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THE WIZARD
OF SCIENCE

CAPTAIN FUTURE

MAN OF TOMORROW

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SPRING
ISSUE



CAPTAIN FUTURE

SPRING 1943

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WORLDS TO COME

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By **BRETT STERLING**

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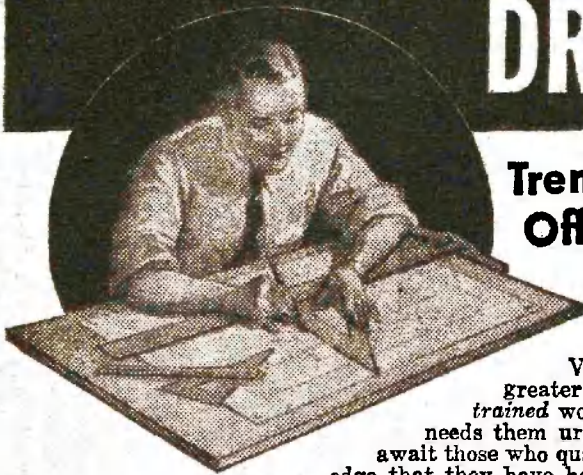
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CAPTAIN FUTURE

WIZARD OF SCIENCE

VOL. 5, NO. 2

CONTENTS

SPRING ISSUE

Curt Newton and the Futuremen

in

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WORLDS TO COME

By **BRETT STERLING**

Captain Future and His Valiant Aides Speed to the Rescue of the Sagittarian System—Ready to Lock in Mortal Combat with Deadly Enemies from Another Dimension!.....

15



Thrilling Short Stories

- PILLAGE OF THE SPACE-MARINE**..... D. D. Sharp 78
Thumb a Ride with Celestial Hitch-Hikers Pledged to Victory's Cause
- BETTER THAN ONE**..... Henry Kuttner 92
The Last Thing in the World that Bruce Wanted to be Was a Wrestler
- GABRIEL'S HORN**..... Ray Bradbury and Henry Hasse 105
A Hero Blows a Blast of Valor, and Evil Comes Tumbling Down

Special Features

- UNDER OBSERVATION (Letters)**..... Sergeant Saturn 8
- THE SHAPE OF THE FUTURE**..... A New Feature 77
- THE FUTUREMEN**..... A Department 88
- THE WORLDS OF TOMORROW**..... The Twin Planets 102
- THE FUTURE OF CAPTAIN FUTURE**..... Announcements 128

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Read our companion magazines: The Phantom Detective, Thrilling Detective, Popular Detective, Thrilling Wonder Stories, Thrilling Mystery, Thrilling Love, Thrilling Ranch Stories, Thrilling Western, Thrilling Sports, American Eagles, Sky Fighters, G-Men Detective, West, Popular Sports Magazine, Popular Love, Popular Western, Everyday Astrology, Texas Rangers, Range Riders Western, Startling Stories, Detective Novels Magazine, Masked Rider Western Magazine, Rio Kid Western, Thrilling Adventures, Black Book Detective, Air War, Exciting Detective, Exciting Mystery, Exciting Love, Exciting Western, RAF Aces, Rodeo Romances, and The Masked Detective.

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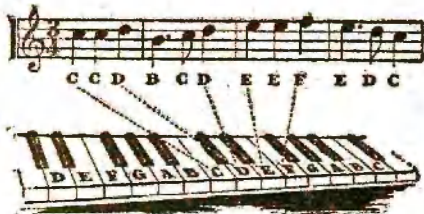
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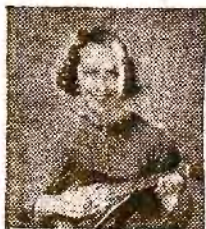


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*R.M., Vancouver, B.C.

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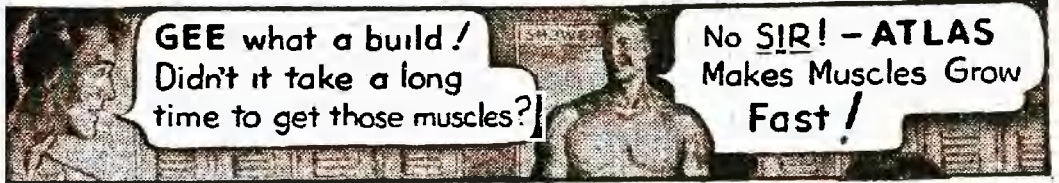
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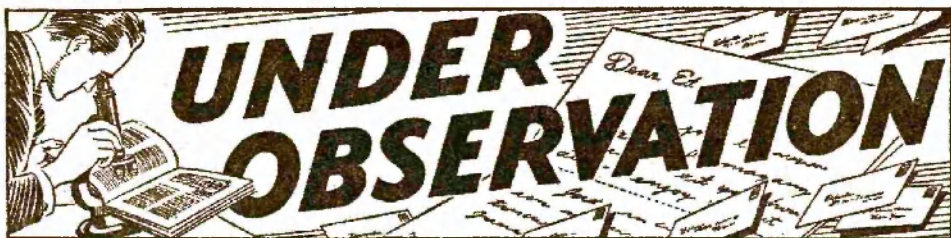
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Check here if under 16 for Booklet A.



Where Sergeant Saturn, Space-Pilots and Kiwis Meet

I KAY, you little tormentors, Wart-ears has just upended the mail sack over my desk and dumped an avalanche of name-it-and-take-it material before the old Sarge for classification. As if I have any dull moments!

In riffling through the rocket fuel—gas, to you junior astrogators—I run across an unusually large number of communiques which lack either the writer's name or his address. This is very bad. In fact, this is calamitous. For we follow a rule in these open forum departments in our science magazines, wherein we permit everybody to express themselves frankly, of printing letters only when the writer includes his name and address. In your cases I am sure it is an oversight, for we don't have any anonymous poison pen pals riding our space lanes.

But, confound it, be more careful, will you? I have a swell letter here this month—from a girl pee-lot, too, and I can't let you space monkeys read it because Rosella forgot to include her return address. And there are a good handful of other ethergrams which are short either or both names, and addresses. So if your letter doesn't show up in the following columns, you probably know the reason.

We will start the merry-go-round this trip with a penny postal which somehow got left out of the winter issue of CAPTAIN FUTURE.

AWAY FROM THE MUNDANE

By J. Wasso, Jr.

Hi, Sarge: Why don't you get away from those run-of-the-mill stereotyped covers on CAPTAIN FUTURE and feature stirring, "breath-taking" space flights and space battles?—119 Jackson Ave., Pen Argyl, Pa.

I guess it's a trifle late, Jay, to point out the recent covers on all three of our scientific group, but I'll ask you, anyway, if you've noticed the winter issue cover of CAPTAIN FUTURE, the November cover of STARTLING STORIES and the December cover of THRILLING WONDER STORIES. Consider yourself asked; I couldn't find a spot to put a question mark in that last sentence.

And don't worry. We are not going to feed you a monotonous procession of covers of any one type. We're going to mix 'em in 1943 so you birds won't be so anxious to mix it up with me.

PLANETS IN PERIL BEST

By Robert Lee Kurth

Dear Sarge: I have been reading CAPTAIN FUTURE since it first started, and I can safely say that I think PLANETS IN PERIL the best Captain Future story I have ever read.—403 Mantooth Ave., Lufkin, Texas.

Short and to the point, Bob. And eminently satisfactory. Write and tell me how you like WORLDS TO COME, won't you?

DO ARTISTS READ?

By Odin Thaanum

Dear Sarge: I've never written to any science-fiction magazine before, but I have to get my two cents' worth in now and tell you I have just finished your fall issue. PLANETS IN PERIL was sort of slow in spots, but all in all pretty good. You should be able to find better shorts. The Futuremen was okay! Under Observation is swell, and that's what caused me to write to you. The cover attracted my attention, but the Cold Ones aren't holding Captain Future at all while Shiri is being unbodied in the story. Don't your artists read the stories before they illustrate them?—San Diego, Calif.

Maybe they can't read, Odin. Honestly, the old Sarge has wondered about little discrepancies of this nature for years. It took three or four issues to dismantle the radio antennae sprouting out of Otho's shoulders as a misconception on the part of the artists. Those boys really get into a rut. I think we'll have to take 'em on a shake-down cruise with us yet.

FIRST EDITIONS WANTED

By George L. Young

Dear Sarge: I don't write well English, but I understand it enough to enjoy reading the "super" magazines in which you are so important member. I've just finished the reading of "The Comet Kings" and "Planet in Peril" and I can tell you, that CAPTAIN FUTURE is the best science-fiction magazine, and Edmond Hamilton the "non plus ultra" of the authors. I am only disappointed by the covers, because they have no connection with the story, and there are so many beautiful scenes to be depicted, that it's a pity they are not drawn by the artists. Please

(Continued on page 10)



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UNDER OBSERVATION (Continued from page 8)

tell me the name of the new cover artist, and who has replaced Wesso in the interior. Wesso was okay.

Fellow Futuremen, I am missing the first issue of **CAPTAIN FUTURE**, and also the first five issues of **STARTLING STORIES**, as well as the issues featuring "Twice in Time" and the "Devil Planet," and I would like to have these issues, for which I would be glad to pay.

Please publish **CAPTAIN FUTURE** bi-monthly, and admit subscriptions. I'm always afraid of missing one novel.—Henry Revett 290, Miraflores, Lima, Peru.

You write English a lot better than some of us so-called natives, George, and the old space dog certainly hopes you get a response to your S.O.S. Sorry that we cannot undertake to supply back issues. And, who knows, perhaps **CAPTAIN FUTURE** will eventually go bi-monthly. Meanwhile, don't overlook **THRILLING WONDER STORIES** and **STARTLING STORIES**, our two companion science-fiction magazines.

Rudolph Belarski did the cover for **PLANETS IN PERIL**, and Morey did the interior art work.

A DUAL PERSONALITY? By Clarence Jacobs

Dear Sarge: There is something that has been puzzling me for a long time. It is this: Is Eando Binder two persons or one? According to the issue of **STARTLING STORIES**, in which his autobiography appeared, he is two people, but Eando's picture is put in a later issue of **STARTLING STORIES**. There is something funny.

Starting to read CF rather late, I missed the first three issues, but later I obtained them from a friend and read them. They were good, but the later ones are better.

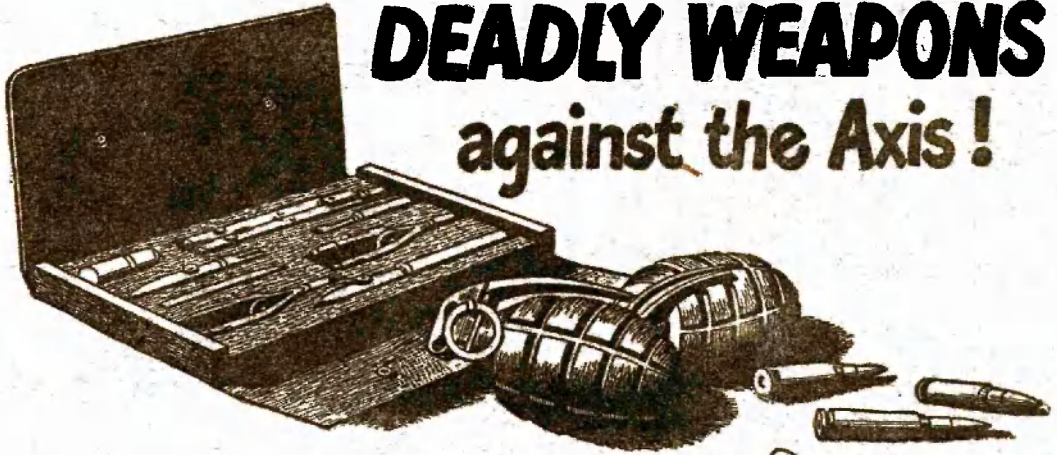
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(Continued on page 12)

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UNDER OBSERVATION
(Continued from page 10)

peared in another magazine in 1937? It is an excellent story, although it is quite long. "The Contraterrene Man" in the current issue of TWS is excellent. Edmond Hamilton is a good writer. I am eagerly looking forward to the time when CF will become a bi-monthly. "The Prisoner of Mars" is the best novel you've had in SS.

Trimmed edges would improve the mags a lot! I would be grateful if you could tell me how I could get the issues I need to complete my collection of CF. Thank you.

Fanatically yours—Box 32, Upland, California.

To clear up the mystery about Binder for you, Clarence, the two Binder brothers, Ernest and Otto, started collaborating on science-fiction stories long ago. They used their initials, E and O, establishing that name in the realm of science fiction. Since then, Otto has done most of the scientific-fiction for the family and has carried on the name. As for your dilemma about past issues, I trust some of the fans can help you out when they see your letter.

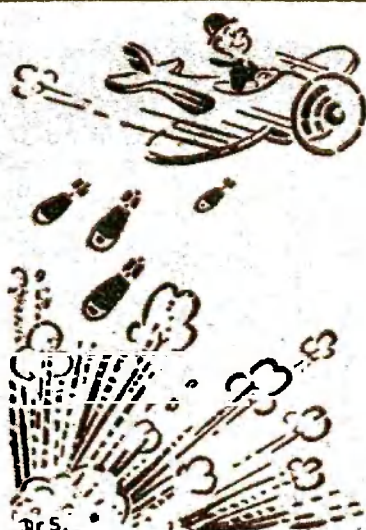
Here is another goggle-eyed lad who is in the same fix.

MORE CAPTAIN FUTURE
By Lefty Gorlich

Dear Sarge: Did it ever occur to you that the real reason for Captain Future overcoming the obstacles he's faced with is that Ed Hamilton ignores all the laws of science when he writes a Captain Future novel? For example: the vibration drive which CF used so successfully in "Quest Beyond the Stars" was supposed to propel the *Comet* along at a speed almost as great as the speed of light. Even if he traveled at the speed of light it would take him four years to reach the nearest star. Now try to squirm out of that one.

When I write to you in the future should I address it to the Book Dept. or Futuremen? In your Under Observation column you don't give your address. This time I'm sending this letter

(Continued on page 116)



Dr. S.

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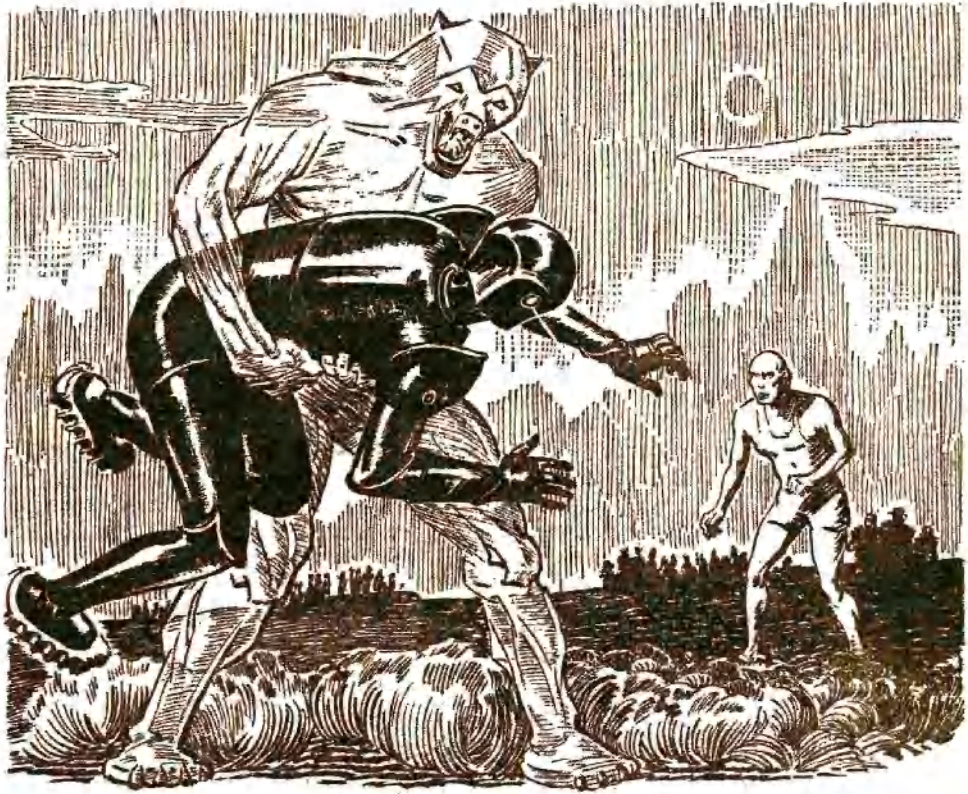
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The Sverd lifted Grag as though the robot were a helpless child and strode on (Chap. XII)

WORLDS TO COME

By BRETT STERLING

Captain Future and His Valiant Aides Speed to the Rescue of the Sagittarian System — Ready to Lock in Mortal Combat with Deadly Enemies from Another Dimension!

CHAPTER I

Menace in Sagittarius

IN THE light of the blue sun that blazed fiercely down upon the twin planets, Davor and Lagon, the ordinarily stolid face of Ki Illok showed an expression of mingled rage, determination, and hopelessness. His second in command, Rad Magon, was running toward him anxiously.

"The attack has begun!" the lieutenant gasped. "The Sverds are coming!"

"I know." Ki Illok was a brown

man, compact, stocky, clipped of speech, brusque of manner. His dark eyes ran quickly over the atom-pistol at his belt. "We are ready for them, Rad Magon. As ready as we shall ever be."

His eyes, inspecting defenses, swept over the city which was soon to become a battlefield.

The planet Davor, which was under attack, was a small one, circling along with its twin about a minor sun in the constellation known thousands of light-years away from the Solar System as Sagittarius. Its cities were constructed not of metal, but of plants

A COMPLETE BOOK-LENGTH NOVEL

trained with great skill to grow into place, and were therefore highly inflammable. But Ki Illok's feeling of hopelessness was due not to this, but to the mystery that surrounded his enemies.

The Sverds were strange, apparently invulnerable creatures, almost certainly non-human. Together with an army of human soldiers, they had already sown destruction far and wide. Under the leadership of a mysterious being known as Gorma Hass, they had conquered planetary system after planetary system.

Was Gorma Hass himself human? Ki Illok did not think so. No man would set out to conquer systems of worlds out of a sheer lust for power. The project was too vast, and life was too short. No, the purpose that drove Gorma Hass was something more subtle than that, something Ki Illok had racked his brains again and again in a vain effort to guess.

The streaks of light that were flashing silently across the heavens blazed up in a dazzling criss-cross pattern that at any other time might have impressed Ki Illok with its beauty. But now he knew that the lights came from the space-ships of the Sverds, and that the pattern meant death—death to the world of Davor, to its cities, to its inhabitants, to himself.

Lagon, the second of the twin planets, had just risen above the horizon. Rad Magon pointed.

"Ki Illok, you must escape. I have a ship ready. Lagon is as yet unattacked. From there we can voyage to some far star where Gorma Hass will not follow."

Ki Illok shook his head. The blue sun shed a ghastly light upon his brown face.

"I intend to fight, not run away," he answered bitterly.

ALREADY the plant buildings in the distance were bursting into flame. But now answering flashes of light came from the ground. And far overhead, some of the attacking ships, hit by the return volleys, were disintegrating.

The ships opened and spewed out large metal spheres, which began to

fill the skies. These globes drifted down slowly, unaffected by the fierce rays which the defenders turned against them. Only when they hit the ground did they burst open, scattering deadly fragments of metal, and men poured out from them.

There was no need for Ki Illok to bark out last-minute orders, for his men already knew what to do. He himself had his atom-pistol out. He fired whenever he saw anything that might possibly be a target, shooting rapidly but accurately. It gave him a grim satisfaction to know that the attackers were paying a heavy toll.

Then from Rad Magon there came a sudden despairing cry. "The Sverds! The Sverds!"

Ki Illok turned quickly. A couple of hundred yards away from him two gray metal monsters were striding along remorselessly. They walked upright like men on two legs, but they were beyond the height of any giants of whom he had ever heard. Over ten feet from toe to crown, they had stolid animal faces apparently set upon the tops of their bodies without intervening necks. They walked through the flames, as unaffected by the heat as by the rays that were levelled upon them from every side.

A metal sphere drifted down and exploded near one of the Sverds. Ki Illok stared in excitement as the fragments shot through the mysterious creature's body without obstruction. Now, he thought, he knew the secret of their invulnerability.

"They're ghosts!" he cried. "Three-dimensional images! They can do no harm!"

He saw one of his own soldiers rush past the Sverd, to shoot at a human enemy upon whom his atom-pistol might have some effect. Then, as Ki Illok stared in horror, the Sverd raised an arm, pointed a metal rod—and the soldier of Ki Illok disappeared in a burst of vapor.

"So they're not images!" murmured Ki Illok dazedly. "They can kill!"

Then he saw a dark shadow forming on the ground. Its edges took shape and outlined a man. Ki Illok realized that facing him at a distance of a few hundred yards was a figure that might



For the first time in his life Captain Future felt that his mind was something tangible, like an arm or a tentacle with physical power (Chap. XX)

have been his own. Compact, stocky, brown of face, there was nothing frightening about it except the manner of its appearance.

"Soldiers of Davor, I am Gorma Hass!" cried the figure.

Ki Illok's teeth clenched. So Gorma Hass was human after all! He levelled his atom-pistol, pressed the trigger—and saw in despair that Gorma Hass, like the Sverds was unaffected.

"Surrender and you will be well treated!" cried Gorma Hass. "If you fight on, only death awaits you. My human soldiers are vulnerable, but the Sverds are not. It is useless to struggle against them. Surrender to save yourselves!"

Already men were throwing down their arms.

"The cowards!" muttered Ki Illok bitterly.

"It is hopeless, Ki Illok," said Rad Magon at his side.

"Perhaps it is," he replied fiercely, "But I will not desert my men. I will die with them."

But as he rushed forward, a shower of metal fragments spattered through the air from an exploding sphere, and Ki Illok fell.

Rad Magon picked up the unconscious body, ran for the waiting space ship. It was the work of a few seconds to deposit Ki Illok inside, and blast off. He was afraid he would be seen by Gorma Hass, but by now the smoke was so thick that during the few moments of danger it shielded him well. He could hear Gorma Hass speaking again, "Soldiers of Davor, this is your last chance to surrender!" Then he was beyond Davor's atmosphere, streaking for Lagon. He would pause there briefly, then drive on.

He looked back fearfully. He was unpursued.

KI ILLOK awakened to stare up at a sun that was red, not blue. He felt weak, but still he had sufficient strength to stand up. He stared around him.

In addition to Rad Magon, there were three men watching him. One was a giant over seven feet in height,

with a brilliant crimson skin and stiff black hair. He wore a garment of black leather secured by a scarlet belt. The second was small, withered, blue-skinned and completely hairless, with the bulging skull of a man of intellect, and colorless, faded eyes. The third, also blue-skinned, was slightly taller, also hairless, but obviously younger and more vigorous.

"Hol Jor!" exclaimed Ki Illok. And Ber Del! By the gods of space, where am I?"

"This is Anfren, my home planet," replied Hol Jor, the red giant. "The sun is Antares."

"How did I get here?"

"Rad Magon managed to bring you. He took you first to Lagon, where your life was despaired of. Then he had you put in a sound hypnotic sleep and brought here to our doctors. You owe him your life. Ber Del came here from Vega much as you have done, to escape Gorma Hass and his Sverds. The young man beside him is Mar Del, his son."

Ki Illok nodded, held up his hand in a curt gesture of greeting. Then his face darkened.

"What now?" he demanded bitterly. "Where do we run next?"

Hol Jor's broad crimson features became thoughtful. "You are asking a difficult question, Ki Illok. When the time comes for Gorma Hass to attack us, we shall fight as bravely and as desperately as you have done, but we too have no hope of winning. And soon there will be no place to which we can escape. We shall have the choice of dying or submitting to Gorma Hass."

"I have made my choice. I will never submit."

"Nor I," cried Mar Del. "You old men give up too easily. Gorma Hass is not unconquerable. After all, he is only a Vegan, like myself."

Hol Jor's crimson eyebrows went up at the words, "old men."

"If I had trusted my eyes, I should have called him a Sagittarian," commented Ki Illok impatiently. "But I believe now that this is only an appearance he assumes. I am convinced that he is not human at all."

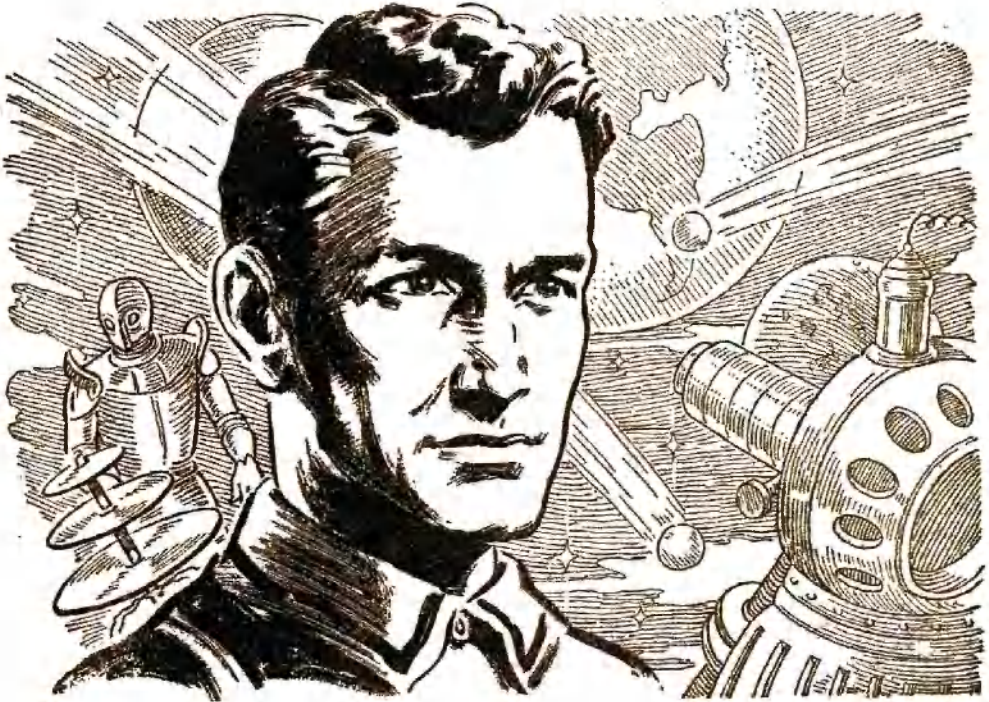
"Aye, you are right," agreed Ber

Del. "And seeing that he is not human, he can have no human objective in mind. I feel that he will not stop at the conquest of a few star systems. He intends to continue on to every world where human type beings live."

"Why?" challenged his son.

burst out the mystified Mar Del. "What are you talking about?"

"We are talking of a man of a distant system called Captain Future, and of his companions," explained Hol Jor. He turned to Ki Illok. "The strength of Gorma Hass lies not in his armies of conquered races, but in him-



Captain Future

"That I cannot tell," admitted Ber Del, greatly troubled. "But the danger is great. He possesses a science which we cannot equal."

