Reflected sunlight was utilized to illuminate the greatest advertising sign ever conceived.

The thin hand of the commander had reached wearily for the thick sheaf of green-tinted pages headed:

REPORTS OF THE COMETARY RESEARCH EXPEDITION, J. KALAM, DIRECTOR. REPORT CXLVIII.: PRELIMINARY ACCOUNT OF METHODS AND EQUIPMENT FOR THE REDUCTION OF MATTER TO AN IMPALPABLE NEUTRONIC DUST.

But the rising sign, as it had been designed to do, held his eyes.

A vast circle of scarlet stars came up into the purple-green of dusk. They spun giddily, came and went, changed suddenly to a lurid yellow. Then garish blue-and-orange letters flamed a legend:

"Vacation! Take the New Moon

Line to happiness!" The disk became a red-framed, animated picture of a slender girl in white tripping up the gangway into a silver liner of space. She turned, and the gay invitation of her smile faded into the burning words: *"Whatever you seek, you will find it at the Planet of Paradise!"*

"Even," Jay Kalam remarked dryly to the sign, "the System's foremost criminals."

"Find health at our sanitariums!" flamed the writing in the sky. "Sport in our gravity-free games! Recreation in our clubs and theaters! Knowledge in our museums and observatories. Thrills and beauty—everywhere! Fortune, if you are lucky, in our gaming salons! Even oblivion, if you should desire it, at our Clinic of Euthanasia!"

"But, all the same," Jay Kalam whispered to the sign, "I think I'll still take the quiet peace of John Star's Purple Hall—"

The commander stiffened, behind his desk.

For the great sign, where a green flaming hand had begun to write some new invitation, suddenly flickered. It went out. An instant of darkness. Then red, ragged, monstrous letters spelled, startlingly, his own name!

"KALAM!" Darkness again. Then the fiery scarlet symbols: *"G-39!"*

An explosion of red-and-white pyrotechnics wiped that out. A cold blue point grew into an immense blue star. And the star framed a girl in rainbow colors, dancing. She laughed, and a white arm beckoned.

But Jay Kalam was no longer watching the sign. For *G-39* was his emergency call, to be used only in cases of grave necessity. A little chill of cold forewarning shook his hand, as he touched the communicator dial.

"All right, Lundo," he told the orderly. "Get me Gaspar Hannas on the visiwave!"

BUILDER and master of this gaudiest and most glittering of all resorts, Gaspar Hannas was a man who had come up out of a dubious obscurity. The rumors of his past—that he had been a space pirate, drug runner, android agent, crooked gambler, gang boss, and racketeer in general—were many and contradictory.

The first New Moon had been the battered hulk of an obsolescent space liner, towed into an orbit about the Earth, twenty years ago, and more. The charter, somehow issued to Gaspar Hannas in the confusion that had followed the war with the Medusæ, gave it the status of a semi-independent planet. It offered a convenient refuge from the more stringent laws of Earth and the rest of the System. And Gaspar Hannas, with a growing wealth and a spreading secret influence, had defied outraged reformers. He had prospered exceedingly.

The wondrous artificial satellite, now open just a decade, had replaced a whole fleet of luxury liners that had circled just above the laws of Earth. The financial status of the New Moon Corporation was always a little clouded—Hannas had been called a financial octopus; but none doubted that the New Moon returned a profit tremendous enough to justify its tremendous cost, or doubted that Hannas, with his special police, ruled it like a dictator.

His enemies—and there was no lack of them—liked to call Gaspar Hannas a spider. And it was true enough that his sign in the sky was like a gaudy web. True that millions swarmed to it, to leave their wealth—or even, if they accepted the dead-black chip that the croupiers would give any player for the asking, their lives.

The man himself must now have been somewhat beyond sixty. But as he sat, gigantic and impassive, at the odd, round desk in his office, watching the flowing tape that recorded the winnings in all

the halls, sipping the dark Martian beer that never intoxicated him, no onlooker could have guessed his age within a score of years—or guessed at anything that moved behind his face.

For the face of Gaspar Hannas, men said, had changed with his fortunes. His old face, they said, had reflected his real nature too well. It had showed the scars of too many battles. And it was printed, they whispered, on too many notices of reward.

The face of Gaspar Hannas, now, like the flesh of his great idle hands, was very white—but whiter still, if one looked closely at his vast smooth expanse, were the tiny scars the surgeons had left.

It was a face of peculiar blankness. The only expression that ever moved it was a slow and meaningless smile—a smile that made its white smoothness look like the face of a monstrously overgrown idiot child.

The eyes of the man, set far apart and deep in that white bald head, were sharp and midnight-black. Beyond that idiotic smile, they looked a little odd. But their dark, piercing fixity never revealed what was passing in the mind of Gaspar Hannas.

Such a face, men agreed, was singularly useful to a man in his trade.

THAT WAS the face that Jay Kalam waited to see, upon the shining oval plate of the visiwave cabinet. (One of the System's first useful developments from the conquered science of the comet, this instrument utilized the same instantaneous or achronic force fields that the lovely fugitive, Kay Nymidee, had used to reach Bob Star, on her escape from the comet.)

The plate flickered, and Jay Kalam saw the vast smooth features of the New Moon's master. And even that senseless smile could not hide the apprehension that was devouring the vitals of Gaspar Hannas. For his whiteness had become a ghastly pallor, and he was breathless, and his whole gross body trembled.

"Commander . . . commander!" His great voice was dry and ragged-edged with fear. "You've got to help me!"

"What do you want, Hannas?" Jay Kalam asked flatly. "And why was your sign used to call me? You already have a legion fleet to guard your place."

Still Gaspar Hannas smiled that silly baby-smile, but his blank forehead was beaded with fine drops of sweat.

"Admiral General Samdu gave the authority," he gasped. "He agrees that the situation is urgent. He's here with me now, commander."

"Well," Jay Kalam wearily inquired, "what's the trouble?"

"It's this man—this monster—who calls himself 'the Basilisk'!" The huge voice was hoarse and wild. "He's ruining me, commander. Ruining the New Moon! Time knows where he will stop!"

"What has he done?"

"Last night he took another patron! The high winner at baccarat—Clovis Field—a planter from the asteroids. My police escorted him, with his winnings, to his yacht. They got him there, safe. But he was taken out of the sealed air lock, commander—with all his winnings!"

Jay Kalam brushed the white forelock back into his dark hair, impatiently.

"Just one more gambler robbed?" His tired eyes narrowed. "That has happened many a time on the New Moon, Hannas—when you didn't think it necessary to call the legion!"

A queer tensity stiffened that white, foolish smile.

"Robbed—but that isn't all, commander. Clovis Field is dead. His body has just been found in the precrematory vault at the Euthanasia Clinic. And his right hand is closed on one of those little black clay snakes that this

Basilisk uses to sign his crimes!"

"What killed him?"

"Strangled!" boomed the great white man. "With a green silk scarf." In his deep black eyes, behind that mindless mask, Jay Kalam saw the glitter of a terrible light. Accusing—or triumphant—he didn't know which. "It is embroidered in gold, commander," said the great voice of Hannas, "with the wings of the legion of space!"

Jay Kalam's lean face tensed.

"Robbery and murder," he said. "But still I see no need to call upon me. What's the matter with your own police? You have ten thousand of the toughest men in the System. Set them on your Basilisk!"

The deep black eyes almost—glazed.

"You don't understand, commander. It . . . it's uncanny! The air lock was sealed—and stayed sealed. And the vault was locked. Nobody could have done the thing. Nobody but one of our own employees could have opened the vault. And—*nobody* could have entered the air valve!"

"I advise," said Jay Kalam, "that you examine some of your own employees. "You say that Admiral General Samdu is with you? Please put him on."

THE SMOOTH, white face was replaced by a scarred, rugged, ugly red one, equally gigantic. Beneath his snow-white hair, the features of Hal Samdu were stiff with an awed bewilderment.

The commander smiled a greeting.

"Well, Hal, what is your emergency?"

The battered red face twisted, and the blue eyes of Hal Samdu grew dark as if with pain.

"I dont' just know, Jay," said his deep, worried voice. "There's not much you can put a finger on." His own big fingers were clenched into baffled fists. "But it *is* an emergency, Jay! I know it. I can feel it. The beginning of something—dreadful! It may turn out to be as bad as the Medusæ—or the cometeers!"

Jay Kalam shook his tired dark hard.

"I don't see anything, Hal—"

Hal Samdu leaned forward, and his great scarred impotent fist came up into the screen.

"Well, Jay," he rumbled, "maybe you'll listen to this!" His voice sank, with an unconscious caution. "I've been on the Derron case, you know, ever since we got back from the comet. Well, I haven't caught him—there was never such a man! But I've got clues. And, well—"

His tone dropped lower still.

"Commander, I've got evidence enough that this Basilisk is Chan Derron!"

"Quite possible." Jay Kalam nodded.

"There was no Basilisk until after Derron got out of prison," argued Hal Samdu. "Soon after, there was. He began with small things. Experiments. He's trying out his power—the invention he murdered Max Eleroid to get! Time knows how he hid the thing on that rock, when we combed every square inch—unless he could have used a geopeller!

"But he has it!" A secret, frightful power!"

The great hands twisted together, in a baffled agony.

"And he's getting more confident with it. Bolder! Every job he tries is more daring. And time knows where he will stop!" The great rugged knob of his Adam's apple jerked. "I tell you, Jay, the man who robbed and murdered Clovis Field can do anything—*anything!*"

Hal Samdu's voice dropped again. It was cracked and shaken with alarm.

"I don't like to speak of this, Jay, on the wave. But if this Basilisk—if Derron—can do what he did tonight, then *she* isn't safe! Or—*it!*"

Jay Kalam stiffened. He could not faile to know what Hal Samdu meant by *she* and *it*—he and the giant, with

fat old Giles Habibula, had been too long the guards of Aladoree Anthar and the priceless secret that she guarded: the mysterious weapon, designated by the symbol AKKA, whose very existence was the shield of mankind.

If *they* were in danger—

"All right, Hal," he said. "I'll come out to the New Moon—"

"And one thing more, Jay—" The rugged face was yet stiffly anxious. "Bring Giles Habibula!"

"But he's on Phobos," protested the commander, "with John Star and Aladoree. And Mars is a hundred degrees past opposition. It would take half a day to get him. And I don't see—"

"Call John Star," begged the big legionnaire, "and have him bring Giles to meet you. Drunk or sober! For

we'll need Giles, Jay, before this thing is done. He's getting old and fat, I know. But he has a gift—a talent that we'll need."

"All right, Hal." Jay Kalam nodded. "I'll bring Giles Habibula."

"Thank you, commander!" It was the great hoarse voice of Gaspar Hannas. Into the visiwave plate, beside Hal Samdu's unkempt white head, the smooth white face of Hannas crowded, smiling idiotically. "And—for Earth's sake—hurry!"

JAY KALAM put through his call to Phobos by ultrawave—the faster visiwave equipment, still experimental, not yet having been installed there. He ordered the *Inflexible*—powerful sister ship of the *Invincible,* which was destroyed by the cometeers—made ready to take off. He was on his feet, to leave the office, when he saw the little clay serpent.

It lay on the thick green sheaf of the report that he had been working over a few minutes before. And beneath it was a folded square of heavy, bright-red paper.

"Eh?" he muttered, uneasily. "How did *that* come here?"

He looked quickly around the room. The heavy door was still closed, the orderly sitting watchful and undisturbed beyond its vitrilith panel. The vitrilith windows were locked, the grates over the air ducts intact.

"It couldn't—"

Certainly he had seen no movement, heard no step. The cometeers had known invisibility—came an alarming thought. But, no, even an invisible man must have opened a door or a window. He shook his head, baffled and aware of the cold prickling touch of a nameless dread, and picked up the serpent.

That was crude enough. A roughly molded little figurine, burned black. It lay in a double coil, head across the tail, so that it formed the letter B.

Where *had* it come from?

Thin, delicate hand trembling a little, he unfolded the heavy red sheet. The impression of a black serpent, at the top of it, formed another B. Beneath it, in a black script precise as engraving—the ink still damp enough to blot his fingers—was written:

> My Dear Kalam:
>
> Since you are going out to the New Moon, will you kindly take Gaspar Hannas a message from me? Will you tell him that nothing—not even the protection of the legion of space—will keep his most fortunate patron every day from the fate of Clovis Field?
>
> The Basilisk.

IV.

THE SOLAR System is curiously flat. The two dimensions of the ecliptic plane are relatively crowded with worlds and their satellites, with the cosmic débris of meteors, asteroids, and comets. But the third is empty.

Outbound interplanetary traffic, by a rule of the spaceways, arches a little to northward of the ecliptic plane; inbound, a little to the southward, to avoid the débris of the System and danger of head-on collision with another craft. Beyond these charted lanes, there is nothing.

A tiny ship, however, was now driving outward from the Sun, parallel to the ecliptic plane and two hundred million miles beyond the limits of the spacelanes. Its hull was covered with thin photoelectronic cells capable of being adjusted to absorb any desired fraction of the incident radiation—making the vessel, when they were in operation, virtually invisible in space.

Not thirty feet long, and weighing too few tons to have perceptible effect on the mass-detectors of a legion cruiser beyond ten million miles, the ship had power to race the fleetest of them.

Her geodynes—or, in the terms of the geodesy engineers, hyper-compensated

electromagnetic geodesic deflectors—were of the new type designed by Max Eleroid. Far more powerful than the old, they were yet so delicately matched and balanced that the ship could be landed on a planet, or even worked into a berth, without the use of auxiliary rockets.

The *Phantom Atom* had compact accommodations for a crew of four. But only one man was aboard—now staring grimly at his own picture, fastened beside another on the metal bulkhead behind the tiny, vitrilith-windowed pilot bay.

ONE HUNDRED THOUSAND DOLLARS REWARD!

That was the heading, in startling crimson letters, above the full-color picture. Beneath it was a block of smaller black type:

> This sum will be paid by the legion of space, for aid and information leading to the capture or the death of Chan Derron, escaped convict, believed to be known also as the "Basilisk."
>
> Description: Stands six feet three. Earth weight, two hundred ten. Hair, bronze. Complexion, deeply space-tanned. Eyes, gray. Slight scars on face, neck, and back, such as due to violent interrogation.
>
> This man is physically powerful, intelligent, and desperate. A former captain in the legion, he was convicted of murder and treason. Two years ago he escaped from the legion prison on Ebron. He is believed to possess a small but powerful spaceship. Clues of him have been found on several planets.
>
> Officers of all planets are warned that Derron is a dangerous man. He was trained in the legion academy. He is believed to be armed with a mysterious and deadly instrumentality. It is advised that he be disabled before he is accosted.
>
> JAY KALAM
> Commander of the legion of space

Four years had made a difference between the picture and the man. The picture, taken after his arrest, looked bleak and grim enough. But Chan Derron, in those four bitter years, had grown harder and leaner and stronger. Some frank, boyish simplicity was gone from his dark-tanned face, and in its place was something—savage.

HE TURNED from the picture, to the one beside his own. His great brown hand saluted it. And a brief, sardonic grin crossed his square-jawed face.

"Comrades, eh, Luroa?" he muttered. "Together against the legion!"

He had taken the other picture from the same legion bulletin board, in old, mud-walled Ekarhenium, on Mars, where he had found his own. The two notices were side by side, at the top of the board—offering the two highest rewards. And he had been dazzled by the sheer, startling beauty of the face on the other.

A woman's face, wondrous with something beyond perfection. Beneath the dark, red-gleaming hair, her features were regular and white—and something shone from them. Her eyes were a clear green, wide apart, with the slightest hint of a slant. Full-lipped and red, her long mouth smiled with a hidden mockery.

A woman's face—but she was no woman.

For the text beneath her picture ran:

> Rewards totaling two hundred and fifty thousand dollars will be paid by the legion of space, the Green Hall Council, and various planetary governments, for the being named Luroa, pictured above, living or dead.
>
> She is not a human being, but a female android.
>
> The history of the android traffic is perhaps not generally known. But for many years, at his laboratory hidden on a planetoid beyond the normal limits of the System—a gifted criminal biologist—Eldo Arrynu engaged in the manufacture of these illegal synthetic beings. He headed a ring of criminals that made a vast income through smuggling these beautiful, but dangerous beings to wealthy purchasers throughout the System.

Stephen Orco, the male android whose deadly cunning and soulless hate came near destroying the System during the war with the cometeers, is typical of these creations. Perfect of body, brilliant of brain, inherently criminal, Stephen Orco caused the destruction of his maker by the cometeers.

The entity Luroa was the last creation of Eldo Arrynu, and she is believed to be the last android in existence. The scientist refused to sell her. He kept her with him until the attack of the cometeers. She escaped, however, when all others on the planetoid were killed. Since, she has been the gifted and ruthless leader of the remnants of the interplanetary gang.

Beyond the single picture above, discovered in the records on the planetoid, no description of the android Luroa is available. Nothing is known of her surviving associates.

Officers are warned that this sinister being possesses a mind of phenomenal keenness, that she is pitilessly free of all human scruples, and that her alluring beauty is her most deadly weapon. She is fully trained in many lines of science, physically more powerful and far quicker than most men, and skilled in the use of weapons.

Officers are advised to destroy this being upon identification.

JAY KALAM
Commander of the legion of space

A quarter of a million, darling!" Chan Derron whispered. "And I think you're worth it—on looks alone!" The hard grin seamed his dark face again. "For your own sake, I hope they haven't got you overestimated as much as they have me."

HE BLEW the smiling picture an ironic kiss, from his big brown hand, and then bent again to the hooded view plate of the chart cabinet. Miles of micrograined film within the instrument, intricate reels and cams and gears, ingenious prisms and lenses, could give a true stereoscopic picture of the System as it would appear from any point in its stellar vicinity—at any desired telescopic power, at any time within a thousand years. The anal-integrators could quickly calculate the speediest, safest, or most economical route from any one point to any other.

The big man found the light fleck that was Oberon, outermost satellite of cloudy-green Uranus. His great hands deftly moved the dials to bring it into coincidence with the tricrossed hairs in the view plate. He read the destination from the indicators—set it up on the keys. And then, while the humming mechanism was analyzing and reintegrating the many harmonic factors involved in moving the *Phantom Atom* across a billion miles of space to a safe landing on that cold and lonely moon, his bronze-glinting eyes went back to the smiling picture on the bulkhead.

"Well, Luroa," he said slowly, "I guess it's going to be good-by." He waved a grave farewell to her white and mocking loveliness. "You know, we could have made quite a team, you and I—if I had just been what the legion takes me for!"

His bronze head shook.

"But, my lady, I'm not. I'm no reckless pirate of the spaceways—unless by dire necessity. I'm just a plain soldier of the legion, in incredibly and peculiarly bad luck. I haven't got any 'mysterious and deadly instrumentality.'"

His head lifted a little. His eyes lighted. His voice softened, confidentially.

"But I've got a secret, Luroa!"

Smiling again, almost wistfully, he pointed at a series of figures on the log tape beside the hooded glass.

"No secret weapon," he whispered. "And nothing like the secret of your life, Luroa. But it's enough to mean new hope, to me." His great head lifted, with a fierce little gesture of pride. "It means one more chance."

A moment he looked silently at the smiling picture. And the green-eyed loveliness of Luroa looked back, he thought, with a mocking comprehension.

"It was like this, my lady," he said.

"The last time Hal Samdu chased me, I got a hundred million miles ahead of his fleet, running out north. I got far beyond visual range. Or beyond the normal range of the mass-detectors. I was splicing up a new hookup, to find if old Hal was still on the trail, when I found—something else."

He shook his finger at her.

"Don't ask me what it is, Luroa. It's too far off, with whatever albido it has, to show even a point in the System's best telescope. But the mass is of the order of ten million tons, and the distance approximately ten billion miles, estimated by triangulation.

"Doesn't matter, what it is. A chunk of rock, or a projectile from Andromeda. I'm going out there. Just one more landing first, at some outstation, to get food and cathode plates. And then I'm off. I'll find out what it is. And do a bit of research I have in mind. And wait."

Chan Derron's air of lightness was growing very thin. A hoarse little break came in his voice.

"Wait," he whispered. "With the atosynthesis plant, for air and food staples, I can wait a lifetime—or what's left of mine—if I must.

"Wait—and listen. Beyond the ultrawave, of course, and out of all the beams—but the visiwave should pick up something. Enough so I'll know if Chan Derron can ever come back."

He tried to grin, again, and waved his hand at the picture of Luroa.

"Till then, my darling," his voice came huskily, "I guess it's good-by. To you. And the legion. And the System. To every man and woman I ever knew. To every street I ever walked. To every bird and every tree. To every living being I ever saw.

"Good-by—"

Chan Derron gulped suddenly. He turned quickly away from the two pictures on the bulkhead, and looked out into the depthless dark of space. His eyes blinked, once or twice. And his great tanned hands stiffened like iron on the vernier wheel of the *Phantom Atom.*

THE GEODYNES made a soft musical humming. There was a slow, muffled clicking from the gyrotomic pilot. Chan Derron peered northward, into the star-shot dark. There—somewhere in Draco—lay that unknown object, his only possible haven.

It would be like this, always, he thought. Silence, and darkness. He would hear the small sounds of machines, and his own voice, and nothing else. He would talk too much to himself. He would look across the cold dark, at the bright points of other worlds. And wonder—

Tchlink!

It was a soft little sound. But Chan Derron stiffened as if it had been the crash of a meteor's impact. He spun, and his hand flashed for the barytron blaster hanging in its holster on the bulkhead. Then he saw the thing that had made the sound, lying on the view plate of the star-chart cabinet.

The breath went out of him. His hand dropped from the weapon, helplessly. His great shoulders sagged a little. For a long time he stood staring at it, with all the strength and hope running out of him, like blood from a wound.

"Even here!" His bronze head shook wearily. "Even out here."

Slowly, at last, he picked up the sheet of heavy red paper, that had been pinned beneath the crude little serpent of black-burned clay. He read the neat black script:

> My Dear Captain Derron:
>
> Congratulations on the brilliance and the daring of your last escape. Samdu has long since turned back, to try to guard the New Moon—from me! For the moment you are safe. But I must give you two points of warning.

You will find alarm and danger waiting for you on the moons of Uranus. For the legion base there has been tipped off that you are on your way.

And you will be held responsible, captain, I fear, for the things that are going to happen in the New Moon—whether you are there or a billion miles away.

Your faithful shadow,
THE BASILISK.

Stark dread had driven its stunning needle into Chan Derron's spine. He stood dazed, motionless. The mockery of that message swam and blurred upon the red page. And a slow, deadly cold crept into his paralyzed body.

It was more than frightening to know that his every act was followed by a sinister and unescapable power. Frightful to know that the incredible arm of the Basilisk could reach him, even here. Omniscience! Omnipotence! The powers, almost, of a god in the hands of—the Basilisk!

Almost, he could feel that fearful presence with him. He peered about the tiny pilot bay. It was dimly lit with the shaded instrument lights, the faint starlight that struck through the ports. He snapped on a brighter light. He wanted to search the ship. But, of course, that was no use. There couldn't be a man within a hundred million miles. The mass-detectors, with his new hookup, would have given automatic warning of the approach of the mass of a man's body, within a million miles.

HE CAUGHT his breath, trying to shake off that shuddery chill, and began to talk.

"Give me a chance, won't you?" he begged of the empty air. "I don't know who you are, Basilisk. Or where. But I've got a feeling you can hear me—a terrible feeling. Just listen to me. And give me a chance."

His great fists clenched, and came up against his breast.

"Look what you've already done to me! Isn't that enough? Four years ago I was a captain in the legion, with the promise of an honorable career. Commander Kalam chose me to guard Dr. Eleroid—that proved he trusted me.

"It was you, Basilisk, who killed Dr. Eleroid!" Against the silence of the ship, the muffled musical hum of the geodynes, the subdued clicking of the robot navigator, his challenging voice rang a little wild. "You did it—with my bayonet!

"It was you who sent me to prison. Two years, Basilisk, on the place they call the Devil's Rock. With the guards making it a hell for me, trying to make me tell what I did with Dr. Eleroid's invention—the invention that you took, Basilisk!

"And you've hounded me since I escaped in the guard cruiser I rebuilt into the *Phantom Atom.*" A hoarse little quiver was in his voice. "I've been trying to find another identity and another life. I didn't want to fight the legion—or you, Basilisk. But you've made me!"

He tried to swallow a pleading sob.

"Look at all the things you've done. Look at the time I landed at that plantation on Ceres to get supplies—I was going to pay for them, honestly, with my mother's rings. But I found the planter and his wife murdered—you did that, Basilisk! And a cruiser of the legion was about to arrive—you called it! And, after I had got away, I found the loot—the plate and jewels from the plundered house—aboard the *Phantom Atom.* You put it there, Basilisk!"

His bronze-gray eyes blinked.

"Or the time in Ekarhenium, on Mars, when I had just found an honest job in a laboratory, under another name. And my new employer was stabbed at his desk. And a bag of his money and papers—with blood on it—was flung into my room.

"Or that time I left the *Phantom Atom* hidden in the desert on Mercury,

and stowed away on a freighter for Venus. The very hour I got aground in New Chicago, I saw my face on the news screens, with offers of reward. For the Terrestrial Bank had been looted on the night before, and the film in the camera of a murdered guard showed my face."

His voice broke again.

"And that's not half! Haven't you done enough, Basilisk? Haven't you tortured me long enough? Won't you let me go? I only want to leave the System, now. You can't deny me even —exile!"

He choked, and stared around the pilot bay again. The geodynes, aft, hummed softly on. The gyrotomic pilot clicked gently, now and then, as it set the little ship back upon her course toward Urnanus.

"Will you let me go?" gasped Chan Derron. "Tell me, Basilisk! Give me a sign."

Silence jerred at him.

He stared at the B-shaped serpent of clay and the heavy red sheet lying on the chart cabinet. And his breath caught. They were his answer—answer enough. This thing called the Basilisk had no humanity—no more than the android Luroa, whose dazzling, enigmatic smile mocked him from the wall.

No appeal would serve—none save a force as ruthless as its own.

He snatched the serpent, suddenly, and hurled it to shatter into black fragments on the floor. A savage anger took his breath, and roared in his ears, and shook him. He gasped. And suddenly his voice came back to him, low, and cold, and harsh.

"All right, Basilisk," he said. "I'm going to quit trying to run away. It may seem pretty foolish, for one man to try to buck you, and the legion, too. But I'm going to, Basilisk. I'm going to get you—or die fighting. Still I may be your pawn—you must have meant for me to turn back, when you delivered that note. But watch me!"

He stopped the song of the geodynes, and then turned grimly to the star-chart cabinet. The view plate presently showed him the silver atom, spinning about the green sphere of the Earth, that represented the New Moon. He read its position, and his fingers moved swiftly to set up a new destination on the calculator.

V.

THE MIGHTY *Inflexible* slipped gently into a berth against one of the six vast tubular arms of the New Moon's structure. Massive keys locked her trim hundred thousand tons of fighting strength into position. Her valves opened to communicate with the artificial satellite.

Three men in mufti were sitting at a table in a long, richly simple chamber hidden aft the chart room of the flagship. The slender man had chosen conservatively dark, exquisitely tailored civilian garb. The white-haired, rugged-faced giant had attired himself in lustrous silks that reflected every bright hue of the New Moon's mirrors; he had left behind his tinkling sheaf of medals only after argument. The careless gray cloak of the third fell loose of his short but massive figure; a heavy cane was gripped in his pudgy yellow hand.

"For life's sake, Jay, what's the mortal haste?" The round, blue-nosed face of Giles Habibula looked imploringly at the dark-clad commander. "Here we've just sat down to get our precious breath, after a frightful dash across the void of space. We've had but a whiff of your blessed viands, Jay. And now you say that we must go!"

Great Hal Samdu looked at him grimly.

"The dashing could have harmed you little, Giles," he rumbled, "when you were fast in a drunken sleep. And if you've had but a whiff of Jay's good

food—then a mere taste would founder a Venusian gorox!"

Jay Kalam nodded gravely.

"We're at the New Moon, Giles. Gaspar Hannas is waiting for us, at the valve. And we've a job to do."

Giles Habibula shook the wrinkled yellow sphere of his head, and turned fishy pleading eyes to the commander of the legion.

"I can't stand it, Jay," he whimpered. "It's a mortal turn I can't endure." He pointed a trembling yellow thumb at his protruding middle. "Look at Giles Habibula. He's an old, old man, Giles is. He must ration his wine. He must have a cane to aid his limping steps. He'll be dead soon, Giles will."

The pale eyes blinked.

"Ah, so, dead—unless the blessed scientists come at the secret of rejuvenation. There's a specialist, Jay, on this very New Moon, that promised—but John Star wouldn't let me come!"

He sighed, sadly.

"Aye, the whole world plots for the death of poor old Giles. Look at him, Jay! He was drinking up his last miserable drop of happiness at the Purple Hall. For Phobos is a pleasant world, Jay. The sun in its gardens is blessed kind to the aches in an old man's bones. John Star is a generous host—not always rushing famished guests away from his table, Jay!"

His thick yellow finger shook reprovingly.

"Ah, and it is a blessed comfort to see Aladoree every day—to see her so happy with John Star, Jay, after all the fearful dangers they have come through. A comfort to be near, to guard her, if trouble comes again."

His seamed face smiled a little.

"It gives a lonely, friendless old soldier a blessed mite of happiness, Jay, to dandle Bob Star's daughter on his knee. And to see the lass, Kay, so lovely, after all the horror of the comet, and so eager for Bob's visits home.

"The next one, the doctors say, will be a son—and that's a precious secret, Jay!"

Leaning heavily back in his chair, the old man sighed again.

"Old Giles was happy on Phobos, Jay—happy as the miserable, shattered old wreck of a dying legionnaire can be. Look at him. He has his bit of supper, amid the dear familiar faces. He savors his precious sip of wine. He dozes quietly away—ah, so, and it might have been into a poor old soldier's well-earned last repose!

"And what happens?"

His pale eyes stared accusingly.

"He wakes up in a strange cramped bunk. And he finds he is upon a mortal cruiser of the legion, shrieking through the frigid gulf of space. Ah, Jay, and his dimming old senses feel the shadow of a frightful danger, rushing down upon him! That's a mortal evil way to serve a defenseless old man, Jay, in his miserable sleep. The shock might stop his blessed heart!"

His fat hands clutched the edges of the table.

"'Tis a fearful thing, Jay, to alarm folks so! Ah, it made me think of the bloody Medusæ. And that evil manthing named Stephen Orco, and his fearful cometeers." He leaned forward, earnestly. "Tell old Giles there's no alarm, Jay! Tell him it's only a precious joke."

His small eyes looked anxiously back and forth, between the grave face of Jay Kalam and the grimly rugged one of Hal Samdu. His wrinkled face faded slowly, to a paler, sickly yellow.

"Life's name!" he gasped. "Can this thing be so mortal serious as that? Speak, Jay! Tell old Giles the fearful truth, before his poor brain cracks."

RISING beside the table, Jay Kalam shook his head.

"There's little enough to tell, Giles," he said. "We have to deal with a criminal, who calls himself the Basilisk. He has got some uncanny mastery of space, so that distance and material barriers apparently mean nothing to him.

"He began in a small way, nearly two years ago. Taking things from secure places. Putting notes and his little clay snakes in impossible places—I received one in my office in the Green Hall.

"He keeps attempting something bigger. There have been murders. Now he has served notice that he is going to rob and murder one of the New Moon's patrons every day. If he goes on—well, Hal is afraid—"

"Afraid?"

Hal Samdu crushed a great fist into the palm of his hand, and towered to his feet.

"Afraid?" he rumbled. "Aye, Giles, I'm sick and cold with fear. For if this goes on, the Basilisk can take Aladoree as easy as any luckless gambler—and

nothing all the legion can do to save her!"

"Aladoree?" In his own turn, lifting himself with the table and his cane, Giles Habibula heaved anxiously to his feet. His pale eyes blinked at Jay Kalam. "Then why can't she use—AKKA"—his voice had dropped, almost reverently, as he spoke those symbolic letters—"and so end the danger?"

The commander's dark head shook, regretfully.

"Because we don't know who the Basilisk is, Giles," he said. "Or where. Aladoree can't use her weapon, without a target to train it on. If we can ever discover the precise location of the Basilisk in space—before he takes her—that is all we need to know."

"Aye, Giles," Hal Samdu rumbled urgently. "And that is why we sent for you. For you have a gift for opening locks and discovering hidden things."

Giles Habibula inflated himself.

"Ah, so, Hal," he wheezed. "Old Giles had a blessed genius, once—a precious talent that has twice saved the System. And a miserable little thanks he got for the saving of it. Ah, once—But it's rusted, now. It is dying. Ah, Jay, you might better have left a poor old legionnaire to his peaceful sleep on Phobos."

His small eyes were blinking at them, swiftly.

"But we must seek the identity of this mortal genius of crime? Have you no clue, Jay? No precious clue at all?"

"Aye, Giles," broke in Hal Samdu again. "We've clues enough. Or too many. And they all tell the same story. The Basilisk is the convict, Derron."

"Derron?" wheezed Giles Habibula. "I've heard the name."

"A captain in the legion," Jay Kalam told him, "Chan Derron was convicted of the murder of Dr. Max Eleroid and suspected of the theft of a mysterious invention. The model was never recovered. Derron escaped from the prison on Ebron, two years ago. The activities of the Basilisk began soon after."

A green light blinked, above the door of the sound and ray-proofed room.

"My orderly," said Jay Kalam. "We must go. Gaspar Hannas will be waiting." He looked at the timepiece on his wrist, a compact comparative chronometer that would give solar, civil and astronomical time for any zone on any planet. "And we have only two hours."

"Two hours?" gasped Giles Habibula. "Jay, you speak as if we were condemned! What do you mean?"

"Two hours to midnight," Jay Kalam explained. "It is then that the Basilisk is expected to strike. We have two hours to complete whatever arrangements we may be able to make, in the hope of trapping him."

Giles Habibula peered at him.

"And what do you plan, Jay?"

"First," Jay Kalam told him, "the ten cruisers of Hal's fleet are on guard against the approach of any strange ship. Second, within the New Moon, Gaspar Hannas has promised the full co-operation of his ten thousand special police—they will be on duty everywhere. Third, we will be waiting within the New Moon ourselves, with a score of legion operatives in plain clothes."

"It is this man Derron that we must take," grimly added Hal Samdu. "There's evidence enough that he's the one we want. Gaspar Hannas has raised the reward for him to a quarter of a million. We've papered all the New Moon with his likeness. The guards, and the players, too, will be watching. If he comes here tonight, we'll get him!"

"Ah, so, Hal!" wheezed Giles Habibula. "But if all you've told me is true—if distance and walls mean nothing to this mortal strange power with which the Basilisk is armed—then perhaps he can strike down the poor gambler without coming here!"

"Anyhow"—and Jay Kalam beckoned toward the door where the green light

was blinking still—"we must go. If he comes, we may take him. If he doesn't, we may still discover some clue. Anything—"

His lean jaw set.

"Anything to betray the whereabouts of the Basilisk, so that he can be destroyed!"

Gigantic Hal Samdu stalking ahead, Giles Habibula waddling and puffing and laboring with his cane behind, they went out of the commander's apartment, out through the chart room, and out through the great armored valves of the *Inflexible,* into the New Moon.

GASPAR HANNAS met them. Huge as Hal Samdu, he was dressed in loose, flowing black. The black emphasized the whiteness of his monstrous soft-fleshed hands, and of his vast smooth face. His black, deep-set eyes were distended and darting with fear. Sweat shone on his forehead and his white bald head. But his face greeted them with its slow and idiotic grin.

"Gentlemen!" he gasped hoarsely. "Commander! We must hasten. Time draws short. The guards are posted, and I've been waiting—"

His voice choked off, abruptly, and he started back from Giles Habibula. Leaning heavily on his cane, the old man was peering at him. His seamed yellow face broke slowly into a wondering grin.

"In life's name!" he wheezed. "It's Pedro the Shar—"

The idiot smile congealed on the white lax face of Gaspar Hannas, and his huge hands made a frightened gesture for silence. His black eyes darted over the old man swaying on the cane, and he whispered hoarsely:

"Habibula! It's been nearly forty years. But I know you! You're Giles the Gh—"

"Stop!" gasped Giles Habibula. "For I know you—Gaspar Hannas—in spite of your grinning mask. And I know more on you than you do on me. So you had better hold your mortal tongue!"

He steadied himself, with both hands on the cane, and his pale eyes blinked at the giant in black.

"Gaspar Hannas!" he wheezed. "The great Gaspar Hannas, the New Moon's master! Well, you've come a long way, since the time of the Blue Unicorn. You must have eluded the posse in the jungle—"

The big man lifted his hand again, fearfully.

"Wait, Habibula!" he gasped. "And forget what you remember."

"Ah, so, old Giles can forget—for a price." The old man sighed. "Life has served us mortal different, Pedr—or Gaspar Hannas," he said sadly. "Here you have made a mighty fortune. Men say the New Moon has made you the System's richest man—richer than John Star, even. And your poor old comrade is but a penniless and derelict ex-soldier of the legion, starved and friendless and ill." He quivered to a sob. "Pity old Giles Habibula—"

"In forty years, you have not changed!" Admiration rang in the husky voice of Hannas. "What do you want?"

The yellow face was suddenly beaming.

"Ah, Mr. Hannas, you can trust the discretion of Giles Habibula! The luxury of your hotel accommodations here is famous through all the System, Mr. Hannas. The excellence of your cuisine. The vintage of your wines!"

Gaspar Hannas smiled his senseless smile.

"You are the guests of the New Moon," he said. "You and your comrades of the legion. You shall have the best."