Burly Hol Jor nodded. "That is true. And there is only one way to conquer him—oppose him with a science greater than his own."

Mar Del laughed. "That is easy enough to say. But where shall we find such a science?"

"No trouble at all," interrupted Ber Del. "By the green devils of Antares, I think I know what Hol Jor has in mind!"

Ki Illok, too, knew what Hol Jor meant. "Our knowledge is like that of children compared to his," he said slowly. "But he and his companions are only four in number. Gorma Hass possesses countless armies."

"By the names of all the star-gods,"

self and his Sverds. If any one can learn how to conquer him, Future can."

"We understand too little about Gorma Hass," pointed out Ber Del. "That has been our chief difficulty. It is not enough to realize that he is not human. To aid us in our fight, we need the resources of the vast science which Captain Future has at his disposal."

HOL JOR nodded. But Ki Illok had one final objection.

"He is too far away. Even with the aid of the powerful vibration drive he devised, it would take many quads before we could reach him. And by the time we returned, it would be too late."

"No, there is time," said Ber Del. "We are not the greatest scientists in

CHAPTER II

Danger from the Sun

the universe, we Vegans, but we do make advances now and then. Ki Illok, have you seen the ship by which I arrived here?"

Ki Illok shook his head. Ber Del led him to the side of the room. Here he pressed a button, and the wall became transparent. Ki Illok looked out and saw a cylindrical ship resting quietly on the ground.

He shrugged. "It is an ordinary space vessel."

"Look more closely, Ki Illok."

"The outline of the hull seems vague."

"Ah, now you are more observant. The ship is equipped for dimensional travel. Imagine yourself in a two-dimensional world, Ki Illok, a world like a sheet of paper. You are at one corner of the world, Captain Future at the other. You are a universe apart. But now some one bends the paper, brings the two corners close together.

"You are still far apart so long as you can travel only on the paper. But what if you could leap from one corner to the other, through another dimension?"

"The distance would be trifling," admitted Ki Illok.

"The distance between us and Captain Future is trifling, provided we can travel outside of ordinary three-dimensional space. And the ship you see is equipped to make that very journey."

Hol Jor growled, "You are not telling him everything, Ber Del. The trip is dangerous. Space in the other dimensions is almost uncharted, practically unchartable. We can land in Captain Future's solar system, but we cannot choose the spot at which we desire to land. And once there, we shall have to finish the journey in the ordinary way."

Mar Del interrupted impatiently. "Enough of talking. The trip can be made; let us make it. My father must remain behind, to care for his people. I volunteer to pilot the ship."

"I," answered Hol Jor, "will be the pilot. But I accept you as a member of the crew."

They glanced at Ki Illok. "Let us start," he growled.



A MAN'S hearty laugh rang out, audible only to his companions across the savage lunar landscape, as the massive metal body of a great robot flew through airless space to land on his bulbous metal head.

The robot sat up, then scrambled to his feet, a furious expression in his bright photo-electric eyes.

"By Jupiter, that animal can't do that to me!" boomed his deep voice. "Let me at him again!"

"It's useless, Grag," laughed the man. "The day will never come when you can ride a wild Plutonian slug-horse."

Curtis Newton, the tall young Earthman who was famous throughout the solar system as Captain Future, grinned in anticipation behind his glassite helmet as the robot once more approached the slug-horse. In the wild forbidding landscape, lighted by the green radiance that came from Earth, he looked hardly less weird a figure than the robot.

Tall, lithe, and broad-shouldered, his mop of tousled red hair, and his handsome space-tanned face with its clear, keen gray eyes were visible through the glassite. An audiophone of short radius enabled him to communicate with his comrades, enabled Grag to hear his laughter. But to a stranger there would have been no sound, for the surface of the moon was airless, and the walls of the crater Tycho never knew an echo.

The Plutonian animal, about ten feet in length and four feet high at the shoulders, resembled a giant slug as it motionlessly awaited its angry would-be rider. Its legs were so short as to be practically invisible, but for all that it could cover ground like the flick of a whip once it was aroused.

Grag approached it cautiously, leaped clumsily upon its back, and

clamped his legs about the thick body. At once the slug-horse began to vibrate.

The outlines of its body, lashing back and forth violently, began to blur as Captain Future stared at it. A low humming sound testified to the speed of the back-and-forth motion. Grag, at first firmly ensconced in his seat, began slowly to vibrate also. Greater and greater became the amplitude of his vibration, until suddenly the animal made a gigantic effort, its whole body heaving in one vast convulsion, and the robot flew over its head again.

This time Grag's discomfiture had another witness. A lithe and pale-skinned man had stepped up from the flight of steps that led to an air-lock entrance of the underground Moon-home. Human as Otho's appearance was, he was actually only a synthetic man, an android. His body had been constructed of artificial tissues.

This was a sore point with him, for he hated to be reminded that he had been born in a series of test tubes. His head was hairless, the skin pure white, with neither brows nor lashes. Slanted green eyes sparkled with reckless deviltry. Otho was the swiftest and most agile creature in the system, and often he needed all his speed and agility to escape from the trouble he loved to stir up.

"Good riddance to that pile of useless scrap metal!" he jeered. "Look, Chief, I'll show you how a slug-horse should be ridden."

An agile bound took him to the slug-horse's back. The animal began to vibrate as before, but this time to no avail. No matter how rapid and violent the motion, the lithe android had no difficulty in keeping his seat. Finally he dismounted in triumph.

"You two make too much of a fuss about nothing," grinned Curt Newton. "Let *me* show you how to handle the creature."

"Hold on, Chief," yelled Grag. "He's dangerous!"

BUT Curt Newton was already upon the beast. To the amazement of both Otho and Grag, the slug-horse did not vibrate at all. He raced

forward over the rocky surface at Curt's bidding, then turned obediently around and slithered back.

"Holy sun-imps!" gasped Otho. "Why, you might be a cowboy from Pluto itself! How did you do it?"

"It's easy enough when you know how. This little gadget at my belt contains a vibration ray of the same frequency as his own. Slug-horses find such rays very soothing. It's impossible to control them by sheer strength alone."

"Is it?" growled Grag. "Throw off your ray, Chief. Let me try one more time!"

Once more he leaped upon the Plutonian beast, this time with more determination than ever. The slug-horse's vibrations increased in violence until the two onlookers thought that even Grag's metal body would be shaken to pieces, but still he held on. The animal twisted, squirmed, went into convulsions.

"There!" panted Grag. "He can't throw me!"

With a suddenness that startled every one, the slug-horse collapsed. When the astonished Grag dismounted, it presented a disheartening appearance. It was as flat and squashed as if a mountain had fallen upon it.

Grag shook his head in bewilderment. "I don't understand it, Chief. What happened?"

"Your weight was too much for it," taunted Otho. "A slug-horse is built to carry a rider, not a perambulating junk-yard!"

"Go back to the test tubes where you were born," replied Grag majestically. "It didn't throw me, did it?"

"It didn't," agreed Curt Newton. "But you threw it, and that's almost as bad. It'll take a couple of days before that slug-horse is back in shape to be ridden again."

"Curt!" called a pleasant, woman's voice.

Out of the Moon-home had emerged a dark pretty girl, Joan Randall, one of the shrewdest and most courageous investigators of the Planet Patrol. Floating a few feet off the ground alongside her came the weirdest of all the Futuremen, Simon Wright.

Simon had once been a brilliant, ageing scientist on Earth. When he was on the point of death, Curt Newton's father had surgically removed the living brain and installed it in a special serum-case of transparent metal.

The case contained the serum and pumps and purifiers that kept the brain alive. In front were Simon's glass lens-eyes, mounted on flexible stalks, and the aperture of his mechanical speech-apparatus. From his case, the Brain could project magnetic traction beams, by means of which he was enabled to wield tools or instruments, or glide swiftly through space.

Simon Wright rarely showed emotion. Ordinarily absorbed entirely in scientific research, his icy mentality was little affected by the disturbances that upset ordinary mortals. Only one thing could arouse him—danger to his ward and pupil, Curt Newton.

THE story of Curt's birth and boyhood was the saga of the Brain's wisdom. A generation before, Curt's parents had fled to the Moon to protect their scientific discoveries from an unscrupulous man named Victor Corvo. Together with Simon Wright, they had built their combination laboratory and home under Tycho.

Here their experiments had created Grag, the robot, and Otho, the android. And here, soon after Curt Newton's birth, Corvo had killed his parents, to be killed in turn by the avenging Brain, robot, and android.

The three unhuman beings had reared and educated young Curt Newton. Their combined instruction had made him the most skillful planeteer in space and the System's greatest scientist. For some time, Curt had devoted his immense abilities to the eradication of crime from the System. In that war against the enemies of society, he had come to be known as Captain Future.

The Brain's strange box form now glided toward him.

"Lad, you've done it!" he called. "That last suggestion of yours for using a borate flux did the trick!"

He held in one of his tractor beams

a small, many-faceted, transparent disk that glittered like crystal. Actually it was the new metallic alloy upon which he had been working.

Joan added, "From now on, Curt, we'll always be able to keep in touch with each other. Simon has made a metal crystal for each of us. We'll always have to keep them upon us. They'll project such thoughts as we wish farther than any audiophone will project sound vibrations."

"But they must be used with care," cautioned the Brain. "The crystals will wear out in time, and they are difficult to reproduce. Their use must be reserved for emergencies."

"We still have the problem of permanence to solve," agreed Curt. "Meanwhile, Simon, the crystals represent a definite advance in thought projection. I don't think there's any limit to the distance at which they will operate."

A grizzled man in the black uniform of the Planet Police came running up the steps from the Moon-home with a spryness that belied his age. This was the veteran marshal, Ezra Gurney. He and Joan, temporarily off duty, were visiting the Futuremen for a well-earned vacation. The marshal's face was eager and excited.

"Curt, there's a call for you from the Planet Patrol! There's trouble within Mercury's orbit!"

Curt's eyes lit up. "Good! The way I feel now, I'd be interested even in a couple of space-ship thieves."

The old marshal shook his head. "These aren't thieves, Curt. A strange shimmering craft has appeared out of nowhere, about a third of the distance from the sun to Mercury. It appears to be caught in the sun's gravitational pull. And it hasn't got the power to get out."

"There's plenty of time," said Otho. "The sun's pull will take time to act."

"Not as much as you think," returned the marshal grimly. "The craft was driving ahead at its full speed when it appeared."

Curt's face paled. "Then we'll have to move fast. Quick, Otho, the Comet!"

The android was already darting into a passage that led through the

solid lunar rock to a roomy chamber. This was the hangar of a small spaceship of tear-drop design—the *Comet*, super-swift vessel of the Futuremen.

Otho slid behind the controls. Joan Randall was already in the ship. The others joined her quickly. Overhead, doors opened automatically, and the powerful craft streaked up into the star-studded heavens.

A few moments later, Marshal Ezra Gurney, his ears glued to the audiophone, looked up in alarm.

"I've just had a report on the speed of that strange ship!" he announced. "Curt, it's going faster than the fastest model space cruiser in the System! It's going faster than we are!"

"We'll catch it," said Curt Newton grimly.

Ezra Gurney shook his head slowly. "I'm sorry, Curt, we're too late. That ship is doomed!"

CHAPTER III

Visitors from Space



AS THEY rushed ahead, Curt Newton listened to the audio reports describing how the strange ship was being drawn nearer and nearer to the sun. Otho was racing the *Comet* toward the trouble spot, but it was

clear to Curt that at their present pace they would never reach the ship in time to help.

"How about the vibration-drive, Chief?" demanded Otho.

"I'm afraid it's our only hope. Any other craft in between?"

"None, Chief."

The vibration drive was a new principle of space-travel developed by Curt and the Brain. The ordinary rocket-propelled ship derived its motive power from the reactions of particles produced with the aid of giant cyclotrons from atomic explosions in a special chamber, and expelled at high speed.

Curt and the Brain, making use in-

stead of the reactive push of high-frequency electromagnetic vibrations projected from a drive-ring at the stern of the ship, had been able to build up velocities many times the speed of light. But such velocities, useful as they were in interstellar travel, could not safely be used inside the solar system.

"What's your plan, lad?" demanded Simon.

"I had intended to cut directly ahead of the ship, slow down to make contact, and then reverse our direction, using the *Comet's* power to push them away from the sun instead of toward it. But they're going so fast that I'm afraid there isn't time."

"No, Curt, there isn't. We won't be able to accelerate to the speed we need to overtake them, and then reverse."

Curt's eyes suddenly lit up. "But we *have* got time to cut between that ship and the sun!"

"What's the idea, Chief?" exclaimed Otho. "There's no sense in our getting burnt up, too!"

"We're probably better insulated than they are, so we'll be able without too much danger to ourselves to shield the other ship from the fiercest heat. My idea is to use our side-rockets to push them away from the sun. In that way, we'll get the ship to swing through a very eccentric elliptical orbit.

"And if we succeed in doing that, the faster they're plunging at the sun right now, the better. The high velocity will take them far past the sun, and we'll be able to give them the extra push that will carry them beyond Mercury's orbit to safety."

"Then here goes the vibration-drive, Chief. I'm putting on the stasis projector to protect our bodies from the acceleration."

The *Comet* leaped forward in space. Despite the protecting stasis of force Curt, like the others, suddenly felt the grip of the terrific acceleration. It threw him against a wall, held him there, appeared to be flattening him out. But the distance between the *Comet* and the endangered craft was quickly decreasing. In a couple of hours they could see it

with the aid of the space-visor screen, a tiny black dot in space, silhouetted against the blazing sun.

Otho cut off the vibration drive, began to decelerate. Even with their speed decreasing, they were rapidly eating up the remaining distance that separated them from the other ship. Otho skillfully cut in to one side of the stranger, and now they raced along side by side.

CURT threw a lever, and the side-rockets leaped into activity with a roar. The other ship, forcefully repelled, widened the gap between them.

"Holy sun-imps!" cried Otho. "They're pushing us the other way, into the sun!"

"Action equals reaction," rasped the Brain. "If we push in one direction, we get pushed in the opposite direction. It's an old enough law of physics for you to have learned it, Otho. We'll have to use our rockets on the sun side to close the distance."

They drew close again, blasted the rockets once more. Slowly the other craft was being pushed out of the straight line of its fall toward the sun. Its course was now faintly elliptical.

"This is hot work," grumbled Otho. "We may be insulated, but our insulation isn't perfect."

The sun was looming ahead, only two million miles away. The inside of the *Comet* began to resemble an oven. Again and again the rockets blasted at the other ship, driving it further and further out of its former straight-line course.

Otho, speechless now in the intense heat, stuck doggedly to the controls. The old marshal, Ezra Gurney, was gasping for breath, and Joan was pale. Only Grag didn't mind the terrific temperature. To his special metal body a few hundred degrees more or less meant little.

Curt Newton noted grimly that they were winning. The two ships raced past the sun together, with less than a half million miles to spare. The flaming corona seemed to reach out at them, and Curt could hear the creaking of the *Comet* as some of the

stellite plates began to buckle under the intense strain.

Then they were streaking away from the sun just as rapidly as they had approached. The heat grew less intolerable, and Curt wiped his forehead.

"We made it, Chief," cried Grag triumphantly. "Now all we've got to do is give them a little shove, and we can leave them to themselves."

"Not yet," cautioned the Brain. "First we're going to see who's in that ship."

Several hours afterward, when they were safe from the sun's gravitation, and both ships had reradiated into space some of the excess heat they had absorbed, the two ships swung together, clung with the force of the *Comet's* magnetic grapple.

The inner door of the *Comet's* airlock opened, and Curt Newton stepped into it. "Be careful, lad," warned the Brain. "You don't know who those strangers are."

Curt, his hand on a proton pistol, nodded. The inner door of the airlock closed, the outer door swung open. Some one was waiting in the airlock of the strange ship.

Curt Newton raised his proton pistol, then uttered a cry of surprise. "Hol Jor!"

BACK in the lunar home once more, the giant robot labored on the repairs needed for the *Comet's* hull while Curt Newton and the Brain considered what the far-traveled star-captains had told them.

"Dimensional travel," admitted the Brain, "is a great advance. But it would be more valuable if you could reach your destination exactly."

"We came closer than we had expected," pointed out Mar Del.

"Too close for comfort," agreed Hol Jor. "We emerged from the other dimension to find ourselves going full speed directly toward your sun."

"Let us forget past dangers," said Ki Illok impatiently. "Our reason for coming here was to ask for help with regard to Gorma Hass and his Sverds."

Curt Newton nodded. "So no one

understands his origin, or the nature of the strange creatures?" he asked.

"No one," repeated Hol Jor. His eyes wandered about the laboratory, taking in the wonders of this strange place that so few men had ever had the opportunity to see. Enormous generators, transformers, synthesizers, and atomic furnaces were near the walls. Some of them were instruments such as Hol Jor had never before encountered.

Mar Del and Ki Illok, just as curious as the Antarean, had been staring unashamedly. But Ki Illok, who was far from being a scientist, was most closely interested in the question Curt had just asked.

"Who or what Gorma Hass is, no one knows," he stated emphatically. "As for the Sverds, they are not human, they are invulnerable to all ordinary weapons, and they possess enormous strength. Grag is a weakling compared to them."

Gray looked up from his work. "Is that so?" he bristled. "Let me get at them, Chief, and I'll show these fellows what I can do. Watch this."

He lifted one of the warped metal plates that had come from the *Comet's* hull, bent it in his metal hands.

"Showing off again," jeered Otho. "Now, how about showing us how you can ride a Plutonian slug-horse?"

"Never mind that," ordered Curt Newton. He turned to the Brain. "Simon, here is a problem that will challenge all our skill and ingenuity. I am in favor of undertaking it."

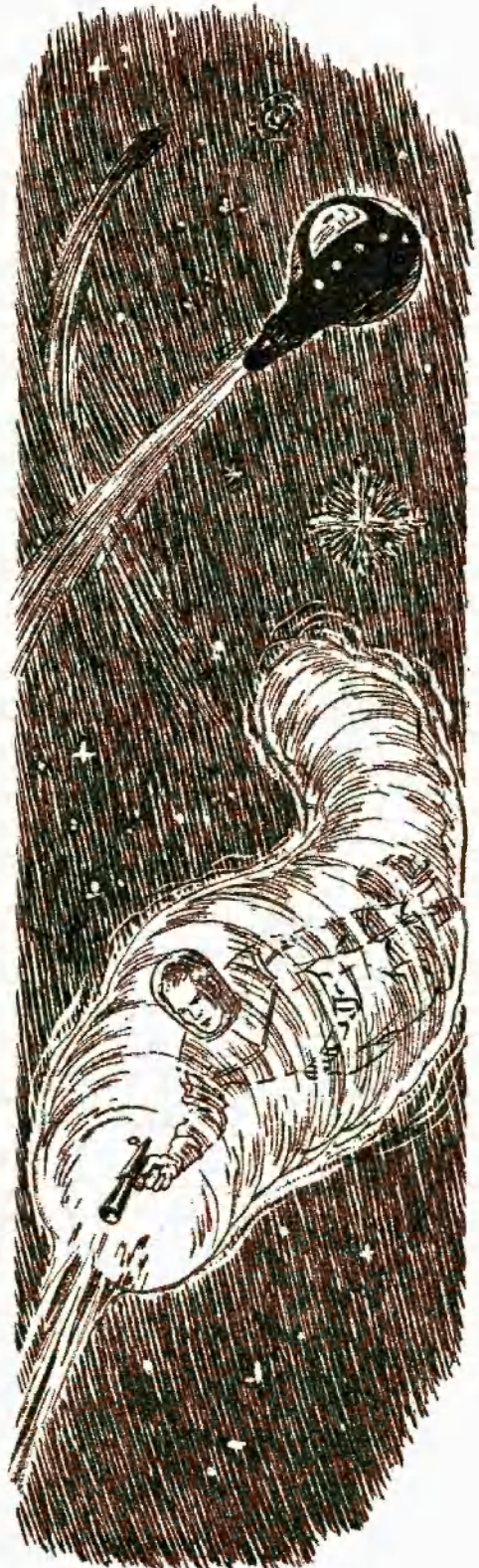
"Aye, lad, especially if Hol Jor is right in thinking that Gorma Hass expects eventually to extend his operations to other star systems."

"Chief," put in Otho, "we can have a dimensional drive built into the *Comet* in a few days. Why not have that weak-brained, strong-armed junk-pile"—he indicated Grag—"start work at once?"

"Why, you misguided son-of-an-inner-tube—" roared Grag.

"Silence, you two. We'll start work on the dimension-drive at once." Curt faced the girl. "And for once, Joan, you'll be able to come along."

"I'd love to—" she began, when Marshal Ezra Gurney, who had been at the long-distance audiophone, en-



With the loosing of his proton ray, the mist in front of Captain Future began to dissolve (Chap. V)

tered the laboratory.

"Sorry, Joan," he apologized. "You and I have to get going after a couple of porite thieves. The government's supply works on Venus has been blasted open, and a large quantity of the drug stolen."

The eager look faded from Joan's face, to give way to an expression of disappointment.

"This always happens whenever you get started on something that looks interesting, Curt," she sighed. "Well, at any rate, I'll be able to keep in touch with you for a while with that metal crystal Simon gave me."

The Brain was already in motion, gliding toward the craft they had rescued, anxious to examine the dimension—traveling device. He was in a deep study of its mysteries while Curt kissed Joan farewell, and saw her and the marshal take off in a Patrol ship.

CHAPTER IV

Through the Dimensions



OTHO'S EAGER green eyes looked a question. "Ready, Chief?"

Curt glanced through the visiplates and nodded. The Futuremen were driving outward from the sun in the direction of Mars, away from

heavy traffic, using the ordinary rocket-propulsion method. On the floor of the *Comet*, Eek, a moon-pup, and Oog, a meteor-mimic, pets of Grag and Otho respectively, rested quietly. The moon-pup was a small bearlike creature, the meteor-mimic a fat, white and doughy little animal. Both the robot and the android would have been unhappy without their pets.

A few thousand feet ahead of them, Hol Jor was cruising slowly along. His ship had just showed a green signal light. Then it seemed to waver and blur in front of Curt's eyes. Suddenly it disappeared from sight.

It had started on its journey through the dimensions. It was time for the *Comet* to follow.

Otho pressed a stud, and the Universe began to fade out. The stars dimmed, then disappeared entirely. The Futuremen were now out of their normal three-dimensional world.

It was a world of ghosts and shadows that they had entered. Far ahead of them they caught sight of Hol Jor's ship. Then quite unexpectedly that vanished, only to reappear a few moments later, strangely distorted, as if seen in a concave mirror.

"What's going on? demanded Otho. "How is it that now we see them, now we don't? And why are they twisted?"

"Light waves are subject to curious laws in this world," answered Curt. "They no longer travel in the straight lines with which we are familiar. Keep the course Hol Jor charted for us, Otho, even though it looks twisted. We're liable to lose them entirely before the trip is finished."

Out of the blackness where nothing had been visible a moment before, a giant green sun, cubical in shape, but with rounded edges, suddenly loomed.

"Watch where you're taking us, you overgrown mess of colloids," bel-lowed Grag.

Otho was tugging frantically at the controls. But the Brain's voice grated calmly:

"No cause for excitement. That sun doesn't even exist in this world."

"Maybe it doesn't exist, but we're going to hit it right now!" yelled Otho.

Curt laughed. "We're not going to come near it. It's only a projected shadow, and we're going right through it."

Otho stopped fighting the controls. They plunged straight ahead for the green giant, dived through its surface. It gave Curt a weird feeling to be traveling inside that blaze of dazzling light.

All the visiplates had to be blacked out, and Otho had to steer by instruments alone. There was no sensation of unusual heat.

AND then, suddenly, the green sun disappeared, and they were speeding through the blackness again, with nothing but the ghosts of unfamiliar stars lighting their way.

"By the demons of space!" rumbled Grag. "You never know where you're at in this crazy world!"

"You can trust your pilot," boasted Otho. "I'm keeping to the course laid down for me. Look, Chief, here's another of those fake suns, a round yellow one this time, way in the distance. Let's see how it feels to go through this one."

"Veer left, Otho!" ordered Curt sharply. "That's a real sun in this world, not a projection! Left, quick!"

Otho, a surprised look on his plastic white features, obeyed with the unmatched speed his muscles were capable of. The *Comet* roared to the left as the yellow sun grew larger. Eventually they drove past with only a few million miles to spare.

"But how can you tell?" protested Otho. "The green one looked just as real as this did!"

"Keep your eyes on the thermocouples," replied Curt. "If there's a rise in temperature, the sun is real."

Grag laughed, emitting a deep booming noise like the rumble of an earthquake heard in a cave. "So we can trust our pilot, can we? Leave it to him, and we'll end up as nothing but a heap of cinders."

The android, abashed, lapsed into silence. Queer images appeared and disappeared from time to time. Once they passed close by a lifeless planet, with the ruins of a long-dead civiliza-

tion still visible upon it. And once they passed the shadow of a planet that was still full of silent and ghostly life.

As they neared the end of their journey, Curt declared tensely, "It's in getting back to our own three-dimensional world that the real danger lies. Be careful, Otho."

Otho muttered, "Sure, Chief," his eyes on the instruments. His overconfidence was gone, and when Otho was on his mettle, he was the best pilot Curt had ever encountered, in the System or out of it.

"Now, Otho," Curt exclaimed, and the android pressed the stud that would take them back to their own three-dimensional world.

The ghost stars faded, the stars of their own Universe blazed back into view again. In this region of space they formed queer, unfamiliar constellations, but it was a relief to know that the light that came from them followed familiar laws.

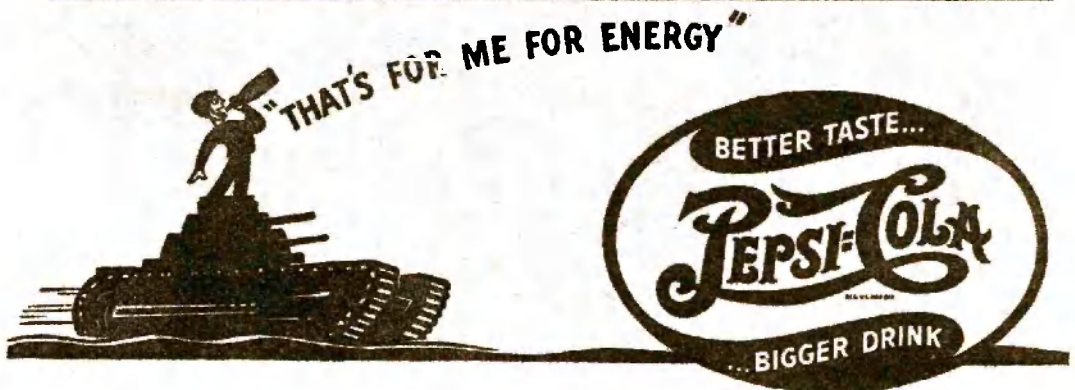
"We made it Chief!" cried Otho exuberantly. "And we're in no danger of a smash-up from any stray sun."

"Yes, but we've still got a tricky journey to make. Hol Jor's ship has gone out of sight, as we feared might happen. Now Simon and I have to calculate our course to Hol Jor's home planet, Anfren. Straight ahead, Otho, until I order you to change our course."

"Shall I use the vibration-drive?"

"No, the rockets will do. It's a trick journey, but not a long one. And if everything goes smoothly I think we can count on our landing on

[Turn page]



Anfren within two days."

Curt was to think, of that remark later, after disaster had struck.

IT was only a few hours afterward that Otho, his face worried, turned momentarily from the controls.

"Something's wrong, Chief. One of the rear rockets is missing."

"The exhaust tube is probably fouled."

"Want me to climb out and fix it?"

"No, you stay at the controls, Otho. I need a little exercise. I'll handle the job."

It was but the work of a moment for Curt to get into his space suit, and clamber with magnetic traction shoes out through an air-lock onto the hull of the *Comet*. The ship was moving along so steadily that he was hardly conscious of any motion. The whole celestial bowl of space was ablaze with brilliant stars, arranged in strange new patterns, Curt gazed at them for a moment, then got to work. He found the fouled rocket tube quickly. A short examination convinced him that it could be cleaned in half an hour.

He set to work, glad of the chance to stretch his limbs.

Meanwhile, inside the *Comet*, Grag had become bored with his inactivity. He picked up one of the pets from the floor and began to fondle it with his huge metal hands.

No ordinary animal would have enjoyed those heavy-handed caresses, but Eek, the moon-pup, was no ordinary animal. He was small and gray, and he fed, like Grag himself, on scrap metal. Unlike Grag, however, who used only copper to supply the energy plant inside him, Eek would devour any sort of metal, precious or otherwise. This voracious appetite of his was a continual nuisance, and had more than once got the Futuremen into hot water. As though to compensate for the trouble he caused, he possessed a telepathic sense that had several times come in handy.

Otho glanced at Grag, then looked around for his own pet, the fat little meteor-mimic. But Oog was apparently nowhere to be found. A half-

concealed smile played on Otho's lips, as he devoted himself once more to piloting the *Comet*.

A quarter of an hour later, he remarked casually, "Say, Grag, isn't Eek sort of shrinking a little?"

Grag carefully examined the animal in his arms. "He does look a little smaller," he admitted.

"Too bad, Grag, too bad."

"Why, what's wrong?" asked the alarmed robot.

"Oh, it happens oftener than you think that a moon-pup stops growing and starts to shrink. It's a sign of premature senility."

"Holy sun-imps!" roared Grag. "I'll have to ask the Chief what can be done about it."

"Nothing, I'm afraid," sighed Otho. "There's no cure known to science. In a little while, Eek will have shrunk away to practically nothing."

At that moment, the moon-pup in Grag's arms squirmed and began to go through a series of amazing contortions, ending up before the robot's startled eyes as a Martian snake. Grag dropped him in disgust.

"That thing isn't Eek at all," he thundered in rage. "It's Oog, your dirty little meteor-mimic!"

Otho chuckled. Oog had the ability of making his protean body flow into an imitation of anything he had seen. This gift of protective mimicry had proved extremely useful to what would otherwise have been a completely helpless animal.

"So you don't know your own pet!" the android taunted.

GRAG bellowed again, and Otho laughed. The next instant the threatening figure of the robot disappeared from view. The lights of the *Comet* had gone out.

"Lights!" yelled Otho frantically. "Grag! Simon!"

"I'm floating here in free space!" cried Grag in alarm. "We've lost our artificial magnetic and gravitational fields."

"Easy, boys," called the Brain. "I think I know where the trouble is."

Otho waited impatiently. Then there came a shock that whirled the *Comet* part way around.

"What happened?" demanded Grag.

"What happened?" repeated Otho in fury. The lights suddenly went on again, revealing his expression of rage. "While we were floating along crippled, a meteor decided to come down and smack us on the nose. It was all I could do to twist the *Comet* around in time to avoid the full force. And if you'd like to know whose fault it is—"

He pointed dramatically. Eek, the moon-pup, was cowering not far from where the Brain was deftly making repairs. Reading Otho's emotions telepathically, the animal shrank against the side of the ship.

"Whatever he did, he couldn't help it!" defended Grag, suspecting the worst. "He was hungry."

"That's fine! He chews up a couple of wires and a copper disk on which the life of every one in this ship depends, and all you can say is that the poor thing is hungry. I'll give him a bellyful—"

Another darting meteor threatened, and this time, with the ship functioning properly, Otho had no difficulty in avoiding it. His anger died down gradually, until only an occasional grumble came from him.

With the ship fixed, the Brain lost interest in the dispute, and was now absorbed in brooding over a scientific problem. But half an hour later, he came out of his period of abstraction.

"Where is Curtis?" he demanded.

"He should be here by now," replied Grag uneasily.

"Take over, Grag," ordered the android. "I'll climb out and see how he's getting along."

He clambered out through the airlock. In a moment he had returned, his white face tense. "The Chief is gone!" he blurted.

"You've looked all over the ship?"

Otho nodded. "That collision must have knocked him loose."

The three unhuman beings stared at each other tragically.

"Turn back," ordered the Brain, his harsh voice betraying a touch of emotion. "We'll see if we can find him."

But the Brain knew that there was little hope. Once a man was lost in space, he was lost for good.

The *Comet* retraced its path. Many hours later, after a weary search, Otho's eyes met Grag's, dropped to the floor of the ship.

"Where to now?" asked the android of the Brain.

"We may as well go on to Anfren," replied the Brain tonelessly.

Otho turned the ship about once more, and they sped on. Simon Wright, his usually emotionless mind deeply stirred, gazed silently off into the stellar distances.

Captain Future, the brilliant scientist, the man he had raised from childhood, the pupil he had regarded as a son, was lost to him. Simon felt wearily that he himself had nothing to live for now.

CHAPTER V

Lost in Space



WITH the loss of magnetic power, Curt Newton's shoes no longer held him to the *Comet*. A moment later came the collision with the meteor, throwing him into space, and dazing him at the same time.

It was only a few seconds before he recovered. When he did, he could see far in the distance a tiny spark of light becoming smaller, disappearing before his eyes. It was the *Comet*!

He had sighted the approaching meteor, had realized that only Otho's skill at the controls prevented the disabled ship from making a collision that was utterly disastrous. He wondered what had happened to the ship's magnetic and gravitational fields, but meanwhile he had to let the Futuremen know of his plight.

He spoke sharply. "Otho! Turn back! I'm out here in space!"

There was no reply, and he realized at once that the limited range audio-phone built into his helmet was out of order, its mechanism damaged by the same collision which had shocked him. There was the telepathic crystal

on his wrist, but only Joan had the mate to that. He was cut off from his companions on the ship.

"This is it," thought Curt. "This is the end."

The thought chilled him, but panic was foreign to his nature. His mind remained cool and powerful, seeking for a way out.

He knew that he was traveling at terrific speed, but there were no objects close by which he could use as landmarks, and at first he seemed to be standing still. He twisted about, regarding the unfamiliar heavens more closely than he had done at first.

Stars blazed in every direction, unwinking pinpoints of light that ranged from red and yellow through green and blue. And off to one side his eye caught a faint blue crescent of light. Curt's heart leaped. It was a planet, shining by the light of a small blue star!

"It's fairly big," muttered Curt, "so it must be close. I'm probably falling there right now. Perhaps a day of this free flight through space, and I'll make the landing."

What then? Curt knew from his previous visit here that many of the planets in this section of the universe had breathable atmospheres. The chances were that this planet had one as well. But he would do well to make sure in advance.

He removed from his belt a small portable spectroscope, focused it slowly on the crescent of blue. The blue light filtered through the tiny jewel-like prisms, broke up into its constituent monochromatic beams. Curt's eager eyes saw faint but characteristic dark lines. Nitrogen, carbon dioxide and hydrogen were present. Most important of all, there was a high concentration of oxygen. The atmosphere was breathable.

Within his space suit, Curt was conscious of his own sigh of relief. If he could only reach the planet safely the friction of the atmosphere would help slow his fall. But the heat that would be generated, like the heat generated by a meteor entering the atmosphere of Earth, would be enough to burn him to a crisp. He would have to figure out some way to slow

down first by his own efforts.

Well, that wouldn't be as hard as it looked. He had his proton pistol by his side, fully charged. And once more, he had the third law of motion of his namesake, Sir Isaac Newton, working for him.

ACTION, had proclaimed the ancient Newton, equalled reaction. The pistol projected a stream of protons that was deadly to any human target. But at the same time, the proton stream, like the ancient metal cartridges that had once been used, kicked back with a terrific recoil. Ordinarily, the recoil was taken up by the mechanism of the gun so that it might not harm the man who was using it. But a slight adjustment would take care of that.

When he came close to the planet, he'd aim a powerful proton stream at its surface. The effect would be exactly like that in the rocket tubes of the *Comet*. Here too the recoil of a stream of disintegrated atoms propelled the ship. The proton stream would propel him away from the planet—in other words, slow him down sufficiently so that he could enter the atmosphere without harm.

Perhaps he was imagining it, but already the crescent seemed larger. He must be falling fast.

In the distance he caught sight of a faint flash of light. A tiny object was coming into view. It grew larger until he could see its strange teardrop shape, a shape he himself had designed. It was the *Comet*, come back to look for him!

"Otho!" he called. "Otho!"

But there was no mistake about the audiophone being out of order. He watched with growing tenseness as the *Comet* cruised about aimlessly. If there was any way of letting them know his whereabouts—but there was none. The *Comet* turned in the wrong direction and disappeared once more. His chance of rescue was gone.

But now the crescent of the planet toward which he was falling was definitely larger, about the size of the Earth as seen from the moon. A few more hours, and he would know his fate.

Several huge dim shapes swam between him and the crescent, blurring its clear outline. The shapes passed, then swam back again. Curt Newton's eyes narrowed.

"They're alive!" he whispered to himself. "Some sort of space creatures."

There were no more than half a dozen of them, all vague and amorphous in outline, and semi-transparent in body, but Curt had a feeling of uneasiness. The Solar System was free of creatures that lived in the barren void of space, but out here, far from the worlds he knew, their existence was not entirely unexpected.

"Hol Jor and Ki Illok once talked of encountering them," he recalled. "They said the creatures were intelligent. Still, I don't see what harm they can do."

He might possibly avoid them by using the propulsive power of his proton pistol, but its energy was too precious to waste. He allowed himself to continue falling. And then, so suddenly that he had no time to prevent it, a blurry shape seemed to enclose him. He was *inside* one of the amorphous creatures!

Whether he had torn into its body, or something like a mouth had opened to swallow him, Curt did not know. All he could be sure of was that he was surrounded by a dense gray gas or smoke, in which currents were visibly flowing toward him. And for the first time in his life, Curt had to fight against a feeling of panic.

A powerful evil mind seemed to be beating against his own mind, trying to batter down its defenses. Curt was conscious of vague, horrifying impressions, of half-formed thoughts designed to fill him with terror. It was as if he were caught in the meshes of an invisible mental net.

"I mustn't let myself give in," he thought desperately. "I must think of familiar things—of Grag and Otho and Simon, especially of Simon and the things he's taught me. There's nothing terrible in this. I can get out whenever I want to."

BUT the whisperings of fear and defeat continued.



"Those smoke currents—they're trying to digest my space suit!" he realized suddenly. "They're working away at it while this mental force tries to keep me paralyzed. I've got to get out fast. The proton pistol—"

A strange inertia seemed to be overcoming him. It required an agonizing effort for Curt to perform the simple act of drawing his proton pistol. But with the loosing of a proton ray, the mists in front of him began to dissolve. Wisps of smoke floated about him, then disappeared in space. His mind was free, its own master once more. And he was falling once again toward the approaching crescent.

"By all the sun-imps that Grag swears by," he muttered, "that was a close thing. And yet there seemed to be no danger. I hope I don't run into any more of those things before I land."

The surface of the planet was beginning to emerge clearly. Off to one side was a mountain range, stretching across the top of the crescent. The crescent itself was growing in thickness, for he was falling not in a

straight line toward the planet's center, but in a spiral. A streak of silver at last came into view, persisted, broadened. It was a large lake.

"The water will break the final fall," thought Curt. "I'm in luck."

Time passed, time which he couldn't reckon. The mountain range at the top of the crescent grew, the lake began to sparkle more brightly. Curt had a slight sensation of warmth. "That must be from friction," he muttered.

He aimed his pistol at the lake, let loose a blast of protons. With the adjustment he had made, the recoil was strong enough almost to take his arm off. He blasted again and again, and the sensation of warmth died away. He was slowing down.

He allowed himself to plunge downward until he could see the tossing of tiny waves on the lake, could see them



roll in and break on a vivid green shore. The planet as a whole was no longer visible. All he could view now was an area of a few hundred square miles.

He aimed his proton pistol at the water, slowed his fall even more. But still the waves were rushing up at him with dizzying speed. One final blast—and then the waters were closing over his head.

The shock dazed him for only a second. The space suit had helped cushion it. But now its weight was dragging him down. He allowed himself to sink quietly, conserving his strength. The water of the lake was clear, and he could see the currents apparently streaming up as he sank. Queer creatures that had not the slightest resemblance to fish stared at him with thousands of tiny insect eyes as he passed.

Then the water was black and no longer transparent. He had stopped falling. He tried to move, but his legs were caught. He was stuck in the mud at the bottom of the lake.

His lungs began to hurt, and he realized that the oxygen supply in his space suit was becoming exhausted. He struggled furiously, but again in vain.

STRANGE lights swarmed around him. The lake-dwelling creatures were coming closer, curious about the unfamiliar being that had invaded their domain. Curt Newton raised his proton pistol again, aimed it at the mud, threw the entire remaining charge into one powerful blast.

This time the recoil was so terrific that the pistol was wrenched out of his hand and disappeared. But at the same time, he was torn loose. With the stream of protons he had created a chemical storm. They had torn into the mud, heated the water to create steam, decomposed the steam into hydrogen and oxygen, disintegrated part of the oxygen itself to lighter gases. Curt Newton rose toward the surface on a giant bubble of steam, hydrogen, helium, and oxygen.

As he broke the surface, the bubble burst, and he began to sink again. He struggled frantically to free himself from the now useless space suit. The glassite helmet came first. The cold water hit his face with a shock, stimulating him to renewed efforts. Then he tore loose from the rest of the suit. He kicked out furiously and rose to the surface. He took a deep breath, filled his lungs with the oxygen his spectroscopy had told him existed here.

The clear, unfamiliar, air invigorated him, gave his muscles new strength as he struck out for the shore a mile or two distant. The strange creatures of the lake approached him, then retreated in alarm from his thrashing arms and legs.

The shore was coming closer. But Curt Newton, his body buffeted by one shock after another, was approaching exhaustion. His arms were moving more and more slowly. No

longer did they cleave the water as powerfully as they had done at first. Each stroke was weaker, took him only a foot or two along his way.

Only that dogged determination that was an essential part of Captain Future's character prevented him from giving up the apparently hopeless fight, allowing his weary body to sink beneath the waves to the rest it craved. His arms moved slowly, but they did move. When finally he looked up for what he felt was the last time, it was to see the shore only a dozen yards away.

His feet found the bottom. He dragged himself painfully out of the water, collapsed on the curious light-green sand. His mind became a blank.

After a time he could not estimate, he sat up again and looked around. The landscape was of the same curious green color, rocky, bleak, apparently uninhabited. And he was alone.

He had been Captain Future, a man with the most faithful companions alive, a man with every resource of a great science at his fingertips. Now he was only Curt Newton, without weapons, without equipment, with nothing but his bare hands to fall back upon in his struggle against a savage environment.

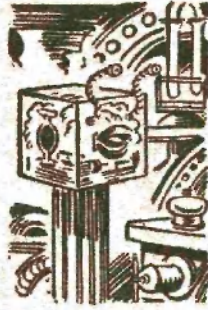
There was no doubt that the environment was savage. A dozen greenish wolflike beasts, each four feet high at the shoulders, were approaching. They had emerged almost unnoticeably from the green landscape. They had curious narrow faces, with two eyes set so close together that they almost formed a single large eye, and three nostrils forming a triangle beneath. Their teeth were bared—greenish teeth, few in number, but broad and dangerous looking.

Curt Newton almost laughed aloud as he faced them. There was irony in his encounter with these beasts. He had expected to brave danger at the hands of the mysterious Gorma Hass—the danger of a subtle, civilized, super-scientific enemy. Instead, he was staring at death in a highly primitive form.

The foremost beast snarled and launched himself forward in a mighty leap.

CHAPTER VI

The Blue Savages



CURT NEWTON did not wait for the animal to reach him. He leaped forward and to one side. For the speed at which he moved, he could thank the wisdom of the Brain, who had always insisted that he keep in good physical condition. He seized the animal's hind legs, used the momentum of the body itself to swing the struggling shape in a furious arc. The head crashed against the ground, spattering it with blue-green blood.

The other beasts were closing in. Curt Newton swung the dead body in front of him like a rapidly moving club. He wounded one beast, which ran off, apparently as much afraid of its companions as of him. He killed a second. And then the rest fled. Dangerous as they appeared, they were after all cowardly and had no stomach for a fight that was so costly to themselves.

Curt looked around him. The prevailing color of the ground, as of the blood of the animals he had killed, was blue or green. That probably indicated copper. But the plants with which he was most familiar could not grow in soil that contained much of that element. Those plants that did flourish in copper-containing soil were poisonous to human life.

That meant that he would have a problem finding suitable food.

Nevertheless, Curt Newton was already making plans. Somehow or other, he knew he would solve the problem of obtaining food. And then would come the further problem of getting off this out-of-the-way world, of making contact with the Brain and his other companions, of checkmating the plans of Gorma Hass.

For a moment, as Curt considered the situation, he was surprised at his own daring. Alone on this bleak planet, with no instruments to aid

him, he dared think of creating means of space-travel, of space-communication! But Captain Future had as much mental courage as physical. Starting from nothing, he was certain that he would attain his goal.

A shout interrupted his thoughts. "Blad magr gubdu?"

Curt's eyes glittered as he looked toward the source of the vocal sounds. So this planet was inhabited by human-type beings after all! Half a dozen of them were approaching. They were short in stature, blue in color, and with high, bulging foreheads. So far as he could tell, they were of the same race as Ber Del, the Vegan. But he could see at a glance that they were savages. They were dressed in the skins of animals, and they carried simple weapons that were nothing more than lumps of malachite bound with animal sinews to a wooden club.

Their leader was an old man, his face wrinkled, but still vigorous. Four younger men followed him, and shyly bringing up the rear was a girl, her youthful figure clearly defined by the skins she wore. Despite her blue color, she was pretty by any human standards, decided Curt. There was a look of astonishment on her face as she regarded this tall, stalwart, red-haired stranger.

"Blad magr gubdu?" repeated the old man, pointing.

He seemed to be referring to the color of Curt's hair. In this copper-saturated world, thought Curt, red hair must be as much a novelty as blue hair would have been on Earth. He grinned.

"It's natural," he commented. "I can't take it off at night."

Now the old man was pointing to the dead wolflike beasts. One of the younger men said something, and the leader stared at Curt in growing awe. He pointed to his own weapon, asked another question.

"I haven't got any," returned Curt. "I did it with my bare hands."

THE girl was gazing at him as if fascinated. Curt's eyes accidentally caught hers, held them for a brief second. Her face purpled. And

Curt, a feeling of relief sweeping over him, grinned happily.

That was a blush he had seen. Beneath the blue skin that owed its color to copper compounds was red blood, a blood that contained haemoglobin like Ber Del's and like his own. His own metabolism was essentially the same as that of this strange blue race, and he would have no difficulty eating the same food they ate. His first problem was solved.

Next came the question of grasping the essentials of their language. That, he knew, would take him only a few hours. He had long since been forced to develop a technique for acquiring a rapid grasp of any language constructed according to reasonably familiar principles.

He began to point to different objects, giving the English names for them. It was the girl who got the idea first. She gave him her own name for lake, for water, for a club. Curt began to mimic different actions, and thus to acquire one verb after another. His phenomenal memory, concentrating on the task before him, retained every word, and before many hours had passed, he was speaking hesitantly, but in a way that could be understood.

The girl's name was Varra, the name of the blue race the Vardri. The old leader was Kuru. Almost the first intelligible question the latter asked was:

"Are you from Gorma Hass?"

Curt started. He had never imagined that Gorma Hass would even have heard of this strange planet. He shook his head.

"What do you know of Gorma Hass?" he asked.

There was an expression of awe on the chief's face. "He has appeared here. He is blue, like one of the Vardri."

"And his Sverds?"

"They are neither like the Vardri nor like any other human race." Kuru's face betrayed his fear of the mysterious creatures. "They are invulnerable to all weapons. One of the members of the tribe, a young and strong man, attempted to hit a Sverd with a club. The club passed through

the Sverd's body without resistance, and the Sverd was unharmed. But the young man died."

Curt reflected rapidly. He could not imagine that Gorma Hass would have any great use for this minor planet. But perhaps he wanted to use it as a military base. If so, some day the Sverds would return here.

When they did, he must be ready for them. He must start building his scientific equipment as rapidly as possible.

He became aware that one of the savages, a tall, sinewy youth, was staring at him with undisguised hostility. He bent over to whisper to the old chief.

"Lherr claims that you did not kill the beast with your own hands," said Kuru. "He claims you used magic, evil magic."

"All the magic I know is good magic," returned Curt firmly.

Lherr frowned, whispered again to Kuru.

"That savage," thought Curt, "is going to cause me trouble."

Meanwhile he had more important things to worry about. He spoke to Varra again, asking one question after another. But all the while she answered him, he was conscious of Lherr's angry scowl.

CHAPTER VII

The Brain Becomes a Trojan Horse



FOLLOWING the path Simon Wright had charted, the *Comet* drove steadily toward the planet Anfren. Inside the teardrop-shaped vessel, all was gloom. From the moment Otho and Grag had discovered that Curt

Newton was lost, their manner had become quiet and subdued.

The Brain himself spent most of his time brooding over scientific questions, to keep from thinking about Captain Future. It was without the feeling of elation that would other-

wise have accompanied their visit to a new world that they prepared to land.

Anfren was a small planet, no larger than their own moon. As the *Comet* circled about it, Otho quickly caught sight of a huge landing field whose description Hol Jor had given them. With a roar of the deceleration rockets, the *Comet* plunged downward, losing speed steadily, and finally coming to a slow and skillful landing that aroused the admiration of the watching Antareans.

It was with a blank look that Hol Jor and the other assembled star-captains greeted him.

"Where is Captain Future?" demanded the big red Antarean.

"Lost in space," replied the Brain somberly.

"In the trip across the dimensions?"

"Later on."

The star-captains exchanged glances of bewilderment. "Then your long trip here was in vain!" exclaimed Ber Del.

"It was disastrous," said the Brain. "Nevertheless, I am going to do what Curtis would have wished. I intend to make an effort to discover the true nature of Gorma Hass."

"We have sent spies to learn about him," declared Ber Del, "but in vain. Either they have been caught, or they have returned with nothing to report."

"I expect to see Gorma Hass for myself."

There was an uneasy silence. "What we hoped that you and Captain Future would do," put in Ki Illok, "was teach us means of combatting the Sverds."

"You asked for the help of our science," rasped the Brain impatiently. "It is for us to decide how that science can be most useful. And as your chief enemy is Gorma Hass, and not the Sverds whom he controls, I intend to investigate him first."

"How?" asked Hol Jor.

"By letting myself be captured by his soldiers."

"You can't do that, Simon!" gasped Otho. "Why, they'd kill you!"

"My life isn't so valuable, now that Curtis is gone," returned the Brain. "Moreover, I think you are unduly pessimistic. I can go to places where

no ordinary man can penetrate. If I am seen by the soldiers of Gorma Hass, I will appear to them merely as a piece of machinery."

"You are right, Simon," boomed Grag approvingly. "It's the kind of thing the Chief would have done. Don't wait for the enemy to come to you! Go boldly into his camp!"

There was a sorrowful expression on Ber Del's face. "It appears that we have asked you and Captain Future to come to our galaxy merely in order to bring you to your deaths!"

"We Futuremen were always accustomed to taking risks," asserted Simon. "Where can I arrange to be captured by the men of Gorma Hass?"

IT was Ki Illok who answered.

"There is an outer planet in this same system of Antares that is expected to be attacked soon by Gorma Hass. There you will be sure to find both his soldiers and his Sverds."

"Then that is where I must go," declared the Brain.

"We'll go with you, Simon!" cried Otho eagerly. "I can disguise myself as a member of a captive race, and Grag—well, nobody would take him for any kind of a human being, anyway!"

"I go alone," said Simon sternly. "Otho, you and Grag stay here with Hol Jor. Assist him in every way you can. If I am fortunate, and succeed in my efforts, I shall give you further orders later."

It was with a curious respect in their eyes that Grag, Otho, and the assembled star-captains stared silently at the determined Brain, who was about to put himself of his own free will into the power of the sinister and mysterious Gorma Hass.

The Brain hated action. He was able to move, and to utilize his traction beams skillfully in the place of hands, but ordinarily he reserved their use for the scientific experiments he loved. He was pleased therefore to find that letting himself be captured was a simple matter.

Left on the planet that Ki Illok had mentioned, he needed to do nothing but wait. Eventually the soldiers of

Gorma Hass arrived, and one of them, attracted by the curious-looking contraction that Simon appeared to be, seized him, and stored him away.

During the brief interval of fighting that took place, Simon was able to see with his own lens-eyes the mysterious Sverds, so much feared by the star-captains and all others who had fought against them. He watched them walk through material obstacles, apparently unharmed by weapons of any sort, and blast their enemies with deadly effect.

"They're animal, not human," he decided. "And as they're not images, there can be only one explanation of their ability to move through solid obstacles. The atoms which compose their bodies must be in a different plane of vibration from normal matter. Curtis and I long ago recognized the possibility of matter existing in so peculiar a form, although we never succeeded in creating it. But how is it then that they can reach out and affect matter in the ordinary plane of vibration?"

It was while Simon was pitting his wits against this question that he was discovered as he had hoped to be. It was characteristic of him that while being carried by the soldier of Gorma Hass he continued his attempts to puzzle out a solution.

"The answer must lie in the weapons with which Gorma Hass has furnished them," he decided finally. "These weapons enable them to affect matter in a normal plane of vibration while remaining outside it. Unfortunately, neither Curtis nor I ever knew how this could be done."

Lying with a miscellaneous mass of machinery in the hold of a space ship that was taking off from the captured planet, Simon continued to ponder the question, and to make mental calculations. Days passed thus in intense thought, interrupted only by an occasional rest period, for the Brain had no need of ordinary sleep.

When he was finally moved from the ship to a storehouse, the Brain did at last go into action—but even this was action of a special kind, the one kind to which he did not object.