The fishy eyes of Giles Habibula blinked triumphantly at his companions.

"Ah, thank you, Mr. Hannas!" he wheezed. "And I believe that duty's mortal peril is now carrying us into your salons of chance. It's many a long

year, Mr. Hannas, since old Giles risked a dollar in anything but a friendly game. But this meeting has brought the old days back, when the wheels of chance were meat and drink—aye, and life's precious blood—to Giles Habibula."

Gaspar Hannas nodded, and his smile seemed to stiffen again.

"I remember, Giles," he said. "Too well. But come. This thing is too urgent for us to be wasting time on a game. However, if you wish to play, the head croupier in the Diamond Room will give you a hundred blue chips."

"I, too, remember," sighed Giles Habibula, reminiscently. "At the Blue Unicorn—"

"Five hundred!" cried Gaspar Hannas, hastily. "And let us go."

Jay Kalam nodded, and Hal Samdu stalked impatiently ahead.

"Ah, so," gasped Giles Habibula. "Post your guards. And set your mortal traps. And let's go on to the blessed tables. Let the bright wheels turn, and precious blood race fast as the numbers fall. Let brain meet brain in the battle where wits are the victor. Ah, the breath of the old days is in my lungs again!"

He waddled ponderously forward.

"There'll be no danger from this Chan Derron," he wheezed hopefully. "For no human soldier of the legion—aye, none but old Giles Habibula himself—could pass Hal's fleet and the New Moon's walls and all these guards, to come here tonight.

"And, as for your precious Basilisk—I trust he'll prove no more than a fearful chimera, his mysterious power but a mortal hoax— *In life's name, what was that?"*

Some little dark object had fallen out of the air before him. It had struck the floor, shattered. From the fragments of it, however, he could see that it had been the small figurine of a serpent, crudely formed of black-burned clay.

VI.

THE OLD MOON had been eclipsed two or three times a year, whenever the month-long circuit of its orbit carried it through the diminishing tip of Earth's shadow cone. The New Moon, nearer the planet and revolving in the same orbital plane, plunged through a brief eclipse every six hours. Upon that fact, Chan Derron made his plan.

During his strenuous years at the legion academy, Chan had yet found time for amateur theatricals. Many times, in these last two fugitive years, his actor's skill had served him well. And now he called upon it for a new identity.

He became Dr. Charles Derrel, marine biologist, just returned from a benthosphere exploration of the polar seas of Venus, seeking a day of recreation on the New Moon. His bronze hair was dyed black, his bronze-gray eyes darkened with a chemical stain, his tanned skin bleached to a Venusian pallor. A blue scar twisted his face, where the fangs of a sea monster had torn it. He limped on the foot that a closing valve had crushed. His brown eyes squinted, against an unfamiliar Sun.

"That will do." He nodded at the stranger in the mirror. "If you ever get past the fleet and the guards!"

Another bit of preparation, he took the geopeller unit out of a spare space suit, and strapped it to his shoulders, under his cloak. (The geopeller, invented by Max Eleroid, was a delicate minature geodesic deflector, with its own atomic power pack. Little larger than a man's hand, controlled from a spindle-shaped knob on a short cable, it converted an ordinary space suit into a complete geodesic ship. A tiny thing, yet already it had brought many a space-wrecked flier across a hundred million miles or more to safety.)

The *Phantom Atom* drifted into the Earth's shadow cone, beyond the old

Moon's orbit. It dropped inertly Earthward. Hal Samdu's patrolling cruisers set red points to blazing on the detector screens, but they would not discover Chan so easily, he hoped. For the few tons of his ship were as nothing, against their many thousands. And the powerful, ever-shifting gravitational, magnetic, and electrostatic fields of the Earth far reduced the sensitivity of any detector in the planet's close vicinity.

The Earth grew beneath him. A great disk of denser darkness, it was ringed with supernal fire. For the atmosphere refracted the hidden Sun's rays into a wondrous circle that blazed with the crimson essence of all sunsets. The silvery web of the New Moon's sign slid into that ring, and was consumed in darkness.

With a careful hand on the vernier wheel, straining his eyes in that faint red dusk, Chan Derron found his rendezvous. A magnetic anchor held the *Phantom Atom* to the motor house that controlled a great flimsy mirror of sodium foil.

Slipping into white, trim-fitting metal, Chan snapped his blaster to its belt, and went out through the valve. One bolt from his blaster severed the power leads. And he waited, at the mirror's edge, until the Sun came back. The great sheet burned with argent fire, and the little ship, behind it, lay in total darkness. But if the mirror turned—

AT LAST the technician arrived, sliding up a pilot wire from the metal star of the New Moon's heart, carrying a kit of tools to repair the disabled unit. Gripping the control spindle of the geopeller, Chan flung himself to meet him.

They sprawled together in space. The technician, after his first surprise, displayed a wiry strength. He groped for his atomic torch, that would have cut Chan's metal armor like paper.

"I've got a blaster." Vibration of metal in furious contact carried Chan's words. "But I don't want your life—only your number and your keys."

"Derron!" The man's face went white within his helmet. "The convict—we were warned!" Chan grabbed for the torch. But the fight had gone out of the other. Limp with terror, he was gasping: "For God's sake, Derron, don't kill me. I'll do anything you want!"

His name, it seemed to Chan, had grown stronger than his body—and more dangerous than any enemy. Swiftly, he took the prisoner's tools, his worksheet, his keys, and the number plate—a black-stenciled yellow crescent—from his helmet. With the man's own torch, he welded the shoulder piece of his armor to the motor house.

"In three hours," Chan promised, "I'll be back, and let you go."

He gripped a ring on the pilot wire, and the geopeller sent him plunging

down five hundred miles to the New Moon's heart. The wire brought him to a great platform, on one of the vast tubular arms of the central star. He dropped amid half a score of other men, all with kits of tools, and hastened with them into a great air valve.

His own face looked at him, from the wall of the valve. *"$250,000 REWARD!"* shrieked crimson letters. *"LOOK! This man may be beside you —NOW!"*

At a wicket, as he filed with the others out of the valve, he turned in his captured worksheet. "Inspect and repair Mirror 17 B 285," was the order at its head. He scrawled at the bottom of it: "Defective switch discovered and repaired."

How long, he wondered, before some other man, sent to do a better job, would discover his prisoner and the *Phantom Atom?* If he had earned just three hours—

In the locker rooms, where the men were squirming out of their metal, hastening under the showers, gratefully donning their clothing, he saw that ominous poster again. And all the talk he heard was of Chan Derron and the Basilisk, and whether the two could be the same, and whether the promised robbery and murder would be carried out at midnight.

Chan Derron found the locker to which his borrowed number corresponded. He hung up his suit, hastily donned the somewhat too small lounging pajamas and loose green cloak that he discovered there, and thrust himself into a group of tired men bound for home and supper and recreation.

"Keep yer optics hot," advised a little mechanic beside him. "Any big man you see tonight might be good for Hannas' quarter of a million. You don't know who—"

"You don't know who," Chan agreed.

A little door let them out upon the vast, noisy open space beneath the docks, thronged with incoming passengers from the space liners above. Chan turned away from his companions, and sighed with relief. Beyond the fleet, and the New Moon's walls, and the alert inspectors scrutinizing every man that came down the gangplanks above, he was safe! Safe—

"Your reservation check, sir?"

It was an attentive, dark-skinned Martian porter. The grimy paper sticking from the pocket of his yellow uniform, Chan saw, was another copy of that notice of reward. With a worried frown, Chan patted his borrowed pockets.

"Oh, I remember!" He squinted and blinked. "Left it in my baggage. Can you get me a duplicate?"

Were the dark eyes studying his scar? He eased the crippled foot.

"Yes, sir. A temporary check. Your name, sir?"

"Dr. Charles Derrel. Marine biologist. From Venus, en route to Earth. Two days here." He squinted again. "Can you get me some dark glasses? Not used to the light. The clouds on Venus, you know."

The check, evidently a necessary passport to the New Moon's wonders, was presently procured. Chan dispatched the porter to look for nonexistent baggage, and hurried on alone. The transit bands—a series of gliding belts, whose moving coffee tables and bars were crowded with bright-clad vacationists—carried him through endless enormous halls, past glittering shops and the famed shimmering beauty of the "gravity fountain" and the tall black portals of the Hall of Euthanasia. But Chan had eyes for none of this fabulous splendor, until he saw the Casino—for it was there that he might meet the Basilisk, at midnight.

TRANSPARENT and illuminated from within, the pillars at the entrance looked like columns hewn from living

gems. Ruby and emerald, they were covered with a delicate layer of gold. Tiny beneath their barbaric splendor, Chan saw a woman standing, waiting.

He swung off the belt.

The girl was tall, with a proud grace of poise that he had rarely seen. The wealth of her hair was platinum-white; her fine skin was white; she wore a fortune in white Callistonian furs. And her eyes, he saw, were a rare true violet.

He hurried on, to pass her.

She was utterly beautiful. Her loveliness set a painful throb to going in his throat. He could not help a twinge of bitterness, at thought of the double barrier between them—her obvious wealth and reserve, and his own more-than-desperate situation. If he had been some idle billionaire, he was thinking bleakly, perhaps returning from his colonial mines and plantations, she might have been waiting for him—

His heart came up in his mouth.

For the girl was coming swiftly toward him, across the vast, gold-veined emerald that floored the entrance. The white perfection of her face lit with a welcoming smile. Her eyes were warm with recognition. In a joyous voice—but one too low for any other to hear—she greeted him by name:

"Why, Chan! You're Chan Derron!"

Rooted with wonder, Chan shuddered to those syllables that made his body worth a quarter of a million dollars, living or dead. The smile of admiration congealed on his face. Moving with the weightless life of a flame, the girl came up to him and eagerly seized his nerveless hand in hers.

VII.

THE SALONS of chance occupied a series of six immense halls radiating from the private office of Gaspar Hannas, which was situated at the very center of the New Moon's metal star. The walls of the office were transparent from within, and Hannas, from the huge swivel chair within his ring-shaped desk, could look at will down any one of the halls.

They were huge and glittering rooms. The walls bore expensive statues, expensive murals, golden statues set in niches. And the polished floors were covered with thousands of tables of chance.

Beneath each hall ran an armored tunnel, unsuspected by most of the players above, where their losses were swiftly examined for counterfeit, counted, tabulated, and dispatched to the impregnably armored treasure vault beneath the office of Gaspar Hannas. A continuous tape, fed through a slot in the circular desk, revealed minute by minute the New Moon's gains and losses. The losses were all printed in red, but there was very seldom any red in the totals.

"The laws of probability," Gaspar Hannas always insisted, smiling his fixed and mindless smile, "are all I need. Every game is fair."

And cynics, it had been suspected, were apt to find their doubt very unexpectedly terminated in the Hall of Euthanasia.

The six halls, this night, were more than commonly crowded. For the whisper of the Basilisk had run over all the New Moon, and a great many thrill seekers, in their gayest silks and jewels, had turned out to see what would happen at midnight. The play, however, as recorded on the endless tape, was very slow—too many had heard that it was the highest winner whom the Basilisk had promised to rob and kill.

But Gaspar Hannas, tonight, was not watching the tape. He was walking with the three legionnaires in mufti, through the Diamond Room, where no limit was placed upon the stakes. Hal Samdu, in his great gnarled hand, carried a tattered notice of reward.

"This convict, Derron," he insisted. "He's your Basilisk."

And he refreshed his memory, from time to time, with a look at the bronze-haired, space-tanned likeness of Chan Derron.

"Yonder!" Jay Kalam paused abruptly. "Derron was a big man. There's one as big."

They followed his grave dark eyes.

"Ah, so!" Giles Habibula was puffing mightily, from keeping pace with Hal Samdu's impatient stride. "A majestic figure of manhood. And 'tis a mortal lovely lass at his side!"

The man stood like a tower above all the restless, bright-clad players. His hair was dark, dark glasses shaded his eyes, and his skin had a singular pallor. A long scar marred his face.

The blond girl beside him was equally striking. With a queen's proud grace, she wore a lustrous cloak of priceless white fur. A queer white star-shaped jewel—it looked, Jay Kalam thought, like a hugely magnified snow crystal—hung at her throat.

"Six feet three!" Hal Samdu caught a gasping breath, and the poster trembled in his mighty hand. "He can't hide that—and the paleness and the dark hair and the glasses could be disguise!" He beckoned to one of the legionnaires in plain clothes, trailing unobtrusively behind. "We'll arrest him, and soon find out."

Jay Kalam's head shook sharply.

"Shadow him," he whispered. "But if he is Derron—and the Basilisk—we must see more of his methods. Meantime—"

HE breathed something to Giles Habibula.

"In life's name, Jay!" The small fishy eyes of the old man rolled at him, startled. "Don't ask me that! Don't command a poor old soldier to give up his very blessed life!"

"Remember, Giles." Hal Samdu caught his shoulder. "It's for the safety of the System—for Aladoree."

Giles Habibula winced and heaved himself away.

"Don't mangle me, Hal!" he gasped. "For life's blessed sake! Of course I'll do what Jay desires. Aye, for Aladoree!" He turned ponderously to the white giant in black. "Ah, Mr. Hannas," he wheezed, "now I must have your order for a thousand blue chips."

"A thousand! A million dollars' worth?" The idiot's smile stiffened upon the face of Gaspar Hannas, and he looked protestingly at Jay Kalam. "Commander, this is blackmail!"

"No blacker," whispered Giles Habibula, "than the bloody career of Pedro the Shark!"

"I'll give it to you!"

Clutching the order, Giles Habibula waddled toward the table. A smart jab with his cane, in the ribs of a purple-clad woman as corpulent as himself, made him a place beside the green-cloaked giant and the girl in white. He presented the order to the startled croupier.

"A thousand blue chips, croupier, or a hundred of your mortal diamond ones!"

He turned to the pale tall stranger.

"Begging your pardon, sir," he wheezed. "But my poor old hands scatter the chips, they tremble so. And your blessed touch, I observe, brings luck to the lovely lass beside you. Would you kindly place my bets, sir?"

"If you like." The big man relaxed. "How much are you playing?"

Giles Habibula gestured at the stacks of his chips.

"The million," he said. "On thirty-nine."

Even here in the Diamond Room, such a play made a stir. Spectators crowded up to watch the wheel. With his small eyes half closed, Giles Habibula watched the croupier flick the ball into its polished track, and then lift his hand dramatically over the wheel.

"Eh!" he muttered. "Not when old Giles plays!"

He turned to the man and the girl.

"Thank you, sir!" he puffed. "And now we await the turn of luck—or skill!" His leaden eyes lit with admiration of the girl's proud grace. "A lovely thing!" he wheezed. "As lovely as you are, my dear—that blue tapestry from Titan!"

His cane pointed suddenly across the table, held with an odd sure steadiness in his pudgy yellow hands, so that its polished green head was precisely opposite the upflung hand of the croupier, across the wheel.

The croupier gulped and turned white. His hand dropped, dramatically, as he followed the racing ball.

"Ah, and the golden nymph!" The cane fell, precisely as the hand pointed to a statue in its niche. And the quick eyes of Giles Habibula came back to the girl in white. "Dancing as you must dance, my dear!"

The croupier stood trembling. His pale face ran sudden little rivulets of sweat. And the clicking ball fell at last into the slot. Blank, distended, stricken, the eyes of the croupier came up to the seamed yellow face of Giles Habibula.

"You are the winner, sir," he croaked. "At forty to one!"

"Precisely," agreed Giles Habibula. "And none of your mortal chips or scrip—I'll take my forty blessed millions in good new Green Hall certificates."

The trembling fingers of the croupier tapped the keys before him, and presently a thick packet of currency popped up out of the magnetic tube. While hushed spectators stared, he counted out forty crisp million-dollar bills.

Trembling suddenly as violently as the other man, Giles Habibula snatched up the forty stiff new certificates. He swung hastily, and his fat arm struck the pale man in green, and the bills all scattered out of his hand.

"My life!" he sobbed. "My forty millions! For Earth's sweet sake, help a poor old man to save his miserable mite!"

After the first awed moment, there was an excited scramble after the bills. Giles Habibula, stooping and snatching, fell against the tall man. The stranger thrust a sheaf of money into his hands, and helped him back to his feet.

"Ah, thank you, sir!" Small eyes glittering, he was avidly seizing and counting the returned bills. "Thank you. Thank you mortal generously, madam!" He heaved a vast sigh of relief. "Ah, 'tis all here! Thank you!"

HE WADDLED triumphantly back to where his three companions were ostensibly watching another table. Ignoring the peculiarly pale and sick-looking smile on the face of Gaspar Hannas, he dropped something into Jay Kalam's palm.

"Ah, Jay," he panted, "it cost me mortal peril—aye, and the last desperate exertion of my failing genius—but here are your suspect's keys and his reservation check."

"Mortal peril?" echoed Gaspar Hannas, faintly. "It cost me forty million dollars!"

The commander studied the little oblong of yellow card.

"Charles Derrel," he muttered. "Marine biologist, from Venus." His dark eyes narrowed. "It's just a temporary check—'original mislaid.' And the name—Charles Darrel and Chan Derron!"

Hal Samdu's great fists clenched.

"Aye, Jay!" he whispered. "Shall we arrest him now?"

"Not yet," said the commander. "Wait for me here."

He walked quickly to the table, and touched the tall man's arm. The stranger turned very quickly to meet him. And the sharp-checked jerk of his arm told the commander that some weapon hung ready beneath the green cloak.

"These were dropped when the money

was being picked up, just now." Jay Kalam allowed a glimpse of the keys and the yellow card. "If you can identify the check—"

The stranger stared through his dark glasses, speechless. But the girl stepped forward. Her gracious white arm slipped through the stranger's. And she gave Jay Kalam a face that took his breath.

"Of course he can." Rich as a singer's, her voice was quick and positive. "Or I can identify him. Sir, this is Dr. Charles Derrel. Recently from Venus. My fiancé."

"Thank you." With a sudden intense effort of memory, Jay Kalam studied the girl. "Who, if I may ask, are you?"

The proud, impersonal violet eyes met his.

"Vanya Eloyan." She spoke as if she were saying, "I am the empress of the System." "From Thule."

The commander bowed, and dropped the card and the ring of keys into the stranger's powerful hand. The girl smiled dazzling thanks, and then took her companion's arm and turned him back to the table.

RUBBING thoughtfully at his lean dark chin, Jay Kalam found his own companions at another table, where the wheel paid one hundred to one. Giles Habibula, his moonface intent, was pointing with his cane, across the spinning wheel, toward the stupendous magnificence of a mural depicting the old Moon's cataclysmic doom.

The croupier behind the table, with a desperate illness in his eyes, was staring slack-jawed at Gaspar Hannas. His hand moved, in a convulsive gesture, to mop his brow. And the old man's cane moved swiftly also, pointing.

"And there," he wheezed, "stands the blessed figure of Aladoree!"

"Restrain yourself, Habibula," rasped Gaspar Hannas. "Or you'll destroy the New Moon as surely as she did the old! For honor's sake—"

The number fell.

The croupier's mouth opened in a strangled moan. He gulped, and made a helpless little shrug at Gaspar Hannas.

"You are the winner, sir," at last his voice came squeakily. "Twenty million, at one hundred to one. You have won two billion dollars!" He tapped uncertainly at his keys. "We'll have it for you in a moment, from the vaults."

The great white hand of Gaspar Hannas caught the old man's cloak.

"Habibula," he croaked huskily, "have you no mercy? In honor's name—"

The fishy eyes of Giles Habibula blinked reprovingly.

"Ah, me! But that's a mortal strange word to hear from you, Gaspar Hannas! Blessed little honor has been found in anything your foul hands have touched, in the forty years that I have known you." He turned back to the table. "I want my two blessed billions!"

In hundred-million-dollar Green Hall certificates—the first his blinking eyes had ever seen—his winnings were pushed toward him. With that amazing quick dexterity that his fat hands sometimes displayed, he shuffled through them to check the count.

"Pedro," he wheezed sadly, "you shouldn't begrudge me this—not when all your New Moon's splendor is built upon the cornerstone of my poor old brain. For I find you still using the same simple devices I invented for the tables of the Blue Unicorn!"

He patted his crackling pocket, contentedly.

" 'Twould serve you right, Hannas—aye, mortal justly—if I played all the night. Ah, so! Even if I broke your New Moon, and made you beg for the black chip of admission to your own Euthanasia Clinic!

"But I won't do that, Hannas." He swung heavily on his cane. "Because

I'm more honest than you ever were, Pedro—aye, there's a blessed limit to my stealing. Ah, so, one more play is all I want. Just one billion dollars, Hannas, at a hundred to one."

Gaspar Hannas staggered, and his white jaw slackened.

"Habibula!" he husked. "In the name of Ethyra Coran—"

"Don't utter her name!" cried Giles Habibula. "And I'll play two billion—just for that!"

But Jay Kalam touched his arm.

"Better keep close beside us, Giles," his whisper warned. "Move slowly, so that the plain-clothes men can gather in around you. And keep an eye on Dr. Derrel—for you've got just twenty minutes, now."

"I?" Giles Habibula blinked at him. "You make me feel like a mortal convict, waiting for the ray!" He touched his pocket again, with a sidewise look at Gaspar Hannas. "I know he'd slit my poor old throat in an instant, Jay. But surely, with so many of you here, he wouldn't dare. For Pedro was ever a white-livered coward at the core."

"I was speaking, Giles," Jay Kalam told him gravely, "of your danger at midnight, when the Basilisk has threatened to strike.

"The B-B-B-Basilisk?" Giles Habibula stuttered through ashen, quivering lips. "Aye, the mortal Basilisk! You told me he had threatened to abduct and murder some luckless p-p-p-player. But why should he pick on m-m-m-me?"

Gaspar Hannas caught his breath, and his white baby grin seemed for an instant genuinely mirthful.

"Didn't we tell you, Giles?" asked Jay Kalam's grave, astonished voice. "Didn't we tell you that the Basilisk has promised to come at midnight—in eighteen minutes, now—to rob and murder the highest winner?"

"And your two billions, Habibula, are the richest winnings in the New Moon's history." The great voice of Gaspar Hannas had a ring of savage glee. "You are picked to be the victim!"

TO BE CONTINUED.

ROPE TRICK

BY EANDO BINDER

ROPE TRICK

BY EANDO BINDER

A GOOD ROPE ARTIST CAN ALWAYS MAKE A FAIR LIVING—EVEN A CENTURY HENCE!

YOU people of 2039 has axed me to write down my way of looking at this whole thing. Seems to me Doc Meade has writ it up to the gills and anything I say will sound plumb silly. But you has axed for it, which is a expression of my time that meant you will suffer for it. So don't blame me.

In the following account, we have made no changes in the author's original dialect spelling and quaint idiom, except in the case of oral quotation, where, for the sake of clarity, we have substituted correct English.—The Editors; May 15, 2039.)

When I first woke up, I had the peculiar feeling that I was back in the ranchhouse where I was born. But then I remembered that a lot had happened since them days and I jumped up like a scary colt. I recollected so many things that I got dizzy and sat down to figger it out. I was almighty confused. The place I was in looked like a tomb—but what was I doing in a tomb?

First of all I was Breckenridge Wacker. That was a good start. Let's see if I could figger the rest out. I was born in the Texas Panhandle and learned to throw a steer before I was old enough to shoot straight. And rope? Say, they was the time I roped a coyote on the dead run, in the dark. But my buddies said I could throw the bull best of all, which they meant I was superior to them.

In fack, I was so superior to them and the folks down there that I went away seeking my fortune and that's how come I was here, in the long run. But wait, I axes myself, what come in between? I had to go kind of slow, from leaving home to arriving at this musty old tomb.

I recollects how I went around the country, doing a rope act in theaters, startling everybody with my skill. So I decided to crash the World's Fair in New York and taken a train. I didn't have to pay no fare, on account of who I was but I decided to get off at Passaic, New Jersey, and walk the rest of the way for my health.

Here's where *he* comes in, I says to myself, looking over at the body of the old guy next to me. I could barely make out his face from the moonlight coming through a small, barred window. He had a long bushy beard and looked like dead. Dr. Amos Meade—that was his name! It had come to me.

Then I recalled how I happened to walk by his place at the outskirts of Passaic and there he was, treed by a mad dog. I reckon he'd be there yet if I hadn't hauled out my lariat and set that hound down on his haunches so hard it broke his neck.

Doc Meade come down, shaky and relieved, and invited me in for a handout, which means we dined together. Then he showed me his laboratory in the back room, him being a biologist, and explained he had been trying to inoclerate the dog, which had made it go mad.

"Say," he exclaims suddenly, look-

ing me up and down, "you're a strapping big fellow and healthy-looking—hm-m-m!"

"Us Wackers all is," I allowed, "and intelligent."

"How would you like," he says further, squinting his eyes, "to come with me and gain fame and fortune?"

"I'm going to the Fair already," I informed him.

"No, not the Fair," he says, scowling. "To the fu—somewhere else. I really need a sort of bodyguard. Rex was a good dog, but you'll be better."

WELL, I stayed because he taken a liking to me and I could tolerate him and *that's* how come. Now I was pretty well up-to-date in my mind and the rest was easy, unless I was plain loco. A week later Doc Meade made a business trip to New York and came back rubbing his hands like he'd put something over on somebody.

The next night, when it was plenty dark, we druv away in his car. We came to a old cemetery and he druv past it a ways to a crick, stopping on the high bank. Then I know he's plumb crazy because after taking a black bag from the car, he released the brakes and let her dump nose down offn the bank. It made a awful splash but they's no one around to hear anything.

"Dr. Meade drowned!" he remarks. "That's what they'll think. Come!"

We snuck back to the cemetery and he led the way to a marble tomb—*this* tomb. He has the keys, so in a jiffy we're inside and he locks the grating door. I shivered and axes, "Now look here, Doc, what's this all about? How long we going to be in here and what for anyhow?"

"Not long," grins Doc, his face lit by moonlight from the window. He opens his black bag and taken out something. "Only a hundred years!" his grin finishes saying.

"Ouch!" I exclaimed as he jabs me in the arm. Then he jabs hisself with the hyperdermic and explains some balderdash about "suspenders anermation" which I don't pay any attention to. I'm only wondering when we get out on account of it was cold and damp in the tomb.

"We'll wake up precisely in 2039," he mumbles on. "I've figured out the doses from my guinea pigs. We won't be disturbed. I had this tomb built, and I have no close relatives to investigate. Breck, if you're feeling drowsy, better lie down."

Reckon I was, because a few minutes later I stretched out on the cold concrete floor like it was a bed of thistle. I felt like I wanted to sleep for a hundred years.

WELL, PARDNER, them was my reminiscences when I woke up, like I explained. So now I wonders how long we been here. Being night again, we must have slept through the whole next day, in the tomb! Dawn came along right then, while I'm pondering, and lights up the tomb.

The most I was ever startled before in my life was when I stepped into a rattlesnake nest. But now I was plumb flabbergasted, which is a expression of my time which means eggzackly what it says. There was Doc Meade lying with spider webs onto him. Dead flies and moths and things hung all over him. A ornery-looking little spider crawls out of his beard and looks around.

Which reminds me that something's been crawling over me in places so I bresh it off with a yelp—I don't like vermin—and discover I'm naked. Stark, shameful naked. My boots, corduroy pants, striped shirt, hat—the whole works is gone. I looks to where I been lying and see a pile of dust. A pair of rusty things there might be my spurs, I tolerate.

"Hm-m-m!" I says, very thoughtful-

like but not jumping to no conclusions. I reach up my hand to scratch my chin and meet up with half a mattress of hair hanging from it.

"Hm-m-m!" I says again, doing some powerful straining *not* to think.

Doc Meade began breathing slowly, just like that, while I "hm-m-med" a few more times. Pretty soon his eyes open up and stare around like two glass marbles. Then the glaze goes out and he reckernizes me.

"Hi, Doc!" I greets him, feeling kind of glad he's awake.

He bounces up like a rubber ball and *spang!*—he's as naked as the day he was born. All his clothes change to dust and shreds, and dribble down to his toes. A lot of it stuck to the spider webs that he pushed his way out of, like coming out of a cocoon.

"Good morning, Breck!" is the first he says, grinning like a pie-eyed Piute. "Did you have anough sleep—in the last hundred years?"

"Listen, you old bald-headed goat," I retorted, not feeling so amiable. "I ain't believing that! Maybe a month or two, however you done it, but no hundred years."

But my toe is pushing in the heap of dust that used to be my boots. Them boots was good leather. I'd seen good leather turn rotten in maybe ten—fifteen years. But when it turns to dust—

"You'll soon find out," promises Doc Meade. He seems as chipper as a rabbit in a lettuce patch. "Let's go out. No, wait—we'll have to trim our beards somewhat. You look like a wild mustang with that mane of hair you have."

"You don't look like a movie actor yoreself," I gives back.

He picks up one of my rusted spurs. The rowel wa'n't very sharp so he might jest as well have grabbed my hair with his hands and ripped it out. About a hour later we both looked halfway civilized. Getting the rusty old grate door open almost stumped him till I grabbed the bars with my hands and yanked it right offn its hinges. We went out.

The sun felt powerful good on our hides. The cemetery looked neglected, with weeds growing all over. Doc led the way and pretty soon we crawled over a wire fence into a newer section of the grounds, with lots of nice fresh tombstones spread around.

Suddenly Doc says to me, he says, "There you are!" and points at a new grave. The headstone read: "Joshua Rhodes. Born 1988; Died Anno Domini 2039. Requiescat."

FOLKS, they ain't no other feeling like the one I had, looking at that evidence. I'm a calm steady man and I don't get upset easy. Like they was the time Jed Sharpe blew bird-shot past my head accidental, nipping my ear. I only beat his head agin' a hollow log, or the other way around, for a while, calm and dispassionatelike, to teach him a lesson. Doc Meade backed away from me, though, not knowing my peaceful nature.

"Now don't get . . . uh . . . violent!" he chatters, scaredlike. "It's too late to do anything about it now, Breck. I tricked you into this, more or less, but you'll thank me later. What were you in those former times? Nothing but a hick rope twirler in cheap theaters, without a future. Here you'll be a sensation as a man from the past. Both of us. And think of the thrill, Breck, of being in the world of the future, a hundred years ahead of our times!"

"I wa'n't no hick rope twirler," I growls, not liking them personal remarks. "And I was plumb satisfied with them times, too!"

"All right, you were an expert rope artist," returned Doc Meade quickly. "But just think, Breck, what a century of advancement over our times means. This will be a wonder-age! Just as our century was an age of marvels compared to the previous one."

He was trying to mollify me, you see, thinking that, because I picked up a dead tree branch, I was mad. Well, I only wanted to whack it against a headstone for a little exercise.

"O. K., Doc," I grunts, sticking out my hand. "We're still pards." I squoze his hand without thinking, though, till his knees bent. "I'm here, so I'm here. But I reckon I'll never figger out how we could sleep a hundred years without dying of starvation."

"It's a great scientific achievement, of course," says Doc proudly. "You see—"

He went off into that suspenders anermation business again till I run out of patience and told him to shut up. If any of you folks who is reading this wants to know the details of that part of it, you'll have to read Doc Meade's writings. I could never make heads nor tails of it myself. All I know is we fell asleep in 1939 and woke up in 2039, Anny Dominoes.

"What's the plans, Doc?" I axes. "I sure didn't leave my appertite behind. Let's get away from this boneyard and find us some vittles."

"We'll go to the city—New York—and make ourselves known. If the State highway is still where it used to be, we can get a ride perhaps."

WE STRUCK OUT through the woods back of the cemetery toward the highway. Along about a mile the trees thinned and we could see something broad and white ahead. It was the highway, all right. There was some slight changes in it, from what we knowed. It was now ten lanes wide and the cars that druv along it was speeding pretty fast, maybe 150 miles an hour. Doc Meade was kind of gasping. You see, in my time we went a little slower and the highway wa'n't quite so wide. But I think we had better concrete. Yores looks kind of whitish, I dunno.

"Look at that!" cries Doc Meade. "A hundred years of advancement in highway travel right before our eyes. These are the superhighways they vaguely planned in 1939. And those cars are tremendously superior to ours. Isn't it marvelous, Breck?"

Doc always likes to eggzaggerate, so I didn't pay any attention. I just stepped to the outer lane and wiggled my thumb. About ten cars whizzed past before I had wiggled twice. Doc was shouting something but it was drowned out by brakes squealing something fierce. Yore 2039 brakes has a lot more ornery squeal than than they did in my time.

A car stops a hundred feet ahead, while other cars zip around it. It's a long low thing like a bullet, with clear glass all the way around at the driver's head. I see the driver is a young woman. Then I suddenly ketches on to what Doc is yelling from the trees:

"Breck, you're naked!"

I'd plumb forgot that, being so used to it in the past couple hours. You know how a deer can jump?—or maybe deer is extinct today, like wolves and moose. Anyway, I jumped back to the trees, and fast. We hightailed it back deeper in the woods.

"That's out, gitting a lift," I states. "We got to have clothes first. Whyn't you think of that in the first place?"

"We'll go west, toward the farming section," decides Doc. "Maybe we can get some clothes from a farmer."

"What'll you use for wampum?"

Doc opened his right fist. He had a twenty-dollar gold piece there. "I had it in my clothes and took it along in case we needed it for a starter. Although I think as soon as we tell people we're from the twentieth century, they'll be only too thrilled to give us anything we want."

Doc would of liked to take back them words later.

PRETTY soon we come to the edge of the woods and see a farmhouse ahead about a half mile. The farmer is pump-

ing water at the well. We cross a cornfield and stop at the edge, not daring to step out in the clear in case a woman comes out of the house.

"Hey, pardner, come here a minute," I calls to the hombre at the pump. "Please!" I adds, remembering my manners. But he don't pay any attention.

"Stand back," I warns Doc. Then I really lets out a beller, and folks, when I open up thataway, leaves fall offn the trees. Still he don't turn. "Consarn him, he's deef!" I says to Doc.

Doc is staring bug-eyed. "No, not that, Breck," he says excited. "He's—"

Jest then another man steps out of the barn, looking up in the sky, like he thought he'd heard thunder. Then he comes up to us, but kind of slowlike.

"Whirr ya?" he axes, standing like a idjit ten feet away and surveying our nakedness..

"We're from the twentieth century," Doc Meade blats right out, eagerly. "We've been asleep, in suspended animation, for a hundred years. Can you give us some clothing, as we'd like to go to the city and make ourselves known?"

"Hunt yiz?" repeated the farmer dumbly. "Doan blieve such Ripley. Watcha think I am, a fool? Now gudoff my fom. Stoke ya rockets. Gwan!"

For a spell I thought he was talking some foreign langwidge, or had forgot to swallow a mouthful of pertatoes. Let me say right here that you people of 2039 has a awful bad accent. It's sloppy. Whyn't you get better teachers who can teach yore kids to speak right? They ain't nothing riles me more than hearing the English langwidge spoke bad.

"But you don't understand!" bleats Doc Meade. "We're from the year 1939. We were in a tomb in that cemetery—" He went on for a while, but the more he's tryen to explain, the more fishy-eyed the farmer looked. Doc give up finally and played his ace, holding out the twenty-dollar gold piece.

"It's hard to believe, I know, my good man," he sighs. "But at least you'll sell us some clothes, eh? You can have ten out of this twenty dollars."

The farmer taken the gold piece, turned it over, and snorted. Moreover, he laughs. "Gold!" he says scoffingly. He points to some kind of farming machine next the barn, and Doc and me staggers, seeing it's plated with gold all over.

The farmer says, still laughing, he says, "Ocean gold's cheapern dirt, ya know that. Ja gotny *money?*"

They wa'n't any use keeping this up, thinks I at this point, him talking in riddles. "Ever see one of these?" I threatens, stepping forard and planting my fist under his nose. "Oncst I hit a feller so hard it taken him a week to get back, on crutches. Do we get them there duds or air your calkalating to be stubborn?"

I'm a modest man, but I ain't ever yet seen anybody look at my fist, and what it's attached to, without turning pale. This farmer's no exception, 2039 or no 2039. We follers him into the barn, which is shining with gold fittings all over, and comes out in overalls, blue shirts and halfboots. They wa'n't no fit, being like a sack on Doc and tight as yore own hide on me, but they covered our nudity.

Just in time, too, on account of the farmer's wife and about eight kids arriv to see what all the excitement's about. She looks a little scared, since we must have looked like Russians, only half shaved. I bows perlitely and introduces Doc and me.

"Maam," I says, bashfullike, "they ain't nothing to worry about. Yore husband and us was jest concluding some important business." I sniffs. "Do I smell cooking? Now I was jest thinking—"

"Have suthing tweat with us," invites the farmer promptly, still looking at my fist. "Oh, scuze me, while I

rheostat Oscar." He taken a gadget out his pocket with dials and twiddles them. The pump stops squeaking and I see the guy there turn around and walk toward us.

Only it ain't a guy, it's a robot! No wonder he couldn't hear me before, being made to do things by the gadget control. He stumps up, clanking like a old Ford. For a minute I reckon the farmer was fixing to sick him onto me, so I put a hand on his shoulder, gentlelike. He winced and turned his dials again. Oscar walks past, kind of glaring at me out of his shiny glass eyes. I glares back. He climbs onto a machine with a plow back of it and soon he's chugging away, out to the fields.

Doc Meade is clapping his hands like a little child. "Wonderful!" he exclaimed. "What mechanical advancement! There's proof, Breck, of this age's superiority—mechanical men for heavy labor."

"I still like 1939 better," I mutters. "When men was men. Robot-things jest ain't right, nohow. I'm hungry," I adds, setting the lead to the house.

ABOUT A HOUR later I pushed the table away from me, sighing heartily. The rest was all done eating and the farmer folks was staring at me like I was a freak.