He raised himself by means of his

tractor beams and extended the lens-eyes, mounted on flexible stalks. He could see mechanical devices of all kinds, most of them ruined and useless. But here and there were parts he would be able to utilize.

He selected these parts carefully. There were transparent lenses useful for ordinary optical instruments, as well as the magnetic lenses useful for electron beam focusing. Simon began to experiment, testing one lens after another. High up on the walls, he used an old atom-pistol to remove sections of the opaque material, and substituted for them carefully chosen lenses of the optical type.

FROM these lenses several metal wires led to the central group of visor-screens that Simon had constructed.

Simon's own lens-eyes hung on their stalks over the screens. In front of him he soon had pictures of what was going on in this citadel of Gorma Hass. Outside he could see the soldiers of Gorma Hass, with here and there a Sverd, regarded askance even by their human allies.

The next thing for him to construct was a series of audiphones. Simon worked at the apparatus steadily, for no one came to visit the storehouse. At night he cut a larger section out of the walls, and went floating stealthily over the city, to place his receiving instruments in suitable places.

"There," he finally muttered with satisfaction. "Now I can see and hear what is going on."

The city, he decided, had been constructed purely for military purposes by the soldiers of Gorma Hass. There were no civilians to be seen, and all the conversation was of military conquest.

He overheard one quarrel between two soldiers, one of the Vegan type, the other pink-skinned like the men of Fomalhaut. That argument shed a revealing light on the nature of Gorma Hass.

"By the blue star itself," cried the Vegan, "when the fighting is over and everything is settled, we Vegans will rule the Universe."



GRAG

The pink-skinned Fomalhautian laughed. "It is just as well that you swear by a star that our leader despises, Vegan, for there is no truth in what you say. Gorma Hass himself is one of us, and he is not such a fool as to turn over his conquests to the men of that poor system of yours."

"Gorma Hass from Fomalhaut?" shouted the enraged Vegan. "You lie! I have seen him myself, here on this planet, in his own palace, and he is a Vegan of pure blood!"

The Fomalhautian frowned. "No man calls me a liar and lives," he growled fiercely. "I saw Gorma Hass at the same time you did, and he is from Fomalhaut. For your bad eyesight, Vegan, you will pay—with your life!"

He had his atom-pistol out at the same instant that the Vegan had drawn his. Simon saw the two deadly rays cross in mid-air, watched the two soldiers both fall, their bodies half blasted by the streams of disintegrating particles.

The incident aroused the Brain to considerable speculation. He knew, from what Hol Jor and the other star-captains had told him, that Gorma Hass had the power of appearing to each race as one of themselves. Now he had the further proof of what he

had suspected, that Gorma Hass made use of this power to inspire his soldiers, make each one think he had a personal stake in conquest.

HOW was this power achieved? By the projection of a three-dimensional image? By mass hypnotism? Each was possible, but Simon doubted that either method was employed. A three-dimensional image would be convincing only to savages, and mass hypnotism would result in all the spectators at any one time believing they saw the same kind of man. But what if the spectators themselves belonged to different races?

"If it had been mass hypnotism," murmured Simon, "both the Vegan and the Fomalhautian, staring at Gorma Hass at the same time, would have believed themselves to see the same kind of man. Instead, each believed himself to see a man of his own race. No, Gorma Hass does not employ mass hypnotism."

But the two soldiers had revealed something else, too, something that for the moment appeared to Simon even more important.

"Gorma Hass has a palace on this very planet," he thought. "The next thing is to discover where it is. And to prepare for him."

With these thoughts in mind, Simon during the day remained watching as intently as ever over the visi-screens and audiophones he had constructed. Meanwhile, at night, when he could see and hear little from outside, he worked at fashioning a new instrument.

But he was not fated to remain here long enough to secure the information he wanted. A few days following the lethal quarrel he had overheard, the door of the storehouse suddenly swung open. Simon had barely time to glide noiselessly into a corner before a squad of soldiers entered, carrying more equipment. They halted and stared in stupefaction at the apparatus he had constructed. They had approached by means of a path that was not covered by Simon's visi-screens.

"By the omnipotence of Gorma Hass," gasped the squad leader. "Here

are visi-screens and audiophone receivers. Some one has had the audacity to come here and spy on us!"

"He can't have escaped," said one of the soldiers.

An unpleasant grin spread over the leader's face. "Put down what you are carrying!" he roared. "Search the place! Make sure that the treacherous scoundrel does not get away!"

The Brain watched in quiet satisfaction as the bewildered soldiers spread out to run through the different rooms. Most of them did not even spare him a passing glance. One, however, came close, and caught sight of the lens-eyes at the ends of the flexible stalks.

"Here's another curious piece of apparatus!" he called. "Shall I try to find out what it is?"

"No, you fool, look for the man who was using it! He can't have got away! He must have been at the screens while we were approaching."

As the soldier turned away, Simon glided noiselessly into the next room. A quarter of an hour later he heard the leader cursing.

"Of all the stupid blockheads! A man is here and you can't find him! What do you think he's done, disappeared into thin air?"

The soldier who had wanted to investigate Simon approached the squad-leader in agitation.

"It's gone!" he cried. "It's gone!"

"What's gone, you fool?"

"That apparatus I was telling you about!"

"By the seven lives of a star-devil, he must have slipped back under your noses and picked it up! You'd better find him if you value your worthless skins!"

Soon it would be time to be gone, thought Simon. He waited until the disgruntled soldiers had completed another fruitless search and departed, their leader raving about reporting what had happened to his superior officer. But outside he posted two soldiers as sentries.

Simon drew himself by means of his traction beams to the visi-screens once more. By the dimness of the light, he knew that evening was approaching.

Another quarter of an hour, and Simon rose to the large opening he had cut in the wall of the storehouse. He slipped through just as several more squads of soldiers came racing to the door.

CHAPTER VIII

The Road to Gorma Hass



THE Brain floated soundlessly over the dark storehouse. Once a sentry, his attention attracted by a faint passing shadow, stared suddenly aloft, and murmured something about night-birds. His hand stole to

his atom-pistol, but remained there in indecision.

"I must learn where the palace of Gorma Hass is," thought the Brain. "And the best way to do that now is to be taken there."

He waited patiently while the minutes passed. Eventually the squad-leader who had searched for him previously came out, accompanying a superior officer to whom he was apologizing profusely.

"He must have escaped, but I don't see how! I posted sentries at each door! And there aren't any windows!"

"He took advantage of your stupidity in some manner," growled the officer. "Nonetheless, if there is a clever spy among us, that fact should be known to the general in command. Leave two sentries behind, as before, and come with me."

Watching from above, Simon followed them. His plan was simple enough. By learning from each officer who his superior was, he would eventually reach Gorma Hass.

The soldiers reached a tall building, entered. Here Simon hesitated. So long as he remained in the open air he was relatively safe. But once he entered a building, he might find himself trapped. He did not care so greatly for his own safety, but he

was concerned about the success of his plan.

After a time he made up his mind, and entered. Keeping to the shadows near the ceiling, and moving only when no one was looking in his direction, he progressed soundlessly down a long corridor. At a side-corridor he paused, and just then he heard the sharp intake of a man's breath. A soldier's blue face was staring up at him, his eyes opened wide in incredulity.

Simon glanced back rapidly, only to see another pair of soldiers approaching, both of them officers. "I'm caught!" thought Simon.

"Futureman!" hissed a low voice. "Don't you recognize me?"

Simon gazed down again, and this time his eyes caught the face at a different angle. "Mar Del!" he exclaimed in a rasping whisper.

It was the young son of Ber Del, the Vegan. Down the corridor he could hear the tramp of the approaching officers. He swooped down toward Mar Del, whispered rapid instructions.

Five seconds later the approaching officers came to a halt and stared at Mar Del.

"Vegan," barked one of them sharply, "what are you carrying there?"

Mar Del's right hand finished saluting, secured a comfortable grip on the curious box he was holding in his left.

"A machine used by the spy, sir. He was disguised as a soldier, and mingled with the searching squad."

"So that's why those stupid fools couldn't find him!"

"Yes, sir. But when he got outside, one of the other soldiers recognized this machine, which had been moved unaccountably. He was captured."

"Good! Where is he now?"

"Under arrest," ventured Mar Del. He had finished repeating all that Simon had whispered to him, and now he went ahead on his own account. "I was ordered to take this box to the general."

"Carry it into that room and put it on a table," the officer directed. "I'll see that it gets to the general."

"Yes, sir."

MAR DEL stalked into the room and deposited the Brain on a table. Simon had barely time to whisper a single sentence under the eyes of the watching officers when Mar Del turned and was leaving.

"What's that?" snapped the officer who had spoken before. "What did you say?"

"I'm sorry, I must have been speaking to myself. I was just wondering what this machine could possibly be used for."

"That's not for you to bother your head about. Return to your post."

Then Mar Del was gone, and the Brain was left to wonder what had brought the young man into this dangerous place.

The officer approached, surveyed Simon curiously. He touched the flexible stalks on which Simon's eyes were mounted, and moved them about. Finally he shook his head in bewilderment. "I'll take it to the general," he muttered finally. "Let him see what he can make of it."

Once more Simon felt himself being carried around.

The general turned out to be a crimson Antarean, and at sight of him Simon realized anew the danger of Gorma Hass, who appeared to every man to be of his own race, and could thus persuade him the more readily to turn traitor.

"This is a machine that was being used by the spy, General. We think it should be studied carefully."

The Antarean cast Simon a curious glance. "Very well, I'll turn it over to our scientific experts."

Simon had a feeling of alarm. It was all very well to puzzle a group of stolid, prosaic-minded military men. But scientists would discover his true nature, take steps to render him harmless.

"Put it down temporarily," directed the Antarean. "We'll take care of it later. Right now I'm preparing to visit Gorma Hass."

Mingled with Simon's alarm was a sense of elation. His idea had been right then. Shifting from one superior officer to the next, eventually

he was sure to reach Gorma Hass.

In a few moments, Simon found himself, once more disregarded, in a corner of the room.

He waited until no one was looking in his direction. Then he rose in the air on his tractor beams and floated silently out through the window.

Mar Del was waiting for him, as Simon had directed, a few hundred feet away from the storehouse.

"What are you doing on this planet?" demanded the Brain.

Mar Del grinned. "I came in search of you, to aid you. After all, it is our battle even more than your own that you are fighting. And if you, the greatest scientist of us all, and therefore the most important, can risk yourself, so can I."

"But how did you get here?"

"I encountered a Vegan secretly in the service of Gorma Hass," replied Mar Del. "He assured me that Gorma Hass himself was a Vegan, and that eventually our own system would rule the universe. I let myself be persuaded to join him."

"It is a dangerous thing you are doing," asserted the Brain. "All the human spies employed hitherto have been unfortunate."

"It will be time enough to think of danger when it arrives," returned Mar Del carelessly. "At present it is necessary to act."

SIMON could feel himself warming to the Vegan. There was something of the spirit of Captain Future himself in this willingness to risk death to help a man who was practically a stranger to him. What was lacking was the powerful mind and the great scientific knowledge that had enabled Captain Future to defy so successfully all dangers until the final one.

"It is necessary to act," he agreed. "And first of all it is necessary to protect ourselves. There is an instrument within the storehouse that I desire to use. But there are two sentries guarding it."

"Only two?"

"Don't be rash, Mar Del," reproved Simon. "A single ray from an atom-

pistol can bring your adventures to an end. I shall distract their attention while you dispose of them. Then stand guard yourself."

Simon floated over the storehouse, allowing himself to intercept a beam of light from a nearby building. At the momentary shadow, one of the sentries looked up quickly.

"What was that?"

The next moment, Mar Del's atom-pistol had lanced a low-powered, paralyzing ray at his face. He fell silently. Mar Del turned swiftly as the other sentry approached, lanced

they were on their way, following the general's ship, to the palace of Gorma Hass.

Simon kept his reflections to himself as the ship drove steadily through the planet's stratosphere.

"Obviously, Gorma Hass must attain his effects by mental power alone," he thought. "The Sverds, too, who are not human, but of the lower animals, obey him implicitly. But perhaps I shall change all that."

His tractor beams were manipulating the instrument he had taken from the storehouse.



*Curt Newton and the
Futuremen Dare to
Explore the Mysterious
Sun of Deneb*

IN

THE STAR OF DREAD

An Amazing Complete Book-Length Novel of Spatial Adventure

By **BRETT STERLING**

COMING IN THE NEXT ISSUE

another ray at him. Then he dragged the two bodies out of the way, and mounted guard himself.

Watching from above, Simon muttered approval. He glided into the storehouse, found the instrument which he had last fashioned. When he emerged again, he let it drop into the hands of Mar Del.

A short time later, having again picked up the trail of the Antarean general to whom Simon had been brought, Mar Del had slugged a pilot and stolen a small space vessel. Soon

"What is this thing, anyway?" demanded Mar Del.

"This is a will-dampener," explained the Brain. "Curtis and I worked it out a good while ago. It radiates a force that neutralizes almost completely the neuronics currents in an animal's brain cells, makes him stupid and docile as a lamb."

"Do you plan to use it on Gorma Hass?" asked Mar Del eagerly.

"It would have only a slight effect on the average man, and no effect at all on Gorma Hass."

MAR DEL looked puzzled, but Simon did not explain further. Mar Del peered out, caught sight below of the ship they were trailing, and put on the rocket-brakes. He waited until the other ship had coasted to a landing, then landed himself several miles away.

Another few minutes, and they were before the palace of Gorma Hass. They saw the Antarean general leave the palace cheerfully.

"Now," said Simon, "perhaps he is alone."

The palace was a huge plant-building, in the general style of Sagittarian architecture. Mar Del approached it boldly, carrying both Simon and the will-dampener.

"Won't the guards stop us?" he asked.

"You need fear no guards," returned Simon. "Gorma Hass has no need of them."

No one interfered with them as Mar Del entered the palace. Simon watched him curiously as Mar Del strode directly through a corridor to one of the elevator machines. "How did you know where to go?" he queried.

"I can't say," admitted Mar Del. "But I have a feeling that this is the way to Gorma Hass."

Simon himself had the same feeling. He said nothing more as Mar Del walked down another corridor and entered a small room. They both stared at the occupant of this room.

Simon knew that Mar Del was seeing a man in his own image. But what Simon himself saw was a transparent serum-case, with a living brain inside. In front of the case were two glass lens-eyes, mounted on flexible stalks. He could see also the aperture of a mechanical speech-apparatus. He was looking at the image of himself. And he knew that neither of them was viewing the real Gorma Hass.

With one of his magnetic traction beams he pressed a stud on the will-dampener Mar Del was carrying. A low-buzzing sound filled the room.

"You are daring, you strangers," rasped Gorma Hass. "But you will not escape with your lives."

CHAPTER IX

Joan to the Rescue



SURROUNDED by a group of the astonished Vardri, Curt Newton stepped back and surveyed his handiwork. He had dug a pit four or five feet in depth in the green soil, filling it with pieces of wood ob-

tained from nativetrees.

The trees themselves had been chopped down with sharp stone axes that he had shown one of the Vardri how to prepare. He had covered over the top of the hole with a smooth clayey soil to be found in the neighborhood.

"Ready, Varra?" he called.

"Yes, Cur-tis."

The girl smiled proudly at the thought of having a part in the accomplishment of such strange and wonderful feats. She clumsily moved back and forth a primitive bow that Curt had fashioned. The bowstring of animal sinew was coiled around a wooden spindle that whirled in a groove cut in a piece of hard wood. As she continued to move the bow, several pieces of tinder placed in the groove began to smoke from the friction. Then a small clear flame sprang up.

One of the Vardri sprang back with a sudden cry. "More magic!" he yelled. "Evil magic!"

It was Lherr. Curt grimaced in slight disgust. In the short period he had been with the tribe, he had already found Lherr to be a troublemaker. But now he had no time for arguments. He inserted a small dry branch into the flame, transferred the flame to the pit. The wood in the pit caught fire, began to smolder. A thick black smoke began to pour from a vent Curt had made.

He straightened up with satisfaction. If he remembered his history of science properly, it would take a full day for the experiment to reach

completion, but when it had done so, he would have an ample supply of charcoal to begin the smelting of iron and copper.

It was the copper that he wanted most. He had thought it would be easy to find lumps of the native metal in this copper-rich world, but all his searching had been without success. He had been forced to resort to the usual metallic ores. He had searched for and discovered deposits of different copper sulfides and iron oxides.

"Varra wishes to help," offered the girl. "What next?"

"Let me see." Curt frowned. "I think the skins of some of those animals I killed will make a useful pair of bellows."

He began to describe how he wanted the skins sewn together. Varra listened with an expression of intelligence, but with complete lack of comprehension.

"Why do you wish them sewn together? Will you wear them as a head dress?"

Curt sighed. "No, Varra. I wish to be able to create a strong current of air."

"Air? What is that?"

"It's the stuff we breathe," explained Curt. "It's all around us."

"But that is nothing," objected the girl. "All around us is empty!"

This time Curt groaned. Imagine trying to carry on his work with the aid of a savage assistant, a girl so ignorant she didn't even know there was such a thing as air! And yet, thought Curt, she was intelligent. It was simply that her mind had never been exposed to any of the knowledge which went to make up modern science. Soon Curt would be needing a real assistant. Some one like Otho, with his quick mind and inimitable skill, or Grag, with his enormous strength, or Joan Randall—

HE straightened with a sudden gasp. Joan Randall! Of course. He felt a flush of shame as he stared at the transparent metal crystal that Simon had made. Bound to his wrist, it was the one possession he had left of all his scientific equipment. But he had hitherto been so

preoccupied with the tasks and the difficulties that faced him that he had neglected it. And he had inexcusably neglected Joan, too.

His eyes gleamed suddenly. "Joan!" he thought intensely. "Joan Randall! Can you hear me?"

The blue-skinned girl studied his silent face in astonishment. To her it appeared that Curt had taken leave of his senses. A few moments passed.

"Joan!" his mind repeated. "Can you hear me?"

A startled voice seemed to speak in his brain. "Curt! Are you all right?"

"All right, Joan. But I'm cast away on a planet in one of the systems of Sagittarius."

"Curt!" came Joan's horrified voice. "You're alone!"

"No, I've come across a savage race. I'm working to build apparatus, and I've got an assistant, a very attractive blue-skinned girl of the Vegan type."

"Don't joke, Curt," replied Joan, with a touch of coldness. "I'll speak to the System President. We'll fit out a relief expedition right away."

"No Joan, you have no quick way to reach me. You'd have to build a special ship with either the vibration drive or the dimension-traveling device. And long before you could do that, it would be too late."

"Then what—" began Joan helplessly.

"Joan, can Ezra spare you from that thief-catching case?"

"We finished the other day."

"Good. Are you still sorry," demanded Curt, "that you couldn't come along with us to Antares?"

"Of course, Curt, but I don't understand what you mean!" replied Joan in astonishment.

"Simon and I long ago considered the possibility of mind transference. With the aid of a device like our metal crystal, it's almost certain that your mind could take possession of a body in this planet."

There was a short pause. "I'm willing to try the experiment," said Joan finally. "But I don't understand why it's necessary."

"Joan, I'm engaged in a race against time. I'm having to build equipment

here from primitive materials. And if I had an intelligent assistant, I could go twice as fast."

"Is time so very important, Curt?" she asked.

"It may mean the success or failure of our fight against Gorma Hass."

"Then I'm willing to try it at once," she answered promptly.

"You'll have to make preparations," warned Curt. "Explain to Ezra what we intend to do. Go to the Moon. Have him secure electrostatic vibration machines of a type I'll describe for you. They're in the Moon-laboratory, and Ezra knows how to get there. And tell him that later on he'll have to watch over you carefully, almost as if you had lost your mind."

"Yes, Curt."

"I don't know whether Varra will be willing to try the experiment," confessed Curt. "But I believe I can persuade her. Will you be ready twenty-four hours from now?"

"Everything will be ready."

"Here's the description of those machines." He went into detail, ending finally, "Good-bye, Joan, until tomorrow."

Varra was still regarding him with amazement as the look of intense concentration faded from his eyes. Now Curt's eyes found hers, held them commandingly. "Varra, have you ever dreamed of having your spirit visit the stars?"

"Yes, Cur-tis, but I do not see how—"

"I can cause your spirit to travel far away, to see strange and wonderful things," Curt told her.

"But later it will return?" she asked.

"Yes, after a time it will return."

"Then I should like my spirit to leave me."

Curt nodded in satisfaction. "Tomorrow, Varra, your spirit will be in a strange new world."

AS the hour approached for the decisive experiment, Curt was conscious of a growing feeling of apprehension. He busied himself, and he kept Varra busy, with the work he had laid out, but he labored with only

half a heart. And meantime, Lherr regarded him balefully and continued to whisper stories of Curt's evil magic.

At the time he had arranged with Joan, Captain Future settled down once more to think intently.

"Joan! Is everything ready?"

"All ready, Curt," came the response.

"You're sure the apparatus is exactly as I've described? It's important that there be no mistake. Repeat to me," he commanded, "everything that Ezra has done."

Joan described the apparatus, while Curt's mind listened. "Everything is right," he decided finally. "Now, Joan, I'm going to break contact. I'm giving my metal crystal to Varra. You know what to do?"

"Yes, Curt," she replied with quiet confidence.

Curt wrenched his mind away from her and turned to the blue-skinned girl beside him. "Here, Varra, put on this jewel."

"It is mine?" she asked delightedly.

"While your spirit travels. And now, Varra, look into my eyes. First your spirit must sleep."

Curt's magnetic gaze held her, prevented her from looking away. What he saw in her eyes pleased him. The girl seemed responsive to his will.

"You must sleep Varra," he repeated, slowly and soothingly. "Sleep."

Her eyes gradually became glazed, then closed entirely. Her breathing slowed down. In the grip of Curt's powerful will, she was sinking into an intense coma. In a quarter of an hour she was in a state of profound hypnosis.

Curt could feel the perspiration start out on his forehead. "Now, Varra, your spirit must travel. You will hear a girl's voice."

Varra's body was rigid in sleep. Once she moved her right arm, and a moan seemed to come from her.

Far off, at some remote spot in the Solar System, a modulated electromagnetic current was pulsing through the metal crystal on Joan's wrist. Dimly, Curt was conscious that some

of the Vardri had approached them, were staring in fear and disbelief.

But he knew that he must not think of them. He kept his mind on Varra.

"Your spirit no longer belongs to you, Varra," he said softly. "It wishes to leave. Do not hold it."

The moments passed, and the girl remained deep in slumber. For the first time, Curt's mind began to consider the possibility of failure, and the thought made his heart falter with dismay. Then he secured a grip on himself. He couldn't fail! Simon and he had been too confident in their calculations.

Curt was dimly conscious of the chief, Kuru, whispering to Lherr, and of the latter whispering back. He caught a few words.

"It is more of his evil magic. He has imprisoned Varra's spirit."

Then he shut the natives out of his mind again, and centered his attention completely on the girl.

Suddenly she seemed to sigh. Her eyes opened, looked around wonderingly, fastened on Curt's face.

The lips moved with difficulty, as if unaccustomed to making the strange sounds. "Curt—is it you?" The words were English.

"Joan! You're here, safe!"

The Vardri, hearing the unfamiliar sounds that came from Varra's lips, broke into terror-stricken flight. Curt grinned, started to put his arms around the girl, started to kiss her—and then drew back. She stared at him, her face puzzled.

CHAPTER X

The Sverds Bring Menace



"Curt! What's wrong?" she asked.

"Nothing," he returned sheepishly. "Only I don't feel this is entirely you."

"I don't feel it's myself, either," confessed Joan.

"I foresee trouble," said

Curt. "These savages realize that

something peculiar has happened, although they're not at all sure what it is."

"Then don't you think we'd better get started at the work for which you brought me here?"

Curt nodded, and began to explain to her in detail what the situation was. Joan found that the hands and fingers of her new body had a strange facility in carrying out certain mechanical actions, such as the sewing together of skins by means of animal sinews. She set to work at several of the tasks Varra had left undone, and Curt was pleased to see how rapidly she completed them.

He went ahead with his smelting of copper in earnest now. A deposit of radium or uranium would have solved many of his difficulties, but lacking these, copper was the one metal he needed most.

He had constructed a small rough furnace of rocks, and now he filled it with a charge of the copper ore and began burning off the sulfur. The acid smoke began to roll out of the space he had left for the exhaust.

"But, Curt," asked Joan, "why are you so insistent on getting copper first?" Wouldn't iron be more useful to you?"

Curt shook his head. "What I'm after now, Joan, is a source of atomic energy." He called her by name as if he had been accustomed all his life to seeing Joan Randall in the shape of this blue-skinned savage girl. "You remember how Grag gets his power?"

"He eats copper."

"Of course. He has an atomic disintegrator inside him that breaks copper atoms down into hydrogen and helium, and releases plenty of energy in the process."

"But," she objected, "you haven't got any device for setting off the disintegration."

"For that," said Curt, "two things are necessary. First of all I'll need certain catalysts, made up of salts of rubidium and some of the rare earth elements. I've already located a source of these metals, and although it will be difficult to obtain the salts pure, a small amount of impurity will do no harm. The second necessity is

a source of high voltage."

"You can't get that."

"I think I can," asserted Curt. "Only a few million volts are necessary. There's an easy way to attain it."

"Lightning!" exclaimed Joan.

Curt nodded. "From what old Kuru, the chief, has told me, lightning storms are one of the most greatly feared manifestations of the gods on this planet. When the next one comes, I hope to be ready for it."

NOW that Curt had a skilled assistant, the work progressed more rapidly than before. There were a great many details to which he had formerly been forced to attend himself. Joan took these off his hands, leaving him free to devote himself to the more difficult scientific problems he was forced to tackle.

Curt selected an old dead tree, which had already been hit several times by lightning, as a likely object to be struck again. It stood stark and isolated on a small hilltop, an ideal target. He fashioned some of his copper into rough and uneven wires, and stretched them around several limbs of the tree, so that whenever the lightning struck, the current would be sure to reach his reaction mixture.

This he placed in a hollow spot in the center of the tree. "From now on," he told Joan, "it's up to the lightning gods. And as Kuru asserts that they've been quiet for a long time, there's a good chance that they'll start up again soon."

He noticed that Lherr, still muttering about evil magic, had watched his strange doings in the tree. Curt frowned. "That man will cause us real trouble yet. Keep an eye on him, Joan."

But beyond his muttering, Lherr made no apparent attempt to do harm. Curt went on with his preparations while waiting for the lightning storm.

It came one night, with a crash of thunder that awakened him from a sound sleep. He started up to find the tribe staring at the heavens, expressions of awe and terror on their faces. Kuru and several other of the elders were repeating magic formulas in-

tended to keep the fearful bolts away from them.

After that first crash of thunder, there followed a period of silence. But the whole sky seemed alight with darting, zigzagging streaks of lightning. An aura of light played around the old dead tree, although it had not yet been struck.

"Something in the nature of St. Elmo's fire," muttered Curt.

The air seemed alive with electricity. Then it began to rain gently. The aura of light disappeared, and for a brief moment the heavens were dark. Suddenly, with terrifying abruptness, the thunder roared again. A vivid light streaked down from the heavens, tore into the top of the hill. Kuru broke off his magic chant, and howled in dismay.

"No wonder," chattered Joan, "that they're afraid! I don't feel any too safe myself!"

"That's because you're inhabiting Varra's body, and you've taken over an entire system of fear reflexes."

The lightning began to strike more and more rapidly. Once it hit between old Kuru and Lherr, and both men leaped away in terror. Then the streaks of light began to move away.

"It's going to miss the tree after all!" groaned Curt, "and we'll have to wait for the next—"

A deafening crash drowned out his words. The copper wire on the dead tree glowed with sudden incandescence, and the next moment the tree itself had leaped into flame. In the midst of the crackling wood, the copper mixture blazed like a miniature sun.

"That's done it!" cried Curt excitedly. "We've got our atomic power! From now on everything is smooth sailing. I'll be able to smelt plenty of iron and any other metal we need!"

"But will you be able to build a space ship?"

"Not a ship like the *Comet*, of course. But there'll be no trouble in constructing a small simple one. Once you have atomic power, Joan, you have the secret of handling metals."

THE thunder was finally rumbling away. Old Kuru, followed closely

by Lherr and the rest of the tribe, was approaching with a troubled expression on his face.

"Captain Fu-ture," he said, "your magic is not good!"

"My magic?"

"The gods have struck too close to the tribe. It is a warning. They demand a victim."

"That has nothing to do with my magic."

"But it has," interrupted Lherr angrily. "It is your magic that has changed Varra's spirit, and called the thunder of the gods to the old tree. It is evil, and must end."

"My magic," returned Curt in exasperation, "is just beginning. Go, Lherr, and leave us in peace, and let us have no more talk of a victim to be sacrificed to the gods. Else your spirit will soon be traveling like Varra's among the stars."

Lherr's eyes gleamed wildly. "Let us kill this magician before he bewitches us all!" he cried, and rushed at Curt, his heavy club swinging.

Curt stepped in quickly and caught the handle of the club before it could begin its descent. For a fraction of a second, Lherr, struggled frantically to release it from his grip. Then Curt pulled the primitive weapon away from him, and Lherr, howling with fear, fled. Kuru and the others of the tribe had made no move to interfere. Now they moved away slowly.

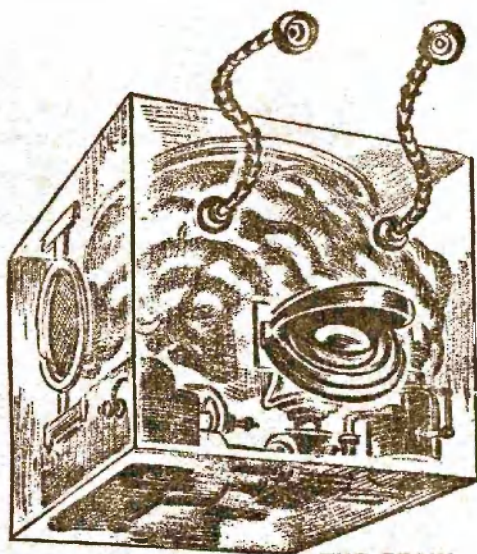
"I'm afraid of him," said Joan uneasily. "Curt, he has to be watched!"

"He won't be able to hurt us," promised Curt. "The first thing I'm going to do is make myself a real weapon. And I start now, without waiting for the morning."

With Joan close behind him, Curt approached the still burning tree. Using a small metal ladle he had prepared in advance, he removed some of the disintegrating copper from the ground where it had fallen.

"We'll let the rest of it remain where it is, and disintegrate until the reaction is completed," he told Joan. "Meanwhile, I need that iron ore mixture."

With Joan to help him, he worked steadily until dawn. By that time he had freed the iron from its ore, and



THE BRAIN

fashioned it into an uneven tube, about two feet long, with a trigger at one end, and a suitable atomic disintegration mixture within.

He pointed the open end at the ground, pulled the trigger. A yawning hole appeared where the charge had struck.

"More like an atom-cannon than an atom-pistol," observed Curt. "But it's effective, and will impress people like Lherr. Now to start getting ready for building that ship."

But the gigantic task of building a space ship on this primitive world was destined never to be completed. One night, about a week after the fateful lightning storm, Curt heard the noise of rockets, and looked up to see a blazing trail of sparks in the heavens.

"A space ship!" cried Joan.

"Yes," agreed Curt. "It was headed toward the other side of the lake, so it isn't likely to be too close. Probably the Sverds, as they've been here before."

"You won't be able to finish your own ship?"

"Not for a long while. Joan, I'm going to forget about the ship for a time. I may not even need it. I'm going to take some of those instruments I made and use them for another purpose."

"But what will you do if the Sverds come here?"

"That's what I intend to prepare for," said Curt. "I've heard some curious stories about them from Ki Illock and Hol Jor, and although I don't doubt what they've told me, I'd like to see these creatures with my own eyes."

JOAN looked at him apprehensively.

"They're invulnerable, Curt. That atom-gun won't affect them."

"It won't," agreed Curt. "But all the same I think I'll be able to protect myself. We'll have to hurry, Joan. First we'll have to take that miniature cyclotron I built and hide it underground, in a hole I'll dig out with my atom-gun. We may have a use for it later. Next I want to put together some of those electromagnetic field deflectors."

Working rapidly, Curt dismantled some of the instruments he had already constructed to aid in navigating the ship, putting them together for a different purpose. As the hours passed, he was conscious that from time to time, the blue-skinned savages came to observe him curiously, but without hostility. He noted that Lherr was not among them.

The blue sun was once more high in the heavens when Curt paused with satisfaction. "That'll do for a time," he decided. "Joan—"

Joan was staring off in the distance. "Curt!" she gasped. "The Sverds!"

From the direction of the lake, a pair of the huge gray monsters were approaching. Curt noted their steady gait, their stupid, beast-like faces, the rows of instruments at their belts.

"I think I have part of the answer, Joan," he said thoughtfully.

"There's Lherr!" she pointed. "He's betrayed you to the Sverds! This is his revenge!"

"It'll be a poor revenge," said Curt, his eyes never leaving the approaching monsters. "As I figure it, Joan, the Sverds can pass through ordinary objects because their atomic vibrations are in quite different planes from our own. Simon and I agreed long ago that such a thing was possible. As a matter of fact, we had the evidence in that dematerialization

trick that Ul Quorn used."

"But, Curt, don't stand there just looking at them. We'll have to escape!"

"We stay here, Joan," asserted Curt. "Of course, if my theory is correct, the Sverds are merely ghosts to us, just as we are nothing more than ghosts to them. You may wonder then how they can affect us. The answer to that lies in their instruments, which emit rays and projectiles that can make the transition from one form of vibration to another."

"Is that what you were putting together?"

"No. Unfortunately, neither Simon nor I reached the point where we could actually make that transition. However, it's time to test whether they're really invulnerable."

He aimed the atom-gun, squeezed the trigger. The atom-blast passed through the Sverds, leaving them unaffected. But it dug a hole in the ground in front of Lherr, and the blue-skinned savage stared at it open-mouthed for a second, and then ran as if all his devils were after him.

One of the Sverds lifted a metal rod from the belt around his middle, exactly such a rod as Ki Illock had seen a Sverd use in blasting one of his soldiers, and pointed it at the waiting man and girl. Curt could feel Joan shiver as she clung to him.

CHAPTER XI

The Bird Men



FOR Grag and Otho, left by the Brain in Anfren, planet of Hol Jor, the time passed with maddening slowness. Without the directing influence of Curt Newton or Simon, their artificially created lives seemed at first both aimless and useless. In Anfren itself there was an atmosphere of hopelessness that helped to intensify this attitude.

To Grag, indeed, life did after a

time seem to hold out a single attraction—the prospect of a good fight whenever the soldiers of Gorma Hass finally attacked.

“Let me get at those Sverds,” he growled. “Strong, are they? I’ll show them what real power is!”

Otho considered this boast for a moment without replying. “Your strength will do no good, Grag,” he declared finally. “What we need to fight Gorma Hass is brains. This is a job for me.”

“Why, you vacuum-headed refugee from an unwashable test-tube!” roared Grag, for a moment aroused to his old fury at Otho’s conceit. “Do you mean to say that you see a way to conquer Gorma Hass where Simon didn’t?”

“Not yet,” answered Otho modestly. “But I’m working on a plan,” he added, with cautious vagueness.

Grag growled again, then subsided into silence. Without the presence of Curt Newton or the Brain, his quarrels with Otho lacked zest, and were soon broken off. But he did notice that from that time on Otho began to have spells of intense concentration, as if he were maturing some great plan.

Eventually there came the day when the soldiers of Gorma Hass were reported assembling on a nearby planet. Grag’s photoelectric eyes brightened in anticipation. Then Hol Jor and Ber Del, accompanied by Ki Illok, appeared before the robot and android.

“We are leaving,” announced Hol Jor. “You will take the *Comet* and follow us.”

“You mean we’re surrendering An-fren to Gorma Hass without a fight?” rumbled Grag, outraged.

“Our forces are inferior. Better to conserve them now that they may fight all the more effectively later.”

“We do nothing but run,” put in Ki Illok, bitterness in his voice. “Soon we shall have forgotten entirely how to fight.”

“We wouldn’t be running if Curt Newton were here,” retorted Grag. “Nor Simon, either. Simon, alone, had the courage to invade Gorma Hass’ stronghold. But you fellows—”

Ber Del’s blue face turned a faint purple. “The Brain left you orders

to assist us, not to argue with us. Do you intend to obey him?”

Grag muttered to himself. Ber Del had him there. Whatever else he did, he couldn’t disobey the Brain’s explicit command. He nodded angrily.

Shortly afterward, Ber Del’s ship and the *Comet* rose above An-fren and streaked through the emptiness of space away from Antares, toward a neighboring star.

THE planet on which they finally landed reminded Grag and Otho of their own Moon. Its gravity was low, its surface rough and mountainous, and its atmosphere so thin that the human beings had trouble breathing it.

To Otho, who could breathe almost any air with some oxygen in it, and to Grag, who didn’t breathe at all, this caused no difficulty. While the human members of the group were forced either to wear clumsy space suits or else move cautiously and avoid over-exertion, the robot and the android wandered about freely.

It was Otho who directed their trips of exploration. Grag, puzzled by the purposefulness of the android’s manner, in vain demanded an explanation.

“I’ll bet you yourself don’t know what you’re looking for,” he decided at last.

“Wait till we find it,” replied Otho. “Then I’ll explain.”

But the days passed, and still the explanation did not come. Grag noticed that Otho wore a small instrument on his wrist, and consulted this frequently. It was obviously not a compass, for Otho referred to it even when he knew perfectly well in what direction they were going, and it was just as obviously not a watch. Grag racked his artificial sponge-metal brain in a vain attempt to guess its purpose, eventually to give up in disgust.

It was more than two weeks after they had landed on the rocky planet that Otho finally glanced at his wrist, and uttered a cry of exultation.

“Ah, I think I’ve found it!”

“You’ve found what?” rumbled Grag.

“Radium! This thing on my wrist

is a tiny, very sensitive electroscope that the Chief invented some time back. It indicates a fair-sized deposit of ore a few dozen feet underground."

"So what? Why just the big mystery about a bit of radium?"

"Because it's necessary for my plan!" exclaimed Otho eagerly. "Grag, do you remember how the Chief got out of trouble on the Moon, some time back, when we were all hunted as outlaws?"

"He invented a damping-wave transmitter to inhibit electronic movement."

"Exactly. For a piece of scrap iron, Grag, you've got a better memory than I thought," admitted Otho. "I helped him build it, and I remember what he did. Why can't we build one to use against Gorma Hass?"

"We can. But it wouldn't work."

"Why not?" demanded Otho. "Don't the soldiers of Gorma Hass use atomic power in their space ships and their weapons? Doesn't atomic power depend on accelerating the electron movements? Don't these rays inhibit the acceleration? Grag," said Otho pompously, "I give you my word of honor as a scientist, this device will stop the men of Gorma Hass cold in their tracks! When it does that, we'll do our fighting with clubs and spears—and then you'll be able to use that great strength of yours."

Grag still looked unconvinced. "It sounds good," he granted, "but if it was as simple as that, why didn't the Chief or the Brain think of it?"

"Maybe they did, but just kept the idea to themselves."

Grag shook his head. "Now that I have a chance to think of it, I remember the Chief saying it wouldn't be any good in a real war, against an enemy who knew the danger. But, anyway, we'll go ahead. Where do I come in on this?"

"You dig," said Otho. "I'll tell you where. Just follow directions and you'll be all right. And keep that Eek of yours away from here, because if he swallows any radium ore, I'll dissect that moon-pup limb from limb to get it back again."

Grag barked out a word of command, and Eek, along with Otho's pet,

backed hastily away from the scene of operations. Then Grag went to work, his great metal hands tearing the dirt and rock away with all the speed of a dredging machine.

AFTER a time Otho noticed that Grag was speeding up.

"It's radium emanations," explained Grag. "They stimulate my reflexes. Come on over and try some."

"Not me," retorted Otho hastily. "Not without a lead suit. They'd fry my plastic flesh a little too much for comfort. How close are you to the ore?"

"Just a few more feet to dig."

"Then I'll go back to the camp, and tell the others to prepare the copper and other metals that we'll need."

An hour later when Otho proudly returned, accompanied by the curious and unbelieving star-captains, he found that Grag had stopped working. The giant robot had clambered out of the hole he himself had dug and was in the midst of what appeared to Otho to be an admiring circle of great birds.

They were an inch or two below six feet in height, about two feet in width, and possessed of intelligent, inquisitive faces that reminded Otho strongly of penguins. But instead of being covered with feathers, their bodies were shielded by layers of thick transparent material faintly resembling scales. They carried what looked like bronze spears, four feet in length. One of them, slightly taller than the rest, carried a spear apparently made of gold.

Not far away from Grag, Eek was gazing at the strange creatures in surprise. Otho's eyes searched the ground, and soon located Oog, who had taken no chances and turned into a perfect imitation of a rock.

Satisfied that his own pet was safe, Otho approached Grag angrily.

"What's the idea of stopping work?" he demanded.

"These people came over here to see what was happening. And, besides, I wanted to see what they were."

"You call these things people?" demanded Otho. "They're birds!"

"They are the Teuri," put in Hol Jor. "I had heard of them, although

I had never seen them before. They are intelligent and friendly."

"They were admiring me," observed Grag.

"Then they can't be very intelligent," returned Otho. "What do they want?"

"I don't know. They don't seem to have any language we can speak or understand," said Grag. "They just make clucking sounds."

"The Chief would have discovered how to talk to them. Anyway, Grag, you've got no time to waste being admired. You've got to finish digging out that radium ore."

Grag nodded, and began to dig once more, while Otho set up the apparatus he would need. First of all were the space suits, which were to be covered with lead so as to repel the dangerous radiations. Then there was a great sheet of copper which Grag would hammer into a spherical shell intended to radiate the damping ray. Finally there were numerous instruments which Otto had taken from the *Comet*.

The Teuri watched as Otho made all these preparations. It was evident that they admired Grag for his great strength, and when he began to beat the copper sheet into a spherical shell, the chorus of clucking sounds became deafening.

"They look powerful," thought Otho. "And their spears will make good weapons. If they think so highly of Grag, he might persuade them to work or fight for us. They'll be useful when the time comes for that hand-to-hand struggle."

As several days passed and the apparatus approached completion, Otho strutted around connecting wires, adjusting the instruments, and behaving in general like a man who was the brains of his organization and knew it.

GRAG, the metal sphere completely formed, stared at him and then laughed.

"Somebody might think you invented this outfit!" he jeered. "You're only taking over what Curt and Simon discovered. And I bet you don't know the whole story about it. You

don't know why the Chief said it would be useless in a real war, against an enemy who knew the danger."

"I know enough to make this work, and that requires more intelligence than you possess," retorted Otho. "Lift that sphere into place, Grag. Excellent. You're not a bad assistant at that. And now we're ready to go."

Hol Jor, Ki Illok, and Ber Del were watching curiously. Otho threw the switch that sent the power racing into the wave-transmitter, and a loud drone filled the air. But nothing else happened.

"Is that all?" asked Ber Del in disappointment.

"All?" repeated Otho. "Wait until you see what this does! Hol Jor, point your atom-pistol at my head!"

"Very well," said Hol Jor. He raised the slender weapon.

"Now pull the trigger!"

"Wait a minute!" cried Grag, leaping forward. He knocked the pistol to one side, and a beam lanced into the ground, transforming a piece of rock into a few wisps of vapor.

Otho's natural complexion was a pale white. But for a moment he seemed to turn faintly green. "What—what happened?" he stammered. "That pistol wasn't supposed to work."

"You forgot something!" declared Grag. "Let me look at the apparatus! Ah, I see what's wrong! The Chief used three condensers, where you've got only two! You were a little over-confident, Otho!"

Otho, chastened, turned off the switch, and hurriedly inserted another condenser into the oscillatory circuit. The next time, when he made connections, Hol Jor's atom-pistol did not fire.

But Hol Jor did not attempt to test it on Otho's head. He pointed the weapon at a rock, and Otho was satisfied to let him use that object for his experiment.

After Hol Jor had failed, the other star-captains attempted to use their own weapons. These, too, were useless.

"You see," cried Otho triumphantly, "no device that depends on atomic disintegration can function within

thousands of miles of here. Atom-pistols, space-ship engines, heating outfits, refrigeration units—all are useless so long as this apparatus is in operation! Now let the Sverds come! We're ready for them!"

It was just at that moment that Otho felt a flipper-like hand grasp each of his arms. One of the bird-men was on each side of him, an expression of grim anger on the penguin-like faces. Each star-captain was likewise in the grip of a pair of the Teuri, while Grag had been paid the compliment of being surrounded by at least a dozen of them.

Otho stared in bewilderment. "I thought they were friendly! What's wrong?"

"That," said Ki Illok, and pointed.

Eek, the moon-pup, was cowering at one side. Lying on the ground near him was the remnant of the golden spear which one of the Teuri had been holding. Otho did not need to ask what had happened. The voracious moon-pup, with his insatiable appetite for metal, had been caught in the very act of devouring the spear!

CHAPTER XII

The Soldiers Arrive



IT WAS useless to resist. The very machine which Otho had set in operation, by rendering the atom-pistols useless, made it impossible for him and the star-captains to defend themselves. Grag

alone, by virtue of his superior strength, might have escaped, but any struggle on his part would have led to the death or injury of the others, and Grag judged it wiser to submit.

"This is the second time this trip that we've suffered because of that overgrown moon-pup's appetite," said Otho bitterly, as they were led away to a chorus of clucking sounds. "Why did he have to pick on the one spear

that those birds seem to hold sacred?"

"How was he to know?" defended Grag.

"Wonder what they'll do to us," remarked Ber Del.

It was a deft change of subject, thought Otho, but hardly a change for the better. As the Teuri led them forward, they suddenly found themselves approaching an underground entrance. A pale greenish light seemed to come from the walls of a tunnel. Probably the result of radioactivity, thought Otho.

They moved ahead several hundred feet through a high but narrow passageway, and found themselves unexpectedly in a huge grotto. The walls glittered with the same greenish light that had illuminated their way, and by its ghastly glare Otho could glimpse directly in front of them what appeared to be the grandfather of all the bird-men.

It took him a moment to realize that it was a statue he saw, standing in a great niche in the wall, and glowing with a light of its own. And it was not exactly like the bird-men in shape, either.

It was almost twenty feet in height, and about seven in width. But there were four arms, instead of the usual pair with which the Teuri were supplied, and each arm held a silver spear. Flames seemed to come from the penguin-like beak, and a glow of blue-green fire from the entire great body.

"The Teuri use radium freely," commented Ki Illok.

Otho nodded. He was a little uncertain as to what would come next, but he had an idea it would not be pleasant. This statue was undoubtedly the bird-god of the tribe. And when a group of strangers was brought before the deity of savages, human or bird-like, it was not simply for the sake of making introductions. There were a few sacrifices in the offing.

He looked around at the faces of his companions. The star-captains, who were just as much aware as he was of what was coming, showed no fear, but only curiosity. Strange, thought Otho, the way these human beings

reacted. All along they had been afraid of what would happen to their people at the hands of Gorma Hass. But when danger threatened them personally, it meant little to them.

As for Grag—well, Otho liked to stir the big robot up, arouse his fury by making some remark directed at his vanity, even jeer at him occasionally for being afraid, but to tell the truth, there was not an iota of fear built into Grag's sponge-metal brain. If it came to the worst, he would go down fighting courageously—provided he went down at all. The fact was that Otho didn't see exactly how the bird-men could harm Grag, anyway.

The huge grotto was filling slowly with the Teuri. The one whose golden spear had been partly devoured by Eek was approaching slowly, making his clucking sounds.

Otho racked his brains in an attempt to discover a way out of the situation. He had speed to match Grag's strength, and a sudden dash might lead to his own freedom. But it would also lead to the death of the star-captains, with their merely human reflexes, and that meant that any attempt at his own escape was out. He would have to think of something else.

MOST of the Teuri were making the clucking sounds now, and Otho was reminded of the chants of more human savages. He could detect a sort of rhythm in the sounds, and occasionally even a rhyme or two. As time passed the rhythm appeared to quicken.

Ber Del had been staring at the huge statue of the bird-god. "Look!" he exclaimed suddenly.

The points of the four spears the statue held were incandescent. "What does that mean?" demanded Grag.

"Probably the way their intend to kill us," replied Ber Del. "Those spear points are loaded with radium."

"Very likely with poison as well," added Hol Jor. "Just to make sure that a touch will kill, and that death will be instantaneous."

The bird-man who had been leading the chanting was now beginning to move around in a circle, as if in a weird dance. And then suddenly he leaped toward the statue. With a motion so quick that none of the men could follow it, he pulled a spear from a pair of the extended hands, and threw it.

It sped straight for Ber Del, oldest of the star-captains. Its flight was so rapid that Ber Del had no chance to step aside. But as it drove toward his heart, Otho flung himself at it.

Otho had need of all his super-human speed now. He caught the spear by the shaft just as the incandescent point was a foot away from Ber Del, and flung it back. The bird-man who had thrown it at Ber Del received it square on his broad body.

He fell as if blasted with an atom-pistol. And at the same time another chorus of clucking sounds came from the Teuri. Otho thought at first that the sounds were angry ones, but the actions of the bird-men quickly taught him better. They were bending over toward him, as if in worship.

Because of his feat of skill, wondered Otho? And then a rapid glance behind him gave him the answer.

The Teuri were worshipping a small live bird-god, who had strutted out from behind the star-captains and was now gazing stolidly at the grotto filled with savages. The small creature raised one of its arms, and the clucking died away. Then the miniature deity sank down to the ground, and became a stone.

"It's Oog!" breathed Otho. "Let's hurry, before they change their minds!"

The android, the robot, and the star-captains retraced their underground path unmolested. Arrived at the surface once more, Hol Jor and the other two men wiped the perspiration away from their foreheads. Then Hol Jor laughed.

"That was close," he said. "Lucky we had a god of our own."

He was wrong about the men, decided Otho sadly. They *had* been slightly afraid. About the only man who would have been utterly fearless

in such a situation was Curt Newton himself.

Otho threw off the switch of his wave-transmitter. "Now," he said confidently, "let Gorma Hass and his soldiers come."

GORMA HASS did not accept the invitation personally, but he did send his soldiers. It was not many days after the near-sacrifice to the Teuri bird-god that Otho, watching intently, looked up to see a sky filled with the faint fiery trails of distant rocket blasts. He ran hurriedly to the wave-transmitter, and threw the switch.

What happened then was almost uncanny. The rocket trails died away, and the large space-ships from which they had been coming thundered on, their speed unchecked. Otho heard no sound for a time, as the skips were moving much more rapidly than sound waves would travel. But he could see their outlines beginning to glow from the heat of friction developed in their mad onrush through the atmosphere.

"They're going to crash!" exclaimed Ber Del.

Otho nodded happily. "They can't use their braking rockets. And they've built up a terrific speed in their journey through space."

Grag was staring fascinated at a single one of the two dozen space ships. "It's moving parallel to the planet's surface. It won't crash for a long time."

"But it will eventually," said Otho. "It can't help that."

Unexpectedly, a jet of flame came from the ship's fore-rockets.

Otho's mouth dropped open in astonishment.

"Somehow," observed Grag, "that ship has managed to get its atomic power working once more. Your wave-transmitting machine is a failure, Otho."

Otho shook his head. "You think it's a failure? Just take a look at that!"

The other space-ships were crashing. Like gigantic meteorites, each hit the ground with a tremendous deafening explosion. To save his ear-

drums, plastic though they were, Otho judged it wise to follow the example of the star-captains, who were protecting their ears with their hands, and at the same time keeping their mouths open to equalize the pressure.

Grag, of course, being built of metal, was not so strongly affected.

The explosions came to an end. Where each space ship had struck there was now an enormous crater, several hundred yards in diameter. Near the center of each crater was a glowing lump of molten metal. Of living beings inside the crater, there was no trace.

"So my machine's a failure, is it?" asked Otho proudly.

"You needn't boast," returned Grag. "It failed with one ship."

"We'll take care of the crew. Wait till they come after us and try to use their atom-pistols."

They waited on the alert. It was several hours before they saw the line of soldiers coming toward them. Each space ship carried almost a thousand men, and, with their atom-pistols of no use whatever, Otho figured that Grag's strength would be just about enough to enable them to win the victory.

As a triple line of soldiers came within pistol range, Otho heard a loud yell.

"Surrender, and you will not be harmed! Gorma Hass does not destroy unless it is necessary!"

Otho smiled. Those soldiers had a surprise coming to them. Their weapons would be useless. And they hadn't seen him or Grag yet, they believed that there were merely human beings to fight.

He saw the atom-pistols rise at the word of command, saw fingers press on triggers.

And then he watched the startled expressions that were on the faces of the soldiers.

"Time to let them have it," he decided.

FIVE spears sped toward the wavering lines. Four men fell to four of the spears, pierced through. The fifth spear, that thrown by Grag,

went completely through a soldier in the first row, missed one in the second, and transfixed another in the third.

The rows of soldiers had stopped coming now, but a sharp word of command urged them on again. Another group of spears took its toll, then another.

At this moment, Grag stepped forward and showed himself.

"Come on, you weaklings," he roared. "I'll lick the whole bunch of you myself!"

The soldiers moved rapidly again, back toward their original position. They wanted nothing to do with the robot.

And then the ranks parted. A beast-faced gray monster came striding through between the fear-stricken soldiers.

"A Sverd!" breathed Ki Illok.

NEITHER Grag nor Otho had previously seen these feared creatures of Gorma Hass. Grag studied the approaching monster, then stepped forward.