"You gets pretty hungry after a hundred years," I apolergizes.

Doc hadn't et much. He was too excited. "What a wonderful age!" he says for the umpty-umpth time. "Robots to ease mankind's physical burden! Gold-plating, beautiful and lasting, over all metals. Feel how cool it is in here, Breck? That's an air conditioner there in the corner. People must be so happy in these times—"

Jest then the farmer, who had opened some mail, let's out a groan. "The finance compnee again!" he bleats to his wife. "Nother payment due on Oscar. Oh, such hard times—"

"What did you say?" I grins at Doc. "Peers to me I've heard them kind of sentiments before. What a wonderful age, eh?"

Still moaning around, the farmer snaps on something in the corner and they comes images on a big glass screen. A guy's face talks and then a orchestra appears and makes nice music.

"Television in the home!" chortled Doc triumphantly. "Even farmers—"

"Still owe two hundred on this!" bleats the farmer again. "Hockuna meet ma bills? Top of that, strangers come and WPA me—"

"Come on, Doc," I says, feeling sorry. "This feller has his own troubles. We'll go to the city. Thanks much, pardner." And we scoots.

"WHAT WE going to do when we *git* to the city?" I axes, out on the highway, thinking about it seriously for the first time. "If that farmer didn't cotton to our explanation, who will in New York? City folks is powerful hard-boiled."

"You leave that to me!" returns Doc confidently. "I'm not as dumb as you look, you know."

Which satisfies me. A hour later a traveling salesman taken us to New York, driving no faster than 200 miles a hour on straight stretches. Right off the bat he begins springing the latest jokes, and I looks at Doc and Doc looks at me. We heard all them jokes a hundred years before, every consarn one!

The driver pays a dollar toll and we taken the new Franklin Delano Roosevelt Bridge acrost the Hudson River. On the other side we see two big boats docked, one twice as big as the other.

"First time in New York?" inquore the driver, in yore hot-potato accent which I gives up trying to reperduce any further on paper. "That's the *Columbia*. The smaller one beside it is the *Queen Mary Second*."

"Oh," gasps Doc Meade. He looks

ahead. "Where's the Empire State Building?"

"Why, want to buy it?" grins the salesman, sourcastic, like they all is anyhow. "Can't see it from here. It's just behind the Everest Building, tallest in the world, two hundred fifty stories."

"Uh!" gulps Doc. "Glory, how things change! Now in 193—*ulk!*"

That last is the kind of noise Doc makes when I squeeze his leg till my fingers meet. I figgered no use letting everybody think we're loco. We look at the city. New York don't look like the pitchers I seen of it, eggzackly, in 1939. It's got a lot of extry junk, like a steel spider web, all over it.

"Elevated traffic spans!" says Doc, ecstaticlike. "And pedestrian-walks in the air. And look there, Breck, a regular sky-harbor for aircraft!"

I never seen so many airyplanes before, settling and rising from a big platform hooked onto a dozen big buildings.

"The wonder-city of the future—our future!" Doc was murmuring, like he does most of the time in an undertone. "It's magnificent, glorious, breath-taking—" He run out of sech ajectives a few minutes later.

I dunno. It all looks kind of mixed up, yore 2039 New York. I bet you don't know what yore doing half the time, with all them things going on to oncst. Now in 1939, things was all orderly and efficient. Back in them days, a body didn't have to keep looking up in case one of them airyplanes flopped down onto yore head, or whatever.

And yore loco system of tiers. It's plumb disgusting. The salesman left us off, and we find we're on Tier 6. So we taken a elevator down and get out and find we're still in the air, on Tier 5. We taken more elevators, till I calkalate we're about at the center of earth by now. But it's the ground level with trucks and taxis skittering by like mad.

"Where to?" I axes Doc. "We don't want to git too deep into this mess, or we'll never git out again."

"To the nearest policeman for directions—" Doc lights out for a traffic cop at a intersection. We like to got killed before we squoze through the cars to where he was.

"Can you direct us to the Midcity Trust and Bank Co.?" Doc wants to know. "Is it still at Seventh and 53rd?"

The cop answers only after he gives us the once-over and grins at our hayseed riggings. "It was there this morning. Going to walk? Take the short-cut—Tier 3, P.W. 4, turn to your right." He turns. "Hey, you Charlie McCarthy—you in the blue sedan—where do you think *you're* going—"

Traffic cops is all alike, today and in my time. Always perlite. And always giving you the wrong directions. After walking our legs nigh off, and risking our necks on those perdestrian-walks forty miles above earth, we find we're further away than when we started. So we taken a taxi. That was Doc's idea.

"Wait here," commands Doc to the taxi driver when we stop in front of the right building. We go in and the place is like a fairyland, much cooler than outside, and with fountains, shrubs, and pretty pictures all over. They is perfume and soft music in the air, much to my disgust. Sech things is only for dudes, not for a man from my vigorous times.

It turns out that Doc demands to see the president of the bank! After a hour argying with numerous and sundry hombres, with him shoving me back ten times when I would of cracked a few sassy heads together, Doc wins his point, but we still has to wait two hours more outside the prexy's office.

I give a convulsive start suddenly, while we're waiting. "Hey, Doc," I reminds him, "that taxi man's still outside. The bill must be higher than blazes by now. And us with no money!"

"Never you mind," retorts Doc confidently, patting his bald head like he was complimenting hisself. "When we walk out of here, we can buy out the taxi and the company that owns it!" Which don't make sense to me.

WE GO in the prexy's office finally. Mr. Henshaw, the president of the bank, is a runt with a waxed mustache. "I'm a busy man," he snaps. "Come to the point."

"There's an account in this bank, deposited in 1939 by one Dr. Amos Meade," begins Doc. "The original amount was ten thousand dollars, in gold bonds. Certain legal attachments specified that it was to be left to accumulate, at 7% compound interest, for a hundred years, unless claimed by direct descendants of Dr. Meade, or Dr. Meade himself."

"How do you know all that?" axes the president, glaring in amazement. "Who are you?"

Doc Meade drew himself up pompously, farmer clothes and all. "I'm Dr. Amos Meade!" he declares. "Through a method of suspended animation I, and my friend Breckenridge Wacker here, survived a hundred years. Since I was unmarried and have no direct descendants, the money reverts to me!"

"You . . . Dr. Meade . . . suspended animation!" gasps the prexy. "Preposterous! Ridiculous! Practical jokers, eh? Get out." He looks us up and down like we're a couple of vermin. "Crazy mad!" he finishes.

I taken a step forward to wipe the leer off his face, which I don't cotton to, but Doc drags me back. "No roughhouse, Breck. I'll take care of this matter. Now look, Henshaw——"

Jest then the desk phone rings. Henshaw listens a while, and a peculiar look comes onto his face. Then he hangs up and smiled friendly—too dern friendly.

"Sit down, gentlemen!" he invites graciously. "I'll take care of you in a moment. In a moment!"

We sit down. Doc is happy. "Just a little provision of mine, Breck," he purs, proud of hisself, "to assure us of a tidy little sum to live on in this future age. That ten thousand dollars has grown to at least seven million eight hundred thousand dollars!"

WE LOOKS UP as the door opens and in busts a bank official and with him is a dozen men in uniform. Cops! "There they are!" points the official accusingly.

The police captain nodded. "They're the same two described by the farmer, robbing him of clothes this morning, under threat of assault." Henshaw then pipes up and tells his story, and the captain shaken his head. "Trying some new kind of racket, or else they're phobiacs. Come along quietly, you two."

"Wait!" shrieked Doc Meade as a cop lays a hand on his arm. "You're making a mistake. I have proof that I am, who I say I am. Henshaw, lockbox 44-b-1888 contains my fingerprint records. All you have to do is match them and——"

"Oh, take the lunatic away!" snapped Henshaw.

The cops advance on us, and at this point my dander riz up something fierce. I decided to stop all this foolishness. I shoved the cops back. "Listen here!" I roars. "We're telling the truth. You has to believe we're from 1939. I serves warning here and now that if—"

Well, I'm a plumb peaceful man, but when one of the cops snuck up behind me and broke his stick over my head, I see red. I rammed my elbow back onto his jaw, knocking him out. Then I go for the other cops, determined to prove we air two peaceable and honest gents and not lunatics.

Then all to oncst I felt all my bones turn to jelly and I folded up on the floor like a empty sack. The captain

was pointing a affair at me like a big-barreled six-gun that sparkled. Later I found out it was one of them shock-guns the cops is armed with, which sprays out electricity and paralyzes most of a man's muscles.

They carry me out, and drag Doc Meade along. I'm still plumb mad, but helpless. All I remember distinctly is that taxi driver outside the bank, yelling for his fare, which the captain tells him to forget it. Then they is the ride in a barred paddy-wagon, with me fuming, and Doc Meade looking at me sad and dispirited. We air in some almighty Dutch.

And it is about this time we realize it ain't so easy to come from a past age —and prove it. Like I told Doc later, supposing in our day someone had appeared and claimed to be from *1839*, would we of believed him? Especially if he ran in a bank in farmer clothes and demanded eight million dollars! They is jest natchally a limit to things.

I SKIP OVER the lurid details of what went on at court. That dern paralysis finally left me, but I was stiff and sore. We was booked for petty larceny, disturbing the public peace, and resisting arrest. The judge said, "Sixty days!"

"Same old world," says I to Doc, having been in 1939 jails for sechlike trivial doings before. Like they was the time —well, never mind.

"It's all your fault," says Doc bitterly. "With your caveman tactics. I wish I'd left you back in 1939. Now we'll cool our heels in a jail for two months. What a disgraceful début into this age!"

I was remorseful, but it was too late, and that was our first day in 2039. I ain't got much to say about it now, but you people had ought to hang yore heads in shame. We gets throwed into jail first off, jest for telling the truth and sticking to it. That ain't justice like we had in 1939.

The jail had me plumb perplexed. It was more like a big hotel, with no bars on the windows and all the comforts of home. Our rooms was big and airy and the food tolerably good, though the portions was small. They was a swimming pool, library, and you wore regular clothes, no striped outfit. They didn't shave our heads, either, but we finally got our beards clean off and felt more human. The guards had no guns and treated all us prisoners perlitely. They was even movies in the evening. "Three-dimensional," Doc called them. It was like seeing real things, instead of images.

Me and Doc learnt a lot about 2039 from the movies, which was mostly of a educational type. We see yore big atomic-power generators, stratosphere ships, and how you get gold and other metals out of sea water. Doc has fits as per usual, over them things, especially when they shows how sech diseases as tuberculosis, cancer, and syphilis has been practically wiped out.

"Breck, science has advanced a lot since our day!" says Doc, rapturouslike. "All the things we dreamed of in 1939 have come true!"

"Aw, it ain't so hot," I snarls. "These times may have a few things over our times, but they ain't no justice. For instance, what air you and me doing in jail? Now—"

"Why, this jail is an example alone!" pursues Doc. "You've noticed that the prisoners are not treated like culprits, but like men who have just made human errors. The whole atmosphere here is psychologically uplifting. The criminal warp is straightened out, by good treatment. The movies they see, giving an inspiring view of civilization, tend to make the prisoners see it as a wonderful world to live in if they only conform to its laws and letters. I'll bet the majority of men who go out

here lead decent lives from then on!"

Then he sighs. "Still, nice as it is, I don't care to be here. It's the ignominy of it." He begins pacing up and down, restlessly. "They wouldn't keep us here if they knew who we were. If I could once get among my own kind, among biologists, they'd believe me. I used to do research up at Medical Center—"

"Consarn it, let me get a word in edgeways," says I. I looks around carefully, to see no one else can hear, and whispers, "I was jest going to tell you that I noticed something. They ain't no barred gate to this jail. And no guards on the grounds, outside!"

"The honor system," Doc explains. "Prisoners are shown that they aren't under eagle-eyed surveillance. It tends to build up their self-respect and—"

"So what," I seggests, "is to prevent us walking out, jest like that?"

"But, Breck—"

"You wants to git to Medical Center and prove who we air, don't you? We been here three days, that's enough. Come on, Doc, I got it all figgered out—"

HE LOOKS kind of dubious, but finally agrees. It was a easier jailbreak than the time I busted through the side wall of the Hoss Creek clinker. We jest strolled in the shadow of a wall till we come to the gate and kep on strolling. I heard a kind of click behind us but didn't pay any attention. It was broad daylight and we mingled with the crowd on P.W. 5G, laughing up our sleeves.

"That was so easy I'm ashamed of myself," I chuckles.

"Maybe it was *too* easy," murmurs Doc.

When we come to the intersection where P.W. 5G runs into a lot of other walks going all whichaway, we hears a public newscast going full blast. The screen shows shots of armies marching and the commentator's voice blares out.

"Unrest in Europe over troop movements. All the Big Powers, rearmed to the teeth, watch each other like cat and mouse. A war, if it came, would be more fearful and destructive than the All-Nations War of 20 years ago. War clouds hang over Europe—"

"I'll be darned, are they *still* going at it over there?" I comments, plumb disgusted with them foreigners and their goings-on.

"And now the latest sports results," says the announcer's voice as we walk under the screen. "One moment, please," he adds. "Flash! Two prisoners just escaped from the Midtown Detentarium. Dr. Amos Meade and Breckenridge Wacker, attention! The warden requests that you return. If not, you will be apprehended."

And derned if that screen don't suddenly flash out in a still, showing me and Doc as plain as the nose on yore face to all the people around. It *was* too easy, at that. They're pretty slick, all right, with that photoelectric gadget at the gate that snaps you leaving and sounds the alarm.

Doc give a start, turned pale, and made a break to run like a wild rabbit. I grab his arm. "Stay put, you fool!" I whispers. "That'd give us away. Jest saunter along like we don't know what it's all about. Them's bad pitchers of us anyhow."

All's well and good except that they is more to their tricks. A figger that has been standing quiet under the screen comes to life all at oncst and makes a beeline for us. I see it's a robot, clanking and jingling like a cement mixer.

"Halt!" it grinds out, "in the name of the law!"

That give us away and all the people turn and stare at us, backing away, and three cops run out of their booths and converge on us. And danged if that robot thing don't grab my arm, while

I'm looking the situation over. Impulsively, I turns and cracks the robot in the head, but it don't register, except to make my hand numb to the elbow.

"We're caught!" moans Doc Meade, shivering and cowering.

"Like h—l we air!" I cries, seeing red. "Look here," I says to the robot, "unhand me or else!" The thing only looks at me like a dummy and squeezes my arm tighter.

Well, I goes into action and I ain't seen the man, beast or robot yet could stand up agin' my righteous anger. I wrenched that robot's hand loose and taken his arm in my two hands and twisted it in a loop. I did the same to the other arm.

"Think yore as good as a man, hey?" I taunts. Then I grab him around the head and throwed him over my back, down onto the sidewalk. It was like ten tons of junk landing, and all kinds of wheels and springs bust outen his sides and roll around. All the people watching gasped and look at me like they don't believe it.

I give it a extra kick in the side—I hate vermin and robots—grabbed Doc's hand and we run down the nearest P. W. and get onto a elevator, six jumps ahead of the cops. I taken that elevator down myself, when the operator sassed back. I git out at Tier 2 to fool the cops, where cars is scooting by like comets.

"Medical Center!" pants Doc. "We must get there . . . only chance . . . . ohhh . . . the police again—"

THEY was streaming out of the elevator, a dozen of them. It was a blind coulee, blast it, with no way to retreat. They wa'n't no taxis on this tier, only private cars, so I dragged Doc to the parking lane. Some people is jest fixing to git into their car, but I shoulders them aside

"Excuse us, pardner!" I yells perlitely as I yank Doc in. I'm in the driver's seat but don't see no driving gear except one stick like a gearshift.

"You don't know how to work one of these things!" groans Doc, scrambling to git out.

I grabbed him back. "I watched that there salesman," I says. "Hang on!"

I press the button at the top of that lever which starts the powerful engine. Then I push the stick forard and the car jumps forard, ramming the next parked car out of the way. I pull the stick to the left and the car goes that way, out into the slow lane.

"That's all they is to driving one of these here contraptions," I informs Doc confidently. "Whichever way you pull the stick, the car goes. And the farther you pull, the faster."

To demonstrate, I shove the stick forard and the car jumps ahead like a bullet. I whisk into the fast lane and let her rip. We has slipped away from the cops, and at the next intersection, I turn right. For a minute I was plumb scared, feeling with my foot for a brake pedal that wa'n't there. Then I recall the brakes come on automatic when you return the stick to neutral. Still, we went around that turn on lessen three wheels.

Doc finally figgered out directions and we headed uptown for where Medical Center used to be, if it was still there. The way led down to ground-level Broadway. I reckon I druv pretty good, all things considered. I didn't knick but three or four fenders and swiped one running board clean off, but they should of watched where they was going. You has very careless drivers in 2039.

"Keep your eyes off the sidewalks," admonishes Doc, seggestively, as though I'm looking there.

I kep wondering, though, how women could wear sech short skirts, halfway above their knees, without most of them being the worse off, till I saw a big billboard which says: "Girls—why have knobby knees? Or thick ankles? Plas-

tic Surgery Incorporation will correct that, painlessly, completely. Special bargain rate this week."

"Same old world," says I, "in more ways than one."

MEDICAL CENTER was still there, on the river, and twice as much of it, according to Doc. We inquore inside, Doc fidgeting impatiently, and finally we was ushured into the presence of Dr. Joel Pench, research biologist.

Doc started right in eagerly, and give the whole story. Dr. Pench looked kind of shellshocked. "Don't you believe me?" bleats Doc. "You must! Listen, I did research here at Medical Center in 1932. I can name half the staff of that time, and your records will prove I'm right!"

Dr. Pench put his fingertips together, eying us. "I've heard of you two, over the newscasts," he says slowly, like he ain't committing hisself as yet. "Pardon me, just a moment."

He come back in a few minutes with ten husky young internes at his back and another sawbones, a psykitrist.

"Tell your story to Dr. Pearson," says Dr. Pench sweetly.

Doc goes through the dismal details again, thinking he was getting somewheres. Dr. Pearson stroked his beard all the while in a way I didn't cotton to. I see them young internes trying to keep from grinning.

When Doc finishes, Dr. Pearson shaken his head sadly.

"A clear case of paranoia, with delusion of a life in the past," he murmurs. "And the other, the big one, must have complications of homicidal mania, to judge by his previous actions." He turns to his men. "Take them to Ward 6B, boys."

The internes advance on us, with a strait-jacket and some rope, and at this point I feels they is need of my intervention. "Looky here, fellers," I grits out calmlike. "If yore fixing to lay a hand on me or my pardner here, I cain't promise what'll happen."

"He's the dangerous one, boys!" pipes up Dr. Pearson. "Tackle him first."

They come up friskily, like they'd handled many a maniac in their time. One of them vermin grabbed my arm. I shaken him off so hard he fell agin' the wall with his head and said, "Wug, wug, wug!" Then I taken the nearest two by the scruff of the neck and banged their heads together and flang them among the others, bowling them all over.

"Stop, you idiot!" I hear Doc Meade entreat from a corner where the other two doctors was, too, but I'm past sech admonitions.

They was pandymoanyum for a while, I allow. If I was a short-tempered man I'd of been inclined to violence. The internes was cursing and grunting and trying to git at me, but I fit them off. I pulled my punches, too, on account of I has respect for the medical perfession. I didn't knock but three of them out.

Still they come at me, grimlike. Seeing they was determined to start trouble, I figgered they was nothing left to do but start manhandling them. They is a saying down where I come from in Texas that they's only two things worse than a mad bull—a cyclone and Breck Wacker on the rampage.

Good thing I'm a mild-tempered man. I only throwed them, one after another, agin' the wall, gentlelike so as not to hurt them. Suddenly cops busted in, looked around amazed, and one of them jerked out his shock pistol and aimed it at me. I ducked aside but got the charge in my left leg a bit and went down like a poleaxed steer.

But it still took them ten minutes before they could quiet me, with a cop each sitting on my arms, legs and stomach.

"Back to jail!" says the captain, glaring down at me on the floor. "Jail-

breaking, stealing a car, leaving the scene of an accident, demolishing a Federal robot—you'll get a pretty stiff sentence out of this, you maniac!"

"Exactly—maniac!" chirps Dr. Pearson. "This man will not go back to jail, captain. He's going into our mental ward, in a padded cell!"

"Oh! oh! oh!" Doc Meade was wailing. "Breck, now we are sunk! We'll *never* get a chance to prove our identity, locked up in this institution! Oh! oh! oh!"

That made me so plumb disgusted that I got mad for the first time and riz up like a wounded grizzly, upsetting the cops holding me down like they was bags of feathers. I got my back agin' the wall so's I could stand with my weak leg and bellered for them to take me, if they could, dead or alive.

The captain simply aimed his shock gun at me—

Well, in that moment I realizes, before it came, that me and Doc is about sunk, with nobody believing us, neither the scientific authorities, the police authorities, nor the bank people. I begin to wonder if maybe in 1939 we had people in jail or a nuthouse. But no use thinking. The captain is squeezing his finger and I'm about to git it. And me and Doc has come all the way from 1939 jest to help fill a 2039 institution—

JEST THEN somebody busts in, yelling his head off. It's Henshaw, our banker friend, of all people. He passes a hand acrost his eyes at the ruins of furniture and men and then shaken his head at the captain not to paralyze me.

"These men are telling the truth!" he cries. "They *are* from 1939! The matter preyed on my mind, since they visited me, so I took Dr. Meade's fingerprints out of the lock-box he specified and took them down to the jail to check them with his fresh prints. They are the same!"

The cops fell back, mouths open. The internes, those that was conscious, stopped groaning. Dr. Pench and Dr. Pearson looked at Doc Meade like he was a ghost. They wa'n't a sound in that room for a minute.

Then Doc Meade struts out onto the middle of the floor, proud as a bantam. He looked around like a king surveying his disgraced subjects. "Of course," he says, condescendingly, "we won't press any charges against any of you for false arrest, or manhandling our persons—"

"Manhandling *your* persons!" gasps one of the internes, going limp.

The cops file out now, disappointed that we ain't criminals, and the internes leave, groaning and staggering, and the excitement is over—almost. They is only one thing left to tell about. I been keeping myself in the background in what I writ so far on account of my modesty. But, hell, I got to git in here somewheres.

The two doctors and Henshaw is questioning Doc Meade eagerly, now that they know who he is. Dr. Pench goes into the next room for a book to look up Doc Meade's record from a hundred years back, and lets out a piercing shriek from there. We go to look and it turns out Dr. Pench has been cornered by a maniac, who escaped while all them internes was away from the ward. A real mania this time, and with a fire ax in his hands!

"Dr. Pench is going to be murdered before our eyes!" moaned Dr. Pearson. The maniac was brandishing his weapon over Pench's head and evidently gitting a kick out of seeing him wince.

"Do something, Breck!" urges Doc Meade, shoving me forard like I should tackle a man with an ax and a dern mean look in his eye. I'll break the bones of any man calls me a coward but that there situation had me plumb stumped.

Then I spies the rope in the corner them internes left that they been fixing

to tie me with before. I has it in my hands and make a slipknot loop in no time. I bust into the other room twirling the loop around my body like us experts do.

"Stop!" says the lunatic, turning and waving his ax. "I'm going to split the doctor's head open. He thinks I'm crazy. I'm Napoleon. Who are you?"

"Breck Wacker, from 1939," I says to humor him.

"Crazy, eh?" he leers. "Now go away or I'll—"

He waves his ax in my direction. But he is also watching me make the rope talk. I twist it up and down like a live snake and jump in and out of the loop and almost forget about Dr. Pench, thinking about old times. But then he moans, and seeing I has the full interest of the maniac, I lets fly. I flang that rope slicker than I ever tossed one in 1939 and afore he knew it, his arms was pinned to his sides. The ax dropped. I hogtied him so fast I bet I beat the world's record.

"Y-you saved my life!" stutters Dr. Pench, wiping his bald head and gitting up.

"You're a wizard with a rope!" praises Dr. Pearson. "You could make money on the stage, demonstrating your ability. And of course you'll need some."

"Money!" snorts Doc Meade. He turns to the bank president. "Henshaw, you can make any cash installment arrangements you wish, with the seven million eight hundred thousand dollars your bank carries for me."

"Oh, about that," says Henshaw. "You see, when the gold market collapsed in 1977, with the production of cheap sea-gold, all gold bond holdings devaluated accordingly. Yours too, naturally. Your account is worth today —let's see—about two thousand five hundred dollars."

DOC MEADE recovered without any ill effects. Especially with the honors and banquets heaped onto him later, for his scientific achievement of bringing us alive to 2039. But now that's wore off, too, and we're jest ordinary citizens of 2039. Doc's got a funny look in his eyes these days, two years after our coming to these times. He ain't never given away his secret of how he worked the suspenders anermation. Maybe he's calkalating to try it again, I dunno.

Hell, I'd be glad to leave these times. They ain't much I like about 2039. Except one thing. I can wear silk underwear here—which I always had a secret hankering to do—without my being classed as a dude. You couldn't do that in my times.

Coming next month—the long-awaited sequel to "SANDS OF TIME"

"COILS OF TIME"

by

P. Schuyler Miller

REVOLT

BY A. M. PHILLIPS

REVOLT

BY A. M. PHILLIPS

AN AUTHOR NEW TO ASTOUNDING BRINGS A NOVELETTE OF REVOLT AND SWIFT ACTION ON A TINY ASTEROID.

NIGHT comes quickly on Astra Pacificum. When the vast brassy ball of the Sun drops behind the narrow horizon it takes with it the warm, red sunset glow, and darkness, blue-black and large-starred, sweeps down. It has nothing moderate—there is no slow, meditative twilight. It is violent and intense, and swept with savage color.

Perhaps it is the fire of youth, for as a planet, Astra Pacificum is very young. Less than a decade ago it was a frigid, iron-hard black cinder sweeping through the flame-lit void of space at miles per second on its orbit about the Sun. Then came the planetary engineers—those hard-bitten, fearless gardeners of space who force the very vacuum to flower and yield fruit—and Astra Pacificum was given an atmosphere, water, soil, and a gravity nearly equal to that of the Earth, though the asteroid was but a fraction of the terrestrial sphere. Its harsh surface was softened, and the brave, green cloak of life wrapped it round.

But all they could do to the speeding Astra Pacificum—so it had hopefully been christened—to soften and civilize it for the colonists, who had bought lots from the development company before ever the work of reclamation had been begun, could not entirely subdue its wild and savage spirit. It had been made to rotate on its axis and so has night and day, and even seasons of a sort. But the days are blinding and dangerous to a stranger, and the nights are vast and sudden.

ALTHOUGH he had lived in his little, flower-decked cottage on Astra Pacificum for three Earth years—he had been among the first of the colonists to arrive—Roger Vance had never wearied of the ceaseless pageant of night and day as they alternately ebbed and flowed across his world. It was his custom to spend that hour before sunset upon the veranda of his cottage, meditatively sipping a cocktail. When the night was come, blue and starlit and heavy with the scent of flowers, he had dinner inside, served by his quiet, middle-aged housekeeper.

So it was not strange that this night—that was to be so fateful in his life—found Roger Vance watching its approach, as usual, from the comfortable vantage of his porch chair. He was a slight, dark man with black, untidy hair and unusually brilliant blue eyes.

When he heard the distant hum of a motor he did not even glance up. All the village knew of his habit, and he frequently had visitors at that hour. His housekeeper's cocktails were well known and appreciated.

Presently the little aircraft swept into view above the still palms and dropped lightly to the strip of lawn before the cottage. Its vibrant humming ceased, and the cream-colored door in the fore part of the hull opened. For all this Vance had been prepared, but he was not prepared for what followed—for with the opening of the door a dishevelled, bloodstained figure tumbled out, fell, rose again, and broke into a stum-

bling run. Roger Vance's blue eyes opened wide, and he sprang to his feet.

It was Mark Gifford. He knew that, for it was Mark's aircar.

"Roger!" cried the figure as it approached. "They're coming, Roger!"

Vance ran down the steps to the other's side; put an arm about him.

"You're hurt, Mark! What's happened? What is it?"

Mark Gifford gasped, twisted to peer over his shoulder, brushed ineffectually at the blond, blood-streaked hair that hung in his eyes.

"Don't you know? Weren't you there, Roger? The conscript transport came two hours ago . . . and a fleet of four Space Patrol rockets. We refused conscription . . . stood them off as long as we could. But they turned a sound gun on us . . . and gas. And they outnumbered us five to one. They hanged Filten and Marlow. The revolution has begun and ended, Roger. I don't think more than five of us got away."

Roger Vance stood still in the blue dusk, a great bitterness filling him. Revolution! Even on this unimportant speck, in this far frontier, the Federated Nations would not be content until their tyranny drove men to desperate, futile resistance. Now, he knew, Astra Pacificum, whose sharp young beauty and quiet solitudes he loved so well, was lost to him for good, and to most of its other colonists as well.

"Here," he said, "come up to the house, Mark. You're hurt. I'll turn on the viso-screen. Come on."

"No!" Gifford tried to draw back. "They'll be after us. They'll hunt us down. Got to get away. I thought you were in it, Roger, or I'd never have come. If they find me here, they'll take you, too. Let me go!"

"They'll take me, anyway. Governor Steadman knows I was as much opposed as any of you to the damned oppression of the Federated Nations. Come on, Mark, that's a bad cut in the scalp you've got."

AS HE TALKED, Vance led the other up the steps and into the dining room. The table, its dark, gleaming mahogany reflecting the pale walls and hidden lights like the still surface of a deep pool, was set for two. By Vance's orders it was always so laid, so frequent were his visitors at this hour. Mrs. Elston, his housekeeper, entered as he was seating Mark in a position to examine the scalp wound. She screamed shrilly at the sight of the bloodstained young man.

"It's all right, Mrs. Elston," said Vance, suavely. "Mark's cut himself a bit. He'll be quite all right. He'll stay for supper. You can serve it in a moment."

"Yes, sir," Mrs. Elston stared at the torn shirt and dust-stained clothes of the patient. "Will you want anything, Mr. Vance? Dressing? Veezo solution?"

"I have it here. You can lay some fresh clothing out in my bedroom, Mrs. Elston. Mark will change before supper."

The woman withdrew, and Vance set about dressing his friend's wound.

"Listen, Roger"—Gifford spoke in an urgent whisper—"I've got to go. If I'm found here you'll be taken. They'll charge you with rebellion, or with harboring a rebel. Let me get out."

"Did anyone see you come here?"

"I don't know. I don't think so. But what difference does it make?"

"Then they can't know whether you were in the revolt or not," said Vance. "Come on, get those clean clothes on, and, if we are visited by the Space Patrolmen, they will find merely two gentlemen at dinner. We can assure them we haven't left the house the entire afternoon—that we know nothing of any rebellion." He piloted the uneasy rebel into the bedroom and hurried him in the

exchange of clothing. "Your injury was effected by striking your head on the door edge of your aircar."

At that moment a deep, powerful throbbing broke the night's silence, grew swiftly to a thunderous roar as the approaching rocket ship swooped for a landing.

The two conspirators hastened back to the dining room, where their meal awaited them.

"Look," exclaimed Gifford, as they entered the room. "There! They've turned their light on. Not going to let anyone get away in the dark. I tell you, Roger, I should have gone!"

"Where could you go?"

"Venus. Mars. Drop out of sight in one of the big cities. Maybe even Earth."

Vance laughed shortly. "In that little pleasure boat of yours? Why, you wouldn't even make Earth."

The lawn, seen through the French windows opening onto the veranda, was bright as day, lit by the powerful spotlight on the rocket ship. Gifford moved to the windows to peer anxiously out, and was ordered sharply away by Vance. They were seated and eating when Mrs. Elston came hastily into the room.

"Mr. Vance," she gasped. "A crowd of men . . . a lot of soldiers—"

"Never mind, Mrs. Elston," Vance said. "They're coming here. It means nothing. Probably more taxes. Stay in the kitchen, Mrs. Elston—unless we call you."

"It's trouble, Mr. Vance," she moaned. "It's them spacemen. There's been trouble, I know it."

She returned to the kitchen and Vance began a casual conversation with his friend. He looked his usual self, calm and untidy, but his light-blue eyes were sparkling dangerously.

A minute passed—two, three. When five minutes had elapsed they heard a step on the veranda. The ship had landed, and the rockets ceased their thunder for at least seven minutes, Vance noted. They had been searching the grounds.

HE GLANCED up casually, but did not rise, as the door opened and a group of blue-clad spacemen crowded into the room. Without a word, they ranged themselves about the seated men, their weapons gleaming dully in their hands. Vance could hear others methodically searching the rest of the house.

"What—" asked Vance, beginning to rise from his chair.

"Shut up and sit down," ordered one of the spacemen, and Vance, after a moment's steady glance at the man, complied.

More spacemen filed into the room, accompanied by a captain of the Space Patrol. The officer, a heavy-jawed, arrogant-looking man, strode into the center of the room and stared contemptuously about him. With a sweep of his hand he brushed the dishes from one end of the table and seated himself on it.

"This all that's here?" he asked.

"An old woman in there," answered a spaceman, pointing to the kitchen.

"All right." The officer rose and moved to the doorway. "Bring them along."

"Just a moment," began Vance, getting to his feet.

"If they resist, blast them," ordered the captain.

Gifford had also risen, and two spacemen, coming from behind, sprang upon him without a word. An instant later he was manacled to one of them by the wrist.

"Wait a minute," said Gifford. "Roger Vance had nothing to do with this rebellion. He wasn't even there."

The Space Patrol captain turned and, walking deliberately back to his prisoner, struck him heavily in the face with his open hand.

"You do your talking later," he ordered. "You'll have more time for it.

"Bring the prisoners."

A spaceman was approaching Vance, handcuffs in his hand, but at that instant the quiet and apparently innocuous man seemed to explode. So quickly did he move, the roomful of people lost him for a moment. The spaceman turned dazed eyes toward the door, where a vicious *thwack!* of fist on flesh preceded a thunderous crash as the stricken captain, taken completely unaware by Vance's lightning attack, plunged backward into the thin door, tearing it from its hinges. Together they crashed to the floor.

The dumfounded silence ensuing was shattered by a gay laugh.

"Wish me luck, Mark," called Vance as he leaped away from the fallen officer. "I'm starting my own revolution now!"

The next few seconds were a blurred bedlam. Without a word, Gifford struck the spaceman to whom he was handcuffed. The man fell like a stone, and Gifford stooped above him, seeking the keys to the manacles. Before he could find them three spacemen were upon him, and he went down under a vicious storm of blows. In the center of the room, four more of the soldiers were attacking the slight but unbelievably elusive Vance. He had armed himself with a part of the door frame, broken by the body of the captain, and was using it with a blazing and lightning-quick ferocity.

The whirling tangle crashed into the mahogany table, and it and they collapsed ponderously, shaking the whole house with the thunder of their fall. Vance, with snakelike swiftness, had wriggled clear, and without a glance at his adversaries dashed toward the door.

"That'll be about all." The cold voice stopped him like a bullet. An under officer was standing in the doorway, a long-barreled rocket pistol in his hand. Vance saw the flaring muzzle held directly on his middle, and slowly his hands went up. A single explosive bullet from that gun would blast him into nothingness, and the man was so close he could not miss. Nevertheless, Vance's eyes, a luminous blue in his blood-streaked face and deceptively mild, noted every detail of the situation, saw the tense finger on the trigger and noted the distance between them. Behind him he heard other spacemen getting to their feet.

"Stand from behind him," ordered the lieutenant, without a trace of emotion. "I'm going to blast him."

Vance heard a quick scramble as the spacemen scattered, and drew himself together. Before he could spring, a voice from the doorway cried: "Halt! Lieutenant, stop! Seize that man!"

The captain, recovered from the blow he had received, thrust his officer aside and entered the room. Simultaneously Vance received a terrific blow on the back of his head, and he crumpled to the floor. The spacemen were taking no further chances with one as agile as Roger Vance.

The brutal-jawed captain cursed and viciously kicked the unconscious man. "I told you to seize him," he snarled at his soldiers, "not knock him out. And you're not killing him as easy as that, lieutenant. He's going to pay for this. It's time these colonial swine learned to come to heel. Rebels, are they? Governor Steadman will make good rebels of them. Bring them along!"

WHEN Roger Vance regained consciousness he found himself in complete darkness, and racked by pain that seemed to encompass his whole being. He groaned and made an effort to sit up, at which the darkness burst into a shower of wheeling sparks, which, though he shut his eyes, did not vanish. At the sound of his movement a voice beside him spoke.

"Roger?" it said, and he recognized Mark Gifford.

"Mark! What happened? Where are we, Mark?" He heard a rueful

laugh in the darkness beside him.

"Where do you think, Roger? In a cell, along with almost everyone else on Astra Pacificum. Are you all right?"