"Here's where I pin this thing's ears back," he boasted.

The Sverd was coming silently. When it reached Grag, it made no attempt to use any of the instruments that hung at its belt. It simply stretched out its arms.

Otho stared, and for the first time in his plastic life, almost fainted. For Grag, the mighty Grag, was as helpless a child. The Sverd lifted him, tucked him under one of its arms, and strode on!

Ten minutes later, Grag, Otho, and the star-captains were prisoners aboard the space ship, that had not been destroyed, headed for a destination unknown. Their own *Comet*, piloted by several of the soldiers, followed.

Grag was still in a stupor. "I can't see," he complained, "how that animal could do such a thing to me!"

"What I don't understand," said Otho, "is why this single space ship didn't crash when that wave-machine of mine went into operation!"

The three star-captains sat in glum silence, making no attempt to answer either of these questions.

CHAPTER XIII

Gorma Hass Talks



IN THE palace of Gorma Hass, while a buzzing sound came from the machine the Brain had constructed, the hand of Mar Del closed on his atom-pistol. He had been gazing steadily at the blue-skinned Ve-

gan whom he knew to be Gorma Hass. He realized that the conqueror's appearance was deceptive, and that to the Brain he might have a totally different form, but all the same it gave him a feeling of reassurance to see this enemy in a shape he recognized.

"That will do no good," said the Brain.

Mar Del realized that the Brain was speaking to him. He was referring to the atom-pistol.

Nevertheless, Mar Del raised the weapon and fired. The slender beam of highly energized atoms passed through the body of Gorma Hass as if it were not there. A round hole formed in the wall behind him, and that was all.

Then the Brain spoke again. "What are you doing in this world?" he rasped.

For a moment Gorma Hass was silent. Eventually, however, Mar Del saw the blue-skinned Vegan whom he knew not to be a Vegan at all break into a smile.

"You are clever, you box-creature. Of all those whom I have seen in this Universe, you are the only one who has had the intelligence to learn what I am."

"I do not know what you are. I only suspect. I decided that you were from out of this Universe because your mind does not function as ours do. What are you doing here?" Simon repeated. "Why have you come here to destroy?"

Gorma Hass was silent again, as if debating within himself whether or not to reply. "There is no harm in

my telling you," he said finally. "I am from a Universe where the curvature is ten times that of your own. You could no more live there physically than I could live here."

"You mean that you have no material existence at all?" gasped Mar Del.

"Not here. My body is in the world from which I have come. And my mind can not be harmed."

Gorma Hass was lying, thought Simon. His mind *could* be harmed, else he would not have troubled to state the opposite. He was simply trying, for his own purposes, to convince them of his invulnerability. Simon did not intend to let himself be convinced.

"Why did you come here?" he asked a third time.

"Life in my own Universe was becoming intolerable," replied Gorma Hass slowly. "For millions of years, my race had been conscious of dangerous radiations that have penetrated our few worlds, slowly killing many of us, and harming countless others. Until recently, we looked upon these radiations as natural phenomena, phenomena which were beyond our control and must be endured.

"But a few centuries ago we discovered the truth. These harmful radiations originated not in our own Universe, but in another totally alien to us."

"In ours," suggested Simon.

"In yours," agreed Gorma Hass. "Material objects in both your Universe and our own were limited by the boundaries of ordinary three-dimensional space. But radiations, being nothing but a form of wave-motion, could spread into other dimensions. Crossing a vast four-dimensional gulf, these radiations reached us.

"Many of them were harmless in the worlds where they originated. But our worlds are subject to different laws than yours. We suffered long—and then we discovered that these radiations were created by living creatures.

"Since coming to your Universe, I have learned something of its history. Unhampered by the presence of a material body, I have been able to travel easily from one star to another. I

discovered that the origin of the so-called human race was on the planetary system of the star named Deneb.

"From Deneb this race spread to other stars, some of them many light-years away. Everywhere that it spread, it built cities and civilizations. And each civilization was a source of some form of the radiations that caused so much harm in my own Universe.

"I came to a single conclusion. These civilizations must be destroyed."

SIMON spoke as Gorma Hass paused.

"Not only the civilizations," rasped Simon. "You seek to destroy the human race itself. For even though you reduce it to savagery, if any of its members are left, some day they will regain the civilization they have lost, and you will be in danger once more."

"It is hardly necessary to explain to you," said Gorma Hass with approval. "You understand only too well. I and my Sverds are too few in number to effect so great a task alone. The destruction, to be effective, must be carried out by the human beings themselves. So I have enlisted in my cause many of those I have already conquered."

"And eventually, when they have completed your purpose, they too will be destroyed."

"As you are to be destroyed now. By the Sverds."

There was another short pause. Mar Del saw a faint expression of surprise beginning to form on the face of Gorma Hass. And then there came a sound from Simon that might have been laughter. The Brain's voice-apparatus was not constructed in such a way as to permit the easy expression of the few emotions that moved him. But in those sounds Mar Del was distinctly aware of a feeling of amusement.

"It is useless to concentrate your will, Gorma Hass," said the Brain. "You can not influence us directly. And your connection with the Sverds is broken."

"They will come soon."

"Not this time. I have long been

certain that your control over these creatures was purely mental. Suspecting that you yourself were nothing but mind, I knew that any form of physical control was impossible."

"We could sense the mental control while walking through the palace," put in Mar Del.

"Yes. This instrument whose buzzing you hear, which I worked out with the aid of a—a friend some time ago, radiates a force that neutralizes the neuron currents in an animal's brain cells. Within the radius of its vibration, the Sverds can neither have thoughts of their own, or receive orders from you.

"Now, Gorma Hass, we shall find out whether you are as invulnerable as you claim to be."

Simon was bluffing, Mar Del felt sure. But for one long breathless moment he saw an expression of doubt on the Vegan face of Gorma Hass. And then a Sverd walked into the room.

The creature faced Gorma Hass.

"I shall do your will, Master," it said.

Then it turned around and saw Simon and Mar Del.

CHAPTER XIV

Soldier for the Enemy



AS THE Sverd lifted the rod to blast him and Joan, Curt Newton moved swiftly. Joan did not see what he had done, but the next moment the figure of the Sverd and the objects about him became dim. He

lowered his weapon and stared about in confusion.

"What—" she began.

Curt squeezed her arm and at the same time put a finger to his lips. Joan relapsed into silence.

Then they started to walk quietly to one side. The Sverd was still staring quietly at the place where they had been. Now Joan noticed that as

they moved, the huge beast's body seemed to glitter slightly.

After another moment, the Sverd turned and walked slowly away from them, in the direction from which he had come.

"But, Curt," asked Joan insistently, "what did you do?"

"Merely turned on the invisibility machine I had been perfecting."

Joan shook her head. "I remember the invisibility device you used formerly. It created an intense electromagnetic field that deflected light rays around you, so that no one could see you. But because no light hit your own eyes, you couldn't see any one else either. "Yet we could see the Sverd."

"This device worked on a different principle," explained Curt. "It bathed our bodies in a penetrating radiation of the nature of X-rays. Most of the light waves that came toward us lost their independent existence as light and became merely modulations of the penetrating waves. In other words, our bodies became practically transparent to light."

"But not completely. A tiny part of the light was reflected, and could be noticed, especially if we moved rapidly. We would seem to glitter slightly, just as the Sverd seemed to glitter. Of course, the reason his figure became dim is that most of the light that came from his body to us was also transformed into modulatory waves."

"But we did see him," objected Joan. "Whereas he didn't see us at all."

"Our eyes, being under the influence of the penetrating radiations, could to some extent detect the modulated light waves. His couldn't."

Curt switched off the invisibility machine, and the objects about them sprang back into their usual bright sharpness.

"Now," he decided, "we've got some more apparatus to construct in a hurry. But with the use of atomic motors, it shouldn't take us too long."

During the next few days, both Curt and Joan worked feverishly. First they created a metal shell in the shape of a Sverd. Curt had taken ordinary

types of clay and smelted them to recover the aluminum. This he fused with small quantities of other elements to produce a metal alloy that was extremely light, and yet harder than any steel. Next he hammered the alloy into shape.

"Luckily, the neutral color of the alloy is about the same as that of the Sverds," he said. "We won't have to depend on a paint that might wear or chip off. As for the muscular strength—well, Grag has strong muscles, and we'll pattern our synthetic Sverd's after his, making them larger though, and taking advantage of certain improvements since the time Grag was constructed."

When the synthetic Sverd was completed, Curt slipped into the compartment that he had built into the body for himself, and snapped the door shut behind him. Joan, seeing the great beast-like body move about, was conscious of a feeling of fear, almost as if it were a real Sverd she were watching. There might be trifling imperfections in the metal creature's appearance, but she was convinced that no human being would stare at it long enough to find them.

"As for the Sverds themselves," judged Curt, "I think that they'll be easiest of all to fool. Acting under the orders of Gorma Hass, and having very little mind of their own, they'll probably accept me without hesitation as one of their own kind."

IN THIS, as they were to discover, Curt was correct. That same day, as Curt approached the colony of soldiers sent to the planet by Gorma Hass, he was greeted with averted glances. The soldiers apparently had no love for their non-human allies. But the Sverds themselves paid their apparent comrade little attention.

Only when Curt was certain that he himself would pass as a Sverd did he venture to bring Joan with him as a pretended captive. He was surprised how little trouble he had.

No one spoke to him, either to give orders or accept them. The Sverds, as Curt had judged, received their directions by telepathic means directly from Gorma Hass. He himself

could do as he pleased provided he patterned his actions in general after those of the real Sverds.

As the days passed, he became accustomed to living within his strange metal shell. He dared leave it only for a few moments at night, when he was sure no one would see him. But there was really no need to do so at all. He had taken the precaution to supply the inside of the shell with both food and water, and if occasionally the strange noises of a man eating or drinking came from the Sverd, no one cared to examine the matter too closely.

Meanwhile, he rejoiced in a physical strength that not even Grag could match. It required but the touch of his finger on a stud for him to plunge one of his metal fists through a brick wall, or to leap dozens of yards into the air. In case of necessity, he could use this strength to impress any one who might suspect his true nature.

One characteristic of the real Sverds, however, he lacked. Not existing, as they did, in a plane of vibration different from the usual one, he was unable to pass through material objects, and he was vulnerable to weapons that were sufficiently powerful. But no one troubled to observe him with care, and these deviations from the normal were not noted.

A few days after he had joined the company of the real Sverds, Curt found them preparing to leave. A dozen large space ships, each filled with human soldiers, had landed on the planet for a short stay. Judging from the conversations he overheard, these ships, along with others, would be sent to attack some military objective in a planet populated by bird-men.

When the ships finally took off again, there was a real Sverd on board each. One ship contained in addition Curt and Joan.

As they approached the planet of the bird-men, Curt could see it clearly through the visor plates of the space ship, a shining rocky sphere that reminded him of his own moon. Then the rockets began to blast, decelerating.

Curt's own ship was approaching

the planet at a tangent instead of head on, and to that fact he and Joan, as well as the soldiers in the ship, were to owe their lives. For as they descended into the planet's thin atmosphere, suddenly the rockets ceased blasting.

"What's happened?" cried Joan.

The question was addressed to Curt, but one of the soldiers, not dreaming that she would speak to a Sverd, took it upon himself to answer. "Some minor trouble in the engine," he said carelessly. "It'll be fixed in a couple of minutes."

But Joan was staring at the other ships. "Their rockets have stopped blasting too!"

"What's that?" The soldier's usually pink Fomalhautian face was white with fear. "Then it may be some enemy trick! We'll crash!"

MEN were already running in panic about the ship. Curt Newton, in his metal shell, thrust himself through the milling crowd and made for the engine room.

"If it's effective on all the ships, it must be a damping ray," he thought. "And if it's the kind Simon and I have invented—well and good! But if it's something new—"

He shrugged within his metal shell. If it were a new type of ray he knew that he would not be able to find suitable protection against it before the ship crashed.

In the engine room the captain and several smudge-faced engineers, having as they thought found a clue to the trouble, were working excitedly on the explosion chambers. Curt

threw them aside, and slammed the chamber doors shut. Then he removed from his belt one of the pistol-like instruments, which he, in imitation of the real Sverds, carried with him.

He adjusted a dial on one side and pointed the instrument at the explosion chamber. Then, in front of the muzzle he held a piece of wood, and pulled the trigger. A thick black smoke at once surrounded the chamber. And from within there came the faint explosion of atomic fuel.

"A Sverd who understands how an atomic engine works!" cried the captain. "I thought they were all dull-witted animals!"

"He may be working directly under orders from Gorma Hass," said one of the engineers. "He may not be using his own brains at all."

"He seems to know what he's doing!"

"You can thank your lucky stars for that," thought Curt, as he blasted away at the other chambers. The black smoke was filling the room, and everywhere that it spread, the chambers sprang into action once more. Soon the braking rockets were functioning at full efficiency.

Curt remained in the engine room until the ship had landed. Then he returned to Joan. The soldiers were already pouring out into the open air. One of them, the pink-skinned Fomalhautian who had at first proclaimed that there was no danger, had taken a liking to Joan, and had stayed in the ship in an attempt to persuade her to accompany him. But at sight of the grim look of purpose about the

[Turn page]



approaching Sverd, he turned and ran.

"What happened?" whispered Joan.

"The engines failed because an atom-damping ray had been used. I surrounded them with a thick black carbon smoke. Carbon absorbs the damping rays, and the engines were able to operate again."

"But how could you form a smoke so quickly?"

Curt indicated the metal instrument at his belt. "This is an ordinary heat-ray pistol, whose operation does not depend on sub-atomic processes. I adjusted it to low temperature and let it act on a piece of wood. Without enough air for complete combustion, only the hydrogen burned away, leaving the carbon behind. Much the same thing happened in the explosion of the ancient black-smoke type of explosives."

Out in the open, the soldiers, together with the genuine Sverd who had been in the ship, were preparing for an attack, Curt marched out and silently joined them. It came to him as something of a shock when he saw who their opponents were. Otho, Grag, and the star-captains!

CURT watched with great interest the fight that ensued. He knew that the atom-pistols were useless within the range of action of the damping-ray machine, and he was amused to see the soldiers run when Grag roared his challenge.

Then he saw the other, the genuine Sverd, slowly moving forward, and he knew that it was time he himself went into action. Long before, Gorma Hass must have been impressed on the Sverds that they must help their human companions when these latter proved unable to conquer their own difficulties. Help in this case would take the form of exterminating Otho, Grag, and the others.

But the Sverds did not harm prisoners. Otho and his companions must be taken prisoner before the Sverd could get into action.

He overtook the Sverd, passed through the ranks of soldiers, and found himself facing Grag.

Grag came at him with a bellow of anger. Curt stretched out his

metal hands, grasped the mighty robot, and tucked him under one of his own great arms. He could feel the robot squirming furiously, but Grag's strength was not nearly equal to his.

Then Curt strode on toward the others. After what they had just seen, Otho and the star-captains were in a daze. In a moment, the unequal struggle was over.

Within his metal shell, Curt grinned to himself at the woeful faces of his prisoners.

CHAPTER XV

Lesson in Robot Anatomy



IN THE prison to which they had been brought, Grag and Otho stared moodily at each other and at the star-captains. At their feet played the two pets Oog and Eek. Grag and Otho were not quite sure why

they had been permitted to keep the animals.

"So," observed Otho bitterly, "the great Grag was going to tear a Sverd to pieces as soon as he got his hands on one!"

"They're stronger than I thought," muttered Grag. "Also, Gorma Hass is cleverer than you thought. That damping-ray machine of yours was going to ruin his plans. Look what it got us into!"

"It didn't get us into anything," retorted Otho. "If not for the machine, we'd have been killed or taken prisoner even sooner."

"Oh, sure. But when the Chief constructed a damping-ray machine, he didn't have to make excuses afterward. Any more clever ideas?"

"Hundreds of them." Otho began to pace back and forth excitedly. "And one of them is first class. It's an idea for an escape."

"From this place?" Grag waved a long metal arm. They were in a nearly cubical room, forty feet high,

and fifty feet in each of the other dimensions. What windows the room possessed were small and close to the ceiling. And the doors and walls were of some metal whose nature they did not know. But Grag had already tested it and found that it would not yield to his strength.

"Yes, from this place. The windows are a little more than thirty feet from the floor. I can make the leap easily, and then squeeze through to the outside."

"You can. But how about the rest of us? How about me, for instance?"

"I can take you with me," declared Otho.

Otho was pleased to see the rest of them stare at him as if there were something wrong with his mind. He himself knew that there wasn't. He had a foolproof idea this time. What a difference there would be in their expressions when they heard it!

"This," said Grag, "is the first time I ever heard of a son of a test-tube going crazy!"

"I thought," returned Otho, "that you might have enough brains to think of the idea yourself. But as you haven't, I see that I'll have to explain it to you. You forget, Grag, that you're made of detachable parts."

"Keep your insults to yourself, you gutta-percha guttersnipe!"

"I'm not trying to be insulting. The idea is simply to take you apart, and then for me to carry each part up to the windows and outside. Once you're out of here, I'll put you together again. Then you can overpower a guard—"

"What!" cried Grag. "And have you give me the laugh for the rest of your unnatural life? Never!"

"Oh, well," sighed Otho, "if you consider your pride more important than our freezing ourselves, and getting the better of Gorma Hess—" he shrugged.

The star-captains had not hitherto interfered in the argument. Now Hol Jor interrupted. "I remember once when I was in danger of capture I escaped with important information by disguising myself as a woman. Can you imagine me, Hol Jor, wearing a dress? But my escape resulted

in the winning of a great battle."

"I, too, remember," said Ber Del, "how in my younger days, while in the intelligence division of the Vegan army I worked as a menial servant, doing the most degrading and laborious tasks."

"I don't remember anything of the kind," growled Ki Illok, "but I do know that if I were in Grag's place, I'd let myself be dismantled, and that would be the end of it."

"No," remarked Otho, "we musn't try to persuade Grag to do anything that would hurt his dignity."

Grag glowered, but they could see that his resistance had weakened. "All right," he said finally, "I'll do it! But make it fast, and let's get it over with!"

HOURS later, after night had fallen, Otho leaped for the window. He made it with feet to spare. Then he dropped lightly to the ground outside, deposited both of Grag's arms, and returned to the others. Next he brought out Grag's legs, then the metal head, and finally the giant body. This last caused him some trouble, and only after considerable twisting and tugging did he manage to get it through the narrow space of the window. As he sprang down, it slipped from his grasp and crashed against the ground.

"Careful, you fool," growled Grag's head. "Don't try to smash up my insides."

Otho fitted the head to the body, and then began to fasten the right arm back in place. He had barely finished doing so when he heard a cry in back of him. "The prisoners! They're escaping!"

Otho turned swiftly. A soldier who was raising an atom-pistol to firing position staggered back as the android's incredibly rapid fist smashed into his jaw. Before his companion could realize what was happening, Otho had disposed of him likewise. But there was another pair of soldiers behind them, and even Otho could not reach them in time to prevent their firing.

Then a metal object sailed through the air. Grag's leg caught one sol-

dier behind the ear, his left arm caught another across the chest. Both men went down, crushed under the force of the terrific blows.

"Bring back my arm and leg," ordered Grag fiercely. "Hurry!"

Otho returned the two objects to the angry robot. Grag, with his one useful arm, quickly attached his own legs, while Otho worked on the other arm. In a few seconds Grag arose, none the worse for his experience.

In front of the prison door was a group of about a dozen soldiers, summoned by the alarm. Otho was upon them before they knew what was happening, and then the slower Grag joined the fray. In a few seconds, those who were still on their feet were running as rapidly as those feet could take them. Grag had one of his arms blasted partly away by a beam from an atom-pistol, and Otho's plastic face was slightly scorched by a heat-ray, but otherwise they had suffered no damage.

Otho's quick hands ran over the bodies of the unconscious soldiers. "Ah, here are the keys!"

He moved so rapidly toward the door that only Grag's photoelectric eyes could have noted what he was doing. Then the door swung open. The first one out was his pet, Oog, who sprang at him gleefully.

"Hurry," came Otho's voice urgently. "We have to be away before they return."

They could hear alarm bells ringing in the darkness, and see signal lights flashing all about them. It was a question of little more than seconds before soldiers would be back in force, perhaps accompanied by the feared Sverds.

"Where to?" asked Ber Del.

"The space field, where they're keeping the *Comet*. Unless it's very heavily guarded, we can capture it by a surprise attack."

They set off, Otho leading the way. Several times they passed groups of soldiers headed for the prison, but Otho's quick eyes caught sight of them first, and they were enabled to hide in the shadows while the soldiers passed. A single soldier who thought he saw some one lurking in

the darkness, and showed curiosity about it, received a tap on the head from Grag and was curious no more.

THERE were half a dozen ships at the space field, the *Comet* conspicuous among them because of its odd tear-drop shape. And to the dismay of Otho and Grag, there was a guard of several hundred soldiers surrounding the ship.

"There's no hope," declared Grag gloomily.

Otho's face, scorched as it was, suddenly brightened. "I think I can manage a temporary disguise," he said.

"You won't get as far as the ship," replied Ki Illok.

"If I can get within a hundred feet, it will be enough. Wait here."

They waited, while Otho disappeared. In a few moments he was back wearing the uniform of an officer not far below a general. His face was stained red, and it required a second glance to see that it owed its color not to a dye, but to a red earth.

"How long do you think you'll get by with that?" demanded Grag.

"Long enough to do what I intend." Otho, always a master of disguise, strutted back and forth, the very picture of a pompous officer. "Hol Jor, you know something about the language that Gorma Hass' soldiers speak. How could I order them to rush off the field in pursuit of the prisoners?"

Hol Jor told him, and although ignorant of the different words, Otho repeated the syllables slowly, memorizing them.

"But be careful," urged Hol Jor. "One wrong accent, and they will know the truth."

"I'll be careful. You fellows get back a little," suggested Otho. "There's going to be some fireworks."

As Grag watched skeptically, Otho stalked out on the field. Several soldiers stared at him curiously, and one of them approached him, saluted, and said a few words.

Otho looked grave, cleared his throat, muttered under his breath, and moved away. The soldier looked after him, puzzled.

Then Otho reached the center of the field. Another soldier in the uniform of an officer came over to him, and Otho decided that the moment to give orders had come.

"Ernang!" he shouted.

That was the word for attention. Hol Jor listened to Otho's little speech, and groaned. "He's left out a syllable. It turns the whole thing into nonsense. Another second, and he'll be caught."

Otho must have sensed from the expressions on the faces opposite him that something was wrong. And with characteristic swiftness, he acted.

Two quick steps gave him a start. Then he leaped, far over the heads of a group of astounded soldiers, to land in the doorway of the *Comet*. A second later, two soldiers who had been inside the ship flew out, head first. The door slammed shut.

The space field was a scene of vast confusion. But in the midst of it, Grag and the waiting star-captains saw one thing clearly. The soldiers were bringing up their heaviest artillery. The *Comet* was heavily armored, but it couldn't resist powerful rays at point-blank range.

At that moment the tear-drop-shaped ship suddenly lurched into motion. Lateral and rear rockets blasting, it skittered crazily all over the field, the force of its different exhausts knocking over soldiers like ten-pins. When finally it came to a rest near Grag and his companions, there were no soldiers nearby who were in any condition to interfere with them.

The door slid open, and Otho appeared. "Get in here!" he cried, and Grag and the others did not wait for further encouragement.

They moved almost as quickly as Otho himself would have done. Ber Del was the last to pass through the door. And with him, appearing from nowhere, came a Sverd.

"Don't let him in!" yelled Otho.

It was already too late. The Sverd was inside the ship before the door clanged shut.

As the *Comet* rose into the air, the Sverd moved ominously toward Grag.

CHAPTER XVI

Reunion in Sagittarius



OTHO had his atom-gun out, when the Sverd did a peculiar thing. His hand rose to his chest, and a door opened there. A second later, Grag and Otho saw staring at them the face of Curt Newton him-

self.

"Chief!" exclaimed Grag and Otho at the same time.

And then Curt witnessed something he had never expected to see. Grag's photoelectric eyes flickered with emotion. Otho turned his head away.

A second later, he looked back. "I don't believe it," he said. "You're not Curt."

But neither Otho nor Grag required much convincing that it was really Captain Future. In a quarter of an hour, it seemed to them that Curt had never been missing. By that time, the *Comet* was off the planet, and no longer in danger of being interrupted.

Curt climbed out of the metal shell in which he had lived for so many days. "Well, Grag," he smiled, "I see that you're not as strong as you used to be!"

"What's that? Say, Chief, was it you who licked me so easily?"

"It was that shell. It can develop greater power than you can, Grag. It wasn't really a fair contest."

"Oh, well, Chief, if I had known it was you, I wouldn't have felt so bad."

Ki Illok, who had been an almost silent spectator of the Futuremen's reunion, interrupted. "We have no time to waste on frivolous memories. The Brain is in danger, if not dead. He has invaded the stronghold of Gorma Hass as a spy. It was a daring deed, and now that we are ourselves free, we must think of rescuing him."

Curt nodded. "I've learned where the palace of Gorma Hass is, and I

had intended going there, anyway. And talking of prisoners, I'd better release poor Joan. I figured on getting away with the *Comet* the same as you fellows did, and I had her hide here in advance."

"Joan in this part of space?" cried Otho incredulously.

Curt went to one of the lockers reserved for food storage, and smashed open a lock. A moment later, a blue-skinned girl of the Vegan type climbed out.

Otho whistled. "What a disguise! It's better than anything I could do! How did you manage it, Joan?"

"Curt will tell you later," she said with a laugh. "Meanwhile, we'd better get started on our plans for Gorma Hass."

A few days later, the Futuremen were tramping into the palace of Gorma Hass. Curt, in his Sverd disguise, led the way. Otho was once more a soldier of high rank, and Grag, his arm temporarily repaired and his metallic features covered with plastic flesh from the *Comet's* supplies, was a common soldier, as were the star-captains. Joan went along as a pretended prisoner.

An unexplainable feeling guided them to the room where Gorma Hass was. As they approached it, Otho's keen ears caught the sound of a peculiar humming, and then the sound of words.

"One of the voices is the Brain's," he whispered excitedly. "He's safe!"

The next moment they all heard Simon's voice raised harshly. "Now, Gorma Hass, we shall find out whether you are as invulnerable as you claim to be."

Curt, who was leading the way, alone entered the room. He ignored Simon and Mar Del at first. He had eyes only for the creature who appeared to him in the shape of an Earthman counterpart of himself. Curt spoke slowly from within the Sverd shell.

"I shall do your will, Master."

The spurious Earthman disappeared, just as completely as if he had been blasted out of existence with an atom-pistol. Curt was left alone with Mar Del and the Brain.

ANOTHER second, and Grag, together with the others, had crowded into the room. Simon faced the imitation Sverd. It was the first time Curt had heard his voice tremble.

"I thought you were dead, lad. Thank God you're not."

Moments later they were all back in the *Comet* and rocketing away into space before the alarm that had aroused the soldiers of Gorma Hass could bring any effective action.