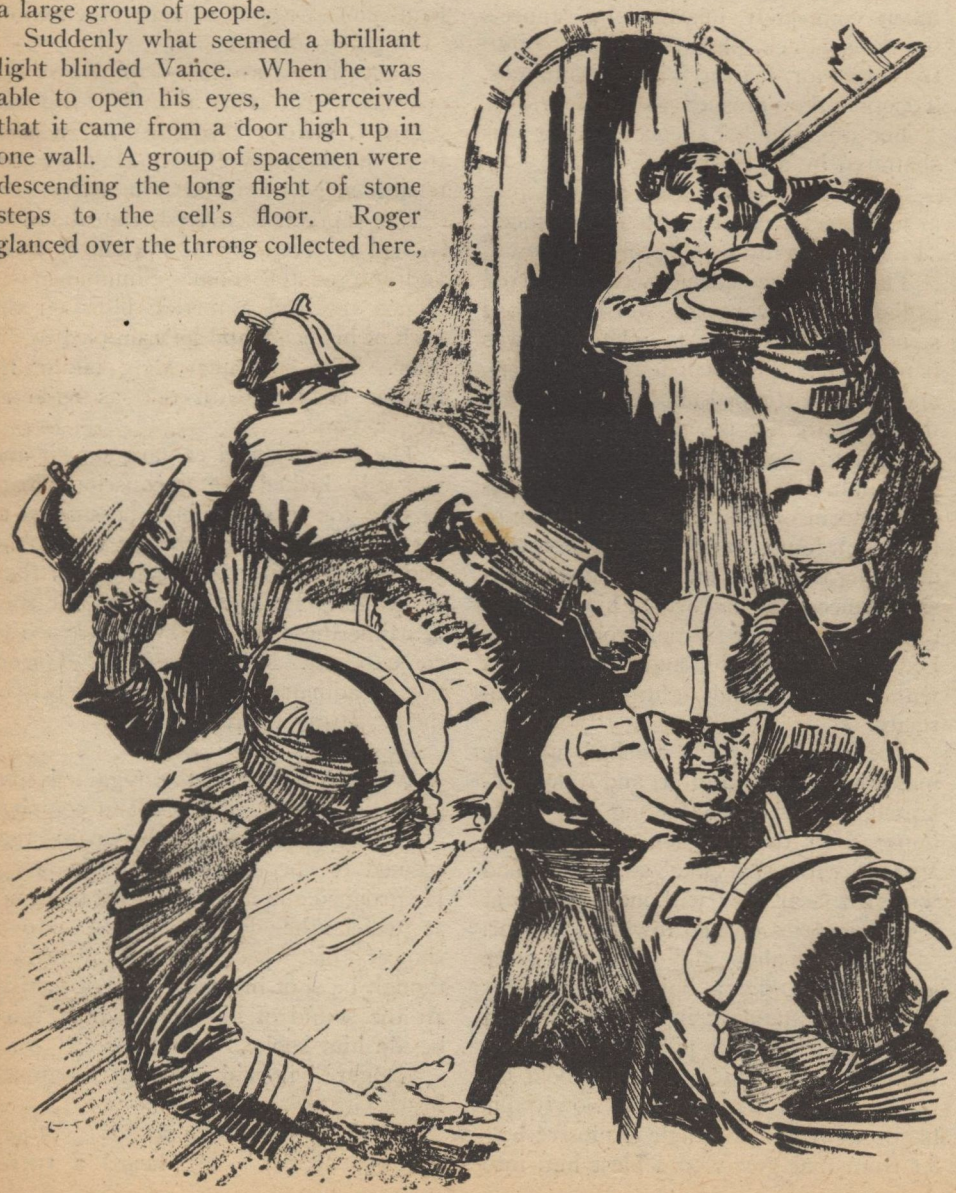
"A crack on the head. Yes, I remember now. No bones broken. You, Mark?"

"About the same as you." In the silence that followed Roger could hear the merged breathing and movements of a large group of people.

Suddenly what seemed a brilliant light blinded Vance. When he was able to open his eyes, he perceived that it came from a door high up in one wall. A group of spacemen were descending the long flight of stone steps to the cell's floor. Roger glanced over the throng collected here, recognizing many he knew. All were worn and battle-marked, and many were too weak to rise.

"All right, colonials," called a spaceman. "On your feet. The rest of you carry the ones that can't walk. Move!"

They were herded up the steps and were met by another contingent of guards as they entered the long bare hall



of the governor's prison. Though it was the first time Roger Vance had visited the dreary place, it was well known to many of the others. Governor Steadman was renowned throughout the system for his tyranny.

"Where are we going?" whispered Vance to the man who walked beside him.

"Don't know. Thought they were taking us to the courtroom to be sentenced, but that's down that way." He nodded toward a side passage. "The way we're going now leads to the back of the prison."

"Quiet," ordered a guard, and they tramped on in silence.

Presently they passed through a doorway into the bright, sunlit prison yard. Beyond its walls the dense, subtropical vegetation of this artificial little world crowded close. The prisoners stood in a silent, unhappy column, sharply watched by the trim, blue-clad spacemen, while several officers conferred.

To Vance it looked very much like preparations for an execution, but presently orders were given and the huge gate swung open. One of the officers approached them.

"Now, you damned colonials, listen," barked the officer. "You are marching to the landing field. The first man that breaks rank gets an explosive in his back. And I hope the whole filthy herd of you tries an escape. Now, MARCH!"

The column got under way with a buzz of talk.

"The landing field!" "Where they taking us?" "Transportation!" "—the Mercurian mines!" "No! Treason to . . . State . . . hold trial on Earth."

"What do you think, Mark?" asked Vance. The young rebel, marching just before him, was a sorry sight in the bright light of day. His face was grimed and blood-smeared, his clothing in rags. Vance realized he must be in like condition, and made a useless effort to brush back his hair and straighten his tattered clothing.

"The mines," replied Gifford, laconically.

"Quiet, you dogs!" The officer stamped back along the column, his fat, red face blazing with vindictive rage. Vance could have told him that such excitement was dangerous under the ardent sun of Astra Pacificum.

Once through the gate the dense, tangled arborescence of the jungle swallowed them, and they followed the narrow path in a dim half light. The guards marched close, alert, wanting only an excuse to fire. They proceeded for about twenty minutes, coming at the end of that time to a wide, smooth, green-colored roadway which, they all knew, led from the governor's manor to the rocket field.

THE VILLAGE lay on the left. It was a curious mixture, architecturally, of primitive and modern. The three large, many-terraced, glassite community houses built by the development company and which had been the scene of yesterday's bitterest fighting, seemed to stare down in revulsion at the crowd of individual frame buildings which clustered at their feet. These community houses, with their wealth of modern conveniences, had, but for one or two families, never been occupied. The colonists had largely preferred their own individual homes. Although the company had erected many single homes, which lay on the far side of the village, they had been insufficient to accommodate all, and those who arrived last set about building their own, using the timber which grew in profusion upon the revitalized little asteroid. Now all these varying edifices lay silent and empty under the brilliant sunlight. Gaping holes in the walls revealed the force of the rocket pistol's explosive bullet, and from one of the terraces dangled the body of a man, hanged by the neck, and slowly revolving.

As he observed this dismal spectacle, Roger Vance reflected bitterly on the fate that had brought him to this desperate day. A quiet, retiring man by nature, he had obtained, after graduating, a minor position as a governmental clerk. In this obscure life he had passed the next five years until a small inheritance from a relative had suddenly set him free. Sick of the towering, many-leveled giant cities of his century, he had come to this obscure frontier to escape them, and the tyranny and slowly crystallizing class distinctions of the Federated Nations of Earth. The urge to find quiet after the thousand-voiced cacophony of traffic, the desire for stillness after the ceaseless movement and turmoil—in short, a hunger for peace—led him to that which, until so recently, had been his home—the small cottage, removed a mile or more from the village, and embowered in the fluorescence and scented peace of the silent woods.

He knew that all this was now lost to him. The Federated Nations of Earth, supposedly a league sanctifying the rights of men, was actually a tyrranical bureaucracy. Any resistance or criticism of the Federation was dealt with swiftly and decisively. Within a month, Vance knew, his cottage and its ground would be in the possession of some politically favored terrestrial who would undoubtedly dispose of it as quickly and profitably as he could. The dwellers in the larger cities looked with contempt upon the small homes and villages of the "out-places."

In the last year the oppression of the Federation had become unbearable. More and more liberties were taken from the people of Earth, and resentment and discontent grew swiftly. But the wealth pouring in to the authorities was power—they built up a mercenary army of police that struck wherever resistance to the Federation arose, and struck without mercy. An intricate system of espionage was next evolved.

Once in complete control upon Earth, the rulers of the Federation had struck outward, their aim the distant outposts on the various planets. The Space Patrol was created, and through it a golden revenue flowed Earthward to the swelling coffers of the rulers. And now they had ordained compulsory conscription to their armies.

Upon Earth there was little resistance. The city dwellers, wrapped in the luxury of those twenty-second century cities, and sapped of their individuality and self-reliance, grumbled feebly and surrendered to their overlords. Rebellion, when it came, came naturally from the out-places, the frontiers. As always, the far places had drawn the sturdiest, the most indomitable, of Earthly stock. Adventurers, rogues, "wanted" men, political offenders, all that swaggering, swearing, fighting, discipline-defying crew that has always sought escape from "civilization" and standardization, gravitated away from Earth. With them went the families, who, possessing nothing on Earth, hoped mightily for a better chance in these new lands. And together they formed communities not easily dominated or oppressed.

For a year, since the first Space Patrol had landed and had arrogantly demanded humiliating and unjust tribute for the Federation, revolt had been brewing. Space Patrolmen had been attacked—reprisal had been swift. Guerrilla warfare, fierce, asking no quarter, flared periodically, until even the doughty spacemen dared not walk Astra Pacificum singly. So it had gone until the first of the conscript ships had arrived, when bloody rebellion had blazed openly. Slavery the Astra Pacifici would not tolerate. Stubbornly and doggedly, they fought—and vainly. The spacemen, outnumbering them by the hundreds, had leaped to the fray with vindictive joy—they would revenge themselves upon these mutinous, obstinate colonials, teach them their place.

And so now the sorry remnant of the revolutionists plodded silently past their empty, sacked, and silent village. What their fate was to be they did not know, but they were sure it would not be a happy one.

PRESENTLY, the village disappeared behind the ubiquitous vegetation, and a few minutes more brought the marching column out upon the Federation's rocket field. It had been built to accommodate the Space Patrol rockets, and was one of the sore points for Astra Pacificum, for the villagers were forced at the pistol's point to labor at its maintenance in an endless struggle against the encroaching vegetation.

Now it couched five of the swift, heavily armed rocket ships of the Patrol —their number testifying to the reputation for desperate defiance Astra Pacificum had acquired.

The rebels were marched to the largest of the five ships—a conscript transport—and were herded into the large space below the engine room. This area, a bare, empty space between the hull of the ship and the floor of the engine room, ran the entire length of the ship. There were no ports and only two entrances, one aft near the beginning of the rocket jets, the other forward under a storage compartment. A rank of cots, lined against either wall, constituted the only furniture. The place was dimly lit by an occasional cold-light illuminator sunk in wall or ceiling. The ceiling itself was not over five and a half feet above the floor and most of the rebels were, therefore, unable to stand erect.

When all of the Astra Pacifici had descended into this gloomy dungeon, the captain of the Patrol stepped to the trapdoor in the storage compartment through which they had passed and called down to them: "Now, you surly dogs, I want you to understand the situation. None of you will leave this chamber until we reach our destination. You will be served two meals a day and no medicines. In the event of a death among you, you will notify the guard and then pass the body up to them. You can't escape, and any attempt to do so will result in your immediate destruction. This chamber can be sealed off from the rest of the ship. You can be gassed or electrocuted, as the walls and floor are wired. That's all."

He turned to go, and a rising growl broke from the rebels. The spacemen leaned forward eagerly, their fingers tightening on ray-gun and pistol.

"Where are you taking us?" demanded one of the prisoners.

The captain wheeled about, a thin, cruel smile on his face. "The government feels that you may prove more tractable on Mercury," he announced. "Certainly you will be more useful while you live. You go to Mercury—to the mines. And I don't think any of you will be returning."

A stunned silence followed his pronouncement. No Earthman could long endure the fiery hell of a Mercurian mine. Only the shell-skinned Venerians, impervious to unbelievable temperatures, ever toiled in these mines, as earlier laws of Earth had forbidden even the sentencing of incorrigible criminals to service in them. A rumor on Astra Pacificum had it that the Federation was ignoring this law as it did all others, had determined to exile the rebels to this inhuman prison. Now it was confirmed. A stir ran through the crowd.

"Do we get no trial?" demanded one.

"You had your trial," replied the captain. The metal trapdoor clanged down, leaving the prisoners to themselves in their bleak cell. They disposed themselves on the cots, silent in despair.

An hour later they took off, the huge ship quivering to the muted thunder of the powerful rockets, as though in pleasure at return to her natural medium—the void of space. When the full-throated roar of the starting rockets had

faded to the steady, monotonous beat of the driving jets, they knew they were clear of the asteroid and had set their course for Mercury.

TWO DAYS passed. The morale of the rebels sank steadily during that time; the monotony, the close confinement, and most of all the inability to stand erect, the constant necessity to stoop, had reduced most of them to helpless despair. Most of them, but not Roger Vance. Some vital spark in his slender frame refused to surrender to the prevailing lethargy, the acceptance of defeat. While his fellow prisoners lay on the cots, to stare with hopeless eyes at the low ceiling, or sat in silent groups about the floor, Vance prowled uneasily from one end of the cell to the other. An occasional dim, cold-light lamp foggily illuminated the dully gleaming stellux walls and the hopeless faces of his companions. The steady thump of the rockets beat a ceaseless, nerve-racking refrain that once or twice drove a weaker member of that hapless crew to pound with insensate fury upon the unyielding walls.

To all of this Vance paid no attention. Inch by inch he went over the walls, the floor, the ceiling. He spent hours at his task, studying the two exits, memorizing the exact manner in which their food was handed down to them and the number of guards who were outside the exits at the time. The thing seemed hopeless. Only one exit was opened at a time, and the prisoners were permitted to approach it only singly. Their ration was handed down to them—none of the spacemen even entering the prison chamber.

Mark Gifford watched his friend's actions with lackluster eyes.

"What's the use, Roger?" he asked at last. "There's no way out. Perhaps we can escape from Mercury, but it's certain there's no escape from this place. You might as well give up."

"I'm not so sure, Mark," Vance replied, his eyes thoughtful. He squatted

down, his back against a cold bulkhead, and stared at the exit above his head. "If I could get out of here, somehow—He said this chamber could be sealed off from the rest of the ship."

"What could you do, if you did get out?" demanded Gifford. "What chance would you have against them? Forget it. Sorry I got you in this mess."

"Mark," said Vance, sharply, "can we trust all these men here? Do you think there are any Federal spies in with us?"

The other looked surprised. "Why, I don't know. Offhand I'd say there would be. They say they have spies in every community. Why?"

"They must know nothing. Listen, get all the men you are sure you can trust. Just circulate around; speak to them casually. Tell them— Wait, listen, here's what I want to do."

The two were seated side by side, their backs against the wall, at the forward end of their prison. The hatch leading into the storage compartment was above their heads, and the nearest of the cots was some distance away. None of the other prisoners were within earshot. Vance glanced about to satisfy himself of their privacy, then began speaking:

"I've located all the ventilators. When the time comes I want you to stop them up. I'll show you where they are. Use pieces of clothing, bedding, anything, only do it right. Be sure they're completely, tightly closed. And after I get out keep the exits closed until I knock. I'll knock three times. If they try to open them hang on them, or brace them shut with the frames of the cots. But don't let them open. It's a long chance, but if it works the way I think it will, we'll be free. If it doesn't—well, we're no worse off.

"How long do you think the air in here would be breathable with all the vents closed?"

"An hour, possibly," replied Gifford. "But what are you going to do, Roger? What can you possibly do?"

"LISTEN," said Vance, tensely, and began a rapid whispering. Gifford at first shook his head dubiously, but at last he responded to the urgent eagerness of his companion and his expression changed.

"It's barely possible, Roger," he said at last. "Just barely. But if anybody can do it, you can. How will you get out?"

"Get the men you can trust. You lived in the village, Mark, and know them better than I. Explain to them what I'm going to attempt—ask them if they'll go in with us. Most of them will."

"Then?"

Vance glanced at his watch, which, not having been taken from him, he had kept going. "Two hours to the next meal. That's close, but time enough. If they're all satisfied with the plan, gather enough rags or bedding to close the vents—that'll take a little while. Be ready as soon as they open this hatch to hand down the food. Have your men at the other end, under the after-hatch. As soon as this hatch opens start a riot back there. Put out the light and make as much noise as you can. The ones you haven't spoken to will be drawn back there to see what's going on. If, as I think likely, the guards at this hatch come down, keep up the racket till they stop you. And as soon as they've gone out, close all the vents as quickly as you can. And keep the hatches closed. Got it?"

Gifford nodded. "And you?"

"Leave that to me. Don't resist the guards, if they come down. Quit the disturbance immediately, and tell them nothing. If we can confuse them, so much the better."

"I'll start now." Gifford got up and walked away in the half-crouch forced by the low ceiling. He stopped at one

cot and apparently talked idly for a moment, then passed on.

An alert observer in the next half hour would have known something was stirring, for as Gifford passed slowly down the line of cots he seemed to leave behind him a different atmosphere. Those he had not visited lay apathetically, their faces dull and vacant; those who had listened to him were sitting up on their cots, and were inhabited by a new spirit. They spoke quietly to each other, or sat in apparent listlessness, picking at their clothes or bedding, but the glances they exchanged were pregnant with significance, and one optimist even began whistling. The scowling stares he received from others sharing his secret acted like a sudden shower of cold water, and the offender subsided sheepishly.

The two hours passed swiftly. Long before the moment came, however, Vance had managed to crawl unobtrusively under a pile of blankets against the forward bulkhead. He had thrown them there the day before in preparation for the use he meant to put them to, and to accustom both the prisoners and the guards to the sight of them. To his relief neither had paid the mussed heap of blankets any attention. The spacemen, leaning down through the hatch to hand down the food, had not even glanced at them though they were almost directly below.

He felt confident now that none had seen him crawl into the pile. No light bulbs were near, and the spot was shadowy. The seconds ticked past, and Vance's tension grew. Glancing out occasionally at his confederates he saw that they, too, were nervous and uneasy. He wished they would not roam about so—it might make a Federal spy, if any were there, suspicious. He glanced at his watch; the time was almost up.

NOW! The hatch above him grated and creaked as it was unbolted from above. Vance dared one last glance back before he drew the blanket completely over his head. Gifford and the men he had enlisted were beginning. There was a ripple of oaths, a crashing, and then a tremendous thundering as they beat the cots upon the resounding metal floor. Abruptly, the light in the aft part of the chamber was extinguished.

Pandemonium broke out in earnest then, as the other prisoners, ignorant of the meaning of this demonstration, ran toward or away from the center of disturbance, as their natures dictated. Vance hoped none would get close to him.

The hatch above swung open. After a moment of vain commands and unanswered questions, the spacemen, by no means fearful, began dropping down into the prison chamber. The tense man beneath the blankets heard and counted as their heavy boots struck the floor—nine—ten! That was the full number of the guard usually present when the food was brought. Vance peeped out. They were spread out—moving toward the uproar aft, their backs to him.

This was the moment. With unbelievable swiftness and a catlike agility, the slender man sprang for the hatch, thrust himself through, ducking to avoid a possible blow from above as his head came up into the storage compartment, and slid across the floor. No one else was in the room. The guards were all in the prison hold below. Vance swept the small room with a quick glance. It was a supply bin for the engine room, and the racks ranged about the walls contained all manner of parts and replacements. The hatch opened in the center of the floor and near it stood the containers of food which the spacemen had been bringing to the rebel prisoners.

Pausing a moment to seize a length of metal tubing, Vance slipped out through the narrow, rounded door, now standing open. Outside, a corridor ran

aft to the engine room. Its glaring white walls were spotted with fan vents and red alarm signals. It ended at the supply or storage compartment, and in an alcove at one side a spiral stairway ascended to the upper regions of the ship.

Gripping his length of tubing Vance made for it and scurried up. He halted abruptly at the first level and peered cautiously above the edge of the deck. Another corridor greeted him, connecting a few feet from the spiral with a wider passage running fore and aft through the center of the rocket ship.

Vance paused only long enough to assure himself that no one was near, then continued his ascent. The armory, he reasoned, would be on the rocket's highest level adjacent to the pilot room and captain's quarters. And it was the armory he was seeking.

Another ten feet brought him to the upper deck. A quick glance made him drop back as swiftly and silently as he could. The upper end of the spiral opened into the pilot room and for a flashing second he had stared at the quiet, intent pilot, half-hidden by the massive control board. He would have to find another way of reaching the upper level. He could never pass through the pilot room undiscovered.

Back at the middle level Vance waited and listened. No sound but the even throb of the driving jets broke the silence. He ventured out into the corridor. The central passage revealed itself also deserted, when he peered cautiously into it. Forward it made a sharp turn a short distance from him. What lay beyond the angle he did not know. Toward the stern it ran straight and undeviating, and Vance perceived in the distance that which he had been seeking —another spiral ascending to the upper level.

He reached it safely, passing a number of closed, metal doors, and darted up. Once again he examined the control deck carefully, his eyes on a level with the floor. Vance recognized instantly, this time, which region of the ship he was in. It was the officers' quarters. Several of the doors along the central passage stood open, and he could see the sumptuously furnished compartments within. The armory he judged to be forward, between the pilot room and the captain's cabin.

Beads of perspiration were standing now on the rebel's forehead, and the muscles of his face were tight and set. He had an hour or a little more. He had to do it in that time. Had to! Beneath his torn and filthy clothing his tense body seemed carved from wood, so rigid was it. Slowly, quietly, gripping the metal tubing, he crept into the corridor.

Door by door he slipped past. In one cabin an officer was absorbed over a drawing board. Vance was half tempted to attack him. He desperately wanted a weapon. At last only two doors remained. The nearer was plainly marked "Captain." The other he was sure was the armory.

With a last quick dash he made it, dived through—and so astounded the spaceman on guard within that the man never uttered a sound. He went down under Vance's metal tube as silently as a figure of straw.

AND NOW the slender colonist became busy in very earnest. First, shutting and bolting the door, he ransacked the large arsenal like a demon-driven cyclone, seizing guns, bombs and ray-pistols and thrusting them into his shirt and pockets until the weakened, rotted fabric threatened to split. Then he carefully arranged all the gas cylinders upon the floor, examining each one carefully. Some were discarded and kicked to one side. Those left were gathered together —five of them. Then he attacked the cupboard containing the gas masks—

took as many as he could carry and destroyed the remainder.

At last Vance seemed satisfied. He turned to the gas containers he had set aside, adjusted the control on one, opened the door again, peered out, and then, slipping as quietly as a shadow to the vent on the other side of the corridor, thrust the now open and faintly hissing container into the narrow throat of the vent, careful not to strike the fan as he did so. Dashing back, he donned one of the masks, and stood waiting. The first blow in his campaign had been struck.

Ten minutes passed. Vance moved restlessly back and forth across the littered floor, glancing every moment or so at his watch. When fifteen minutes were gone he sprang determinedly to the door, flung it open, and leaped into the corridor, a ray-pistol in either hand.

A deep, relieved sigh, audible through the vibrator of the glassite, tumescent mask, revealed Vance's suddenly slackened tension, for there on the floor of the corridor lay an officer, sprawling helplessly unconscious.

Vance ran to the pilot room, saw the pilot hanging limply from his seat, and returned to the armory. Gathering the remaining four gas containers, he quickly located the main air vent, which circulated the air throughout the entire ship, and thrust two of the containers into it, first smashing off the tops so that the gas might escape more quickly.

He allowed fifteen minutes more for the gas to take effect throughout the rest of the ship, then Vance gathered his masks and went on a precautionary tour. From engine room to control deck not a man remained conscious. The gas he had used was an anæsthetic—colorless, odorless and tasteless—and the spacemen would remain unconscious for at least two hours. For those two hours Roger Vance commanded the rocket ship *Eastern Sun.*

THE HOUR he had allowed himself was running out. Vance wondered how the men imprisoned in the hold had survived. If the gas had gotten in to them, if they had failed to completely occlude the air vents, or if the gas had some other means of entry, and they, too, were under its influence their cause was lost, and the ship would very soon be again in the possession of her rightful masters. Vance put from his mind his fate should such be the case.

In the engine room he set in operation the atmosphere renewing machinery and stood impatiently between the enormous fuel distributors of the rocket jets while a strong stream of the incoming clean air flowed through the ship. From a giant vent in the prow the renewer released clear, fresh air, combining the condensed and compressed chemicals to form it, while a pump in the stern sucked the gas-tainted atmosphere into a lock from which it was released into space.

For perhaps five minutes he allowed it to operate, then snapped the control switch off and dashed down the white corridor from the engine room to the storage compartment into which he had first emerged to begin this fantastic attempt to take a Space Patrol rocket ship single-handed. To his surprise he saw five spacemen slumped in various positions upon the narrow spiral staircase by which he had earlier ascended to the upper levels. The gas must have struck them like a blow! And they must have just emerged from the prison hold. He had not thought they would remain below so long. Had he opened the gas containers a few minutes sooner it would have meant ruin to his plan.

In the storage compartment he jerked the bolts from the metal hatch, tried unsuccessfully to raise it, and realized with a thrill of delight that it was held firmly from below. With bated breath he rapped three times upon it; waited, beat again and louder and more anx-

iously, and then with a tide of golden relief welling up inside him, watched it slowly rise, fall back. The thing was done!

He reached down, flung the hatch open with a clang of metal, and seizing Gifford by the arms dragged his half-stifled friend up into the crisp, clean air still blowing a faint breeze from the prow.

"We've done it, Mark! We've done it!" Vance yelled, and the words, transferred from within the mask to the outer atmosphere by the round, metal vibrator set in the otherwise unbroken glassite shell of the gas mask, echoed with a weirdly mechanical and robotlike intonation through the silent ship. The revivifying air and this sudden strange howling brought Gifford to his senses with a start. He began a stumbling query, but Vance interrupted him. The dark, slender man had permitted himself this one burst of jubilance. Now he was again all haste.

"Hurry, Mark!" he barked. "Hurry, man! Get them up! Get them out of there!"

He dropped into the prison-hold and herded the stumbling, drooping, white-faced men to the hatch, boosted and pushed at them while the now completely recovered Gifford pulled at them from above. When all were out he did not leave off, but harried and worried them; made them rise and walk about.

"Now then, through the ship, everybody!" he ordered when sure that all had thrown off the lethargy produced by the stale air. "And go in groups. If there are any Federation spies among us they'll have no chance to cause trouble. Don't let any man be by himself. Get every spaceman on board—bring them here. Now go. And be quick! Hurry!"

With broad grins of delight as they perceived what he intended, the erstwhile prisoners sped off in every direction, and within a surprisingly few moments a steady stream of limp and senseless spacemen began dropping through the open hatch into the prison-hold.

WHEN THE last had disappeared below and the hatch was closed and bolted—when Vance had assured himself on a flying tour of the ship that not one spaceman remained above—relaxation came. The tattered, tired, grimy little rebel dropped wearily into a seat in the pilot room, his eyes, under the lank lock of hair, fixed with unseeing abstraction on the flaming curtain of stars which gleamed with every color of the spectrum in the infinite void of space beyond the enormous, sweeping triangular port of glassite that stood before and above the control board.

For a few moments he sat thus, deep in frowning thought, then he roused himself with decision. Without rising he said: "Mark, get the men here. Call everybody. Use the general alarm speaker; they'll hear you in every part of the ship."

Gifford stepped over to the vacant pilot's seat and, taking up the speaker tube, gave the order twice.

There were a half dozen mutineers scattered about the room and Vance surveyed them carefully. Selecting two whom Gifford had designated as trustworthy, and who were bitterly resentful of the Federation tyranny, he called them to him.

"Jonathan Scar, you take the forward hatch to the prison-hold. Ringgold, you take the after-hatch. No one is to go down or hold communion with the prisoners. Nobody! Stay there until you are relieved."

The two men departed and Vance sank back in his chair, watching the mutineers as they began streaming into the room. They were a wild-looking crew. Unshaven, ragged, some with bloody rags wrapping limbs or head, and all bearing a bristling array of weapons, they were none the less jaunty

and, collecting in small groups, they watched their self-elected commander with expectant eyes.

"All here," said Gifford, who had counted the men as they entered.

Vance rose. "We've taken the ship," he began.

"Thanks to you, captain," said a mutineer.

"Right!" "You did it, Roger Vance!" "—saved us from the mines, he did!" chorused the others.

"The thing now is; where do we go?" asked Vance. "This will start up a hornets' nest of Patrol Ships that will scour the System looking for us. The Federation will regard this as a direct challenge to its authority. It must get us, or it will be weakened everywhere. So then —where do we go?"

"Mars—the equatorial cities. They'd hide us. Ain't no love for Earth in them skinny devils." "Venus—the swamps! Nobody ever found anybody there!" "I say strike for the outer planets. Cold, sure, but we can build our own city. No Space Patrol ever visits the outer planets."

Vance waited until the volley of suggestions ended: "We'd never get to any of those places. Now, at this minute, the cordon is being flung out to intercept us; every Patrol ship near us is heading this way. The pilot on a conscript ship reports his position hourly in code. More than an hour has passed since the last report was received from this ship. I don't know the code, and I doubt if any of you do. In any event, the home station would be difficult to placate or deceive now. They'll want this ship investigated. And they'll think of Mars, Venus and the outer planets as quickly as you do. A fleet of ships will be forming a million-mile ring about Pacificum now. We can chance it if you want, but I think I have a better suggestion."

They crowded eagerly about him, demanding to know it.

"Let's head for the place they'd be least likely to look for us—Astra Pacificum!"

FOR A MOMENT the mutineers were silent, astounded at this proposal, then one tall fellow smacked a hairy fist into the opposing palm: "Captain Vance, you've got it! The last place in the System they expect us—that's where we'll be!"

His enthusiastic indorsement let loose a flood of excited comment, and for a few minutes there was a brisk discussion, which terminated in a quick agreement on the plan.

"There we can outfit, refuel and provision," explained Vance, when the talk had stopped. "We will have time to rest and, when we leave, we will have a much better chance of making whatever destination we select.

"Mark"—turning to his friend—"you're a pilot. Can you handle this ship?" The other assented. "Then take over control. Set the course for Astra Pacificum."

Gifford slipped into the pilot's seat and began a quick reading of the present course, speed, and prevailing gravities.

"It will take some time," he announced after some brief computations. "These calculations are rough, but they show we've a high velocity and are still accelerating. Means a long swing. Let's hope none of the Patrol rockets stray between us and Pacificum."

"Then make the swing at right angles to the plane of the ecliptic," ordered Vance.

"There's one other thing," he continued, "that we should settle now. We're a large group and in the most desperate of circumstances. We should have a leader, elected by a majority, who will have full command. I have assumed command in this emergency, but now that it is to some extent mitigated, I think we should hold an election."

The rest indorsed this idea, but

elected Vance captain unanimously. Their affirmed captain then divided them into watches, and dismissed those not on duty.

"And now for a bath and a shave." Captain Vance stretched sleepily and departed to explore the captain's cabin.

THE SWING-BACK did take time, and it was four days later that the rocket ship descended into the lush jungle of Astra Pacificum. They circled the little asteroid to come at it from the night side, and landed in the most uninhabited section of the small planet.

The rest was childishly easy to these men who had dared so much. The intricate trails of this jungle area were well known to a number of the rebels, and a swift, unbroken night-long march brought them just before dawn to the government buildings at the north end of the village.

No detector wave had been spread around Astra Pacificum, and their vessel's approach had been undiscovered. Their appearance was a complete and stunning surprise. The small permanent guard of spacemen stationed on Astra Pacificum were captured and confined in their own prison after a brief, dazed resistance. In an hour the rebels were in undisputed possession of the village. The surprise of the few people left in the village—the small families whose men, for the most part, had not dared join the rebellion for fear of the reprisal the Federation would have been only too ready to make upon their dependents —was as great as had been that of the now imprisoned spacemen.

During the fighting at the rebellion these families had gone en masse to Governor Steadman's residence where they had escaped any suspicion of complicity, but not the scorn and contempt of the spacemen.

Now—the rebels apparently crushingly defeated and dead or exiled—they were permitted to return to their desolate community, where grisly tokens of the spacemen's conquest awaited them in the forms of the slain and the summarily condemned and hanged leaders of the revolt. These they had sadly given burial.

So their astonishment can be imagined when, on a dawn a week later, they had awakened to find their streets patrolled by a groomed, armed, resourceful-looking detachment in whom they recognized their late fellow-villagers.

Explanations were in order, and the rebels proudly recounted the tale of their captain's single-handed capture of a well-armed and guarded Patrol ship.

Meanwhile in another section Captain Vance and a contingent of the mutineers were approaching the governor's residence. It was still early morning and few were about. No one challenged them in the luxuriant gardens surrounding the house, and the servant, who opened the door to Vance's imperious knocking, was appropriately deferential to the magnificent captain's uniform Roger Vance now inhabited. Slight though he was, Vance looked every inch the captain. The jaunty cap was set at an angle, its sky-blue making an excellent setting for the electric blue of his remarkably brilliant eyes. About his shoulders hung the crimson-lined cape of a Patrol officer, flung back to reveal the lining. The neat jacket, with its golden wings on breast and collar, followed every line of his slender body. One of the mutineers, who in stable times had been a tailor, had spent four days returning in remodeling the uniform to fit. So there is excellent excuse for the servant's error.

The rebels waited elegantly in the reception room while the servant went to inform his master of their presence. While waiting, Vance took the precaution of calling his ship on the small viso-screen built into one wall. Everything there was in order, and the ship was ordered to advance to the village.

As he switched it off, the governor entered.

HE WAS a portly, red-faced man, coarse at any time but having just arisen, his eyes red and puckered and his sparse, reddish hair rumpled, he was particularly so.

"Well, gentlemen, captain, sir," he said, buttoning a lounging robe as he strode toward them: "I am glad to see you. Ungodly hour to get a man up though, really. I suppose you have news? Bad news? The Patrol rocket *Eastern Sun*, eh? What of it? Nothing serious, I hope. The rebels—"

"Exactly, sir," broke in Vance. "The rebels. They've taken the ship."

"What! Impossible! The ship was fully manned. How could—"

"A fact none the less, sir. Not only has the *Eastern Sun* ceased reporting since last week, but she never made Mercury. There has been no word or sight of her since she left here."

"Gods!" The governor ran thick fingers through his hair and a sullen anger began to grow in him. "The mangy dogs. I shall be reprimanded because of this. They will wish to know why I— My dear captain, you will explain that I warned them of these rebels? That I insisted they should be severe with them, should crush them utterly? I favored execution. You will explain that at the home office?"

"I shall be pleased to, excellency—if the opportunity occurs."

"Good. Good. Now to your business with me. I shall remember you, captain—" The governor looked more closely. "I don't think I have met you before."

"I think you have, Governor Steadman," replied Vance, flashing white teeth in a smile. "I am Captain Vance."

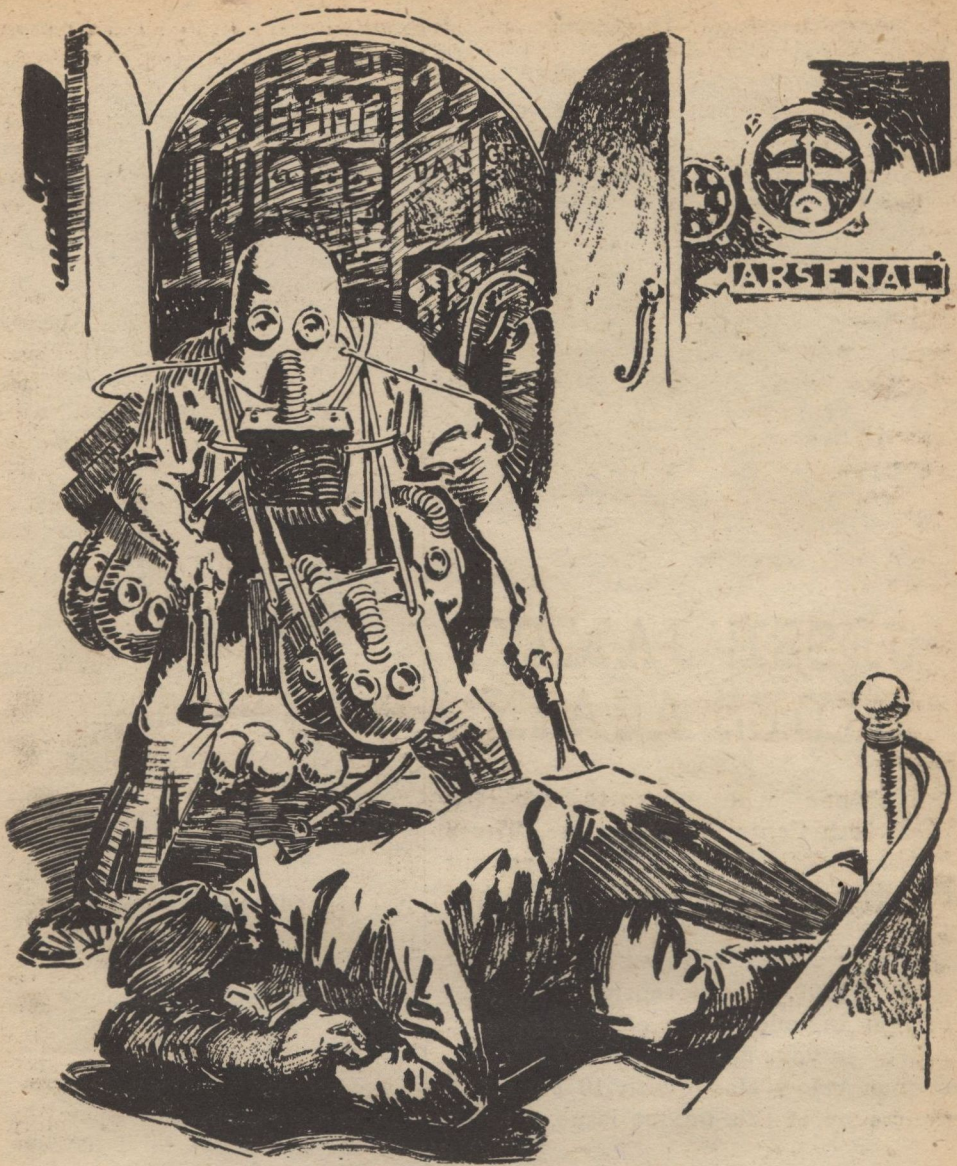
"Captain Vance? Vance? VANCE!" The governor's little eyes nearly popped from their fleshy sockets as he stared at the smiling man. "Why it is! It is! Roger Vance!" For a long unbelieving moment he stood, mouth open, incredulous eyes upon the rebel, then his glance faltered, swept the grinning fellows in spacemen's uniforms who stood about him. "Scar . . . and William Ringgold! Thomas Delfdene! Why you . . . why, you're the rebels! The rebels!"