Otho, at the controls once more, grinned happily. "I never thought we'd all be together again like this."

"Otho feels better," boomed Grag, "because now, knowing that nobody would believe him anyway, he doesn't have to strain himself posing as a great scientist any longer."

Curt smiled. It was good to be back again and hear Otho and Grag bickering just as they had done so many times before. He turned to the Brain.

"How did you recognize me through that Sverd getup, Simon?"

"I knew it wasn't a real Sverd, lad, because they walk through, and not around, material objects. They don't talk, either. That was how Gorma Hass knew, too, and departed so abruptly. And I knew it was you because of the company you kept."

Meanwhile, Mar Del had been staring in open admiration at Joan. Now he spoke to her in one of the languages used by the blue-skinned Vegans. Joan shook her head blankly. Mar Del tried again and again, always with the same results. Finally he contented himself with a meaningful smile, and moved away, an expression of temporary disappointment on his face.

They had left the palace of Gorma Hass so far behind by this time that there was no longer any need to think about pursuit. Simon had become lost in thought. Now he spoke to Curt.

"Lad, we've got some difficult decisions ahead of us. I'd like to know your opinion."

He explained briefly what he had learned from Gorma Hass. Curt nodded.

"You think, Simon, that there's no use trying to overcome Gorma Hass with any weapons we now have?"

"We have none that will harm him. What there is of him in this Universe is purely mental. And I fear that his mental strength is sufficiently beyond ours to make any contest with him hopeless."

Hol Jor spoke up. "Then there is nothing we can do to stop him from conquering the different human races, and then destroying them?"

"I don't say that," returned Simon. "We can defeat Gorma Hass if we learn more about him. But to do that, we must go to the Universe from which he has come."

"That is impossible!" exclaimed Ber Del. "How can we choose the one correct three-dimensional Universe from the infinite number that exist in four-dimensional space?"

"It isn't impossible," returned Curt slowly. "In the first place, the number of Universes, though large, is not infinite. In the second, we know that Gorma Hass first entered *this* universe not far from here, some place in Sagittarius, we can judge then that in four-dimensional space Sagittarius is closest to his own Universe. And in the third place, we have a very important hint that Gorma Hass, perhaps without realizing it, gave it to Simon. The curvature."

Simon's stalk-eyes shone brightly. "That's the important point, lad. A Universe with curvature ten times that of ours is a rare thing. It must be small, and it is possible only where great masses of matter exist. And such masses will have their effect in four-dimensional space. We can construct instruments to detect them."

"Very likely, in the Universe of Gorma Hass there may be a central sun," remarked Curt. "And that's where we'll learn the secret of his origin."

"It still seems impossible to me," declared Otho.

"Suppose we put it this way, Otho," said Curt. "You are told that some one you are seeking lives on a mountain located on Earth. There are many mountains on Earth, and you can not investigate each one. But then you learn that this one is ten miles high."

"There are no such mountains on Earth," replied Otho.

"But you realize that the figure ten is only a round number. The height may be nine miles, or even eight, but it can not be one or two. Do you think that you would discover that mountain?"

"Even if I didn't know Earth," said Otho, "you could let me have the *Comet*, and I'd do it in a day."

"Well, our problem is similar. We know in general where to look. We search for a small Universe with curvature from eight to ten times that of ours. It shouldn't take us too long."

"You are forgetting," unexpectedly pointed out Ki Illok, "one thing that Gorma Hass said. He himself could not travel physically from his own Universe to this. The change in curvature had too great an effect. Will we be able to make the reverse journey unharmed?"

There was a silence that dragged on painfully. It was Simon who finally broke it.

"Gorma Hass did not tell the whole truth," he rasped. "Possibly he himself lacked the necessary physical strength. But the Sverds did make the journey with him. And if they could do it, so can we."

"I suggest," rumbled Grag, "that we go right ahead, and attempt it."

Curt looked around. There seemed to be agreement on every one's face. "It's decided," he said. "And now, Simon, we've got work to do."

"So have I," observed Grag. "I have to make myself a new arm."

CHAPTER XVII

Curved Space



THE *Comet* was moving ahead cautiously in four-dimensional space once more. Otho, at the controls, had that same sense of uneasiness that had oppressed him the previous time when they made

their journey from the Moon. His path swarmed with ghost suns and

planets that looked real, and with real suns that he thought were ghosts. He had to rely almost entirely upon his instruments to tell them apart, and astrogation solely by instrument had never afforded him much pleasure.

Curt and Simon had devised a modified, highly sensitive form of torsion balance for determining the gravitational constant at any point, and from it they could read directly the curvature matrix of four-dimensional space. They had also mapped roughly the four-dimensional territory they expected to cover, and for several days now they had been cruising back and forth, making careful charts of the curvature.

Now Curt and the Brain were discussing what they had found.

"The median curvature," said Curt thoughtfully, "appears to be one and six-tenths times the usual. And there aren't many deviations from that."

The Brain's stalk-eyes were peering at the charts. "Nevertheless, there seems to be a trend toward higher curvature along the right. I think we ought to try that region."

"Then we'll get Otho to change the *Comet's* direction."

Obediently, Otho shifted the *Comet's* course. As he moved along, he could hear occasional remarks from Curt and the Brain.

"It's dropping again," said Simon disappointedly.

"The drop may be only temporary. We'll keep going for a while, anyway."

Joan was busy preparing meals for those persons aboard the *Comet* who were accustomed to eating. Near her, Mar Del was laboriously attempting to carry on a conversation using the few English words he had learned. He was having a difficult time of it, and Otho, his keen ears overhearing a few of the remarks, could not help grinning.

But Otho, no matter how interested he was in Mar Del's English, dared not take his eyes from the instrument panel. Ahead of him was a sun that might be either real or a ghost, and it was important for him to know which. He stared at the dial that recorded temperatures, and wondered.

Was the needle moving to the right or remaining stationary? Strange that he couldn't tell—

And then he realized the truth—the needle was twisting! At the same time, he heard a whistle from Curt.

"A sudden leap to five and one-half! Simon, we've found it!"

The Brain's rasping reply was drowned by the crash that came from the *Comet's* kitchen. Then Grag's rumbling voice carried throughout the length of the space ship. "Something funny is going on here! The *Comet* is shrinking!"

"So are you!" cried Joan.

Everything was changing shape around them. And directly ahead lay that dubious sun! Otho's green eyes glistened. He felt sure now that it was real, and he moved swiftly to steer the *Comet* to the left of it. But no matter how much he tried to turn the ship to the left, it refused to respond. The steering gear seemed utterly useless.

"Chief!" he yelled.

Curt came running to him. "What is it, Otho?"

"She won't answer to the helm! And we'll hit that sun!"

"The whole ship is warping out of shape," said Curt, his forehead damp with perspiration. "We've reached the place we were looking for. Now we've got to get out of this four-dimensional space and into the three-dimensional. Make the jump, Otho."

"If you say so, Chief!"

FOR a moment the entire *Comet* quivered. And then it gave one final convulsion and sped smoothly ahead once more. But now it was a different ship.

The *Comet* was foreshortened, and curiously twisted. Where there had been straight lines before, there were long sweeping curves, and where there had been smooth curves, twisting spirals were now visible. It seemed as if some one had transformed the ship by first reflecting it in a distorting mirror and then twisting it.

But it was not only the ship itself that was changed. The people in it no longer had their usual appearance.

Every feature of their previous existence was still present, but so altered that no one could have recognized them. They looked like caricatures of themselves.

"What's happened?" cried Joan, fright in her voice. "We seem under a spell!"

"There's no cause for alarm." The Brain's voice, more rasping than ever, reassured them. "This is the kind of change we expected to happen. Your entire bodies, including your eyes and your brains are different in this greatly curved space from what they were before. You'll have to get used to the new types of sense-impressions before your muscles can coordinate. But it shouldn't take more than a day or two. And when we return to our own Universe, everything will change back."

"Some of the rocket tubes aren't firing," said Otho. "What caused that?"

"The strain was unequal on different parts of the ship. Some of the tubes must have given way at the weakest point. They can be fixed."

There was a puzzled look on Joan's face. "Curt," she said, "why do you think that we'd better stay here as short a time as possible before getting back to our own Universe?"

"My ideas are vague, but I have a hunch that—"

"That if we stay here too long, our bodies may adjust themselves to this great curvature so well as to be unadaptable again to the normal type?"

"Yes." Curt stared at her. "Those are the very words I would have used. How did you know?"

"Why, it seemed to me that you were saying so!"

For a moment there was a puzzled silence. "We expected to find new phenomena here," said Curt finally, "with new forms of wave-transmission and of ether motion. We've found them!"

"You mean that thought waves are transmitted more readily here?" demanded Ki Illok.

"As readily as light waves are in our usual worlds. I think that before we go further—"

Simon took over the incompleted

thought. "We'd better decide what to do about it."

"I'd like to keep my mind to myself!" declared Hol Jor.

CHAPTER XVIII

The People of Gorma Hass



HALF an hour later, Curt Newton spoke thoughtfully.

"It appears then, that we all have the ability to receive and transmit thoughts by telepathy to some extent. G r a g and

Otho have the ability least; Joan has it practically to perfection. And the chances are that the inhabitants of this Universe, accustomed to telepathy, will have less trouble reading our minds than we shall have reading theirs."

"Right, lad," said the Brain. "Which means that for our own safety, in case we meet with hostile creatures, it would be advisable to develop mental shields."

Curt nodded. "I think that we already have an idea of the principle we'll have to use. At least you had, Simon, and now that I've caught your thought, I have, too. Seeing that thought waves are transmitted only by space of higher curvature, we can cause a special kind of space warp, an untwisting, so to speak, by means of oscillating waves of the right frequency, and thus bring about their absorption."

"I can't argue with you, lad," said Simon, "not when you express my own thoughts!"

It was not until several days later that the shields were completed. They were crude in appearance, but they functioned fairly well, and of all those aboard the *Comet*, only Joan could catch faint snatches of thought from any one who wore them.

Meanwhile the *Comet* had been driving ahead. Small bright suns lay on both sides of its path, and several times they passed by apparently unin-

habited planets. And then one day—they did not know when, for every chronometer aboard ship had gone out of commission in this strange Universe—a faint white sun came into view. For a long time, despite an increase in brilliancy, it remained a distant star, even though the *Comet* stormed ahead toward it under the full power of the vibration drive.

"A central sun, as you expected, lad," rasped Simon, his eyes peering at it through the *Comet's* visor plates. "We'll keep on the lookout for planets."

"There's one!" exclaimed Otho suddenly.

He pointed out a tiny reddish disk that lay ahead of them, and slightly off to the left. Curt and Simon interchanged glances.

"Make for that, Otho," ordered the Brain.

As they approached, Otho cut off the vibration drive and set the rockets to blasting again. The red planet became unexpectedly blue as they drew closer to one side.

"Desert on one hemisphere, ocean on the other," decided Curt. There's plenty of variety in the climate, and the spectroscope indicates that the air is breathable. There should be living creatures. I wonder what they're like."

Otho set the *Comet* down on a smooth stretch of red sand along the ocean shore. The individual gravity equalizers were still able to operate, and now that they had become accustomed to this strange Universe, every one felt entirely at ease as the door of the teardrop-shaped vessel slid open, and they stepped out on the shore.

"There's life here, all right," said Otho, and pointed to the water. The rounded side of a huge sea-creature cut through the waves and then disappeared.

"That's not what we're looking for," rumbled Grag. "What we want is something with intelligence. Something—" Crag's steel jaw remained suspended in midair, the sentence unfinished.

Half a dozen creatures were approaching along the shore. They were tall and gray, and they had beast-

like faces of a sort that were vaguely familiar. They strode along steadily, at a fast unflinching pace that seemed ominous.

"The Sverds!" gasped Ber Del. "They look different, but they're still Sverds! We'll have to run for the ship!"

Joan shook her head. "They're friendly," she said. "We'll wait for them."

THE Sverds came close and stared at them. Curt was aware of curious phrases forming in his mind, of vague and half-formed thoughts that began by seeming to have a meaning, and then dying away.

"They're talking," said Joan. "Mentally, of course. It's the only way they know. They're asking what we're doing here. They don't understand why they aren't left alone. The Masters promised to leave them alone."

"The Masters? That would seem to be the race of Gorma Hass. Tell them, Joan, that we're looking for the masters."

"They say you will find them up above," the girl answered almost instantly.

"On some other planet?" asked Curt.

"I don't know," replied Joan doubtfully. "All I get is a vague idea that the Masters are up in the sky. It may be a religious concept. I don't think the Sverds themselves are sure where the Masters are."

"At any rate, they're not here."

"We'll make a search," put in Simon. "We'll cover the surface of the planet, then leave."

The Sverds watched them with curiosity as they returned to the ship. "Strange," mused Simon. "They're not dangerous at all—here. It would appear that they owe their destructiveness among our worlds solely to Gorma Hass."

Shortly afterward they were blasting off again. They skimmed over the surface of the planet from a height of a few dozen miles, dividing the total area into zones, and searching each in turn, but there were no signs of buildings or other artificial structures. Finally, they left the planet

behind them, to resume their course toward the central sun.

As the planet's blue side dwindled behind them, Otho turned to Curt. "Shall I give her the vibration drive, Chief?"

Joan spoke suddenly. "No, Otho! Cut off the rockets, too!"

Curt looked at her sharply. "What's wrong, Joan?"

"I just thought I had made contact with a—mind—some place back there—"

Otho looked a question. "What shall I do, Chief?"

"Cut off the power. We'll just drift for a while and see what happens."

The next moment the *Comet* was drifting silently through space. There was an intent look on Joan's face. Curt's own expression was uneasy as he glanced at her, but he knew that Joan had not imagined what she had talked about. For now he too sensed a mind trying to contact him from outside the *Comet*.

And then the outlines of the huge teardrop-shaped vessel began to waver. In several places, something was coming through the walls. This something appeared to ooze through silently, and swirl within the *Comet* like a cloud of vapor. In a few seconds Curt was conscious of three distinct clouds, each with a penetrating, overwhelming mind of its own.

Curt was aware of a tautness in his throat. This was not the first occasion on which he had encountered minds like these. Alone in space, he had been almost trapped by one of them. And now—he had a sudden panicky feeling that every one in the *Comet* was in their power.

A VOICE spoke in his brain. The words were indistinct, but the meaning was clear enough. "You need have no fear. We are not like those others. We are friendly."

Then there was a persistent silence. It lasted until Curt began to wonder whether the strangers would ever break it. He himself had no desire, almost no power, to talk.

It was Joan who finally spoke. "They want to talk through me. In that way we'll all understand most

clearly what the actual situation is."

The Brain's voice grated sharply. "We are listening."

"I shall talk," said Joan, "as if I myself were Ystal, who is speaking to me. This is what he says:

"I have examined your minds, and I understand why you have come here. You are seeking a way to destroy Gorma Hass, whose material body you know to be in this Universe.

"You can not destroy him here. His body is hidden safely, and we ourselves do not know how to find it. To defeat Gorma Hass you must return to your own Universe.

"He has told you that he is fighting to save our race, which is threatened by deadly radiations you human beings continually create. But that is only part of the truth.

"He has gone into your Universe without our consent. We have given him no command to slay as he has been slaying. It is his own evil mind that is responsible for that.

"Before Gorma Hass, there were others that made the trip into your Universe for a purpose similar to his, taking their material bodies with them. But these bodies were so weakened by the change in conditions that they became almost helpless. Their minds even had difficulty in controlling the mind of the tall red-haired youth among you. They could not carry out their original plans.

"Gorma Hass has escaped some of these difficulties by making the trip only mentally. But the power of even his mind was weakened to some extent. Otherwise, none of you would have been able to resist him at all. It will continue to become weaker as time passes and it remains separated from his body.

"To carry out his plans, Gorma Hass took with him many Sverds. These have long regarded us as their Masters, and they could not refuse his orders. Gorma Hass equipped them with instruments of war which he did not invent himself, but which came from our museums.

"Those of us opposed to him have no use for physical violence. We regard material things as evil, and wish to free ourselves from them. Because

of the means he has employed, Gorma Hass will not earn our gratitude even if he succeeds in destroying the source of radiations deadly to us.

"As you can see, we are no longer bound to the planets, which were formerly our homes. All space belongs to us now. We seek constantly to improve our minds, and we are succeeding."

There was a slight pause, and Curt, breathing more freely, was able to cut in. "But how could you come in through the walls of our ship? That's control of material things."

"Through long evolution we have developed the power to change the planes of vibration of our atoms at will. Thus we can pass through material objects."

"But you say that you don't count on Gorma Hass to prevent the radiations that are so harmful to you. How then do you expect to control them?"

"By mental power alone."

CURT shook his head. "That hasn't worked so far. You admit that yourselves. Although you have mental abilities far beyond ours, they give you control only of minds, your own as well as others. To control material objects you must use physical methods."

"Right, lad," agreed the Brain.

"But it is base to be dependent upon matter. The mind should be above such things," objected Ystal through the medium of Joan's voice.

"We've seen people who thought the same," replied Curt grimly, "and they suffered for it. Both mental and material things are important. You can't neglect either without suffering."

There was a pause. Joan spoke slowly again, repeating the words that were not hers. "Then you believe you have a solution for our problem?"

"Simon and I can invent a device that would protect a single individual or a whole planet. So could almost any scientist of our own world. We have long known how to deal with such radiations."

"It would take us a day at most," agreed Simon.

"Once given a device of the proper type, we ourselves could duplicate it easily," said Ystal. "Nevertheless, I do not know how my people will receive this answer to their problem."

"First we'll make a radiation-absorber, and then you'll see," replied Curt. "Grag," he cried, "are you ready for work?"

"Sure, Chief," returned the twisted metal figure that was now Grag.

"Dig up two or three of the smallest induction coils, and half a dozen condensers. Otho, set up a micro-size atomic motor. We're starting on those absorbers right now."

Simon had thought the devices would take them a day or two to make. To Curt, laboring enthusiastically, it seemed that no more than a few hours had elapsed before three absorbers were ready. They consisted simply of tiny generators which emitted spherical damping rays intended to neutralize the harmful vibrations.

Curt was conscious of what was going on in Ystal's mind. While he had been working, Ystal and his companions had sifted his thoughts, and appropriated the information necessary to make the shields themselves. The sole question now was whether they would wear them and thus admit the usefulness of the hated materialism.

Ystal seemed to be reaching a decision. "We shall use these devices," he declared finally, "not merely to guard against the radiations, but because their presence will remind us of our own weakness. They will help mortify our minds."

Curt stared. Then he laughed. This was an acceptance of the situation, and at the same time a neat method of saving face.

But Ystal was not offended. "Now we must consider how you are to deal with Gorma Hass," he said. "Your powers of will are not fully developed, but even after I teach you to make proper use of them, you will still be inferior in strength to him. Nevertheless, if you catch him by surprise, you may be able to meet Gorma Hass on equal terms."

"If we catch Gorma Hass by surprise," answered Curt, "we'll know

how to deal with him."

Ystal probed his mind. "Your plan is a good one," he decided. "And now it is my turn to act. You will permit your mind to become blank." He paused. "No, do not resist. Try not to think at all."

Curt did his best to obey.

CHAPTER XIX

The Way Back



HALF an hour later, Curt awoke. He had been vaguely aware of fingers moving within his mind, snipping connections here and there, and then joining them together again in new ways. Now he

had a curious feeling as of heightened consciousness. He seemed to be more awake than ever before in his life.

Ystal and his companions had disappeared, and the *Comet* was headed outward from the central Sun. Otho was using the rocket-drive, and they were not yet going at a very high rate of speed.

"How do you feel, lad?" asked the Brain anxiously. "None the worse for your experience?"

"Somewhat the better for it," answered Curt. "I feel as if I'd like to come to grips with Gorma Hass right now."

"Beware of overconfidence, Curt. Remember what Ystal said. You are still no match for Gorma Hass."

"I told Ystal I thought I knew how to handle him, and I do. In order to send an object traveling through the fourth spacial dimension, Simon, there's no need for us to go with it. We can use a projector. It would be something like a four-dimensional cannon."

"And your idea is to project Gorma Hass back into his own Universe?"

Curt shook his head. "Not exactly. If I did that, he might return. I intend to project him out of our Universe into some other that is alien

to both him and us. Without a projector of his own, he'll be unable to get back. And with mind and body permanently separated, both will weaken and eventually die away."

"But how will you get him to put himself within range of your projector?"

"I have a plan for that, too. We won't have to search for him, Simon. He'll come to us."

The Brain stared at him, puzzled. Suddenly there came an interruption from Joan.

"Stop the ship!"

Otho, at the controls, spoke without turning his head. "Are those orders, Chief?"

"No, Otho, keep going." Curt's eyes narrowed. "What's wrong, Joan?"

"There's an invisible planet ahead! We're going so fast that we'll collide with it! Stop the ship quickly, Curt!"

The Brain spoke unexpectedly. "She's right, lad! There's a dark body ahead! We must stop!"

Otho's white face betrayed uneasiness. "I'm putting on the brakes, Chief! We don't want to smash!"

The others were looking dazedly at Otho. Curt sprang into action. He ran toward a compartment in the rear of the *Comet* and threw it open. But while reaching in, he stopped abruptly. Then, clenching his teeth, he forced his hand forward against some invisible resistance. He found one of the mental shields that he and Simon had made, and fastened it slowly over his head.

At once the invisible resistance disappeared. He ran back to Otho and the others with the remaining shields.

A moment later, Otho's face betrayed confusion. "Say, Chief, what was I stopping for?"

"Never mind now, Otho. Keep right on going. Use the vibration drive."

The *Comet* knifed ahead through space. The Brain stared at Curt again and spoke.

"What happened, lad?"

"There was an invisible planet," said Joan dully.

"There was no invisible planet,

Joan. Those orders to stop the ship came from outside. Your mind, being most susceptible, received them most rapidly and most completely. But I felt them myself. And only the shields saved us."

"But, Curt, who gave those orders? Surely not Ystal?"

"Not Ystal, but others of his race. You remember that Gorma Hass wasn't alone in his evil intentions. Some of those who thought as he did traveled to our Universe. Those who stayed here undoubtedly read our minds, and tried to detain us. If we had stopped the *Comet*, they would have come on board, and that would have been the end."

"How did you have the strength to resist even for a short time, lad?" asked the Brain.

"I think I owe that to what Ystal did to my mind," mused Curt. "And now, Simon, let me tell you how I expect to make Gorma Hass come to us."

CHAPTER XX

Showdown



AS CURT predicted to the Brain, there was little difficulty. Back safely in their own Universe once more, with the *Comet* and themselves again taking on their usual shape, they sought out in turn

the different planets where the soldiers of Gorma Hass were expected.

The *Comet's* hull was sufficiently tough to repel the ordinary atom-rays that were directed at it unless the rays were fired at point-blank range. Curt did not let his enemies approach close enough for that. The result was that the soldiers of Gorma Hass quickly learned to shun the teardrop-shaped vessel, and to wait for the Sverds to overcome it for them. But the Sverds, for the first time, proved useless.

Peering out through the *Comet's*

visor plates, her passengers saw a pair of them stalk toward the ship, their hands reaching as usual for the weapons at their belts as they strode, invulnerable, through a criss-crossing maze of deadly projectiles and deadlier rays.

And then the Sverds stopped. Their hands dropped away from their weapons, and when they moved again it was almost tamely. A door of the *Comet* slid open, and they came aboard.

That in itself was enough to demoralize the soldiers of Gorma Hass. But later, when the Sverds emerged from the *Comet* to fight against them instead of for them, they broke battle formation and ran in terror. Their opponents, heartened by the unexpected change, cut them down or took them prisoner to the last man.

The first time this happened, those on board the *Comet* were almost as startled as the others, despite Curt's explanation of what would take place.

"I still can't believe my eyes, Curt," marvelled Joan. "They're such deadly, inhuman creatures."

"They're deadly only because Gorma Hass has made them so. Ordinarily, once he's given them his orders, they obey. But the farther away he is from them, the less powerful his commands are. That's why I can cut in with commands of my own, and have them shift their obedience to me."

"And you owe this also to Ystal?"

Curt nodded. "If not for him, all the special telepathic powers I had in his own Universe would have disappeared, just as they've done with you, Joan, and with the rest of us. I think they'll disappear in time anyway, but meanwhile, I've still got them, and I can use them against Gorma Hass."

For the first time since the star-captains had come to him for help, Curt found them hopeful.

"A few more victories like this," said Hol Jor, "and Gorma Hass will be defeated. His men will no longer have confidence in him."

"Gorma Hass will be defeated," agreed Curt, "but not by such victories alone. We shall have to get

rid of him personally."

Ber Del looked troubled. "It is dangerous to attempt a personal struggle with Gorma Hass."

"Just as dangerous for him as for us," replied Curt. "I know that Gorma Hass had mental powers that we can not equal, but we must not exaggerate them. You remember that when Simon and Mar Del faced him, he did not use those powers to destroy them. He relied upon the Sverds."

KI ILLOK nodded. "I had thought of that. I have never been able to understand why."

"It is because to be fully effective, his mind must function in a space that conducts thought waves well. Ours does not. And in addition he must be able to operate on a mind which receives thought waves without too much difficulty. Neither Simon's nor Mar Del's was susceptible because of Simon's special dampener."

"Yours will be, Curt," said Joan.

"Aye, lad, which means that you yourself will be in the greatest danger."

"That can't be helped," retorted Curt. "If we expect to get rid of Gorma Hass, I must take that chance. To make up for any inferiority in will, I'll have the advantage of surprise. Gorma Hass won't be expecting me to attack. And he won't realize that he'll need to hurry, that if I can hold him back for only a few minutes, we'll be able to bring that four-dimensional projector to bear on him."

"What if he is too strong?" asked Ber Del.

"He won't be. Meanwhile, we'd better get to the next planet where Gorma Hass intends to attack, and spoil his plans there. The sooner we make it clear to him that something is seriously wrong, the sooner he'll come to us."

But it was neither on the next planet nor on the one after it that the final struggle with Gorma Hass was destined to come. On each, Curt was able to divert the Sverds from the tasks to which Gorma Hass had set them, and make them carry out his

own will. In each case, the soldiers of Gorma Hass, without the Sverds, showed little stomach for a fight. But their master himself did not appear.

Not until the *Comet* had taken part in half a dozen battles, and captured almost a score of the Sverds, did Curt and the others see a sign of Gorma Hass. And then they saw him almost too late.

Several of the Sverds, following the failure of the human soldiers, had advanced to the attack against the *Comet*. As usual, Curt had set his will against that of their master. He saw the Sverds hesitate, and expected them to come on board the ship, as all the others had done. But their hesitation lasted longer than usual. It ended in their pointing their weapons once more toward the *Comet*.

"Otho!" cried Curt.

Otho acted quickly. It was as if he had sensed Curt's will merely at the sound of his name. Before the slow-moving, beastlike creatures could fire, he had set the rockets blasting, and lifted the *Comet* into the air.