Roger Vance laughed. "Exactly. And now we *will* get to our business with you. You will receive a visoscreen call from Earth at noon. You have daily since the *Eastern Sun* ceased reporting. You will make the same report that you have for the past week. Inform them that you know nothing of the missing ship, and that Astra Pacificum remains undisturbed. We will be with you to be sure you make no mistakes."

The fat, gross man stared about him, all his aplomb gone, and slowly his face mottled with a rising fury, as a realization of the situation gradually dawned on him. He stepped back a pace and clutched at the lapels of his robe. Suddenly, his eyes came back to Vance, and that gently smiling individual saw the fires of hell flaming in those little, piglike orbs.

"You fool! You utter, irresponsible fool!" he spat. "Do you think you can get away with this? You will be taken momentarily, and I, personally, shall take pleasure in supervising your execution. I shall summon the guards. I shall call Earth immediately and inform them of—"

"Still the same jovial fellow, eh, governor?" asked Vance, mockingly. Abruptly, his demeanor changed. The smile faded and his eyes, flaming coldly blue, revealed the restraint the man labored under. He spoke again and the timbre of his voice was like the edge of a knife. "You will do as I tell you. Do you realize your position, you pompous windbag? Your guards are locked in their own prison—we are in possession



of Astra Pacificum. Your life hangs on a word. Do you think these men love you? Look at them! Only my command holds them now. You have taught them well, you and the Federation. Fail us, or make one false move while we are here and they will—"

"Enough. What are you going to do?" The governor was staring in frozen horror at the expressions of the rebels surrounding him. What he read there—the ghosts of old injustices, of tyranny and long-borne humiliations—swept all the arrogance from him.

"You . . . you will murder me when I have served your purpose," he said sullenly. "What assurance have I that you will not kill me?"

"You have my word," replied Vance, briskly. "We are not men of the Federa-

tion. We do not kill for pleasure, nor do we break our word. Do exactly as you are ordered and, when we leave, we leave you in possession. In any event your refusal will not defeat us. We can be gone before any Patrol rocket could get here."

"I'll do it. But when I have you in my hands, Vance—"

"Ringgold! Delfdene! Stay with his excellency," ordered Vance, smiling again. "Mark, get to the ship. Provision, refuel. Get all the arms and ammunition on Pacificum. You others search the files here. Bring me all maps and Solar charts you find. I shall be in the governor's office. Be sure to throw out a detector wave, Mark—and sentry the village."

THE NEXT two days passed swiftly, and by noon of the third day the mutineers had completed all their preparations. Their prisoners, including the crew of the rocket ship, were all confined in the government prison, with the exception of Governor Steadman. He had daily informed the Federation officials on Earth, who called Astra Pacificum promptly at noon each day, that all was well on the asteroid, that no ships had arrived or been seen, and that the colonists were showing no sign of further rebellion. During this daily ceremony, which took place in the governor's office, the spacemen stood behind the viso-screen, which was mounted on the desk, and were invisible to those on Earth.

Although prepared to depart, the rebels waited, on this third day, for the completion of this daily call. When Governor Steadman had bidden his superiors on Earth good-by and clicked off the connection, Vance stepped forward.

"And we, too, your excellency, are saying farewell," he said. "Or perhaps au revoir. Mark, will you attend to the viso-screen?"

Governor Steadman, scowling, now watched while the rebels destroyed the

viso-screen past hope of repair.

"Where can you hope to go?" he asked. "There is no place in the System that will not be searched for you. You haven't a chance—you will die within a week, Roger Vance. Die as a pirate, hanged in chains! And I shall order your execution, do you hear? I shall!"

"Your interest flatters me, excellency," smiled Vance.

"But you other men," said the governor, rising. "You may yet moderate your just punishment. Renounce this rebellion, turn this man over to the proper authorities, and return to the prison, and I shall personally ask the Federation to combine mercy with justice in sentencing you."

A roar of laughter drowned out anything else the governor may have said. When they became silent the man was raging: "—all of you! You shall hang . . . hang in this village as a lesson to all cursed colonials! I shall use all my authority to track you down!"

The rebels, their smiles gone, crowded about him threateningly.

"Let me blast him," snarled one, his pistol in his hand. "Damned fat dog! Remember what he did to Merford? Stand away. Let me blast him."

"Your promise!" shrieked the governor, suddenly realizing to what lengths his burst of rage had carried him. "Your promise! You promised you would not kill me!"

"Stop!" ordered Vance, as the rebel swung up a rocket pistol. "Arnold, put back your gun. If we break our word to this man we are no better than he. Back to the ship—we leave at once."

The rebels reluctantly withdrew. When all had gone Vance moved to follow them, pausing at the door to glance once more about the room.

"You can't escape, Vance," the governor said, watching him. "I'll see you hanged within a week, you damned pirate!"

Mark Gifford, who had passed through the door, wheeled with an oath, but Vance held him.

"Am I so?" smiled Captain Vance. "A pirate, you say—and to die a pirate's death. Then until that death I shall live a pirate, governor. And I think you and the Federated Nations will hear of us again."

He vanished down the corridor and Governor Steadman was left alone in his office.

An hour later the wide-eyed villagers, aware confusedly that events of large import had their inception here, watched the *Eastern Sun* swing up from the landing field—metal flanks blinding in the strong sunlight—and vanish in the deepening blue of the zenith. With them watched Governor Steadman, uneasy, recognizing that here was the greatest challenge the Federation had yet encountered.

THE CACHE

BY HARRY WALTON

IN SPACE — A LIE MEANS DEATH

THE landing Ballinger made on the scarred surface of the grim little planetoid was as cleanly perfect as though he were not piloting under threat of an alpha-gun held to his ribs, as painstaking as though he expected to lift the ship off on its return flight. Robeson, shifting the gun slightly in his palm, found that amusing. As long as there was life in him, Ballinger would hope. But Robeson knew that the little man's hope was a cheat. Ballinger must die, as part of the plan.

The ship's keel grated. Expertly, Ballinger extended the retractable stabilizers. His expertness too was part of the plan. Robeson had picked his man well. Ballinger was an ex-pilot of the Solar Lines, retired for some obscure reason. From him Robeson had learned quickly, on the long flight from Earth, those other things vital to the plan—the mechanics of flight, the handling of the controls, enough space-navigation to enable him to reach any objective in the Solar System. Now, Ballinger's usefulness was at an end.

They donned pressure suits and air helmets of transparent duro. Outside the ship, the scene was as Robeson remembered it from that visit six years ago, when a Venusian gun-runner of which he had been a crew-member had found a hiding place here from pursuing patrols. An uncharted desert island of the sky, airless, bitterly cold, its pitted surface white, here and there, with drifts of frozen gases—remnants of an atmosphere that must long since have dispersed into the void. Barren, hostile as space itself in its utter denial of life, outside of all liner lanes and too small to attract the attention of even a passing vessel, it offered only the refuge of death to any man unlucky enough to be marooned upon it. But its very obscurity was also part of the plan. A man could live in the shelter of his ship for months, here, without being found by space patrols. It was an ideal hide-out, an ideal hiding place also for the rich loot Robeson would have to secrete.

His helmet phone buzzed suddenly with sound.

"I thought," said Ballinger, "that this planetoid of yours was warm—even hot—and that we could work without suits. More lies?"

Robeson chuckled, switching on his suit-heater. That was one of the embellishments, the added details, to the story he had told Ballinger when the latter answered his advertisement for a partner to work a hidden thorium deposit. Grim humour there—for Ballinger had swallowed the tale, invested his life savings in the ship, fuel and supplies to carry out Robeson's undertaking; the plan that demanded his own death. All the pat details as to favorable temperature, atmospheric conditions, and fabulous mineral deposits had originated in Robeson's fertile brain as part of a glowing but entirely mythical mind-picture. Nevertheless, he had seen to it that extra fuel was carried to establish the cache so vital to his plan. He had even checked, privately, the physical characteristics and specifications of the synthetic high-energy rocket fuel to

make sure it would neither freeze nor deteriorate in the sub-zero cold which he knew to be the fact.

HE WAVED the gun negligently, following Ballinger over the bleached and porous rock that seemed to constitute this tiny cosmic island. In a matter of minutes he had selected the place for his cache—a roomy, solid-roofed cavern hollowed out of a peculiarly shaped ridge which he would have no trouble recognizing. He waved Ballinger back to the ship. Inside, they doffed their gloves and helmets.

"I've been thinking," Robeson said smoothly, "that if you became hard to handle, and I had to shoot, it might be a little hard to explain when I go back. So you'd better write me a sort of guarantee. Get that log-book of yours."

Ballinger obediently opened the log, which he had kept meticulously since the journey began, although the last four entries had been written under Robeson's supervision. Four days ago Ballinger's suspicions had been aroused by a discrepancy between the course Robeson gave and the supposed location of the thorium deposit. Robeson had been forced to show his hand and keep Ballinger at gun-point since then. And because space-travel is a lonely, awesome thing, the need for speech had caused him to reveal to Ballinger most of his plan—with one exception. That exception was Ballinger's own death.

Now the little ex-pilot wrote at Robeson's dictation.

"104th day: We have arrived at the deposit and begun operations. It will be necessary to sink a shaft through crumbling stone. The work is dangerous and will be divided equally, only one of us working at a time, so that if a cave-in occurs the other can attempt a rescue. With two in the shaft no escape would be possible.

"105th day: The shaft is progressing, but the rock becomes more treacherous as we go deeper. We are working below alternately. Once the shaft is lined it will be comparatively safe. Already there are rich traces of oxides and sulphates."

Robeson took the log and read with quiet satisfaction. Concisely correct, like Ballinger's own entries. Enough hint of danger, yet ending upon a note of optimism. An obvious man would have emphasized the danger unduly. Robeson wasn't obvious. This matter-of-fact entry, undramatic and without premonition of disaster, and written in Ballinger's own hand, would be far more convincing at any possibly inquiry than a more lurid recital. Robeson himself would tell, briefly and with evident sincerity, how Ballinger, working in the shaft, had broken into a sink-hole and dropped out of sight.

Robeson locked the log safely away. "Now," he said, "we have to stow the fuel in the cave. After that——"

"A fuel cache—here?" interrupted Ballinger. He seemed really surprised, although Robeson had told him the scheme, how he planned to return here with the loot of the platin-liner and remain hidden until the planetoid, on its long swing around the Sun, should be in conjunction with Venus. The fuel cache was vitally necessary, for the stolen platinum would cram the little ship, and only such fuel as the ship's tanks now held would be carried. He would land here with almost empty tanks, depending upon the fuel cache to replenish them, to furnish heat so long as he remained, and power for his flight to Venus later. It was all planned closely, calculated with a narrow, but sufficient, safety margin.

"Why not?" countered Robeson, to Ballinger's question.

The little ex-pilot stared at him, seemed about to speak, at last said: "I wonder if I can write a note in case—

the shaft caves in? You can deliver it or not, as you like."

WAS HE AT LAST convinced that his own death was imminent? Robeson had always tried to keep a spark of hope alive in Ballinger, had talked of "us" rather than the "me" that obtained in his own mind. He had tried to act with bluff good-humor, with persuasion rather than threats. He had even cajoled and argued with Ballinger to throw in with him. A desperate man is always dangerous. Robeson had tried to minimize that danger.

But the masquerade was no longer necessary. Let Ballinger write the note, then destroy it. There could be no risk in that.

Robeson nodded permission and sat down while the little man wrote. For a time the scratching of his pen was the only sound in the ship's cabin. But Ballinger stood up at last—and before Robeson's eyes ripped the paper to shreds.

"Skip it," he muttered. "I—changed my mind."

Robeson, vaguely disturbed, motioned him to the storage chambers. Ballinger docilely carried shining fuel flasks from there to the air-lock. When it was full they donned helmets again, entered the lock, evacuated the air from it, and emerged outside the ship. Carrying the fuel flasks on their shoulders, they made trip after trip to the cache. In the cavern, the orderly pile of cylinders grew. They were of shining tin—the only metal, other than costly platinum, not attacked by the concentrated synthetic fuel. Rocket tubes and firing chambers in space ships, Robeson knew, were lined with platinum. Had to be, obviously, because tin would melt out at the first blast. But tin flasks were suitable for storage. He had seen fuel caches on steaming Venus piled high with such flasks as these. Ballinger had bought them, and extra fuel, upon Robeson's suggestion that they establish a permanent supply camp at the scene of their operations.

So smoothly was the task completed, so meekly did Ballinger obey, that Robeson almost felt a twinge of regret at the last. But he shrugged it off. The plan was perfect, fool-proof. To jeopardize it for the sake of one human life would be absurd.

When the last glistening fuel tank was safely cached, he faced the little man in the cavern.

"This," said Robeson slowly, "is where you get off. Anything to say?"

Ballinger smiled faintly. "It wouldn't help if I asked you to change your mind? You'd be better off."

Robeson shrugged, uneasy despite himself, despite the obvious perfection of his plan. As though he were weighing his own life in the balance, instead of Ballinger's—

"You see," continued the little man, "this isn't so hard on me, really. I was retired on account of radivite—picked it up on Jupiter. I threw in with you because I wanted to feel a ship under me again, before I went. Six or seven months more, the medicos said. You'd get the ship then, Robeson, according to our agreement. You could make an honest living, scouting for ore. Not a rich one, but honest."

Radivite! Scourge of Jupiter—a form of poisoning caused by radioactive gases on that planet. So that was the secret of Ballinger's fatalistic calm!

"If you kill me," the little man continued, "you'll never get back. You'll freeze here."

Trembling rage tightened Robeson's trigger finger. What was the fool saying? Was Ballinger trying to unnerve him, to bluff him? If so, it wouldn't work. Hadn't he proved, even to the ex-pilot, that he could handle the ship properly?

The alpha-gun snorted characteristically. Its thin pencil sheared a single hole through Ballinger's suit and

crackled against crumbly rock behind the man. The body collapsed at once. Robeson took the suit and helmet off it and left it there, already stiffening with cold.

SIX MONTHS later Robeson triumphantly watched the barren little planetoid swell in the field of his course 'scope. His plan had functioned perfectly. Timing his flight to coincide with that of the platin-ship from the Martian mines, he had swung out upon its course, flying wildly to simulate the actions of a sun-blinded pilot. The treasure ship had, of course, taken him aboard. His eyes cleverly irritated with drugs, he had been able to play the part of a blinded pilot perfectly. He had even given his name and an account of Ballinger's death in the mythical mine shaft. He had run no risk in that, because the big ship was as isolated, in space, as his own little vessel. Interplanetary radio was still a dream of the future, so far as real distances were concerned.

After a day aboard the treasure liner, he had located the main ventilating ducts. Four gas capsules placed there had quickly spread anaesthesia throughout the great ship. A mask concealed in the luggage brought from his own vessel had saved him from sharing the oblivion which engulfed the rest of those on board, from captain to rocket tender. It had been a few hours' work to blast the vault open with explosives —furnished by Ballinger for the mythical mining operations—and to transfer the platinum treasure to his own tiny cruiser, now jammed to capacity with the steel-gray bars for which Venusian rebels would pay him a fortune.

Before leaving, he had slashed open the big ship's fuel tanks, flooded the vessel with the superlative inflammable stuff, and set an electrical ignitor. Far behind him, a tiny comet had burst into being, burnt briefly but furiously. Nothing remained to accuse him.

By a narrow margin—narrower than he had planned—his fuel had carried him back to the cache. The tanks were

all but empty; his first act after unloading the treasure must be to refill them, not only for the flight to Venus later, but for keeping the ship warm during the time he had to wait here. When he started back, it would be from a point millions of miles removed from that where the treasure ship was looted, a distance which he would cover without effort, riding this frigid little world.

He would leave the platinum here, returning empty-handed to Venus as Ballinger's surviving partner. He would tell of a long, hopeless wait for a rescue ship, of desperately braving flight when no ship appeared, of drifting lost in space and only by sheer good fortune limping his ship into port. It would be a good story. Nobody would dream of connecting him with the lost platin-liner.

Later he would negotiate the sale of the cached treasure to warring, weapon-hungry Venusian tribesmen, always greedy for platinum to energize their deadly photon guns.

He landed the ship as expertly as Ballinger would have, lips twisting with the memory of that strangely calm little man. Again he felt vaguely uneasy, an unnamed fear born of the ex-pilot's last words.

It was that which altered his intention of unloading the treasure first. Instead, he entered the air-lock, space-clad and helmeted. From the outer port he struck out for the cache. He was trembling now, nerves shrieking for assurance that only the sight of the cache could give. Was it safe, or had some wandering meteor crashed there and buried the precious flasks beneath tons of crumbling stone? It was the one hazard he had been unable to guard against—the single not-inconsiderable risk which he had been forced to run.

Ballinger's body lay near the cavern entrance, frozen stiff, flesh and clothing preserved by the cold. Curiously enough, it steadied Robeson's nerves, testifying as it did that the cavern was intact, the precious cache safe. His flashlight found the tin flasks, in orderly array as he had

left them, light glinting from their polished surfaces under a rime of gray dust. He laughed hoarsely in his relief.

Then with a cold clutch about his heart, he lifted one of them. There is no dust where there is no air. It was almost weightless—but he himself weighed but a few pounds on this tiny world. With trembling, awkward fingers he tried to unseal the cap. The gray dust flaked off, and the metal crumbled rottenly in his hands, a faint yellow stain on what had been the inside surface sole testimony to the fact that it had once held fuel.

HE WENT berserk then, opening flask after flask, hacking the rotten metal apart until a sea of empty fragments lay gray and glittering about his feet. All were drained of their precious contents, all rotten with those gray-white spots. He held a piece before his eyes and saw light glint through a hole the size of a pencil point. The dead metal gave further under his finger nail.

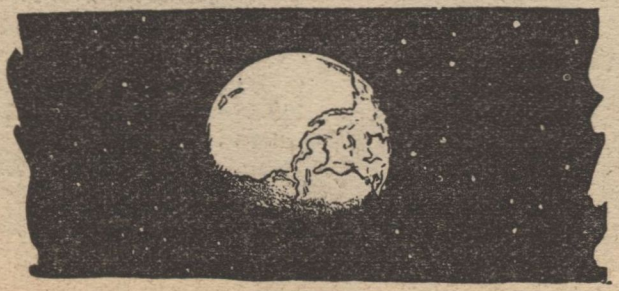
Two flasks remained. One had a swish of liquid in it. Laughing crazily, he emptied it there on the floor of the cavern. A scant cupful perhaps, quickly soaked up by the porous rock. Under the last empty flask he spied a bit of white—a folded, fuel-stained sheet of paper, brittle with cold. He opened it in the light of the torch. The script was Ballinger's. This must have been what he wrote in the cabin. He must have torn a mere blank sheet. Robeson read it through, re-read it, forming the fatal words with dry lips.

When you read this, I shall be dead —and you as good as dead. Had you spared me, I should have warned you to give up your plan. It had a fatal flaw—and that because your own lies betrayed you. You told me that the planetoid where we were to establish a supply base was warm.

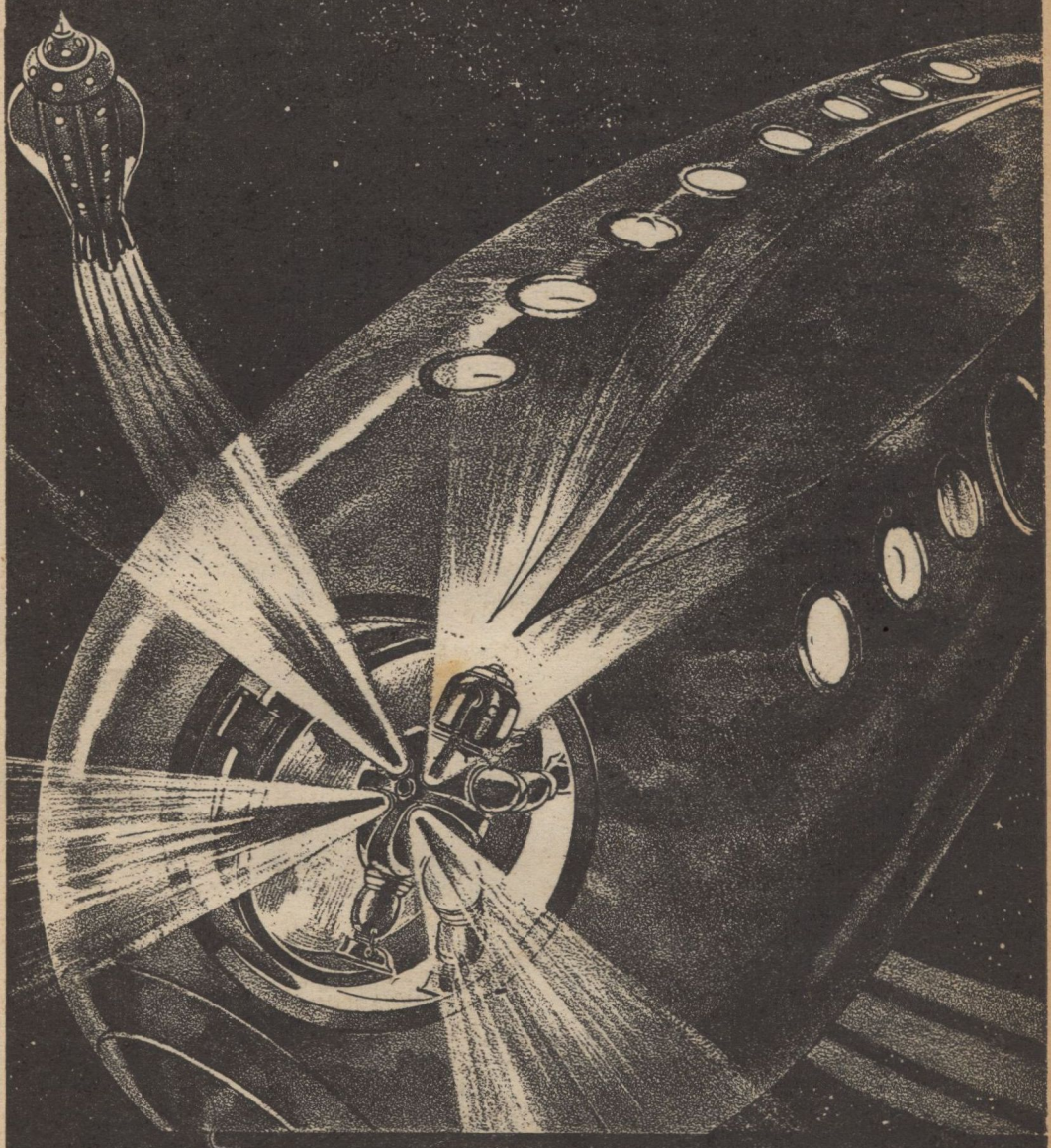
I provided tin fuel flasks such as are used on Venus and in the warm regions of Earth and Mars. But tin—ordinary white tin—is unstable at temperatures below 18°C. And changes into a stabler, but weak and powdery, allotropic form known as "gray tin." The pressure of the contents will penetrate the weakened spots and allow the fuel to leak out, as you now know. To store fuel on this cold planetoid, we need flasks lined with platinum, as our rocket tubes are.

I win, Robeson. As you read this, your ship's tanks must be empty. You are marooned on a cold and lifeless world. When your batteries are discharged—as they soon will be—you will freeze to death—slowly. You'll envy me, Robeson. My troubles will be over. Yours—cold, insanity and death—will just begin.

Edward Ballinger.



COSMIC ENGINEERS



BY CLIFFORD D. SIMAK

COSMIC ENGINEERS

BY CLIFFORD D. SIMAK

CONCLUDING SIMAK'S GREATEST SCIENCE-FICTION STORY — A NARRATIVE OF COLLIDING UNIVERSES!

Synopsis:

Caroline Martin, sentenced to space for refusing to reveal a secret of military value when Earth and Mars are fighting Jupiter for domination of the Solar System, is able to place herself in suspended animation, but finds that while all other physiological functions are suspended, her brain still functions. She is rescued nearly a thousand years later from her space shell near Pluto's orbit by Gary Nelson and Herb Harper, who take her to Pluto.

There, because she has thought uninterruptedly for almost a thousand years, she is able to understand messages being received by Dr. Kingsley from the Cosmic Engineers at the rim of the exploding universe. The Engineers inform her that the existence of the universe is threatened by an outside force and appeal for help. Under the direction of the Engineers, apparatus is constructed to enable the four to travel to the planet of the Engineers in a ship piloted by Tommy Evans, the seventieth century's Lindbergh, who had hoped to fly to Alpha Centauri and thus be the first man to venture beyond the Solar System.

The Engineers, a queer metallic people, explain that the universe exists within a five-dimensional inter-space which also contains many other universes. Our universe and another universe are about to collide, but unless something can be done, both universes will be destroyed before actual contact. Frictional stress will be set up between the two universes upon their near approach and new energy will be created. Seeping into the universes, it will increase the mass-energy in each, turn them into contracting universes and almost, but not quite, destroy them. Just before final destruction, the contraction will halt and the universes will start expanding again. But to all purposes, the universes will have reverted to original chaos so far as life within them is concerned.

Beings on the other universe have informed the Engineers of the impending impact, and are working with them in an attempt to save the universes.

The Hellhounds, however, a race which has warred with the Engineers for millions of years, wish the universe destroyed. They have found a means of escaping into inter-space and expect to follow the contracting universe back to its beginning point, reënter it and take over complete domination of it. They attack the Engineers in an effort to wipe them out before they can save the universe.

Other entities, called by the Engineers from other parts of the universe, prove of little help in solving the problem, and the Engineer informs the Earthlings that the hope of the universe rests upon them.

Meanwhile, they appeal to the beings in the other universe to cross inter-space and help them fight off the Hellhounds. But the other universe people refuse to do so until something is learned of the

nature of the inter-space. Until then, they are afraid to try to attempt a crossing.

Pressed by the attack of the Hell-hounds into the necessity of quick action, the Engineers agree to send the Earthlings to a race which may be able to supply information concerning the inter-space. They warn, however, that the effort may fail, inasmuch as they have discovered the race only through the use of geodesic tracers, and fear the race and its world may exist in probability only. They explain that space-time is filled with shadows of existence and world lines of probability, that only one of these can exist—and that the world they have in mind may be only a probability and therefore inaccessible.

XI.

TOMMY EVANS' ship rested on one of the lower roofs of the city, just outside the laboratories level. In a few minutes now it would be lifted and hurled through a warp of space and time that should place it upon the Earth they had seen in the swirling bowl—an Earth that was no more than a probability—an Earth that wouldn't exist for millions of years if it ever existed.

"Take good care of that ship," Tommy told Gary.

Gary slapped him on the arm.

"I'll bring it back to you," he said.

"We'll be waiting for you," Kingsley rumbled.

"Hell," moaned Herb, "I never get to have any fun. Here you and Caroline are going out there to the Earth and I got to stay behind."

"Listen," said Gary savagely, "there's no use in risking all our lives. Caroline's going because she may be the only one who could understand what the old Earth people can tell us, and I'm going because I play a better hand of poker. I beat you all, fair and square."

"I was a sucker," moured Herb. "I should have known you'd have an ace in the hole. You always got an ace in the hole."

Tommy grinned.

"I got a lousy hand," he said. "We should have played more than just one hand."

"It was one way of deciding it," said Gary. "We all wanted to go, so we played one hand of poker. We couldn't waste time for more. I won. What more do you want?"

"You always win," Herb complained.

"Just how much chance have you got?" Tommy asked Caroline.

She shrugged.

"It works out on paper," she declared. "When we came here the Engineers had to distort time and space to get us here, but they distorted the two equally. Same amount of distortion for each. But here you have to distort time a whole lot more. Your factors are different. But we have a good chance of getting where we're going."

"If it's there when you get there—" Herb began, but Kingsley growled at him and he stopped.

Caroline was talking swiftly to Kingsley.

"The Engineer understands the equation for the hyperspheres," she was saying. "Work with him. Try to set up several of them in our own space and see if it isn't possible to set up at least one outside the universe. Pinch it off the time-space warp and shove it out into the inter-space. We may be able to use it later on."

A blast of sound smote them and the solid masonry beneath their feet shivered to the impact of a bomb. For a single second the flashing blaze of atomic fury made the brilliant sunlight seem pale and dim.

"That one was close," said Tommy quietly.

They were used to bombs now.

Gary craned his neck upward and saw the silvery flash of ships far overhead.

"The Engineers can't hold out much longer," Kingsley rumbled. "If we are going to do anything we have to do it pretty soon."

"There is the old space warp again," said Herb. He pointed upward and the others sighted out into space beyond his pointing finger.

There it was—the steady wheel of light, the faint spin of space in motion—they had seen back on Pluto. The doorway to another world.

"I guess," said Caroline, "that means we have to go." Her voice caught on something that sounded like a sob.

She turned to Kingsley. "If we don't come back," she said, "try the hyperspheres anyhow. Try to absorb the energy in them. You won't have to control it long. Just long enough so the other universe explodes. Then we'll be safe."

She stepped through the air lock and Gary followed her. He turned back and looked at the three of them—great, rumbling Kingsley with his huge head thrust forward, staring through his helmet, with his metal-shod fists opening and closing; dapper, debonair Tommy Evans, the boy who had dreamed of flying to Alpha Centauri and had come to the edge of the universe instead; Herb, the dumpy little photographer who was eating out his heart because he couldn't go. Through eyes suddenly bleared with emotion, Gary waved at them and they waved back. And then he hurried into the ship, slammed down the lever that swung tight the air-lock valves.

IN THE control room he took off his helmet and dropped into the pilot's seat. He looked at Caroline. "Good to get the helmet off," he said.

She nodded, lifting her own off her head.

His fingers tapped out a firing pattern. He hesitated for a moment, his thumb poised over the firing lever.

"Listen, Caroline," he asked, "how much chance have we got?"

"We'll get there," she said.

"No," he snapped, "don't tell me that. Tell me the truth. Have we any chance at all?"

Her eyes met his and her mouth sobered into a straight, thin line.

"Yes, some," she said. "Not quite fifty-fifty. There are so many things. So many factors of error, so many factors of accident. Mathematics can't foresee them, can't take care of them, and mathematics are the only signposts that we have."

He laughed harshly.

"We're shooting at a target, don't you see?" she said. "A target millions of light-years away—and millions of years away—but you have to have a different set of coördinates for each. The same set won't do for both. It's difficult."

He looked at her soberly. She said it was difficult. He could only faintly imagine how difficult it might be. Only someone who was a master at the mathematics of both space and time could even faintly understand it—someone, say, who had thought for forty lifetimes.

"And even if we do hit the place," he said, "it may not be there."

Savagely he plunged his thumb against the lever. The rockets thundered and the ship was arcking upward. Another pattern and another. Plunging upward under the full thrust of rocket power, and still the ruined city was all around them—cragged, broken towers shattered by the blasting of atomic energy.

The soft swirl of light that marked the opening of the time-space tunnel lay between and beyond two blasted towers. He fired a short corrective burst to line the nose of the ship between the towers and then depressed and fired a pattern that drove them straight between

the towers, up and over the city, straight for the whirl of light.

The ship arrowed swiftly up. The directional cross hairs lined squarely upon the hub of spinning light.

"We're almost there," he said, his breath whistling between his teeth. "We'll know in just a minute."

The cold wind out of space was blowing on his face again; the short hairs on his neck were trying to rise into a ruff. The old challenge of the unknown. The old glory of crusading.

He snapped a look at Caroline. She was staring out of the vision plate, staring straight ahead, watching the rim of the wheel spin out until only the blackness of the hub remained.

She turned to him. "Oh, Gary!" she cried, and then the ship plunged into the hub and blackness as thick and heavy and as stifling as the ink of utter space flooded into the ship, seemed to dim the very radium lamps that burned within the room.

He heard her voice coming out of the darkness that was trying to engulf them. "Gary, I'm afraid!"

Then the black was gone and the ship rode in space again—in star-sprinkled space that had, curiously, a warm and friendly look after the blackness of the tunnel.

"There it is!" Caroline cried, and Gary expelled his breath in a sigh of relief.

Below them swam a planet, a planet such as they had seen in the spinning bowl back in the city of the Engineers. A planet that was spotted with mighty deserts, a planet with its mountains weathered down to meek and somber hills, a planet with shallow seas and a thinning atmosphere.

"The Earth," said Gary, looking at it.

YES, the Earth. The birthplace of the human race. Now an old and senile planet tottering to its doom. A planet that had outlived its usefulness. A planet that had mothered a great race of people—a race that always strove to reach the beyond, that met each challenge with a cry of battle. A crusading people.

"It's really there," said Caroline. "It's real."

Gary glanced swiftly at the instruments. They were only a matter of five hundred miles above the surface, and as yet there was no indication of atmosphere. Slowly the ship was dropping toward the planet, but still there was no sign of anything but space.

He whistled softly. Even the slightest presence of gases would be registered on the control panel, and so far the gauges hadn't even flickered.

Earth must be old! Her atmosphere was swiftly being stripped from her to leave her bare bones naked to the cold of space. Space, cold and malignant, was creeping in on mankind's cradle.

He struck the first sign of atmosphere at slightly under two hundred miles.

The surface of the planet below was lighted by a Sun which must have lost much of its energy, for the light seemed feeble compared to the way Gary remembered it. The Sun, behind them, was shielded from their vision.

Swiftly they dropped, closer and closer to the surface. Eagerly they scanned the surface for some sign of cities, but they saw only one and that, the telescope revealed, was in utter ruin. Drifting sands were closing over its shattered columns and once mighty walls.

"It must have been a great city in its day," said Caroline softly, and there was a tinge of sadness in her words. "I wonder what has happened to the people."

"Died off," said Gary, "or left for some other planet, maybe some other Solar System."

The telescopic screen mirrored scene after scene of desolation. Vast deserts with shifting dunes and mile after mile of nothing but shimmering sand, with-

out a trace of vegetation. Worn-down hills with boulder-strewn slopes and wind-twisted trees and shrubs fighting their last stand against the encroachments of a hostile environment.

Gary turned the ship toward the night sight of the planet, and it was then they saw the Moon. Vast, filling almost a twelfth of the sky, it loomed over the horizon, a monstrous orange ball in full phase. Many times larger than they remembered it.

"How pretty!" gasped Caroline.

"Pretty and dangerous," said Gary.

It must be approaching Roche's limit. Falling out of the sky, year after year it had drawn closer to the Earth. When it reached a certain limit it would be disrupted, torn to bits by the stresses of gravitation acting against it. It would shatter into tiny fragments and those fragments would take up independent orbits around old Earth, giving her a miniature of the rings of Saturn. But the same forces that would disrupt the moon would disrupt the Earth. Volcanic action, tremendous, world-shattering earthquakes, monstrous tidal waves. Mountains would be leveled, new continents raised. Earth's face would be changed once again, as it probably had been changed many times before. Search as he might, Gary could find no single recognizable feature, not a single sea or continent that seemed familiar.

He reflected on the changes that had come to pass. The Earth must have slowed down. Probably a night now was almost a month long—and day equally as long. Long scorching days and long frigid nights. Century after century, with the moon tides braking the Earth's motion, with the addition of mass by falling meteors, Earth had lost her energy. Increase of mass and loss of energy had slowed her spin, had shoved her farther and farther away from the Sun, out and out into the more frigid regions of solar space. And now she was losing her atmosphere. Her gravity was weakening and the precious gases were slowly being stripped from her. Rock weathering was absorbing some of the oxygen.

"Look!" cried Caroline.

Aroused from his daydreaming, Gary looked. Straight ahead, looming on the horizon, was a great city, a city of gleaming metal.

"The Engineer said we would find people here," whispered Caroline. "That must be where we'll find them."

THE CITY was falling into ruin. Much of it, undoubtedly, already had been covered by the creeping desert that flanked it on every side. Some of the buildings were falling apart, with great gaping holes and fallen structures. But part of it, at least, was standing and that part gave a breath-taking hint to the sort of city it had been.

Smoothly Gary brought the ship down toward the city, down toward a level patch of desert in front of the largest building, a building that stood weirdly above the sand, a beauteous thing that almost defied description, a poem in grace and rhythm, seemingly too fragile for this bitter world.

The ship plowed through the sand and stopped.

Gary rose from the pilot's seat and reached for his helmet. "We're here," he announced.

He caught the glint of tears in Caroline's eyes. "Here, here," he said, "what is this about?"

She smiled and scrubbed at her eyes. "I didn't think we'd make it," she declared. "We took such an awful chance."

"But we did," he said gruffly. "And we have a job to do."

He set his helmet on his head and clamped it down. "I have a hunch we'll need these things," he said.

She put on her helmet and together they went out of the air lock.

Wind keened thinly over the empty

desert and the ruins, kicked up little puffs of sand that raced and danced weird rigadoons across the dunes and past the ship, up to the very doors of the shining building that confronted them.

A slinking shape slunk across a dune and streaked swiftly for the shelter of a pile of fallen masonry. A little furtive shape that might have been a skulking dog or something else—almost anything at all.

A sense of desolation smote Gary and he felt an alien sort of fear gripping at his soul.

He shivered. That wasn't the way a man should feel on his own planet. That wasn't the way a man should feel on coming home from the very edge of everything.

But it wasn't the edge of everything. Just the edge of the universe. For the universe wasn't everything. Beyond it, stretching for inconceivable distances, were other universes. The universe was just a tiny unit of a whole. A grain of sand upon the beach—less than a grain of sand upon the beach.

And this might not be the Earth. It might be just the shadow of the Earth. A probability that gained strength and substance and a semblance of being because it missed being an actuality by a mere hairbreadth.

His mind whirled at the thought of it—at the astounding vista of possibilities which the thought brought up—the infinite number of possibilities that existed as shadows, each with a queer shadow existence of its very own, things that just missed becoming realities. Disappointed ghosts wailing their way through the eternity of existence.

Caroline was close beside him, her shoulder touching his. Her voice came to him through the helmet phones, a tiny voice. "Gary, everything is so strange."

"Yes," he said. "It is strange."

SLOWLY, cautiously, they walked forward, toward the gaping doors of the great metal building, from whose turrets and spires and froth of superstructure the moonbeams splintered in a cold glitter of fairy beauty.

Sand crunched and grated underfoot. The wind made shrill, keening noises and they could see the frozen frost crystals in the sand, moisture locked in the grip of deadly cold.

They reached the doorway and peered inside. The interior was dark and Gary unhooked the radium flash from his belt. The lamp cut a broad beam of light down the mighty, high-arched hallway that led straight from the door toward the center of the building.

Gary caught his breath, seized with a sort of nameless fear.

"We might as well go," he said, fighting down the fear that clutched at him.

Their footsteps echoed and reëchoed in the darkness as the metal of their boots rang against the cold paving blocks.

Gary felt the weight of centuries pressing down upon him—the eyes of many nations watching furtively, jealous to guard tradition from the invasion of alien beings. For he and Caroline were aliens here. He sensed it in the very atmosphere of the place, in the architecture of the building, in the quiet that brooded in the hallway.

Suddenly they left the hallway and were striding into what seemed a vast hall. Gary snapped the flash to full power and explored the place. It was filled with furniture that seemed hoary with age and mellowed tradition. Solid blocks of seats that faced a rostrum, and all about the wall ran ornate benches, with the look of weighty age about them.

At one time, now long gone, it might have been a council hall—a meeting place of the people to decide great issues. In this place history might have been written in word and deed. The course

of cosmic empire might have been shaped here and the fate of stars decided.

But now there was no sign of life—just a brooding silence that seemed to whisper of olden things, of days and faces and issues long since wiped out by the inexorable march of time.

He looked about and shivered slightly.

"I don't like this place," said Caroline.

A light suddenly flared and blazed as a door was opened and thought-fingers reached out to them, thoughts that were kindly and definitely human:

"Do you seek someone here?"

XII.

STARTLED, they spun around. A stooped old man stood in a tiny doorway that opened from the hall—an old man who, while he was human, seemed not quite human. His head was large and his chest bulged out grotesquely. He stood on trembly pipestem legs and his arms were alarmingly long and skinny.

A long, white beard swept over his chest, but his great domed skull was innocent of even a single hair. Across the space that separated them, Gary felt the force of piercing eyes that stared out from under shaggy eyebrows.

"We're looking for someone," said Gary, "to give us information."

"Come in," shrieked the thought of the old man. "Come in. Do you want me to freeze to death holding the door open for you?"

Gary grasped Caroline by the hand. "Come on," he said.

At a trot they crossed the room, ducked inside. They heard the door slam shut behind them and turned to look at the old man.

He stared back at them. "You are human beings," said his thoughts. "People of my own race. But from long ago."

"That's right," said Gary. "From many millions of years ago."

They sensed something that almost approached disbelief in the old man's thoughts.

"And you seek me?"

"We seek someone," said Gary. "Someone who can tell us something that may save the universe."

"Then it must be me," said the old man, "because I'm the only one left."

"The only one left!" cried Gary. "The last man?"

"That's right," said the old man, and he seemed almost cheerful about it. "There were others but they passed on. A man's life span must sometime come to an end."

"But aren't there any other people?" asked Gary. "Are you the last man left alive?"

"There were others," said the old one, "but they left. They went to a far star. To a place prepared for them."

A coldness gripped Gary's heart. "You mean they died?"

The old man's thoughts were querulous and impatient. "No, they did not die. They went to a better place. To a place that has been prepared for them for many years. A place where they could not go until they were ready."

"But you?" asked Gary.

"I stayed because I wanted to," said the old man. "Myself and a few others. We could not forsake Earth. We elected to stay. All the others have died."

Gary glanced about the little room. It was tiny, but comfortable. A bed, a table, a few chairs, other furniture he did not recognize. Apparatus of undeniably scientific nature piled on a shelf.

"You like my place?" asked the old man.

"Very much," said Gary.

"Perhaps," suggested the old man, "you would like to take off your helmets. It's warm in here and I keep the atmosphere a little denser than it is

outside. Not necessary but more comfortable. The atmosphere is getting pretty thin and hard to breathe."

THEY unfastened their helmets and lifted them off. The air was sharp and tangy; the room was warm.

"That's better," said Caroline.

"Chairs?" asked the old man, pointing out a couple.

They sat down and he lowered his old body into another.

"Well, well," he said, and his voice had a grandfatherly touch to it, "humans of an earlier age. Splendid physical specimen, the two of you. And pretty barbaric yet . . . but the stuff is in you. You use your mouths to talk with, and man hasn't talked other than with his thoughts for thousands and thousands of years. That in itself would set you pretty far back."

"'Pretty far' is right," said Gary. "We are the first humans who ever left the Solar System."

"This is far back," said the old man.

His sharp eyes watched them closely. "You must have an interesting story," he suggested.

"We have," said Caroline and swiftly they told it to him, excitedly, first one and then the other talking, adding in details, explaining situations, laying before him the problems which they faced.

He listened intently, snapping questions every now and then, his bright old eyes shining with the love of adventure, the wrinkles in his face taking on a kind benevolence as if they might be children, home from the first day of school, telling of all the new wonders they had met.

"So you came to me," he said. "You came trundling down a crazy timepath to seek me out. So that I could tell you the things you want to know."

Caroline nodded. "You can tell us, can't you?" she asked. "It means so much to us . . . so much to the entire universe!"

"I wouldn't worry," said the old man. "If the universe had come to an end I wouldn't be here. You couldn't have come to me."

"But maybe you aren't real," said Caroline. "Maybe you are just a shadow. A probability—"

The oldster nodded and combed his beard with gnarled fingers. The breath wheezed in his mighty chest.

"You are right," he agreed. "I might be only a shadow. This world of mine might be only a shadow. I sometimes wonder if there is any reality at all—if there is anything but thought. Whether it may not be that some gigantic intelligence has dreamed these things—set mighty dream stages and peopled them with actors of his imagination. I wonder at times if all the universes may be nothing more than just a shadow show. A company of shadowy actors moving on a shadow stage."

"But you can tell us," pleaded Caroline. "You will tell us."

His old eyes twinkled. "I will tell you, yes, and gladly. Your fifth-dimension is eternity. It is everything and nothing—all rolled into one. It is a place where nothing has ever happened and yet, in a sense, where everything has happened. It is the beginning and the end of all things. In it there is no such thing as space or time or any attribute which we attribute to the four-dimensional continuum."

"I can't understand," said Caroline, lines of puzzlement twisting her features. "It seems so hopeless, so entirely hopeless. Can it be explained by mathematics?"

"Yes," said the old man, "but I'm afraid you wouldn't understand. They weren't understood until just a few thousand years ago."

He stroked the beard down smoothly over his pouter-pigeon chest.

"I do not wish to make you feel badly," he declared, "but I can't see how you would have the intelligence to

understand. After all, you are a people from an earlier age."

"Try her," growled Gary, "and see if she understands. If she doesn't, you're better than the Engineers. They couldn't stump her."

"All right," said the old man, but there was almost a patronizing tone to his thoughts.

GARY GAINED a confused impression of horrific equations, of bracketed symbols that built themselves into a tangled and utterly confusing structure of meaning—a meaning that seemed so vast and all-inclusive that his mind instinctively shuddered away from it.

Then the thoughts were gone and Gary's head was spinning with them, with the vital forcefulness that he had guessed and glimpsed behind the symbolic structure that had been in the mathematics.

He looked at Caroline and saw that she seemed puzzled. But suddenly a look of awe spread over her face.

"Why," she said and hesitated slightly. . . "why, the equations cancel, represent both everything and nothing, both zero and the ultimate in everything."

Gary caught the sense of surprise and confusion that flashed through the mind of their host.

"You understand," said the faltering thought. "You grasp the meaning perfectly!"

"Didn't I tell you," said Gary. "Sure, she understands. But there isn't another human being back in our time who could understand."

But Caroline was talking, almost to herself. "That means that the energy would be timeless. It would have no time factor, and since time is a factor in power, its power would be almost infinite. There'd be no stopping it, once it started."

"You are right," said the old man. "It would be raw, created energy from a region where four-dimensional laws do not hold good. It would be timeless and formless."

"Formless," said Caroline. "Of course it would be formless! It wouldn't be light, or heat, or matter, or motion, or any other form of energy such as we know. But it could be anything. It could crystallize into anything."

"Good Lord!" breathed Gary. "How could you handle stuff like that? Your hyperspheres wouldn't handle it. It could mold space itself! It could annihilate time!"

Caroline looked at him soberly.

"If I could create a fifth-dimensional trap," she said. "If I could trap it in the framework of the medium from which it came. Don't you see that such a framework would attract it, would gather it in and hold it. Like a battery holds energy."

"Sure," said Gary, "if you could create a fifth-dimensional trap. But you can't. It's eternity. The dimension of eternity. You can't go fooling around with eternity."

"Yes, she can," said the old man.

The two of them stared at him, disbelieving.

"How?" asked Gary.

"Listen closely," said the oldster. "By rotating a circle through three-dimensional space you create a sphere. Rotate the sphere through four-dimensional space and you have a hypersphere. You have already created this. You have bent time and space around a mass to create a hypersphere, a miniature universe. Now all you have to do is rotate the hypersphere through five-dimensional space."

"But you'd have to be in five-dimensional space to do that," objected Gary.

"No, you wouldn't," contended the old man. "Scattered throughout three-dimensional space are ether eddies and time faults and space traps—call them anything you like. They are a common phenomena—nothing more than

isolated bits of four-dimensional space scattered around through three-dimensional space. The same thing would apply to a fifth dimension in the fourth dimension."

"But how," asked Caroline, "would one go about it? How would one rotate a hypersphere through the fifth dimension?"

Again Gary had that sense of confusion as the thoughts of the ancient one swept over him, thoughts that translated themselves into symbols and equations and brackets of mathematics that it seemed impossible any man could know.

"Gary," gasped Caroline, "have you a pencil and paper?"

GARY FUMBLED in his pocket, found an old envelope and a stub of a pencil. He handed them to her.

"Please repeat that very slowly," she said, smiling at the old man.

Gary watched in amazement as Caroline slowly and carefully jotted down the formulas, equations, symbols—carefully checking and going over them, checking and rechecking so there could be no mistake.

She shook her head. "It will take power," she said. "Tremendous power. I wonder if the Engineers can supply it."

"They have atomic power," said Gary. "They ought to be able to give you all you want."

The old man's eyes were twinkling. "I am remembering the Hellhounds," he said. "The ones who would have the universe destroyed. I cannot seem to like them. It seems to me that something should be done about them."

"But what?" asked Gary. "They seem to be all powerful. By the time we get back they may have battered the city into a mass of ruins."

The oldster nodded almost sleepily, but his eyes were glowing.

"We have had ones like that in our history," he said. "Ones who overrode the nations and imposed their will, standing in the way of progress. But always someone found something that would break them, someone found a greater weapon, a greater strength, and they went their way. Their names and works were dust and they were forgotten in the march of civilization—a civilization that would not be stayed."

"But I don't see—" began Gary, and then suddenly he did see—as clearly as light. He smote his knee and yelled his enthusiasm.

"Of course," he cried. "We have a weapon. A weapon that could wipe them out. The fifth-dimensional energy!"

"Of course you have," said the old man.

"But that would be barbarous," protested Caroline.

"Barbarous," shouted Gary. "Isn't it barbarous to want to see the universe destroyed so that the Hellhounds can go back to the beginning and take it over, control it, dominate it, take over galaxy after galaxy as a new universe is born? Shape it to their needs and desires? Hold in thrall every bit of life that develops on every cooling planet? Become the masters of the universe?"

"We must hurry then," said Caroline. "We must get back. Minutes count. We still may be able to save the Engineers and the universe, wipe out the Hellhounds."

She rose impatiently to her feet.

The old man protested. "You would go so soon?" he asked. "You would not stay and eat with me? Or tell me more about this place at the edge of the universe? Or let me tell strange things that I know you would be glad to hear?"

Gary hesitated. "Maybe we could stay a while," he suggested.

"No," said Caroline, "we must go."

"Listen," said Gary, "why don't you come along with us? We'd be glad to have you. We could use you in the

fight. There are things that you could tell us."

The old man shook his head. "No," said his thoughts, "I cannot go. For, you see, you are right. I may be only a shadow. A very substantial shadow, but still just a shadow of probability. You can come to me, but I can't go back with you. If I left this planet I might puff into nothingness, go back to the nonexistence of the thing that never was."

He hesitated. "But there's something," he said. "Something that makes me suspect I am not a shadow. That this is actuality. That the Earth will follow the course history tells me it has followed."

"What is that?" asked Gary.

"No," said the old man, "I cannot tell you that."

"Perhaps we can come back and see you again," said Caroline. "After this trouble is all over."

"No, my child," he said. "You will never come, for ours are two lives that never should have met. You represent the beginning and I represent the end. And I am proud that the last man could have been of service to one of the beginners."

THEY FASTENED down their helmets and walked toward the door.

"I will walk down to your ship with you," said the old man. "I do not walk a great deal now, for the cold and the thin air bother me. I must be getting old."

Their feet whispered through the sand and the wind keened above the desert, a shrill-voiced wind that played an eternal overture for the stage of desolation old Earth had become.

"I live with ghosts," said the old man as they walked toward the ship. "Ghosts of men and events and great ideals that built a mighty race. Traditions that are the breath of life to men and ideals that kept us from returning to the beast.

"Probably you wonder that I resembled a man so much. Perhaps you thought that men, in time to come, would become specialized monstrosities—great massive brains that lost the power of locomotion—or bundles of emotional reactions, unstable as the very wind—or foolish philosophers, or, worse yet, drab realists. But we became none of these things. We kept our balance. We kept our feet on the ground when dreams filled our heads."

They reached the ship and stood before the opened outer valve.

The old man waved a hand toward the mighty metal building. "The proudest city man ever built," he said. "A city whose fame spread to the far stars, to distant galaxies. A city that travelers told about in bated whisper. A place to which came the commerce of many solar systems, ships from across far inter-galactic space. But it is crumbling into dust and ruin. Soon the deserts will claim it and the wind will sing a death dirge for it and little animals will burrow in its bones."

He turned to them and Gary saw a half-mystic light shining in his eyes.

"Thus it is with cities," he said, "but Man is different. Man marches on and on. He outgrows cities and builds others. He outgrows planets. He is creating a heritage, a mighty heritage that in time will make him the master of the universe.

"But there will be interludes of defeat. Times when it seems that all is lost—that man will slip again to the primal savagery and ignorance, when the way seems too hard and the price too great to pay. But always there will be bugles in the sky and a challenge on the horizon and the bright beckoning of ideals far away. And Man will go ahead, to greater triumphs, always pushing back the frontiers, always marching up and outward."

Bugles, thought Gary. Bugles in the sky. And beckoning ideals and the

challenge of the skyline. The old crusading spirit—the old grasping of swords and the will to plunge ahead on faith. These were the things that would carry mankind on and upward. These were the only things that counted. The urge and drive and will—the spirit that never would admit defeat, the hands always groping to the stars.

The old man had turned about and was heading back toward the doorway of the building. His sandaled feet left a tiny trail across the shifting sand. Gone without even a good-by, without a wave of farewell. But gone with brave and glorious words winging in the wind.

XIII.

THE CITY of the Engineers lay in ruins, but above it, fighting desperately, battling valiantly to hold off the hordes of Hellhounds, the tiny remnant of the Engineer fleet still stood between it and complete destruction.

The proud towers were crumbled into dust and the roadways and parks were sifted with the white cloud of destruction, the powdered masonry smashed and pulverized to drifting fragments by the disintegrator rays and the atomic bombs. Twisted bits of wreckage littered the chaotic waste of shattered stone. Wreckage of Engineer and Hellhound ships that had met in the shock of battle and plunged in flaming ruin.

Gary glanced anxiously skyward. "I hope they can hold them off," he said, "long enough for the energy to build up."

Caroline straightened from the bank of instruments mounted upon the roof outside the laboratory.

"It's building up fast," she said. "I'm almost afraid. It might get out of control, you know. But we have to have enough of it. If the first stroke doesn't utterly destroy the Hellhounds, we won't have a second chance."

Gary's mind ran over the hectic days of work, the mad scramble against time. How Kingsley and Tommy had gone out to the edge of the universe to create a huge bubble of space-time, warping the rim of space into a hump, curving the time-space continuum into a hypersphere that finally closed and divorced itself from the parent body, pinching off like a yeast bud, an independent universe in the inter-space.

It had taken power to do that, a surging channel of energy that poured out of the power transmitter, crossing space in a tight beam to be at hand for the making of a new universe. But it had taken more power to "skin" a hypersphere, to turn it through a theoretical fifth dimension until it was of the stuff that the inter-space was made of—a place where time did not exist, a place whose laws were not the laws of the universe, a mystery region that was astonishingly easy to maneuver through space once it was created. It wasn't a sphere or a hypersphere—it was a strange dimension that apparently did not lend itself to measurement, or definition, or to identification by any of the normal perception senses.

But whatever it was, it hung there above the city, although there was no clue to its existence. It couldn't be seen or sensed, just something created from equations supplied by a last man living on a dying planet, equations scribbled on the back of an old envelope. An envelope, Gary remembered, that had contained an irate letter from a creditor who felt he should have a little cash on account. "Too long overdue," the letter said. He grinned. Back on Earth the creditor undoubtedly still was sending letters to him—pointing out that the account was becoming longer overdue with the passing of each month.

Outside the universe that tiny, created hypersphere was bumping along, creating frictional stress, creating a condition for the creation of the mysterious energy of eternity—an energy that even

now was pouring into the universe and being absorbed by the fifth-dimensional frame that poised about the city.

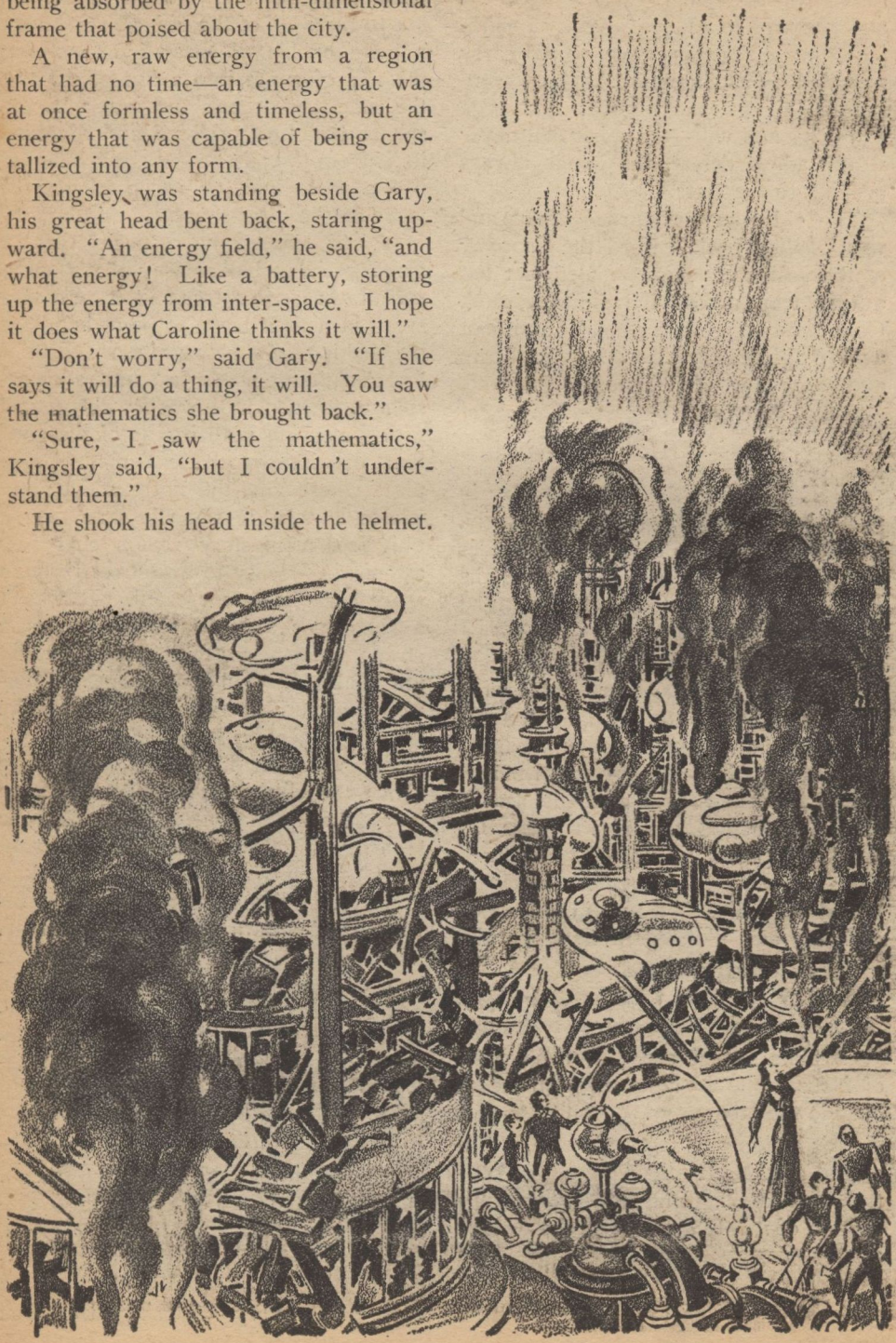
A new, raw energy from a region that had no time—an energy that was at once formless and timeless, but an energy that was capable of being crystallized into any form.

Kingsley was standing beside Gary, his great head bent back, staring upward. "An energy field," he said, "and what energy! Like a battery, storing up the energy from inter-space. I hope it does what Caroline thinks it will."

"Don't worry," said Gary. "If she says it will do a thing, it will. You saw the mathematics she brought back."

"Sure, I saw the mathematics," Kingsley said, "but I couldn't understand them."

He shook his head inside the helmet.



"What's the universe coming to?" he asked.

Caroline spoke quietly to the Engineer.

"I think there's plenty of energy now," she said. "You had better call them down."

The Engineer, headphones clamped upon his head, apparently was giving orders to the Engineer fleet, but the Earthlings couldn't catch his thoughts.

"Watch now," chirped Herb. "This is going to be a sight worth watching."

HIGH ABOVE the city a ship dropped, flashing downward, like a sil-

ver bullet. Another dropped and still another until the entire Engineer fleet was retreating, flashing back toward the ruined city, and in their wake followed the triumphant Hellhounds, a victorious pack in full cry, determined to wipe out the last trace of a hated civilization.

The Engineer had snatched the headphones from his head, was racing to the set of controls. Gary, glancing away from the battle scene above, saw his metal fingers reach out and manipulate dials, saw Caroline pick up an ordinary flashlight.

He knew that the Engineer was shifting the fifth-dimensional mass into a position between them and the screaming fleet of death above them—shifting that field of terrible energy—the energy that was entirely formless, an energy without a time factor, an energy whose power would be almost infinite.

The last of the Engineer fleet had reached the city, was shrieking down between the shattered towers, as if fleeing for its very life.

And only a few miles away, in what amounted to a mass formation, the Hellhound fleet was plunging down, guns silent now, protective screens still up, grim and ghastly ships running their quarry to the ground.

Gary's body tensed as he saw Caroline's arm sweep up, clutching the tiny flashlight, pointing it at the on-driving fleet.

He saw the flash of light burn upward, pale in the light of the sinking suns—a tiny, feeble ineffective beam of light stabbing at the oncoming ships.

And then the heavens seemed to blaze with light and a streamer of blue-white intensity whipped out toward the ships. Protective screens flared briefly and then exploded into a million flashing sparks. For the space of one split second, before he could get his hand up to shield his eyes against the inferno in the sky, Gary saw the gaunt black skeletons of the Hellhound ships, writhing and disappearing in the surging blast of energy that tore at them and twisted them and finally utterly destroyed them.

The sky was empty, as empty as if there had never been a Hellhound ship. There was no sign of the fifth-dimensional mass, no hint of ship or gun—just the blue of the sky, ashing into violet as the three suns swung below the far-off horizon.

"Well," said Herb, and Gary could hear his breath sobbing with excitement, "that's the end of the Hellhounds."

Yes, that was the end of the Hellhounds, thought Gary. There was nothing in the universe that could stand before such a blast of energy. When the light, the tiny feeble beam from the ridiculous little flash had struck the energy field, the energy, that timeless, formless stuff, had suddenly crystallized, had taken on the form of energy it had encountered. And in a burst of light it had struck at the Hellhounds, struck with terrible effectiveness—with entire lack of mercy, had wiped them out in the winking of an eye.

He tried to imagine that blast of light moving out into the universe. It would travel for years, would wing its merciless way for many thousands of light-years. In time its energy might wane, would slowly dissipate, would lose some of its power in the vast spaces of intergalactic space. And perhaps the day would come when all its energy would be gone. But meanwhile nothing could stand in its way, nothing could resist it. In years to come great suns would explode into invisible gas as the frightful power of the beam reached them and annihilated them and then passed on. And some astronomer, catching the phenomena in his lens, would speculate upon just what had happened.

He turned slowly around and faced Caroline. "How does it feel," he asked, "to win a war?"

The face she turned to him was strained and worn. "Don't say that to

me," she said. "I had to do it. I didn't want to. They were a terrible race, but they were alive—and there is so little life in the universe."

"Poor kid," he said, "you're all worn out. You've been working too hard. No sleep. You should rest up a bit."

He saw the tragic lines of her mouth.

"There is no rest," she said. "No rest at all. We have just started. We have to save the universe. We have to create more and more of the fifth-dimensional frameworks, many of them and larger. To absorb the energy when the universes meet."

Gary started. He had forgotten the approaching universe. So absorbed had they all become in ending the Hellhound attack that the edge of the real and greater danger had been dulled.

But now, brought back to it, he realized the job they faced.

HE SPUN on the Engineer. "How much longer?" he asked. "How much longer have we?"

"Very little time," said the Engineer. "Very little. I fear that energy may flood in upon us at any time."

"That energy," said Kinsley, a fanatical flame in his eyes. "Think of what could be done with it. We could set up a huge framework of fifth-dimensional space, use it as an absorber, a battery. We could send energy almost anywhere throughout the universe. A central universal power plant."

"First," declared Tommy, "you'd have to control it, be able to direct it in a tight beam."

"First," insisted Caroline, "we have to do something about this other universe."

"Wait a second," said Gary. "We've forgotten something. We asked those people in the other universe to come over and help us, but we don't need them now."

He looked at the Engineer. "Have you heard from them?" he asked.

"Yes," said the Engineer. "I have heard from them. They still want to come."

"They still want to come?" Astonishment rang in Gary's voice. "Why should they want to come?"

"They want to emigrate to our universe," said the Engineer. "And I have agreed to allow them to do so."

"You have agreed?" rumbled Kingsley. "And since when has this universe been in the market for immigrants? We don't know what kind of people they are. They might be dangerous. They may want to destroy the present life within the universe."

"There is plenty of room for them," said the Engineer, and if possible, his voice seemed cold and more impersonal than ever. "There is room to spare. We have over fifty billion galaxies and over fifty billion stars in each galaxy. Only one out of every ten thousand of these stars has a solar system, and only one of each hundred of the solar systems has life. And if we need more solar systems we can manufacture them. With the power at our command, the power of the eternal dimension, we can move stars, we can hurl them together and make solar systems. With this power we can reshape the universe, mold it to our needs."

The idea impacted with stunning force on Gary's brain. They could reshape the universe! Working with the raw materials at hand, with the almost infinite power at their command, they could alter the course of stars, could realign the galaxies, could manufacture planets, set up a well-worked-out plan to offset entropy, the tendency to run down, the tendency to go amuck. His mind groped futilely at the ideas, pawing them over and over, but back of it all was a curtain of wonderment and awe. And through his brain sang a subtle warning—a persistent little warning that hammered at his thoughts. Mankind itself wasn't ready for such

power, couldn't use it intelligently, perhaps would destroy the universe with it. Was there any other entity in the universe qualified to use it? Would it be wise to place such power in the hands of any entity?

"But why," Caroline was asking, "do they want to come?"

"Because," said the Engineer, "we are going to destroy their universe to save ours."

IT WAS as if a bombshell had been dropped among them. Silence clapped down. Gary felt Caroline's hand creep into his. He held it tight. He heard the gasp from Herb, saw Kingsley's great hamlike hands closing and opening.

"But why destroy their universe?" shouted Tommy. "We have the means at hand to save them both. All we have to do is create more of these five-dimensional screens to absorb the energy."

"No," said the Engineer, "we could not do it. Given time we could. But there is so little time, so very, very little time. We never would be able to create enough of the screens. The energy would overwhelm us. It would take so many of them. And we have so little time."

His thought cut off and Gary heard the shuffle of Kingsley's feet.

"These other beings," the Engineer went on, "know that their universe has very little longer to exist in any event. It has almost reached the end of its time. It soon will die the heat death. Throughout its space, matter and energy are being swiftly distributed. Soon the day will arrive when it will be equally distributed, when the temperature, the energy, the mass throughout the universe will be spread so thin that it hardly exists."

Gary sucked in his breath. "Like a watch running down," he said.

"You're right," said Kingsley. "Like a watch that has run down. That is what will happen to this universe in time."

"Not," said Gary, "if we have the energy from inter-space at our command."

"Already," said the Engineer, "only one corner of this other universe is suitable for life. The area facing us. Into that area all life has been driven and now it has been, or is being, assembled to transfer to our universe."

"But," said Herb, "just how are they going to get here?"

"They will use a time warp," said the Engineer. "They will bud out from their universe, but in doing so they will distort the time factor in the walls of their hypersphere. A distortion that will send them ahead in time, will push their little universe closer to us than to their universe. Our gravity will grasp the hypersphere and draw it in."

"But that," said Gary, "will produce more energy. Their little universe will be destroyed."

"No," declared the Engineer, "because they will merge their time-space continuum with the continuum of our universe as soon as the two come together. They will immediately become a part of our universe."

"Clever," said Tommy, "clever as hell."

"You told them how to create a hypersphere?" asked Herb.

"I did," said the Engineer. "And it will save the people of that other universe. They had tried many things, had worked out theories and mathematics in an effort to escape. They discovered many things that we do not know, but they had never thought of budding out from their universe. They apparently are a mechanistic people, a people very much like the Engineers. They seem to have lost that vital imagination with which your people are so well supplied."

"My Lord," breathed Gary, "think of it! Imagination saving the people of another universe. The imagination of

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a little third-rate race that hasn't even started using its imagination yet."

"You are right," declared the Engineer, "and in the æons to come that imagination will make your race the masters of the entire universe."

"Prophecy," said Gary.

"I know," said the Engineer.

"There's just one thing," said Herb, speaking slowly, "and that is, how is that other universe going to be destroyed?"

"We," said the Engineer, "are going to destroy it in exactly the same way we destroyed the Hellhounds!"

XIV.

TOMMY SAT in the pilot's seat and urged the ship slowly forward, using rocket blast after rocket blast to keep it on its course.

"You have to fight to stand still here," he gritted between his teeth. "A man can't tell just where he is. There doesn't seem to be any direction, nothing to orient oneself."

"Of course not," rumbled Kingsley. "We're in a sort of place that no other man has ever been. We're right out in the area where space and time are breaking down, where lines of force are all distorted, where everything is jumbled and broken up."

"The edge of the universe," said Caroline.

Gary stared out through the vision panel. There was nothing to see, nothing but a blue void that queerly seemed alive with a deep intensity of life.

He turned from the panel and asked the Engineer: "Any sign of energy yet?"

"Faint signs," said the Engineer, bending lower to peer at a dial set in a detector instrument. "Such very faint signs. The other universe is almost upon us now and the lines of force are beginning to make themselves felt."

"How much longer will it be?" asked Kingsley.

"I cannot tell," the Engineer told him. "We know so little about the laws out here. It may be a very short while or it may be some time yet."

"Well," said Herb, "the fireworks can start any time now. The folks from the other universe have crossed safely and there's no reason for the other universe existing. We can blast it any time we want to."

"Gary," said Kingsley, "you and Herb better get over to those guns. We may want action fast."

Gary nodded and walked to the controls of a disintegrator gun. He slid into the seat back of the controls and reached out a hand to grasp the swivel butt. He swung it back and forth, knew that outside the ship the grim muzzle of the weapon was swinging in a wide arc.

Through the tiny port in front of him he could see the blue intensity of the void in which they moved.

Out here time and space were thinning down and breaking up. Like a boat riding on the surface of a heaving sea, they were riding the very rim of the universe, their ship being tossed about by the shifting, twisting coördinates of force.

Out there somewhere, very close, was the mysterious inter-space. Close, too, invisible in all its immensity, but looming ever closer, was another universe. An old and tottering universe, from which its inhabitants had fled, a dying universe that had been sentenced to death so that a younger universe might live.

IN JUST a few minutes now the space between the universes would begin to fill with a charge of that terrible, timeless, formless energy. Slowly it would begin seeping into the two universes, slowly at first, and then faster and faster, increasing their mass, dooming them to almost instant destruction.

But before that could happen the disintegrator ray, most terrible form of energy known to the Engineers, would blast out into that field of latent energy, would sweep outward toward that other approaching universe.

Instantly the field of energy would be turned into the terrific power of the disintegrator ray, but millions of times more powerful than the ray itself. A blinding sheet of savage energy that would stop at nothing, that would smash the very mold of space and time, would destroy matter and cancel other energy, would blast its way into the other universe.

And when that happened, the energy field, draining all of its energy into the disintegrator blast, would be diverted from the younger universe, would turn its full force upon the one to be destroyed.

Staggering under the onrush of such a fierce storm of energy, the old universe would start contracting. Its mass would build up, faster and faster, as the fifth-dimensional energy, riding on the beams of the disintegrator guns, itself turning into an energy a million times more terrible than the disintegrator ray, hurled itself into its space-time frame.

Gary wiped his brow with the back of his hand.

That was the way Caroline and the Engineer had figured it out. He hoped it worked. And yet it seemed impossible that a tiny ship, two tiny guns manned by the puny members of the human race, could utterly annihilate a universe, a massive space-time matrix.

Yet he had seen the beam of a tiny flashlight, crystallizing the energy of the eternal dimension, blast out of existence, in the twinkling of an eye, a mighty fleet of warships, protected by heavy screens, armored against vicious bombs, impregnable to anything—to anything except the flashlight in the hand of a wisp of a girl.

Remembering this, it was easier to believe that the disintegrators, crystallizing a much vaster field of energy, might accomplish the destruction of a universe. But it wasn't the guns themselves that would do it, but the direction of all the energy into the other universe, energy riding on a million or more mile front of the fanning guns.

"The field is building up," Caroline said. "Be ready."

Gary grinned at her. "We'll fire when we see the whites of their eyes," he said.

He racked his brain for the origin of that sentence. Something out of history. Something out of the dim old legends of the past. A folk tale of some mighty battle of the ancient past.

He shrugged his shoulders. The story probably wasn't true, anyhow. Just another story to be told of a black night in the chimney corner when the wind howled around the eaves and rain dripped on the roof.

His eyes went to the port again, stared out into the misty blue, the blue that seemed to throb with vibrant life.

They had to wait. Wait until the energy had built up to a point where it would be effective. But not too long. For if they waited too long, it might pour into their own universe and wipe it out.

"Get ready," thundered Kingsley and Gary's hand went out to the switch that would loosen the blast of the disintegrator. His fingers gripped the switch tightly, tensed, ready for action.

"Give it to 'em!" Kingsley roared, and Gary snapped the switch.

With both hands he swung the swivel butt, back and forth, back and forth. Beside him, he knew, Herb was doing the same.

Outside the port blossomed a maelstrom of fiery light, a blinding, vicious flare of fire that seemed to leap and writhe and then became a solid sheet of flame. A solid sheet of flame that drove on and on, leaping outward, bringing doom to a worn-out universe.

It was over in just a few seconds —a few seconds when an inferno of energy was turned loose to rage between two universes.

Then the misty blue filled the port again and the ship was bucking, tossed about like a chip in heavy seas, twisted and dashed about by the broken lines of force that still heaved and quivered under the backlash of the titanic forces which a moment before had filled the inter-space.

Perspiration poured down Tommy's face as he fought to bring the ship under control, but with little results.

GARY SWIVELED around in his chair, saw that Caroline and the Engineer were bent over the detector dial, watching it intently.

Kingsley, looking over the Engineer's shoulder, was muttering: "No sign. No sign of energy."

That meant, then, that the other universe was already contracting, rushing backward to a new beginning—no longer a menace.

Gary patted the swivel butt of the gun. This and man's ingenuity had turned the trick. Mere man had destroyed one universe, but saved another. It seemed too utterly fantastic to be true.

He looked around the control room. Tommy at the controls, Herb at the other gun, the other three watching the energy detector. Everything was familiar, even to the multitude of dials and gauges on the control board. Nothing was any different than it was before. All commonplace and ordinary.

And yet, for the first time, tiny beings spawned within the universe had taken firm hold of the universe's destiny. Henceforward Man and his little compatriots throughout the vast gulfs of space would no longer be mere pawns

in the grim game of cosmic forces. Henceforward life would rule these forces, bend them to its will, put them to work, change them, shift them about.

Life was an accident. There was little doubt of that. Something that wasn't exactly planned. Something that had crept in, like a malignant disease in the ordered mechanism of the universe. The universe was hostile to life. The depths of space were too cold for life, most of the condensed matter too hot for life; space was traversed by radiations inimical to life. But life was triumphant. In the end the universe would not destroy it—it would rule the universe.

His mind went back, back to the day Herb had sighted that tiny flash of reflected sunlight in the telescopic screen within Pluto's orbit. Back to the finding of the girl in the space shell. And before him seemed to unreel the chain of events that had led up to this moment. If Caroline Martin had not been condemned to space, if she had not known the secret of suspended animation, if that suspended animation had not failed to suspend thought, if Herb had not seen the flash that betrayed the presence of the shell, if he, himself, had been unable to revive the girl, if Kingsley had not been curious about why cosmic rays should form a definite pattern—

And in that chain of happenings he seemed to see the hand of something greater than just happenstance. What was it the old man back on the old Earth had said? Something about a great dreamer creating stages and peopling them with actors.

Perhaps this was just the beginning. There were other universes, perhaps an endless chain of universal systems, with superuniverses inclosed in even greater superuniverses. And in time to come Man would invade and conquer these other universes even as now he was reaching out to reach and conquer new suns and stars.

"No energy indications," said the Engineer. "I think we have definitely ended the menace. The other universe

must have contracted out beyond the danger point. We are saved. I am so very, very happy."

He turned around and faced them all. "And so very grateful, too," he said.

"Forget it," said Herb. "It was our neck as well as yours."

XV.

HERB polished methodically at the last chicken bone and sighed. "That's the best meal I ever ate," he said.

They sat at the table in the apartment the Engineers had arranged for them. It had escaped the general destruction of the Hellhound attack, although the tower above it had been shattered by atomic bombs.

Gary filled his wineglass again and leaned back in his chair.

"I guess our job is done here," he said. "Maybe we'll be going home in just a little while."

"Home?" asked Caroline. "You mean the Earth?"

Gary nodded.

"I had almost forgotten the Earth," she said. "It has been so long since I have seen the Earth. I suppose it has changed a great deal since I saw it last."

"Perhaps it has," Gary told her, "although there are some things that never change. The smell of fresh plowed earth and the scent of hayfields at harvest time and the beauty of trees against the skyline at evening."

"Just a poet at heart," said Herb. "Just a blasted poet."

"Maybe there will be things I won't recognize," said Caroline. "Things that will be so different."

"I'll show you the Earth," said Gary. "I'll set you straight on everything."

"What bothers me," rumbled Kingsley, "are those people from the other universe. It's just like letting undesirable elements in our immigration schedules on Earth. You can't tell what sort of people they are. They might be life

forms that would be inimical to us."

"Or," suggested Caroline, "they might be possessors of great scientific secrets and culture. They might add much to the universe."

"There isn't much danger from them," said Gary. "The Engineers are handling them. They're keeping them cooped up in the hypersphere they used to cross inter-space until suitable places for their settlement can be found. The Engineers will keep an eye on them."

Metallic feet grated on the floor and Engineer 1824 came across the room toward the table.

He stopped before the table and folded his arms across his chest.

"Everything is all right?" he asked. "The food is good and you are comfortable?"

"I'll say we are," said Herb.

"We are so glad," said the Engineer. "We have tried so hard to make it easy for you. We are so grateful that you came. Without you we never would have saved the universe. We never would have gone to the old Earth to find the secret of the energy, because we are not driven by restless imagination—an imagination that will not let one rest until all has been explained."

"We did what little we could," rumbled Kingsley. "All of the credit goes to Caroline. She was the one who worked out the mathematics for the creation of the hypersphere. She is the one and the only one of us who would have been able to understand the equations relating to the energy and the inter-space."

"You are right," said the Engineer, "and we thank Caroline especially. But the rest of you had your part to do and did it. It has made us very proud."

"Proud," thought Gary. "Why should he be proud?"

The Engineer caught his thoughts.

"You ask why we should be proud," he said, "and I shall tell you. We have watched and studied you closely since you came, debating whether you should be told what there is to tell. Under different circumstances we would allow you to depart without a word, but we have decided that you should know."

"Know what?" thundered Kingsley.

"Be patient," said the Engineer. "In time you will see."

A LITTLE silence fell and they waited.

"You are aware of how your Solar System came into being?" he asked.

"Sure," said Kingsley. "There was a dynamic encounter between two stars. Our Sun and an invader. About three billion years ago."

"That is right," said the Engineer, "and the invader was the Sun of my people, a sun upon whose planets they had built a great civilization. My people knew that the collision was to take place. Our astronomers had known it for years; our physicists and other scientists had worked unceasingly in a futile effort to either avert the collision or to save what could be salvaged of our civilization. But century after century passed, with the two stars swinging closer and closer together. There seemed no chance to save anything. We knew that the planets would be destroyed when the first giant tide from your Sun lashed out into space, that the resultant explosion would instantly destroy all life, that more than likely some of the planets would erupt and be totally destroyed.

"Our astronomer told us that our Sun would pass within two million miles of your Sun, that it would grip and drag far out in space some of the molten mass which your Sun would eject. In such a case we could see but little hope for the continuance of our civilization."

His thoughts broke off, but no one said a word. All eyes were staring at the impassive metal face of the Engi-

neer, waiting for him to continue.

"Finally, knowing that all their efforts were hopeless, my people constructed vast space ships. Space ships designed for living, for spending many years in space. And long before the collision occurred these ships were launched, carrying select groups of civilization. Representative groups. Men of different sciences, with many of the records of our civilization."

"The Ark," said Caroline, breathlessly. "The old story of the Ark."

"I do not understand," said the Engineer.

"It doesn't matter," said Caroline. "Please go on."

"From far out in space, my people watched the eruption when the two stars swept past each other," said the Engineer. "Saw the cataclysmic eruptions which occurred. It was as if the very heavens had exploded. Great tongues of gas and molten matter speared out into space for millions of miles. They saw their own sun drag a great mass of this stellar material for billions of miles out into space, strewing fragments of it en route. They saw the gradual formation of the matter around your sun and then, in time, they lost sight of it, for they were moving far out into space and the eruptive masses were settling down into a quieter state.

"For generation after generation my people hunted for a new home. Men died and were given burial in space. Children were born and grew old in turn and died. For generation after generation the great ships voyaged from star to star, seeking a planetary system on which they might settle and make their homes. One of the ships ran too close to a giant sun, was gripped by its attraction and drawn to destruction. Another was split wide open when it collided with a dark star, hurtling through space at a dizzy pace. But the rest braved the dangers and uncertainties of space, hunting, always hunting for a home."

Another pause and still there were no questions. The Engineer went on:

"But no planetary systems could be found. Only one star in every ten thousand stars has a planetary system, and they might have hunted for thousands of years without finding one.

"Finally, tired out with searching, they decided to return to your Sun. For while there was as yet no planetary system there, they knew that in ages to come there would be."

THE COLD WIND from space was flicking Gary in the face again. Could this tale the Engineer was telling be the truth? Was this why the Engineers had been trying to signal Pluto?

The Engineer's thoughts were coming again.

"After many years they reached your Sun, and as they approached it they saw that planets were beginning to form around the centers of relatively dense matter that in truth a planetary system was in the process of formation. But there was something else. Swinging in a great, erratic orbit on the very edge of this nebulalike mass of raw planetary matter was a planet, a planet which they recognized. One of the planets of their old home star, fourth out from the Sun. It had been stolen from their Sun, now was swinging in an orbit of its own.

"They had found a home at last. They descended to its surface to find that its atmosphere had been stripped from it, that all remaining life had been destroyed, that all signs of civilization had been utterly wiped out.

"But they settled there and tried to rebuild, in part at least, the civilization that was their heritage. But it was a heartrending task. For years and centuries they watched the slow formation of your Solar System, saw the planets take on shape and slowly cool, waiting for the day when they could occupy

them. But it was so slow, so very, very slow. The work of building their civilization anew, the lack of atmosphere, the utter cold of space, were sapping the strength of my people. They saw the day when they would perish, when the last one would die. But they planned for the future. They planned so carefully.

"They created us and gave us great ships and sent us out to find them new homes, hoping against hope that we would be able to find them a better home before it was too late. Far out in space our ships separated, each traveling its own way, bent on a survey of the entire universe if necessary."

"They created you?" asked Gary. "What do you mean? Aren't you direct descendants of that other race, the race of the invading star?"

"No," said the Engineer. "We are robots. But so skillfully made, so well endowed with a semblance of life that we cannot be distinguished from authentic life forms. I sometimes think that in all these years we may have become life in all reality. I have thought about it so much, have hoped so much that we might become something more than just machines."

The stem of the wineglass snapped in Gary's fingers and the chicken bone which Herb had been idly nibbling clattered on the plate.

"Robots!" yelled Kingsley.

And then the room was silent.

They all looked at the Engineer. Vaguely Gary wondered why he had not guessed the truth before. The form, the very actions of the Engineers were mechanistic. Once the Engineer had told them that they were bound by mechanistic precepts, that they possessed very little imagination.

But they had seemed so much like people, almost like human beings, that he had never thought of them other than as actual life, but cast in metallic rather than protoplasmic form.

"Well, I'll be damned," said Kingsley.

"Boy," said Herb, "you're topnotch

robots, if I do say so."

Gary snarled at him across the table. "Pipe down," he warned.

"MAYBE you aren't robots any more," Caroline was saying. "Maybe through all these years you have become real entities. Your creators must have given you electrochemical brains, and that, after all, is what the human brain amounts to. In time those brains would become real, almost as efficient, probably even more efficient than a protoplasmic brain. And brain power, the ability to think and reason, seems to be all that counts when everything is balanced up."

"Thank you," said the Engineer. "Thank you very much. You are so kind, so very, very kind. That is what I have tried to tell myself."

"Look here," said Gary. "It really doesn't matter, does it? I mean, whether you are robots or independent entities. You serve the same purpose, you follow the same dictates, you create the same destiny as things that move and act through the very gift of life. In many ways, to my mind, a robot existence might be preferable to human existence."

"You are so kind to say so," said the Engineer, "and it makes me feel so happy. Perhaps it really doesn't matter. I told you once that we were a proud people, that we had inherited a great trust, that we had carried out that trust. Pride might have kept us from telling you what we were, but now I am glad I have, for the rest will be easier to understand."

"The rest," said Tommy, in surprise. "Is there more?"

"Much more," said the Engineer.

"Wait a second," rumbled Kingsley. "Do you mean that all you Engineers were created by a race that flourished three billion years ago, that you have lived through that span of time?"

"Not all of us," said the Engineer. "My people made only a few of us. A few to man each ship. We ourselves

have made others, copies of ourselves. But in each creation we have tried to inculcate some of the factors which we find missing in ourselves. Imagination, for one thing, and greater initiative, and a greater scope of emotional perception."

"You, yourself," said Caroline, "are one of the original robots made back on Pluto?"

"That is right," said the Engineer. "I have lived more than three billion years."

"You are eternal and immortal," suggested Kingsley.

"No," declared the Engineer, "not eternal nor immortal. But with proper care, replacement of worn-out parts, and barring accidents, I will continue to exist and function for many more billions of years to come."

Gary's mind whirled. Billions of years. It was something that was hard to imagine. A man's mind couldn't visualize a billion years or a thousand years or even a hundred years. Man, in general, could visualize not much beyond the figure four.

But if the Engineers had lived for three billion years, how was it that they had not learned the secret of creating hyperspheres or probed out beyond the universe to learn the laws of inter-space? Why must this work wait for a girl—a human being, it was true, who had thought uninterruptedly for a thousand years—but whose thousand years of thought could not even be compared to three billion years of existence.

"I have answered that before," said the Engineer, "and I will answer it again. It is because of imagination and vision—the ability to see beyond facts, to probe into probabilities, to visualize what might be and then attempt to make it so. That is something we cannot do. We are chained to mechanistic action and mechanistic thought. We do not advance beyond the proven facts. When two facts create another fact, we accept the third fact, but we do not reach out in speculation, collect half a dozen tentative facts and then try to crystallize them. That is the answer to your question."

Gary looked startled. He hadn't realized that the Engineer could read his undirected thoughts. Caroline was looking at him, a queer smile twitching the corner of her lips.

"Did you ask him something?" she asked.

"I guess I did," said Gary.

"DID YOU ever hear from these other Engineers?" asked Kingsley. "The ones who were in the other ships?"

"No," said the Engineer, "we never did. Presumably they have by now found other planets where they are doing the same work as we. We have tried to get in touch with them, but we never have."

"What is your work?" asked Gary.

"Why," said Caroline, "you should know that, Gary. It is to prepare a place for the Engineers' people to live. Isn't that right?" she asked the Engineer.

"It is. You understand so well."

"But," protested Gary, "those people are dead. There is no sign of them in the Solar System and they certainly didn't start out looking for some other planet. They died off on Pluto."

He remembered the chiseled masonry that Ted Smith had found and told him about. The hands of the Engineers' creators had cut those stones, billions of years ago—and today they still were on Pluto's surface, mute testimony to the greatness of a race that had died while the Solar System's planets were still cooling off.

"They are not dead," said the Engineer, and his thoughts seemed to have a peculiar warmth in them.

"Not dead," said Gary. "Do you know where they are?"

"Yes," said the Engineer. "I do.

Some of them are in this room!"

"In this room—" began Caroline, and then she stopped and stared as the significance of what the Engineer had said struck her.

"In this room," said Herb. "Hell, the only people who are in this room is us. And we aren't your people."

"But you are," declared the Engineer. "There are differences, to be sure. But you are much like them, so like them in many ways. You are protoplasmic and they were protoplasmic. Your general form is the same and, I have no doubt, your metabolism. And the way your mind works."

"That," said Caroline, "was why we could understand you and you could understand us. Why you kept us here when you sent the other entities back to their homes."

"Do you mean," Kingsley rumbled, "that we are the direct descendants of your people—that your people finally took over the planets? That seems hardly possible, for we know we started from very humble beginnings. We have no legends pointing to such a genesis."

"Not that," said the Engineer, "not exactly that. But I suppose you have wondered how life got its start on your planet. There are so many planetary systems, you know, where life is entirely unknown. Planets fully as old as yours that are barren of all life."

"There is the spore theory," rumbled Kingsley, and as he said the words he pounded the table with his massive fists.

"By Lord, that's it," he shouted. "The spore theory! The people out on Pluto, only a few of them left, with the planets still unfit for habitation, knowing that they faced the end—couldn't they have insured life on those planets by the development and planting of life spores?"

"That," said the Engineer," is what I thought. That is the theory that I hold."

"But if that was the case," objected Caroline, "why should we have developed? Why should a life form resembling, almost a duplicate of the Engineers' people have developed? Surely they couldn't have planted determinants in the spore—they couldn't have seen or planned that far ahead. They couldn't possibly have planned the eventual evolution of a race re-creating their own!"

"They were very clever," said the Engineer. "Such clever people. They had lived so long and knew so much. So much more than we know. I do not doubt that they could have planned it as you say."

"Interesting," said Herb, "but what does it make us?"

"It makes you the heir of my people," said the Engineer. "It means that what we have done here, all we have, all we know is yours. We will rebuild this city, we will condition it in such a manner that your people can live here. Also that whatever those other Engineers may have found and done is yours. We want nothing for ourselves except the joy of knowing we have served, that we have done well with the trust that was handed to us."

THEY sat stunned, scarcely believing what they heard.

"You mean," asked Kingsley, "that you will rebuild this city and hand it over to the people of our Solar System?"

"That is what I mean," said the Engineer. "It is yours. I have no doubt that you descended in some manner from my people. Since you came I have studied you closely. Time and again I have seen little actions and mannerisms, little mental quirks that mark you as being in some way connected with the people who created us."

"But it isn't ours," said Tommy. "We have done nothing to earn it."

"You saved the universe," said the Engineer.

"With your help," said Tommy. "And don't give us the credit. It all goes to Caroline."

Gary tried to think. The Engineers were handing the human race a heritage from an ancient people, handing them a city and a civilization already built, a city and a civilization such as the race itself would not attain for the next many thousand years. He tried to puzzle it out. But there was something wrong, something that didn't click.

He remembered Herb's comment that the city looked like a city that was waiting for someone who never came. Herb had hit upon the exact situation. This city had been built for a greater race, for a race that probably had died long before the first stone was laid in place. A race that must have been far advanced—a race that would make the human race look savage in comparison.

He tried to imagine what the effect of such a city, such a civilization would have upon the human race. He tried to picture the greed and hate, the political maneuverings, the fierce trade competition, the social inequality and its resultant class struggle—all of it inherent in humanity—in this white city under the three suns. Somehow the two didn't go together.

"We can't do it," he said. "We aren't ready yet. We'd just make a mess of things. We'd have too much power, too much leisure, too many possessions. It would smash our civilization. We haven't placed our civilization as yet upon a basis that could coincide with what is here."

Kingsley stared at him.

"But think of the scientific knowledge! Think of the cultural advantages!" he shouted.

"Gary is right," said Caroline. "We aren't ready yet."

"Sometime," said Gary. "Sometime in the future. When we have wiped out some of the primal passions. When we have solved the great social and economic problems that plague us now. When we have learned to observe the

Golden Rule—when we have lost some of the lustiness of our youth. Sometime we will be ready for this city."

He remembered the old man back on old Earth. He had said something about the rest of the race going away—to a far star, to a place that had been prepared for them.

He started. That place he had spoken of had been this city. The old Earth they had visited had been the real Earth then, the actuality existing in the future. And the old man had spoken as not realized before that all of your race would not be like you who came here. But it means that we must wait . . . that we must wait for the masters who are to rule us . . . that it will be long before they come to us."

"You waited three billion years," Gary reminded him. "Wait a few million for us. It won't take us long. There's a lot of good in we humans, but we aren't ready yet."

"I think you're crazy," said Kingsley bitterly.

if they had gone to the city but a short while before. He had said he refused to go, that he couldn't leave the Earth.

He rapped the table impatiently with his fingertips.

The time would be long then. Longer than he thought. A long and bitter wait for the day when the race might safely enter into a better world—into a heritage left them by a race that died when the Solar System was born.

"You understand?" he asked the Engineer.

"I understand," the Engineer replied. "You speak words of wisdom. I had

"You're wrong," Caroline told Kingsley. "Can you see what the human race today would do to this city?"

"But atomic power," said Kingsley, "and all these other things. Think of how they would help us. We need power and tools and all the knowledge we can get."

"You may take certain information with you," said the Engineer. "Whatever you think is wise. We will watch you and talk with you throughout the years, and it may be there will be times you will want our help."

GARY rose from the table. His hand fell on the Engineer's broad metal shoulder.

"And in the meantime there is work for you," he said. "A city to rebuild. The development of power stations to use the fifth-dimensional energy. Learning how to control and use that energy. Using it to control the universe. The day will come, unless we do something about it, that our universe will run down, will die the heat death. But with the eternal power of inter-space we can shape and control the universe, hold it to our needs."

It seemed that the metal man drew himself even more erect.

"It will be done," he said.

"We must work, not for Man alone, but for the entire universe," said Gary.

"That is right," said the Engineer.

Kingsley heaved himself to his feet.

"We should be leaving for Pluto," he said. "Our work here is done."

He stepped up to the Engineer. "Before we go," he said, "I would like to shake your hand."

"I do not understand," said the Engineer.

"It is a mark of respect," said Caroline. "Assurance that we are friends. A sort of way to seal a pact."

"That is fine," said the Engineer. He thrust out his hand.

And then his thoughts broke. For the first time since they had met him in this same room, there was emotion in his voice.

"We are so glad," he said. "We can talk to you and not feel so alone. Perhaps some day I can come and visit you."

"Be sure to do that," bellowed Herb. "I'll show you all the sights. Boy, there's some things back there in the Solar System that will make your eyes bulge out."

Caroline tugged at Gary's sleeve, but Gary didn't notice. Thoughts were swirling in his brain.

Some day Man would come home—

home to this wondrous city of white stone, to marvel at its breath-taking height, at its vastness of design, at its far-flung symbol of achievement reared against the sky. Home to a planet where every power and every luxury and every achievement would be his. Home to a place that had grown out of a dream—the great dream of a greater people who had died, but in dying had passed along the heritage of life to a new-spawned Solar System. And more than that, had left another heritage in the hands and brains of good stewards who, in time, would give it up, in fulfillment of their charge.

But this city and this proud achievement were not for him, nor for Caroline, nor Kingsley, nor Herb, nor Tommy. Nor for the many generations that would come after them. Not so long as Man carried the old dead weight of primal savagery and hate, not so long as he was mean and vicious and petty, not so long as he held to greed and fostered chicanery, could he set foot here.

Before he reached this city, Man would travel long trails of bitter dust, would know the sheer triumphs of the star-flung road. Galaxies would write new alphabets in the sky, and the print of many happenings would be etched upon the tape of time. New things would come and hold their sway and die. Great leaders would stand up and have their day and then would shuffle into oblivion and silence. Creeds would rise and flourish and be sifting dust in the winds that blow between the worlds. The night watch of stars would see great deeds, applaud great happenings, witness great defeats.

There would be many crusades—many bugles would be blowing in the sky and leading Man along the way. Cosmic crusades for cosmic ideals with signs of cosmic faith written large against the black of space.

"Just think," said Caroline, "we're going home!"

"Home?" said Gary. "Yes, I suppose we are going home."

THE END.

SCIENCE DISCUSSIONS and BRASS TACKS

Considering both gases and rocket, the energy balances—but the momentum does too, so the rocket doesn't move!

Dear Mr. Campbell:

I was somewhat surprised and shocked by your reply to Mr. Benson's letter (February Astounding) asking about "The Irrelevant," in which you state that "the degree of mathematics needed was irrelevant to Astounding." Certainly it cannot be that multiplication and algebraic addition are too much for a science-fiction magazine, yet that's all the math needed for a complete solution of the fallacy, or paradox, or whatever you wish to call it. Surely you will reconsider and open Science Discussions to the following little exposition. I take no credit for originality, since the paradox was cracked several years ago in these very columns by David Bohm (April, 1935), and by M. I. Leffing (July, 1935), and mayhap by others. The latter (I wonder if he is still Leffing, and if he won't now come out from behind the beard at this late date) indeed refers us to Jeans' "Theoretical Mechanics," page 228, and there, sure enough, we find the whole difficulty presented and cleared up. All we need for a complete understanding of the question in addition to the two branches of mathematics mentioned above is Newton's Third Law.

For simplicity we shall take the least complicated rocket we can imagine—two balls of say ten grams mass apiece, clamped together with a compressed spring between them. We put the outfit in free space far from gravitic fields, which might cause us mathematical troubles. When the spring is released the balls will fly apart with a final velocity of, say, 2 cm/sec with respect to each other. One of the balls represents the rocket ship, and we'll call it R, while the other, which we call G, represents the gases which have been shot out the rocket jets. To complete the setup outlined in "The Irrelevant" we need two reference points moving with respect to each other. We'll call them A and B and say that before the spring is released the two balls are motionless with respect to A and moving 10 cm/sec with respect to B; i. e., A and B are moving 10 cm/sec relative to each other.

When the compressed spring is released the two balls fly apart with a velocity of 2 cm/sec relative to each other. Since they are of equal mass, Newton's Third Law says that their changes of velocity must be equal and opposite, so that R is now moving 1 cm/sec relative to A, while G is moving in the opposite direction at equal speed, which we algebraically represent as —1 cm/sec. With respect to B, R is now moving 11 cm/sec (if we aim the thing correctly). It was pointed out in "The Irrelevant" that, referred to A, R has increased its kinetic energy ($\frac{1}{2}MV^2$) from zero (or $\frac{1}{2} \times 10 \times 0^2$) to five ergs (or $\frac{1}{2} \times 10 \times 1^2$), while with respect to B it has simultaneously increased its K. E. from 500 ergs (or $\frac{1}{2} \times 10 \times 10^2$) to 605 ergs (or $\frac{1}{2} \times 10 \times 11^2$). Thus the energy stored in the compressed spring has increased the K. E. of the rocket by 5 or by 105 ergs, depending on whether you refer it to A or to B, and such a state of affairs can hardly be termed conservation of energy.

The fallacy becomes apparent when we remember that we have not completely accounted for the change of kinetic energy of the system—we have forgotten the exhaust gases of the rocket, we have forgotten the other ball, G. After the spring is released G's motion is also changed. With respect to A its K. E. has changed from zero (or $\frac{1}{2} \times 10 \times 0^2$) to five ergs (or $\frac{1}{2} \times 10 \times (-1)^2$), while with respect to B its K. E. has simultaneously changed from 500 ergs (or $\frac{1}{2} \times 10 \times 10^2$) to 405 ergs (or $\frac{1}{2} \times 10 \times 9^2$). Referred to A it has lost 95 ergs. Adding up all the K. E. changes produced by releasing the spring we find that whether we refer to A or to B the spring has imparted exactly the same amount of K. E. to the components of the system:

	Referred to A	Referred to B
R	Gained 5 ergs	Gained 105 ergs
G	Gained 5 ergs	Lost 95 ergs
Total	Gained 10 ergs	Gained 10 ergs

We can easily convince ourselves that such will always be the case regardless of the velocity with respect to any reference point. This particular spring always increases the K. E. of the system by 10 ergs when released, and we can say that in this compressed spring is stored 10 ergs of potential energy, and energy is conserved!

Mr. Benson's Question 2, regarding rotation in empty space, has apparently been of interest for a long time. It is considered at some length in a book by A. d'Abro: "The Evolution of Scientific Thought from Newton to Einstein," Boni & Liveright, New York, 1927, which is well worth reading, and from which the following quotations are taken:

(p. 330) "—Mach—instead of holding that centrifugal force was generated by a rotation in absolute space, urged that we should attribute it to a rotation with respect to the material of the universe as a whole. Inasmuch as the vastest agglomeration of cosmic matter is given by the totality of the star-masses, it would follow that the dynamical effects would be generated by the rotation of an object relatively to the stars, or, what amounts to the same thing, by a rotation of the stars relatively to the object. In fact, these two different alternatives would represent but a difference in phraseology, since with absolute space banished, apart from stars and matter generally, there would exist no other terms of comparison. To this rotation relatively to the star-masses would be due the protuberance of the equator, the splashing of water in Newton's bucket, the bursting of a rapidly revolving flywheel, et cetera. Were the stars invisible, no change in the dynamical manifestations would be observed, but if their masses were to be annihilated, if the stars ceased to exist (not merely ceased to shine), all the telltale dynamical effects would disappear; a flywheel would not burst, water would not splash, and so on. In much the same way, the elliptical orbits of the planets are due to the gravitational attraction of the sun's mass; *not*, of course, to the accidental circumstance that the sun happens to be luminous rather than dark."

(p. 456) "—Mach realized the great difficulty of accounting for centrifugal forces under this view. He, at least, made an attempt to solve the puzzle by attributing a direct dynamical influence to the relative rotation of the star-masses. But, since his attempt was not followed up mathematically, it was nothing more than a loose, unsupported suggestion."

(p. 469) "—When the Einstein gravitational equations were studied more closely, it was seen that they entailed those peculiar forces which Mach's relativity of rotation compels us to attribute to the stars."

So there's at least one theory developed along the lines of the scond Benson question—Robert D. Swisher, 15 Ledyard Road, Winchester, Mass.

Well, science lovers? Any answers?

Dear Mr. Campbell:

I would like to say a few words in defense of by favorite Astounding stories authors.

It gripes me, month after month, to see authors like Arthur J. Burks criticized by the rabble. Judging from your readers' column, your subscribers are made up of a bunch of crackpots who argue heatedly and pointedly about scientific matters about which no one is yet positive. If they had lived in early New England, they would have argued about the number of angels who could stand on the head of a pin.

These readers call the authors to task time and time again because the authors do not explain painstakingly just how their characters achieve and operate their marvelous inventions. The readers shout for details, details, and more details.

Which is absurd. Not only do lengthy and technical descriptions of marvelous inventions bore me, but I consider them an insult to my intelligence for the author's labored attempts to kid or bewilder me. What could impossible scientific details add to a story? If the invention were possible, the author would build it and operate it.

But the author, usually, has dreamed a scientific possibility which some day may be a fact. Even if he doesn't know exactly how his invention is to be built, he has at least originated the invention, which is something.

To be more clear—take your famous pseudo-scientific stories of a half century ago. Take Jules Verne's and Edgar Allen Poe's stories. Practically anyone will admit the two authors were far in advance of their times. Their stories are marvelously well written.

But, consider this, which parts of their stories seem the most absurd today? They are the parts wherein the authors labor to achieve their inventions according to nineteenth-century knowledge. Poe wrote of a flight across the Atlantic. I imagine the story was ridiculed then. Today it is a fact. But what part of Poe's story is faulty? The fact that the flight was made in a balloon! Consider the submarine in Verne's "Twenty Thousand Leagues Under The Sea." The submarine idea was sound, but when Verne attempts to tell nineteenth-century readers how the submarine operated he became absurd.

I like well-written, well-co-ordinated stories of the type written by Burks. I do not like stories tied together by unbelievable hocus-pocus. I think your average reader feels the same way.

I like a certain amount of scientific knowledge thrown into the yarn, but not to the extent demanded by your readers who write to your readers' column. When I come upon a mass of scientific description in a story, I skip over and hope it will not spoil my perusal of the story.

To me, those unbelievable facts some of your authors throw in and try to kid us into believing make the stories very unreal to me. You can't make a story convincing by unorthodox scientific facts, but you can by natural human conduct and emotions.

Here's one of my pet peeves: elaborate descriptions of spaceships. You and I know that at the present time spaceships are not in use, at least here on Earth. If I were to write a story involving a spaceship I would say, in passing, that it was operated by anti-gravity motors, and let it go at that. I'd go on with the story. I would not delve into obscure details, which at the present time we know are impractical. Now, by referring to anti-gravity motors, I am merely citing an example of one type of motor for a spaceship. I do not mean that all spaceships in your magazine should be driven by anti-gravity motors. I say that, because judging from the tenor of your readers' column, you might be flooded with a gob of letters explaining why anti-gravity motors are impossible.

Fifty years ago would you have carried a story—if your magazine had been published in those days—that airships would some day be a possibility, a story that some day heavier-than-air craft would fly? I'd say you wouldn't, because you'd be afraid of your loud-mouthed readers—and they are comparatively few—who would send you a gob of letters telling you exactly why heavier-than-air craft could never get off the ground.

You have my permission to use more latitude, originality and imagination in the type of stories you publish. Don't be afraid of these technical kickers. They'll keep on buying your magazine just to find fault or to see their letters in print. I think the majority of your readers, when they read pseudo-scientific stories, accept them in the way that S. Fowler Wright introduced his "Deluge." "If it gives any person an idle hour's amusement, I shall be satisfied." But then if you feel that your readers will turn around and construct the inventions in your magazine, my letter is futile—Robert W. Hansen, 1016 Tennessee Street, Michigan City, Ind.

Our point was that heat-guns are chemical—using flames—and not physical, using radiant energy. But I'd like to see that gun!

Dear Mr. Editor:

I have just finished reading your October issue for 1938, and have noted one or two facts mentioned both by yourself and by Mr. Peter van Dresser.

Firstly, I will endeavor to call your bluff as regards your article, "He Drew His Trusty Heat Gun—" which you state worked beautifully on tanks, armored cars, and, as you lastly state commercial oil burner which could be carried on a little motorcycle affair.

I have developed a heat gun that weighs 17 ounces, (one pound one ounce) which throws a flame exactly 45 feet.

Since developing this heat gun, which, by the way, is a single shot, I have improved upon it and have now developed a repeater heat gun that shoots a flame 30 feet and holds charges for thirty shots, but this one weighs twelve pounds.

The first one I have submitted to the British War Office since September 24, 1938, and is still under consideration by them, although it has been passed by the technical authorities.

As to Mr. Peter van Dresser and "Why Rockets Do Not Fly," I have also submitted to the above people a "Radio Controlled Aërial Rocket Torpedo" for use in warfare.

Now, Mr. Editor, I will call Mr. van Dresser's bluff, and state that, if he can get anybody to put up fifteen thousand dollars, I would build my rocket ship and fly it myself to New York.

I would, of course, keep all my plans and designs secret, and ask Mr. van Dresser to do likewise. I am not prepared to divulge any of my plans and designs to anybody, but, whoever puts up the money can, of course, be present at the trial flights. I may state that this rocket ship of my design is a two-man affair, and perhaps the person who puts up the money to build it may wish to fly with me.

Hoping to hear from you and also Mr. Peter van Dresser—Joseph T. Tasker, 47 High & Hadfield Streets, Georgetown, Demerara, British Guiana, South America.

Ice Age Behind us!

Dear Mr. Campbell:

In connection with Willy Ley's extremely interesting article "Ice Age Ahead?" the following short item may be apropos.

In the fourth and fifth centuries after Christ, the barbarian Goths made frequent winter raids through Thrace and Moesia by crossing the *frozen* Danube. The Danube, from all accounts, seemed to freeze frequently even in its southernmost lowland portions on the borders of present-day Rumania.

Today, fifteen hundred years later, it takes a darn cold winter to freeze the Danube, and it rarely, very rarely, happens. This shows very clearly the general warming up of old Mother Earth's climate even in historical times.

This also reminds me of the story in the Odyssey of the Greek soldier on the plains of Troy that had ice forming on his shield in wintertime. The winters must have been much colder then to produce that effect on the Asia Minor coast—Isaac Asimov, 174 Windsor Place, Brooklyn, N. Y.

Ley pointed out that Earth suffered no great heat, but evenly distributed heat.

Dear Mr. Campbell:

I have just finished reading Herr Ley's article on the present ice age. It is very interesting, but there is one point that bothers me that perhaps you, or Herr Ley, or someone else, can clear up.

As I understand it, the carboniferous period was so named because large quantities of coal were formed at that time. I believe that it is also generally conceded that coal began as peat.

Now, the difficulty is that peat is not formed to any great extent at the present time in the tropics. Peat is almost entirely an arctic or temperate product. Moreover, a hot climate is not necessarily a prerequisite to luxuriant vegetation. Anyone who has been to the northern parts of North America knows that while the trees may not be as big as they are in the tropics, the forests are no less impenetrable in many places.

The reasons why peat is unusual in the tropics are not difficult to find. It depends, for its formation, upon certain micro-organisms and water. A fallen leaf is attacked by the bacteria, et cetera, but before it is entirely destroyed, more leaves have fallen on top of it and pressed it down into the stagnant water of the swamp. This is charged with products of decay and toxic waste products of the micro-organisms. The latter die for the most part, and the subsequent changes in the leaf are almost purely a matter of chemistry.

In the tropics the story is different. The warmth encourages bacterial growth so that decay is more rapid. The high rainfall helps to remove the toxic material, so that bacterial decay not only proceeds at a higher rate, but lasts for a longer time. As a result, very little, if any, of the leaf remains.

It follows, if there is no flaw in my argument, that a coal forest was not like a modern tropical forest. Nevertheless, geologists insist that it was, except that the trees were different. I hardly think that carboniferous vegetation was any more resistant to decay than modern trees. Tree ferns in Tahiti and New Zealand decay with surprising rapidity, and I've never been so cold in my life as I was in New Zealand.

In closing, I might add that when the wood in coal is sufficiently well preserved to be recognizable, it is often similar to the present-day coniferous trees. Trees of this type do live in the tropics, but the majority of them prefer a cold climate—John Davis Buddhue.

Rocket mathematics.

Dear Sir:

Mr. Arthur C. Clarke's reply in the December S. D. succeeds admirably in administering that squelching which I anticipated and undoubtedly deserved. I must report that, among other things, it has stimulated my alleged mental processes to a degree which has enabled me to uncover the fallacy in Leo Vernon's rocket equations.

The difference between Mr. Vernon's equations and those of the rocket men in general was indeed, as I pointed out, simply a question of the interpretation of Newton's second law. Vernon's math was entirely correct—as far as it went. If he had but carried his velocity equation one step further the fallacy would have become exceedingly obvious. The equation then reduces to the good old Ft=Mv form, just fine for problems involving constant masses and forces, but very little help in figuring rockets. Other weird results may be also be deduced. Vernon's equations present an odd case of too much math being as bad as too little—the more common failing.

The trouble, then, must lie in the original assumption; viz., that the force is proportional to the rate of change of momentum. Evidently the equation

$$F = \frac{d}{dt}(Mv)$$

is not generally true. That is a pity; it was such a logical-sounding hypothesis!

It all boils down to just this: In the case of the motion of a body of constant mass, the acceleration produced varies directly as the force applied. But in the case under discussion we have a rocket burning fuel of uniform composition at a constant rate. Here the force, or reaction, is constant, from which it follows that the acceleration must vary inversely as the mass of the rocket. As an equation this is

$$dv/dt = F/M \quad \text{or} \quad F = Mdv/dt$$

which should have been immediately obvious had I not been confusing a physical equation with a purely mathematical one.

Regarding any connection Vernon's mechanics

may have with the Van Kampen controversy, I cannot comment. I climbed aboard the Astounding bandwagon a trifle too late to listen in on that one. All I got was a few tag ends of hashed formulae. My general impression, though, was that no one succeeded in convincing anyone of anything.

Willy Ley, in his article, "Dawn of Conquest of Space," merely gave some illustrations of the exponential law. Its derivation was dismissed as a matter of "higher mathematics." Well, that was all right; the article was not intended to be technical. This being so, it could hardly be employed to disprove, in any manner other than the dogmatical, the validity of Vernon's generalization.

As for a mathematical law becoming a different law when popularly treated—well, that depends on how the law is stated. Despite the iconoclastic vein of my previous letter, I really have a tremendous amount of respect for scientific authority. But even the best sometime make statements that merit close scrutiny. Let us take this matter of the interpretation of the exponential law, now. Apparently Mr. Clarke and I now see eye to eye on this point. That's fine! Now let's put the matter to a test. Suppose we take Mr. Ley's original example of a rocket whose *dead weight* (i. e., weight of unfueled rocket plus payload) is 10 tons. (Sizable specimen!) Let us carry enough fuel to enable the rocket to attain exhaust velocity. From the exponential law, then, the ratio of the original weight of the rocket—which includes the fuel—to the final weight after all fuel is burned (= dead weight) is equal to the constant "e" or 2.7+. Therefore our rocket, when fueled and ready to start, will weigh 10e or about 27 tons. Of this, 10 tons is "dead weight," leaving the difference of 17 tons as the weight of the fuel. In brief, a rocket weighing 10 tons exclusive of fuel, must burn about 17 tons of fuel if it is to attain its exhaust velocity. Right? Now, then, Mr. Clarke, have you a copy of the "Conquest of Space" article handy? If you have, suppose you drag it out and check our result against it. If your copy reads like mine I think you'll find something of a discrepancy. There's a small matter of some 10 tons of rocket fuel (at $1.00 per quart—ouch!) wrapped up in this —which rather removes the discussion from the realm of the academic. I think you'll agree that someone really has slipped up here, and badly. Maybe it's I, but if so, where?

Of course, I agree utterly with Mr. Clarke's emphasis of the importance of getting rocket misinformation out of circulation. However, along with the perennial arguments about rockets' needing something to push against, may I nominate for oblivion the "velocity of escape" superstition? Said velocity is a nice thing to have when you're short of fuel, but it's not absolutely indispensable to interplanetary flight—Norman F. Stanley. 43A Broad Street. Rockland, Maine.

BRASS TACKS

Calling names!

Dear Mr. Campbell:

If there are fingerprints on this letter, please don't mind. I had to fix this blamed riveter before I could use it. The first thing I want to get off my chest is this: Did you put the wrong caption on my letter, or did you really mean that you would like to have me return? If the latter, you have my heartfelt sympathy. When you realize what you've got yourself into, and want to retract that statement, just holler.

The second thing I want to unload is this: After reading my document in the coldness of print I realize I wasn't very complimentary. Let me correct this. I did like you, *tres bowcoop* much. I am a hard ranker, that's all. Since that letter I have sampled other science-fiction magazines, and good old Astounding gets about ten plums, comparatively speaking. But—let's get on with the analytical laboratory, shall we?

As per my customary procedure (one attempt), the cover: Very attractive with that blotch of red in the center, but it really is too fuzzy and indistinct for my choice of A-1. I like 'em almost photographic. Give me Dold and Wesso.

The January issue, all told, is about three plums. (Yes, the plums are here again; just as juicy as ever.)

"The Blue-Men of Yrano" opens the play with three. But I always thought that purple was the color that drove people nuts, not blue. But then the Blue-Men weren't normal, of course. Or were they?

I'll give two plums to the next. As a story, "Saurian Valedictory" is pretty good; but Mr. Knight's diet of dictionaries sort of spoils it. Description is O. K., but not too much of that sort. But that's my opinion. Just one of the many.

Whoops! So soon? Five! Yes, five plums to Vic Phillips for "Maiden Voyage." True, it's a space-travel story, quite common, but the plentiful sprinkling of grim humor—and grim is the word—throughout a well-planned and imaginative story puts it up pretty well to the top. I don't wonder he took the cake—I mean the COVER. Didn't I tell ya I liked technical ideas more than fantasy? Let's have another like this one.

"The Incorrigible." Three and three quarters. Oh, heck, give it four! Why should I quibble over a plum seed? Johnny is quite pip-pip. I can *bear* more of him. (My head is bowed in shame—really it is.)

The article I won't rate, as I didn't see through it. (No puns intended this time.)

The conclusion of "Nuisance Value" proved as good, if not better, than the first part. I wish my car operated the same way as the airships. Many's the time I'd like to be able to go *up*. I'll give it three and a half. (Remember, I'm a hard ranker.)

What? Another five plum in one issue? Yup! Mainly for the extremely and too, too cute idea I give "Mill of the Gods" five. Imagine using the rings of Saturn for a grindstone! Just im-AG-ine! Jameson's imagination must have been whetted on that grindstone, huh?

The *Arachne* is back with three. It's really Josh McNab that gets the plums. The story is a little far-fetched. Some day remind me to pick apart Buck's theory of gravity—me and Don West up in Nova Scotia. And "The First Shall Be Last" is last.

The mathematical average for the complete issue reckons out to 3.6 plums plus. That's that. No prunes today—let's hope there won't be any more.

There is one thing I want to straighten out right here and now! Why don't you writers put less unpronounceable names into your stories? They add to the effect of fantasy, but detract from the story. Try this on your tongue: Thisk-Essif; Visth; Thefshath; Hathest; Apst-Psesp; Thgdyferhydhgbs (that's mine). Horrible, aren't they Think of the linotypers! (Or is it linotypists?)

Another thing. With all these comments about reprints of the old stories and ideas on how to get them in—here's mine: Put out an annual or semiannual issue of Astounding with reprints of older stories. How do the rest of you readers feel about this?

Scattered through the recent issues are some pages on a "slick" type of paper. It costs more, I know—but how about this? Would any of the rest of the readers be willing to part with a quarter a month instead of two dimes in order to get our mag in a listing with the "slicks"? I would. How about a ballot, Mr. Campbell? Would that extra nickel a copy help toward the cost of the new paper?

A couple days ago I received a letter from another Astounding reader who saw my last letter in Brass Tacks. Of course, I was pleased and surprised. How about a "mail-order" club among some of us? Our addresses are printed (although they got mine as 212 when really it is 2-seven-2); and those who would care to are invited to write. Shall we? Let's start something!

I guess that's all I can think of. Now, Mr. Campbell, are you sorry you encouraged me? Give me an inch and I will take a light-year. Happy New Year—or happy Easter it will be when this is published—if. Yours until the Martians really attack us—Gerald B. Clarke, 272 Main St., Waterville, Maine.

Hero Come to Life!

Dear Mr. Campbell:

Some of your readers will no doubt recall that in my story in last December's issue, "The Merman," the hero was a young ichthyologist named Vernon Brock. The name was, of course, synthetic: I got the surname from one source and the given name from another. The combination, while not freakish, is not a particularly common one. Moreover, the number of ichthyologists in the country is limited.

You can, therefore, imagine my astonishment on receiving a letter from a man who is not only named Vernon Brock, but is an ichthyologist—a research worker for the Oregon State Fish Commission, and the author of "Notes on the Range of Fishes from Lower California and the West Coast of Mexico; with a Discussion on the Use of Diving Apparatus in Making Collections," *Copeia*, Sept. 24, 1938. Mr. Brock's letter reads in part as follows:

"Dear Mr. de Camp:

"—In regard to the tale itself, it will be about six more years before I reach the age of the hero, and I would appreciate a brief outline of my career until that time. Now, I know that I will spend the spring and summer on the oceanographic vessel of the Scripps Institute cruising about the Pacific, but what happens then? Make it interesting, for a fellow needs some sort of compensation for the dull existence of a glorified fish cowboy, and such will I become in but six short years, God rest my soul. Also the matter of my sex life—I hope you'll pardon this, but the setup which you outlined in the story did not appeal. Couldn't we have a change made there? You know, you might as well give me the best; it won't hurt you, and it'll certainly please me. Now, I'm particularly interested in the development of lightweight self-contained diving gear, and I want to spend, say, two years diving in the tropics. Please arrange this. You might also come through with a good steady income; routine work sometimes interferes greatly with the development of certain of my projects, and routine work is a sodden necessity to the poor. Furthermore, cash is great stuff to have on hand, and again you might as well give me the best—

"Yours in hope for a glorious future, I am,
"Vernon Brock."

It is *most* disconcerting to have your characters come to life that way. I thought your readers might be interested in this evidence for the statement that anything, however improbable, can happen if you wait long enough—L. Sprague de Camp, 44 East Sixty-third Street, New York. N. Y.

And how about this astronomical cover?

Dear Mr. Campbell:

This is going to be my first letter to Astounding, and that being so, and taking into account the mercenary fact that the money I have so invested (one buys a magazine, but one invests in an Astounding) would now buy me one suit of gent's morning dress, I consider that I have a right to make the letter of a length commensurate with that of the opening sentence.

The theme is to be the performance of Astounding during 1938. I am well aware that there would have been more point in writing twelve times instead of once, but every time I have been tempted to comment on an issue I have been deterred by the fact that the letter would hardly reach you before nearer readers were commenting on the following issue. By this combined comment I place the whole theme out of date anyway. (I wonder who, if anybody, will read this?)

In the way of general comment, I think that the magazine has maintained a fair standard of quality, far and away in front of its competitors. The astronomical covers gave, for the first time, an appearance of distinction to a scientific fiction magazine. In fact, the front covers for the first time bore comparison with the "Chesterfield" back covers. (Kick number one: why can't we have a Chesterfield back cover every month?) The articles were usually refreshing, as were the editorials, a striking point in favor of keeping the two separate.

It is the stories, though, that really cause my muse to clamor for expression. Let me perform the time-honored rite of giving my selection of the best stories of the year. They are not in order of merit.

"Galactic Patrol"—Not up to the Skylarks though, chiefly because the characters were not powerful enough to make the story realistic.

"Dead Knowledge"—Good, but not quite so vivid as

"Who Goes There?"—which is the best of the year. I am a reader of wide tastes and even wider range of reading, but I know of no short story writer superior to Stuart in my opinion.

"The Master Shall Not Die"—Another story that brought distinction to the magazine.

"Martyrs Don't Mind Dying"—Few stories have got as much out of the time-travel idea as this one.

"Three Thousand Years"—The detail work was better than the plot.

"The Command"—And the rest of de Camp's. A very entertaining writer.

"Impulse"—A story I waited for for a long time.

"The Terrible Sense."

The above stories provided us with what I consider to be really worth-while scientific fiction, stories which I am glad not to have missed. In addition a good percentage of authors, Casey and Rocklynne are the most prominent, provided good entertainment. I can give no more higher praise than to say that last year Astounding restored in me a long dormant liking for pulp magazines (is this the correct term?) of science-fiction.

But I have some kicks that I cannot resist passing to you. There is a violent one at "The Legion of Time," I could hardly restrain my impatience with the horde of incredibly artificial characters that filled this story with their insufferable lack of all pretension to living beings. If Williamson could not be bothered to give even a few minutes' thought to his secondary characters, why did he introduce them? And as for the action and the ending, the author seemed to go out of his way to expose the strings manipulating his puppets.

"Men Against The Stars" was an even greater piece of hooey. As soon as I spotted the type of story I prepared to enjoy myself, for I am very fond indeed of hard-hearted idealists. I have never had my faith in a story so completely shattered. At the end I hurled the magazine across the room and screamed. But why the goodness gracious did they have to conquer space in such an idiotic way? What was the hurry that they had to send sixty untried ships into space one after the other without waiting to see if they would work? There was neither sense nor reason in the idea of making sixty identical experimental models and hurling them all into space for the mere desire to conquer space a few years earlier than sane methods would have done. Suppose a man evolved a design for a record-breaking automobile and had sixty built in a batch, without trying out anything on the test bed. Suppose he

then took them to a suitable place and tried to get the land-speed record.

The first one down the course crashes, due to mechanical failure, killing the driver. So does the next and the next, and so on. The drivers begin to get suspicious of the wisdom of this constant stream of deaths, but the designer waves a pistol at them. "Keep going," he says. "Think of the glorious thing we are doing. I grieve for you, but I cannot hide the fact that mine is the harder task." And he only restrains tears with an effort as he thinks how he is suffering for the good of humanity.

The above idealist is more worthy of praise than the "hero" of "Men Against The Stars." He has more reason to think that his racers are soundly designed than the spaceship designer, who would be tackling a more difficult task with less experience of the practical difficulties. His drivers have a much better chance of survival than the space travelers, in case of trouble. He is wasting less money. And his objects are but little less praiseworthy.

That has released my blood pressure a little, but I could dwell indefinitely on the subject of the absurdities of the story. Let me calm down with a milder kick at Josh McNab, the worst imitation of a Scot and of a ship's engineer that I have ever come across. I admit that my tastes in Scotch engineers are high, for I was acquainted at an early age with the exploits of Neil Angus McTodd of Ballindrochater, a gentleman probably unknown to you. By comparison, McNab is a Sassenach sissy who doesn't know enough to hold a hammer at the end farthest from the head. And Burks doesn't seem to know the difference between Scotch dialect, Irish, Cockney, West-country, and a few more that make McNab's speech a pleasure to read.

I will wind up with a few comments on the January, 1939, issue. I cannot say that it is a particularly sparkling effort. The short stories of Knight, de Camp, and Jameson were fair entertainment, but the first two at any rate have done better. Burks' was rather better than the previous one, but it didn't change my opinion of McNab. I wish to add that Parsons is still less of a convincing character.

For the Lord's sake tell Van Lorne to try a different plot.

"Maiden voyage" was perhaps the best of the issue. I was seriously disturbed, though, by the use of the drill press for forging. No doubt machine tools will advance, as do other things, but today a drill press is a drilling machine pure and simple, and you could no more use it for ordinary press work, let alone forging, than you could a lathe. I should hate to have to design a machine to combine the functions of drill and press, which are practically mutually exclusive.

It would be nice to have some of the stuff that reamer was made of, which could retain a cutting edge at white heat!

The serial, never sparkling, spoiled itself by finishing at a gallop in which the last vague illusion of realism vanished. The article was quite interesting and informative. The cover was not too gaudy and not very wide of the story, though the reamer looks more like a twist drill. But Chesterfield is not up to scratch—D. R. Smith, 13 Church Road, Hartshill, Nuneaton, Warwickshire, England.

More votes for "best story of 1938" wanted!

Dear Mr. Campbell:

You'll need a special classification for this one—it won't fit in either "Brass Tacks" or "Science Discussions." Perhaps you could give it a heading like "What not to write and how not to do it."

First, Mr. Frank De Sua, let me say that you are absolutely right. The body moving faster than light would have, according to the Lorentz transformation equations, an imaginary length in the direction of motion, and not a negative length, as I so stupidly stated. No, it didn't take me all this time to figure that out. I'm just behind in my letter-writing.

I can't answer your question about the time difference that would, or perhaps would not, be experienced by your high-velocity traveler going

away from the Earth and coming back. But I can answer that one about two bodies each traveling 185,000 miles per second in opposite directions in relation to a third body, and yet only traveling at a velocity with respect to each other that is less than 186,000 miles per second. Or perhaps I should more truthfully say that I can quote you the formula that will do the trick.

Oh, oh! I don't seem able to find it. Well, stick around a couple of months—I'll write in again and present the little miracle worker for your scrutiny.

Of course, I'm late again, but I do want to write in and sing loudly the praises and glories of the January issue. Superb, magnificent, wonderful, colossal, stupendous, super-super-ultra-macro, no less! It's pretty good, in other words.

What an issue! Pardon me while I catch my breath. But it was really something!

In order of merit:

"Maiden Voyage," by Vic Phillips, and "Saurian Valedictory," by Norman L. Knight, fight it out, tooth and nail, for first place, with "Voyage" a whisker ahead. But, oh, were they good! More, MORE, *MORE!*

In fact, they almost beat "Who Goes There?" And say, I'm glad to hear that you're coming through with another Don A. Stuart yarn. How about some more "Ra for the Rajah!"? I'm glad to see that Gallun is still with us. Sometimes he doesn't do so well, but generally he is good. And every once in a while he knocks out a corker.

Everything is of the grade known as "good" in the January issue, *except* Warner van Lorne's "The Blue-men of Yrano." *It* is so rotten it stinks. Period.

However, the January issue is probably the best you ever put out. Yet, I don't know. You've done pretty well by us, Mr. Campbell. Keep up the good work.

Now for the February issue, which I have just finished reading.

"Cosmic Engineers." Clifford D. Simak, I pause before you and bow deeply. You are good; you are improving in your writing, and you have written an excellent story in this first part of three. Keep up the good work.

"Oil," by Don Wire, rates second. Good it is, but what are such engines with such oil pans doing on a spaceship? Perhaps I just don't get the word, but— Oh, well, it was a good story.

"Living Fossil," by L. Sprague de Camp, is next. Our walking encyclopedia of knowledge is—yes, I mean you, Mr. de Camp—always and consistently good.

"Crucible of Power," by Jack Williamson, is third. And is this the man who wrote that awful monstrosity known as "The Legion of Time"? How the world does change!

Now we go from the "good" class to the "fair." Well, the last four are about even, with "Palooka" last. It would have rated higher, but I just couldn't see the peoples of the world reacting in the manner that Nat Schachner would have them use. People don't throw over existing institutions—yeah, I know there was a French revolution, but so what!—in the wholesale way these folk did, and rush to co-operate to save the Earth from invasion *in that manner*. However, "Palooka" is the only Nat Schachner yarn in ages that has been good. "Simultaneous Worlds" was awful.

And hey, boss, don't take on too much! With you running a couple of magazines, one of 'em may suffer. Just so it isn't Astounding, I don't care. But I can't lose my last youthful illusion, can I? Don't fail us, whatever you do.

Three best stories of the year? Easy. Or is it? There were a lot of good stories.

However, make my choice "Galactic Patrol," "Who Goes There?", and "Ra for the Rajah!", with "Seeds of the Dusk" close.

And congrats, J. J. D., on the letter. Here's a bouquet. I agree on Hawk Carse. He was rotten. Period.

Mr. Glenn R. Stephens! I am right with you on that idea of having Smith's works and Campbell's works published in book form, and I agree on the relative unimportance of the kind of type and printing and binding. We want the stories, not the paper. How about it, Mr. Campbell?

Well, must stop. (A sigh of relief is heard. The nation relaxes.)—Allan Ingvald Benton, 5214 17th N. E., Seattle Wash.

The margins of Astounding have been made a fraction smaller—the text is the same.

Dear Mr. Campbell:

I picked up the latest issue of Astounding today and was immediately elated. Your cover, to put it mildly, is swell. Let's have more from Hubert Rogers; he has proved himself an accomplished artist from the start. It's easily the best cover in months.

Maybe I'm wrong, or else the magazine I bought was a freak, but in comparing this February issue with the others in my complete collection, I find that it is about one fourth of an inch smaller. Am I right? Well, whether it stays that way or not, it suits me to a T. The magazine, in the past twelve months has grown neater, more compact, and has developed its personality wonderfully, and it *has* a personality all its own.

Making the magazine a little smaller makes it easier to handle and better to look upon. Of all the pulp magazines on the stands, Astounding looks more like a "slick" and reads more like one than half of the "slicks" do. No matter what kind of paper you print a magazine on, it still develops a slick personality if given the right stories to grow upon, and that's what you've done.

Glancing through the magazine, I've read such names as Williamson, Schachner and Gallun from the old clan, and then, an author with a good descriptive sense recently came to science-fiction, Fred Arnold Kummer with his story about the "Lorelei of Space," and here is a new writer that I enjoyed by the name of Wire. This story struck *oil* with me.

Paul Ernst should write many more science-fiction stories than he does. His visits are all too infrequent, judging by his superb "Nothing Happens On The Moon." Some of his descriptions struck me very nicely in my "writer's mind." (Yes, I'm a writer myself—amateur, so far; give me time—you'll get a barrage of manuscripts before long.)

Where in 'eck was Dold this issue? I liked his illustrations for the January issue, but he no show up this time. Howcum? Ye gods! Get rid of those Binder cartoons that he sloshes onto paper—more of Wesso—less of Binder, pah-lease.

Thanks a million for putting out *Unknown*. I can hardly wait to read it—it's what many of us have been waiting for. (Incidentally, I've had a fantasy on hand for about two months, wondering where in 'ell to send it, 'cause there just ain't no market, and then you come along with good old *Unknown*. Here's hoping!) Good luck with the new magazine. If it is as good as you've made Astounding in one year, then it will be wonderful—Ray Douglas Bradbury, Librarian, Science Fiction League of Los Angeles, 1841 South Manhattan Place, Los Angeles, California.

Well—Simak did some galaxy prying before he finished!

Dear Editor:

I have established a recent time record for myself in reading the current Astounding through from Listerine to Camels in the spectacular time of three days. Rest at ease for the moment 'cause there are no serious complaints. The compliments I'll try to keep as sober sounding as possible.

The cover represents another artist who I can say is preferable to Wesso. I'll tell you something about that cover if you will believe that I am sincere. After buying the magazine, I stopped at another store, and when I reached for change I happened to lay the magazine on the counter *face up*. Now you might realize that there have been times when I certainly would have hid the magazine in my coat, but this time I never gave it a thought.

Inside. The length of "Crucible of Power" gives it the edge over "Oil." I haven't enjoyed a story by J. Williamson so much for a long, long time. "Oil" was a good story, and I liked Keith even though he did grate on the nervous system of Mr. Lawrence. (This is supposed to be some kind of a subtle hint.) The next item is something I can't understand. How did Brother Nat write a story that I consider to be as high as third place? That's what he did, anyway.

Sir, I'm going to call you a good-natured fibber, strictly avoiding the use of a more drastic word. Simak rival Smith? Phouph! One third of a story gone and there hasn't even been a single galaxy pried out of place. Fourth place, that's what I think of Dr. Smith's "rival." I'll stop at No. 5, wherein stands F. A. Kummer, Jr., to rant about some other things.

So far I have shied away from the fantasy side of fiction, but I'm going to look into *Unknown*. That's a promise. After playing the new game of "find what in the devil the editor did to the magazine this time" for a few minutes, I discovered Astounding has gone flapper and lopped about a half inch off the bottom. I say "the same" for serial illustrations. It's a fact that an illustration brings back a whole story while sometimes a title fails. Careful use of a separatory funnel brought out "Flight of the Dawn Star," "Seed of the Dusk," and "A Matter Of Form" as the best of 1938. In the junk heap: "The Degenerates," "Something From Jupiter," "The Disinherited" and "The Tramp" —Jack Dean, 52 Shrewsbury Ave., Red Bank, N. J.

Not Simak's story—Williamson's!

Dear Mr. Campbell:

I have just bought the February issue of the finest magazine (bar none) on the stands. For a while I thought you had reached the end of your rope, but the last three issues with the dignified lettering, the book-jacket illustrations, and the unusually fine stories have restored my confidence in you.

Your announcement of *Unknown* was very well received in these parts. (The announcement in the *Science Fiction Fan* got it to us early here.) And an engineering student in our A. and M. College at Stillwater thought the name very well chosen. Reminded him of the engineers' "unknown quantity." A look at the reviews contained in the fan magazines should convince you that fans *do* enjoy fantasy.

Some time back I wrote and suggested an idea for a story. This concerned a door through space by warping distant points together. You answered that the idea would appear in a story some time. Is Simak's "Cosmic Engineers" the answer? The first part seems to lead up to such an idea. One swell story.

I liked "The Crucible of Power" best this issue. Had both a new idea and a new and plausible character. Next I rank "Living Fossil," which was interesting sociologically. A very critical and humorous author. Schachner did well on "Palooka From Jupiter." Almost a good satire. Thanks to Ley for the article on ice ages. I look forward to the warm weather he promises.

There are so many new magazines to compete with you in your own field now that one must forever resign himself to pulp paper. These new magazines split up the field so. Quality of stories must also suffer, but as yet your magazine shows no such decline. Probably because of the better rates you offer.

Mr. Asimov thinks women of no account in history. Points out that men are the famed leaders. But history is a record of wars and sad oppression. Women are not famous for such things as this. Let men have all credit as rulers in history. But wait—wasn't there a certain maid of Orleans? Women are great in other things, too. I am reading what I believe to be the best novel in my experience: "Kristin Lavransdatter," by Sigrid Undset. Don't give man

too much credit for the better things of our world. There are women Dostoievskys and Einsteins, but I hope never a woman Napoleon or Hitler!

I failed to understand why Kummer's world of women should not have scientific progress! Always understood that repression of sex led to a distortion. They should have been fanatical scientists and workers—James Michael Rogers II, 2006 Court Street, Muskogee, Okla.

Symbolic book jackets will be used on serials; illustrative jackets on the short stories. This because serial jackets are used on each installment.

Dear Mr. Campbell:

"Cosmic Engineers," in the February issue, promises to be one of the best yarns we've had for some little time. This, due to the ever-increasing excellence of the entire magazine, is saying a great deal. Speaking of four-bell stories, I might say now that the one which interested me most in the past dozen issues or so was "Who Goes There?", Don Stuart's little gem. I personally would really enjoy seeing you publish more stories of this type.

Unknown, your announced new magazine, is, of course, the big news of the month. Man and boy, that's what we've been waiting for these many years—a fantasy magazine with Astounding's ultra high standard! Believe me, you can count on my support one hundred percent. I'll wager it goes over with a terrific bang at the newsstands, too!

As for the new format of Astounding, it's all O. K. with me. Your cover layout is quite good, as is also the contents page. The Brass Tacks and Science Discussions cut, however, does seem a bit out of tune with the rest of the magazine—of course, this is of only minor importance. The book-jacket-type illustrations lend class to the artistic setup, and I hereby cast my vote for them. I would, nevertheless, like to see your art department use less of the impressionistic designs (February—page 73), and more of the genuine illustration-type pictures in the layout of the book jackets. And by *all* means give Elliot Dold, your best illustrator, a lot more to do—two issues recently didn't have one Dold illustration in them!

Rogers' cover on the February issue, incidentally, was quite nifty; please keep this newcomer on the pay roll. He's good. Don't give H. V. Brown the sack, either, now; he's good, too! Brown is not only, in my opinion, your best cover artist, but he's also competent in turning out nicely textured interior cuts. I'll put my X after the proposition on the ballot, to wit: Give Brown more inside illustrations!

Well, that covers the situation, I guess. And thanks again for the new magazine, *Unknown*—L. P. Wakefield, 2832 Marshall Way, Sacramento, California.

We'll say this; the elimination of women would certainly have eliminated history!

Dear Mr. Campbell:

After I read your magazine it was your misfortune that my eye happened to light on the good old typewriter. And once fixed upon that organ of torture, I could not tear it away. It became my intention, irrevocable, to write my reaction of the current Astounding so that all, (yes, all!) might read it. I knew that you might not want my comment, that you could probably get along very well without it, but, well, maybe I wanted to see my name in print again. Or, perhaps, I just got mad at Mr. Isaac Asimov's letter.

In any event, I will tear into Mr. Asimov first. He says he is against women in science-fiction because the authors do not handle them properly. Mr. Asimov! Is that nice? It would be equally just for the women readers of science-fiction to campaign for the elimination of men in science-fiction because of a few idiotic, imbecilic males in science-fiction stories. We do not judge the men or the value of the men in science-fiction by a few blunders, so—why should you? Then, too, pictures of the future would not be complete without women. Or don't you agree that there will be women in the future? I agree with you that the women should be convincing, human creatures. Not goddesses, or silly, simpering saints of sweet sixteen, but honest-to-goodness human creatures. However, that should not put a ban on the entire sex. Nor do I agree that all authors, except Smith and Campbell, give up writing about women. Practice makes perfect, you know, and how are the other writers ever going to learn the right way to handle the female characters if they don't experiment. Another fault I find is your contention that women did not affect history. You say that women only affected the men who made history. Isn't that the same?

Ah, well, to leave Mr. Asimov for a space—until he answers, at least, I wish to say that I like the new artist, Rogers. No, he isn't related to me (he would probably be the first to deny it), I am not pulling for the family name. It is my sincere opinion that he is good. I think my favorite illustration of the issue was the one illustration "The Shadow Of The Veil." Jack Williamson's story was good, one of his best stories, I think. The "Living Fossil" was excellent. Oh, well, why go on? 'Tis sufficient that I didn't find a single story in the magazine to make me disgusted or even mildly resentful. The forecast promises great things, too. I'll be sitting around waiting for the next Astounding to appear on the newsstands with feverish impatience—Mary Evelyn Rogers, 2006 Court Street, Muskogee, Oklahoma.

You know, it'd be some book. Smith's novels total something like 500,000 words and mine something like 750,000. "Gone with the Wind" was about 200,000!

Dear Mr. Campbell:

I'm a bit early this month, but I've read the February issue through and I'm just as enthusiastic as ever about our magazine. Truly, "we" get better steadily.

First of all let me express my heartiest approval of Glenn Stephens' suggestion of Campbell's and Smith's novels being combined into book form. I've long felt the need of such a volume, and you can count me in right at the start. Personally, I think that Don Turnbull and Isaac Asimov are creating an issue where one doesn't exist when they take the stand they do on the "female" subject. I'm not interested in arguing with them about whether or not girls and love interest are necessary in science-fiction, because too many times in the past I have waded through poorly handled emotional situations in a story that needed no mush. However, Don and Isaac, you must remember that as the quality of the writing increases the use of such situations will be handled with more expertness and understanding. The ability to handle such themes is as much a gauge of an author's skill as the ability to present lifelike characters and realistic dialogue. Surely the skillful introduction of Caroline Martin into "Cosmic Engineers" has in no way harmed the story. As a matter of fact, Mr. Simak has proved his ability as an author in yet another way. After all, science-fiction needs "human interest" as much as any other kind of fiction, and the high class of authors that are frequenting the pages of our magazine have the ability to handle their stories wisely and to the best advantage. Love is no more foreign to us than eating, and if a plot needs love to send the hero into the yawning cavity of space after a fabulous new metal that will make for a good story, by all means give

the poor fellow love and send him out on his adventure.

February's cover was a dandy, more of Rogers. I think I mentioned last month that I liked the book-jacket type of illustration, especially as used with the serials. But just a word of caution. Don't overdo it. And if you use the same main illustration for the whole serial (as I hope you will), use plenty of illustrations in the body of the story. The use of several small cuts in "A Matter Of Form" was excellent. "Crucible of Power" would have been easily the top story if you hadn't given us "Cosmic Engineers"; that's a real yarn, and if the next two installments live up to the standard of the first, Simak will be out among the headliners of science-fiction. Third place goes to Willy Ley's article and that sarcastic contribution of his to Brass Tacks. He sounds as though he has indigestion, and I'd leave it at that, except that he started my mind working on what he says, and it seems to this poor fan that maybe the man's right after all. More power to Willy. The other stories were all good, but their good points were all so different that I haven't found a basis for comparing them. I enjoyed them all, so will leave the job of rating them to my more critical fellow fans.

As to the artists. Would you ask a portrait painter to paint landscapes? Well, then, don't expect a Frew to be as good at people as a Wesso. Frew and Paul both do good work where spaceships and machinery are concerned, but leave the people to Wesso and Binder, and this silly arguing alone.

On the strength of what you've done for science-fiction with Astounding (my first love, anyhow), Mr. Campbell, I plan to get hold of a copy of *Unknown* when it comes out, but for goodness sakes, don't spend your time on another magazine to the detriment of Astounding. Good-by and good luck—Charles W. Jarvis, 2097 Iglehart Avenue, St. Paul, Minn.

February 1939 made my twelfth Astounding, at that.

Dear Mr. Campbell:

Congratulations on the first "anniversary" number of the new Astounding. It is one of the few all-star issues that have been put out. The February issue is now the best all-round issue to the credit of the Street & Smith Astounding. Formerly the July, 1936, issue held that honor, in my humble opinion. Also, the present issue now has the best cover that I can recall, and this position was held by the cover illustrating "Spawn of Eternal Thought," in the April, 1936, issue. The cover is the life and so[illegible] of scientifiction, the kind of a cover that embodies all that scientifiction represents as far as its "dignity" is concerned. In this cover, at least, the new cover title looks all right, but I still think the old one's the best.

"The Crucible of Power" was up to the Williamson level of his older writings. It was a great story in its own way, for it does make the characters live. It is a story that won't be forgotten easily, and while it does not have the pounding greatness that is supposed to mark some of the heavier vein scientifiction stories, it is all that is ever needed to make a truly good story. I rate it first.

"Living Fossil" was an interesting short story, and while it cannot be called a "little gem" it is certainly of a superior quality. The use of such fluent slang by a race of civilized chimpanzee of the future seems to be somewhat out of place, though it makes the story easier to read. (Not that I can comprehend excellent English, or anything of the sort.)

I won't comment on the "Cosmic Engineers," but from the first chapter it looks like a story that will rank among the top ten serials of scientifiction.

"Palooka From Jupiter" was distinctly different from Nathaniel Schachner's usual style, but it was most interesting, and certainly brings out a previously somewhat neglected point in scientifiction; the general assumption that the "green earth with its blue sky and shaded forests" is the type of heaven that every alien from an overpopulated planet is looking for.

The science article, "'Ice Age Ahead?" is one of your outstanding articles, and presents an idea that has been overlooked to a large extent.

"Nothing Happens On The Moon" is another of the lighter stories, but it is very well written and presents some unintended humor.

Some of the points in "The Shadow Of The Veil" are debatable, but it was on par with the issue. The fact that one of the peculiar monsters would have the idea, even, that he could conquer a god which was able to kill his own kind from the sky, and with "mysterious lightnings" seems to be against all animal psychology.

"Lorelei of Space" was one of the poor stories in the issue, for no other reason, I suppose, than the fact that I didn't happen to enjoy it. (The feminine readers will probably acclaim it the best, and Kummer will begin to have tons of fan mail.) The idea of the *Maria Stella* seems to be taken right out of the present as yet unsolved mystery of the *Marie Celeste*, which was found in a somewhat similar state floating on the present earthly ocean. The food was still warm on it, and there was also an unfinished entry in the log book.

"Oil" struck me as being an unsuitable name for the story, though, again, probably because I didn't happen to like it, but the story itself was excellent.

As I have said, this issue is tops in the fact that there isn't one particular story that is bad, nor outstanding. The cover is swell, and I like the way of having a separate page for the title and illustration, though I'd suggest getting better interior ones. They were very illustrations, as our friend Ackerman would say.

"Brass Tacks" was somewhat depleted this issue. I particularly liked our chummy friend, J. C. D., in his request for more stories by Don A. Stuart. I got a big kick out of that. Either he is a very subtle jokester or he hasn't been reading the magazines as far back as Hawk Carse—T. Bruce Yerke, Secretary Los Angeles Chapter, S. F. L., Hollywood. California.

Readers of Astounding Science-Fiction:

Are you interested in learning what goes on behind the scenes in science-fiction? Would you like to know what stories the various magazines are going to print months before they actually are printed? Are you interested in reading discussions about and biographies of your favorite science-fiction writers and editors? Would you like to read excellent short stories by promising authors? If so, *Fantascience Digest* is the magazine for you!

For instance, the current issue contains the following: "Keller the Great," an interesting discussion of the immortal Dr. David H. Keller; "Sff. in England," telling you all about the science-fiction being published on the other side of the "big pond"; "Similarity with Differences," in which those two mighty epics, "Invaders from the Infinite," by John W. Campbell, Jr., and "Skylark Three," by Dr. Edward Elmer Smith, are compared. This article itself is worth the price of the magazine. Of course, many, many other articles, stories, et cetera, appear in this issue, but it would require too much space to list them all.

Fantascience Digest is published bimonthly, 15c per copy, two issue for 25c. However, readers of Astounding Science-Fiction may obtain a specimen copy for 10c. Address: 333 East Belgrade Street, Philadelphia, Pa.

Alliterative annotations awarding Astounding's authors.

February Issue:
Cover Colossal.
Williamson Wonderful.
Simak *Stupendous.*
Ernst Erratic.
Astounding Ample!—Bob Tucker, Science-fictionist, Box 260, Bloomington, Ill.

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"Clinging to a tiny platform 600 feet in the air puts a big strain on my nerves," says Charles A. Nelson, steel inspector of the New York World's Fair. His rule to ease nerve tension: "Pause now and then—

LET UP— LIGHT UP A CAMEL"

THE GREAT "SPIKE AND BALL," *(above right)* is the theme center of the New York World's Fair—the Trylon and the Perisphere—7000 pieces of steel joined by a quarter of a million rivets. It's the trying job of Inspector Nelson to check these two huge shells at every vital point. He says: "I've got to know every inch of that steelwork. Hanging onto girders hundreds of feet up, I can't afford to get jittery. I *have* to sidestep nerve tension. It's my rule to ease off occasionally—to let up—light up a Camel." (Notes on the two structures above: The great ball will appear to be supported by fountains concealing concrete foundations. At night, the ball will seem to rotate—an illusion to be created by lighting effects. The Trylon will be the Fair's broadcasting tower.)

LIKE SO MANY OTHERS at the New York World's Fair, Charley Nelson makes it a rule to break the nervous tension of crowded days by pausing every now and then to let up—light up a Camel. Observe, on your visit to New York's greatest exposition, how smoothly everything goes. Also note how many people you see smoking Camels, by far America's largest-selling cigarette. There are dozens of memorable sights to see at the New York World's Fair—but don't spoil the fun by letting your nerves get tired, fagged. Pause every now and then—let up—light up a Camel—the cigarette for mildness, rich-ripe taste—and *comfort!*