"Slow down," ordered Curt. "Slow down and turn back. Gorma Hass is either on that battlefield or near it. Otherwise, the Sverds would have obeyed me. We'll have to find him."

"There'll be no difficulty about that," said the Brain.

"I'll look for a robot," boomed Grag.

"And I'll keep my eyes peeled for an android," observed Otho. "He can't escape."

Curt did not reply. He knew that Gorma Hass could escape without difficulty, and that only ignorance of his danger kept him in the neighborhood of the battle. That ignorance would not last long. If Curt failed to take advantage of this opportunity, he might never find another.

It was Otho's keen eyes that detected him first. "There he is," cried the android triumphantly. "An android just like me. Except that he's frowning."

"The projector is ready, lad," remarked the Brain quietly.

Curt nodded. For the first time, he

was going to make full use of the increased mental power that Ystal had given him. And Gorma Hass did not suspect.

THE *Comet*, braking to landing speed, settled down on the ground.

"I'll have to get out," said Curt. "I think Simon will want to come with me. I'll want Grag and Otho, too. As for you, Joan, I think you'd better stay here."

"We are not deserting you now," exclaimed Ki Illok hotly. "After all, this is our fight."

"You are staying," replied Curt mildly.

Ki Illok, his face dazed, opened his mouth to reply, and closed it without speaking. Curt knew that he would stay.

Otho had landed the ship a few hundred feet away from the center of the fighting. As Curt and the other Futuremen advanced rapidly, the firing died away around them. The Sverds, obeying the orders of Gorma Hass, were mowing down the opposition.

"Less chance of our being hit by stray rays," murmured Curt. "Our thanks to Gorma Hass for that."

Grag was carrying the projector. Close behind him, the Brain floated in the air. Curt could sense the anxiety in the Brain's mind, but he knew that Simon would say nothing that might tend to lessen his confidence. He would need all of it for the coming struggle.

Then suddenly, the figure of an Earthman loomed before Curt. There was an evil grin on the creature's face.

"It is the box-creature and his strange companions," said Gorma Hass. "You, the red-head, were the false Sverd. For a time I sought you in vain. But now—"

A Sverd was approaching, summoned by Gorma Hass. Curt's mind leaped abruptly toward Gorma Hass. There was an expression of astonishment on the bogus Earthman's face. The Sverd, his orders now confused, stopped moving, as if waiting for a clearer voice to tell him what to do.

For the first time in his life, Curt

felt that his mind was something tangible, like an arm or a tentacle, with almost physical power. He seemed to feel Gorma Hass give way under the shock, he could sense the terror that filled his opponent's mind. Curt *had* won the advantage of surprise, and in a moment the struggle would be over.

"Simon!" he cried. "Throw the switch! Now!"

The projector was directed at Gorma Hass. Simon moved hastily, and then his voice rasped out in despair. "Hold him, Curt! A wire has been burned out by a stray atom-beam!"

Gorma Hass was beginning to recover from his surprise. Curt could feel him fighting back, and for a moment he seemed to be conscious of a hand trying to grasp his brain, attempting to destroy it. To those who observed him, he seemed to be doing nothing but stare ahead at the figure of Gorma Hass, but the effort was taxing his power of will to the utmost. The perspiration started out on his forehead.

"Hold him, Chief!" It was Otho's voice, anxious but encouraging. "Another few seconds, and I'll have that thing fixed! He can't throw you!"

Otho's fingers were moving so fast that the air seemed to be full of his hands. The burned-out wire fell to the ground, another, hastily torn by Grag from his own arm, took its place. Grag's arm fell paralyzed to his side, but he hardly seemed to notice it. He was gazing anxiously at the robot figure of Gorma Hass.

And now Gorma Hass was gaining the upper hand. His grip was closing on Curt's brain, and not all Curt's will could force it away. He was not fighting now to pin Gorma Hass down, he was simply fighting for time. Ten seconds, five—they meant the difference between success and failure!

HE WAS not going to have five seconds. In the time that it took a thought wave to travel from the mind of Gorma Hass to his own, he heard his opponent gloating.

"You have overestimated your strength, Earthman! You are helpless now! I have merely to will it

—and you will cease to exist! I have merely—”

Curt stared. For the figure of Gorma Hass had disappeared. He felt his mind relax, and a feeling of weakness swept over him.

“Get him, Chief!” yelled Otho. “He’s gone!”

Gorma Hass was gone, but Curt’s mind was so spent that he could not even transmit orders to the Sverd. The creature remained standing, motionless as before. And Grag, as if understanding the situation, lifted

Ki Illok’s eyes were gleaming. “There is at last an end to running away. It will be pleasant to see our enemies do the running.”

“Then our task here is ended,” said Curt. “And we’d better get back to Sol, and find out how things have gone in our absence.”

“Aye, lad.” The Brain’s eyes rose steadily in the air as he stared at Joan. “But first we must see that Joan makes the return journey.”

Curt nodded. Then he glanced at Mar Del, and grinned. The Vegan

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Curt off the ground with the arm that was not paralyzed, and with Giant strides, made for the *Comet*.

It was hours later before Curt came to. “You’re all right, lad?” asked the Brain anxiously.

“All right, but weak. I’m not used to feeling this way.”

“You’ll get over it. You’ll feel better, lad, when I tell you that Gorma Hass’ soldiers lost that battle.”

“As they will now lose all the battles to come,” said Ber Del. “The main danger is ended. The Sverds are no longer a threat, and we fear no human opponents.”

“Now, thanks to Captain Future, we can defend ourselves,” added Hol Jor.

was disconsolately making ready to leave.

“Stay, Mar Del,” he urged. “I think there’s a Vegan girl by the name of Varra you’d like to meet.”

Mar Del shrugged uncomfortably. “I have already met the one Vegan girl I care to know, and she is not for me. I do not intend to repeat the mistake of Gorma Hass, who remained to gloat when he should have left for his own safety.”

“You think that you are in danger?” asked Mar Del.

“I fear that if I remain, I too, like Gorma Hass, will lose my mind completely.”

Joan smiled. “Stay, Mar Del. I promise you that soon I shall be able

to speak your own language. And I think—I can not promise, but I think that when Captain Future is gone—I shall love you very much.”

IT WAS another day however, before the mental interchange between Joan and Varra was completed. Soon thereafter the Futuremen, once more alone aboard the *Comet* were speeding through four-dimensional space toward their own solar system.

“Say, Chief,” cried Otho, “I’m getting to recognize these fake suns. I can tell them from the real ones now without the instruments!”

“Excellent!” rasped the Brain. “Your ability will be useful when we make our trip to Deneb, to investigate the origin of the humanoid races.”

Otho’s eyes shone. “That’s a trip I’d like to make! When—”

There was a roar from Grag. “That’s a real sun ahead, not a fake! Keep your eyes on those instruments,

you over-inflated hunk of rubber substitute!”

Curt smiled. “Some day, Otho, we’ll go to Deneb, but not now. There are too many other things to attend to first.”

And the other Futuremen, guessing his thought, agreed. It was one thing to have Joan Randall with him in the form of a blue-skinned Vegan girl. But it was quite another to see her as she really was. Even the Brain, long dead to most human emotions, or Grag, who had never had them, could understand that.

The *Comet* roared ahead. Otho pressed a stud, and the four-dimensional world disappeared behind them. Ahead was a blazing yellow star, and a black dot that might be Jupiter moving across its surface.

It was a reasonably small Solar System, but a remarkably pleasant one.

It was a wonderful feeling, thought Curt, to be going back.

Next Issue's Novel: THE STAR OF DREAD

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THE SHAPE OF THE FUTURE



SCIENCE LEADS THE WAY TO VICTORY

FUTURE FIGHTERS FIT—Soldiers of our Army of 1962 will have sound teeth and sturdy bones if farmers and dairymen put the right fertilizers on their fields and take proper care of the soil. The health and strength of the coming generation lies in today's fields and pastures, according to Professor W. A. Albrecht of Cornell University. Fertilizers, moisture and the amount and intensity of sunlight are all being regulated by new discoveries. Professor Albrecht also suggested that the familiar slogan "Our national wealth lies in the soil" might well be amended to read, through the change of one letter, "Our national health lies in the soil."

JUICELESS TELEGRAPH—A Cuban inventor has come up with a startling new discovery—a telegraph that works without a battery. It is not, however, run by magic, but by an ingenious application of the constant, if slight, electric currents that flow between earth and air, which are harnessed to a supersensitive antenna. It promises to revolutionize the entire telegraphic communications set-up.

ENTER THE PARASHOE—A paratrooper is put out of action almost as often through sprained or broken ankles or legs caused by the shock of his landing as he is by enemy bullets after reaching the ground. To increase the efficiency of this spectacular type of soldier, Inventor Ralph W. Jennings of Cambridge, Massachusetts, has invented a parashoe which will largely eliminate this peril.

The parashoe is reinforced by a series of vertical fiber ribs on the sides and has a disc of fiber that covers the projection of the ankle joint. It has a stiffly braced toe and a sponge rubber insole to absorb a good deal of the shock of landing. In addition, it has a double closure—the shoe is laced up in the conventional manner, but has also a slide fastener on the side so that it can be removed very quickly in case of need.

BLANE BOMBS PLANE—A radical new development in air combat tactics may result from the newly patented invention of S. H. Emery of Pasadena, California. It is a time bomb, designed to burst in mid-air and destroy an opponent's flying chariot.

The bomb in its rack is connected with the cockpit by means of a flexible cable which extends from a timing device to a dial on the instrument panel. The pilot judges the distance to his fleeting target, sets the fuse on the bomb by another dial on the panel, then releases it. It generates sufficient explosive power to destroy any plane within a wide radius.

CORNSTALK MASTICATOR AIDS FARMERS—Every Corn Belt farmer dreads the task of ridding his acres of constalks after the harvest is in. It's a tedious, thankless chore, and, until now an inescapable one. Walter S. Sargent of Des Moines has come up with a mobile machine which scoops the old stalks into its mouth by means of an automatic shovel, then chews them to shreds.

The resultant debris forms a useful mulch on or in the soil and reduces the humus much faster than the decay-resistant whole stalks and stumps. The machine is also valuable because it does a thorough job of destruction on the winter homes of the dreaded European corn borers in the process.

MAGIC BANDAGE—Dr. Kenneth L. Pickrell of Johns Hopkins in Baltimore has successfully tested a new type of surgical dressing which looks something like rough waxed paper and is even rougher on bacteria. It is loaded with from 30% to 50% sulfadiazine which counts ten over almost all germs.

It has already been used on more than 100 Hopkins patients, about half of whom suffered from severe burns. In 30 of the burned patients, bacteriological studies revealed no evidence of infection. Such studies were not made in the cases of the other patients, but no sign of infection was seen on inspection of the wounds and burned areas.



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lowed orders
amid the heavy
firing of our
guns

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*Thumb a Ride with the Celestial Hitch-Hikers
Who Pledge Their Lives to the Cause of Victory!*

HENNIGER finished recording the log of the ship's landing, then scowled at the frozen surface of Saturn. From all appearances our troubles had only begun, if we intended to dig under that ultra-arctic landscape for the stuff we had come so far to get. And we would get it. Henniger wasn't the man to turn back without Uranium 235, when

the democracies demanded it for the new atomic power which might bring this fifty-year-old war to a close.

We had volunteered, to give our lives if need be, to come back loaded. Every man aboard, down to the cook who thought U-235 was a German submarine, were determined on that.

We were being followed, how closely we didn't know. The enemy was

faster than the *Space-Marine* and Henniger had barely half a lap's grace to find the stuff and get going again.

Under a cold, dwarfed sun, there was a glint in the snow powder which puzzled me. There was no frost on the viewplates, and that was bad. The blue-white powder which blanketed all out-doors wasn't moisture, but frozen air. A black sky proclaimed it, a sky of vacuum, not atmosphere.

Beyond the glass too, was the stillness of the void. Shadows were sharp and midnight black. Nowhere was there the trace of wind, or living things.

"Better get some sleep," the chief warned, and his finger swept the desolation beyond the portholes. "We've got to tackle that baby at sun-up."

The men walked out glumly, and with little speech. Henniger watched them, unmoved, contrarily blowing smoke rings with every outward appearance of complete assurance. I pushed away my notes, twirled the pen idly, trying to imagine vacuum, and air like a pad under a man's feet.

Henniger went down to check some equipment and I picked up my records again, setting down temperature outside the ship, checking the velocity of the rubble currents moving still in a haze of sunlight, tabulating this and that for scientists to mull over when we were back on Earth again.

I WAS still at work when day came storming into the white fields of frost. Not five hours after sundown, there it was again, blooming majestically upon the great ringed bands which vaulted across the horizon, and so far up they seemed a part of distant sky.

The little sun fairly ticked up from the distant peaks. It was a hurried little sun, with only ten hours and a half to circle the two-hundred-and-thirty-thousand-mile belly of the planet.

The men came in sleepily. Henniger chose five, including myself. We got into gear, blowing up our suits to fifteen pounds after we put them on.

I was fourth to fall in. When the fifth man stood with us we went out through the airlock. The shock of ab-

solute cold was stinging, though we had turned on the chemical warmers of the suits. Henniger leaped down, waist deep in air snow, and after him McGilvary, the mate; and behind him Celgowski, the Russian, peered distrustfully at the fluffy stuff which floated upward like ash when Henniger and McGilvary moved ahead.

"Let me by," I radioed, but he shook his head and leaped.

We kept moving to prevent our feet from freezing to our boots. Nobody needed a map to see where crosses would be planted if we got half a mile from the ship. In less than an hour we turned back. Pitch-blende in practical quantities seemed farther away than earth itself.

Henniger wasn't whipped — not Henniger. His first order was to the ship's doctor, a pale, quiet little man by the name of Meadows, who started treatment on feet and ears. The next sent the mechanics to assemble one of the snow tractors and fuel it up.

Early next morning the freight locks were opened to allow the tractor to go sliding and sputtering down the loading chute, but its power died after a few gasps. It couldn't suck in the frozen air to the carburetors, so we dragged it back with a loading crane.

Three more days we waited. Henniger and the engineers invented a gadget that would warm air snow and pass it to the carburetor, and when the tractor was lowered again, it kept going.

That device inspired us. We began to believe the chief something of a superman whose knowledge of scientific law might yet turn disaster into success.

The tractor coughed and rumbled five miles into an unknown world with four of us huddled within its enclosed cab. Henniger was there, of course, and McGilvary, the Russian, and myself. I went to record data that might be useful to any who should explore after us.

Five miles out the tractor gave up. Every time the clutch went in the engine quit, so we piled out into bitter frost. The rubber of our gauntlets froze hard as shale, and even the synthetic stuff of our suits crackled and

threatened to break at every movement. There wasn't a chance to explore farther, nor even to get the tractor back. Frost welded its gears fast to the track, and that was that.

Henniger swore sharply at the Russ who was stumbling, ready to fall asleep.

"Where're your guts, Russ," he bawled. "Want I should baby you in my arms?"

The Russian blinked, tried to grin, and stumbled ahead. I got it next for looking back at the stalled tractor, already white as the pipes in an ice plant.

Yard by yard we back-trailed, Henniger covering our rear, glaring at any of us who turned or lagged. Fortunately the tractor had opened a lane through the air-snow, and of course where there was no fluid air, there was no wind to blow it back into the track again.

We walked freely, considering the fact that our feet were dead under our legs. The five miles were like fifty, while the worried little sun rushed down the sky.

WE FINALLY got in by the light of the bands. The Russ was done in—one of his legs had to come off. McGilvary lost a toe. Henniger's fingers peeled and peeled until the last day I saw him. If he had other injuries, no one guessed it, for he came out of the ship's hospital swearing roundly at every man who got in his way, and demanding another try, come morning.

But men of Earth are created with pulses and blood that must run free. Saturn was still and dead, jealous of warmth, hostile to anything on wheels, on foot, or in the air, which moved with fluid power.

It wasn't in Henniger to give up, but he did have to change methods. The second tractor stalled less than a mile out, and there she sat tightly welded to her tracks. This time, another crew tried to bring her in—and they fared worse than those who went out to explore.

Henniger didn't roar any more after that. But it was worse when he was quiet and sour. The ship too was quiet,

with men grimly turning faces toward a wall so that their eyes could run tears and their mouths make grimaces without openly shaming them. Pain is one thing for a man to suffer, while an empty sleeve, or a vacant trouser-leg is quite something else.

"We're too far north," Henniger said to McGilvary that night. "Nearer the equator it may be warmer. There might even be a spot of surface warmed by radium, or by low altitude."

So we went up again for a better landing.

There is braking velocity of twenty-two miles per second on Saturn. A ship running slower doesn't escape the grip of gravity. So Henniger ordered the retractable wings extended, for twenty-two miles per second is much too fast to see what is below the ship.

The equator hadn't enough warmth to help much at exploring for radium. Air wasn't frozen, but water was, and the snow was bitter dry, and very deep.

Henniger smoked his pipe and circled around and around to get off the plateau. A great gorge opened under us. The Grand Canyon of the Colorado would have looked like a culvert ditch beside it. Henniger swung his binoculars upon it, then pushed them over for me to take a look.

A thread of silver sparkled where the shadowy lower slopes came together. Those shadows promised forests, but I couldn't see the use of going down. We were after ore. Not one of us had come a billion miles to look at scenery.

I shifted the focus of the glasses to scan the abrupt walls above the slopes. They seemed to be sandstone, shale, lime, but no granite. Sandstone especially seemed to be represented in variety of hues and patterns, and there were stratas of limestone, white as the cliffs of Dover.

So what? I thought. Pitch-blende was what we came for, and it wouldn't be in sedimentary formation.

Henniger's eyes were on the radiometer when I returned the glasses. Its needle was quivering excitedly. But that had happened before. Somewhere, probably covered by snow, or alluvial fill never to be uncovered, was rich,

high grade ore of U-235.

"Avast!" Henniger bawled. "Tighten her down and bottom the gulch!"

An hour later we crunched to a landing beside a ripply, earthy river, with the great bulk of the *Space-Marine* dwarfed by overtowering sandstone of a beautiful canary-yellow.

We spent the next three five-hour days cutting a way up the wall. The open air, new air, rich air never breathed by lungs, was invigorating and sweet to our ship-stifled nostrils. We worked ambitiously, making repairs and cutting a way to scale the ledge.

LA TE one evening after the crew had turned in, Henniger came into the pilot room. I knew by the way he walked that he was about to reveal something important. When he reached my desk, he rolled a piece of canary-yellow rock onto my open notebook and switched on another light as he looked down at me.

"Carnotite," he said as I leaned to examine the piece.

"Carnotite?" I asked.

"Radium," he explained. "It comes in other forms than pitch-blende. That yellow ledge was carnotite—radium ore of secondary formation, and good enough."

His face sobered. I knew he was thinking of the real problem—getting the ore back to Earth in time.

The next morning before I pulled myself out of my bunk, there was a new bustle throughout the ship. Men were working at putting up machinery to get the stuff down and loaded. Within a few days the stuff came down in a yellow stream.

Week on week the men worked with blasting and the flow piled into great mounds beside the ship.

Henniger kept an eye against the sky for a ship no one wanted to see, while thirty men rigged up a mechanical belt with buckets that would take the yellow ore down into the hold.

Our spirits grew with the ore. Rich it was, far richer than carnotite on earth where rain and wind had worked on it time on end. It gave us the feel of victory over a mighty world.

Above us the towering walls faded into shimmering vagaries that seemed more cloud than rock, where a tiny segment of sky and banded rings sealed us in, cliff to cliff.

When the sun went down, we peered vainly through the crepe of the inner band for a pin-point of luminosity where men like ourselves waited for our return to bring law and sanity to Earth again.

"You can't imagine it," growled Henniger as he swung the pilot's binoculars for my eyes.

"Crazy," was all I could think of in reply. Earth so alone, so frightfully engulfed. Men there on that blob of light, fighting on a spinning spar.

I sat toying with the bit of carnotite Henniger had first brought in to me, and nostalgia turned me fit to cry. I flung down the nugget and shook off the mood before it shamed me.

Before I could speak, Henniger clapped his fingers across my mouth. Through the half open door a vacuo message came from the pilot room. A distress call. Distress on Saturn. The enemy of course.

The *Johann* was down, and losing air. Down in vacuum and air-frost. Thirty degrees, forty-five minutes, ten seconds west; ten, four, twenty-three north.

I scowled, though a delicious thought hit me hard. The *Johann* was down! The dirty gangsters who were out to do us in were down. Nothing now stood to threaten those pyramids of yellow ore.

They were down, and we would win! Atomic power would, in three years, be the weapon of the democracies. Power as superior to gasoline, as TNT was to the battering ram.

"Poor devils," I muttered hypocritically, with my blood singing the joys of victory.

Henniger's great hand did not slap his muscular thigh as I expected. He listened. His hairless eyelids squinted, and when the signal was done, he cursed Saturn vilely. He strode to the chart room and banged the door wide. He went to the pilot room to study the log of our own course, correlating positions.

He was a long time over the charts,

but at last he turned to the vacuuo instrument and began rapping out a message that startled me.

"No!" I exploded.

"Boy," he said, "there's a quirk in human nature that won't be denied. It makes us doctor a man to hang him."

"But they'll find our carnotite!"

"And it'll do 'em no good."

"They'll get word back. They're low—they're shrewd. Best let them die. We'll have to shoot them some day anyhow."

He laid a hand on my shoulder. He seemed at that moment far more human than I had thought him ever to be.

"This isn't Earth," he said. "Those fellows breathe. They're alive, and blood runs warm in their veins. They're our sort, and they're out of air."

"Saturn is the common enemy now, and Earth-men are all comrades against it." He gave me a gentle push. "Go out there and flag in the powder crew from the ledge."

I went out to wig-wag the blast-gang down, wondering what kind of a man Henniger was, rescuing men we were risking our lives to kill.

We got away quickly, leaving everything lie where it was. Air is an impatient tyrant, and panting lungs can't put up a long fight. Since the *Johann* was leaking air, we had to hustle if we went at all.

HENNIGER took it cautiously out of the gorge, but up under the wide spread of the banded rings, he opened the guns and headed northward with increasing speed. So much speed in fact, we overshot the *Johann*, and had to turn and scout back slowly.

Night came on and we went down to wait for day. None of us slept for thinking of suffocating men and whether we would find them.

We were up at first dawn. Henniger checked and rechecked the message and the chart. He said nothing except to growl the order to turn about when it became plain we had overshot them again.

"Under some ledge, or between the saddle of sharp peaks," he said when I asked why we hadn't located them.

"Back on Earth we searched four days for a transport plane, and there were twenty or more at it."

By then, we began search at night with lights, and most of us were ready to admit the lot of them were already dead. Henniger slept little, and I stayed with him most of the while.

Late the fifth day a change came over him. For an hour the ship had driven hard with no turning.

"Where to?" I asked.

He glared sullenly. My ears burned and I turned to my typewriter.

The sun stayed hard on our tail and night came again. We weren't searching, that was sure. He had given up, and was going back to the gorge. That puzzled me. I had never known Henniger to give up anything, once he set his mind to it.

When we banked around to coast down the length of the gorge, I discovered the answer. A ship came zooming up from between the canyon walls with the sun on her hull so that she looked like a silver fish against black water. Up she leaped, spouting fire from cannon as well as her exhausts.

Henniger bellowed orders, and the heavy firing of our guns broke all the light bulbs above the panels. The *Johann* answered hotly. A great banging of compartment sealers, the long, shrill whine of escaping air, and then a drunken weaving, told me we were badly hit.

Still the *Johann* looped for another blast at us; so close, I made out her markings; so swift, she was out of range of the tracer bullets our gunners laid after her. Hit and drunken as was our ship, the turret guns threw a shell under the raider's nose and she belched a smoke-screen as one of her own shells came bursting close enough to raise a din against our plates.

The smoke-screen fell back like a loose rag. Smoke-screens were invented for planets with atmosphere. Our gunners got a forward shot at the *Johann*, but she was away into the black star-studded sky.

The *Space-Marine* was badly wounded. Henniger needed all his skill and experience to put her down to the canyon floor. He heeled her

over when she dove for a cliff, nosed her up until she stood on her tail. Then he worked her upright again, and finally got her down only by pancaking the river bed.

"The ore!" I bawled. Of course they had decoyed us to gobble it up while we were away.

Henniger came out of the control room with a gash in his scalp. Blood closed one eye. He bawled me out for staring, and demanded if I knew how bad a job we had done by dropping our shells in a vital spot.

He called the gunners. Asked them if there was one of them able to hit the wall that towered both sides of the ship. He was unjust, and they knew it. He had suspected the *Johann* was in the gorge and he had said nothing.

Henniger wasn't the man to be unjust long. He didn't apologize. He just dropped an unpleasant incident as though it were past and irreparable.

WELDERS began repairing the hull, ripping out damaged plates and riveting new ones. The blast men shot down another avalanche of ore. Every man was pressed into some emergency work, clearing debris or setting up a new conveyer to bring in the ore.

Had Henniger been less stubborn, not a man who scowled under the flay of his oaths but would have worked out his heart in sympathy for him. Maybe that was why he kept himself so sternly reserved. He didn't want any of us to soften. He wanted us to be hard, and as unyielding as himself.

"Bad beezness," wailed Tony the Mexican as he served dinner.

"Dirty doublecrossing brutes," I roared with an oath.

"We can do no-things," Tony moaned, his soft eyes sadly pitying the chief.

"The devil we can't," Henniger growled viciously.

"Why kid 'em. They know better," I said, as Tony slid out the door toward the galley.

Henniger scowled. He didn't seem to understand me. Perhaps, I thought, he is really kidding himself. After a moment he said quite tolerantly:

"Don't try to depress me, son. God himself hates ingrates. Those thieves were made to whip, and you, and I, and the crew are going to do it."

"What with?" I asked, practically. But he chose to ignore the remark.

Night and day we worked. Under pale *Mimas* flowed the ore. Behind the glare of torches was the banging of hammers, the rattle of conveyer buckets, the shouting of men.

My fingers wore through the ends of my gloves. Blisters welled on my palms. We obeyed like power-driven machines. We made no complaint, though I am sure every man looked on the attempt as utterly hopeless.

The rich heaps of ore we had piled so high were rushing back in the hold of the *Johann*. The tables had been bitterly turned against us. It was the enemy now who had power to make the weapons of the democracies obsolete. While we broke down new ore on far off *Saturn*, they hurried to the landing fields of earth to blast away all that we had risked our lives to save.

Should all the breaks come our way now, what chance had we to climb into the void to overtake a craft which had four miles per second edge on our speed? Long before we passed the orbit of *Mars*, or possibly even *Jupiter*, the dictators would be supreme! Yet Henniger drove us relentlessly.

"It's plain bull-headed," I spat one morning as he commanded that I leave my typewriter to shovel down ore. My fingers were already so torn, every key that was struck brought a smear of blood. "You haven't the guts to admit you're sunk."

He turned on his heel, and I resumed my work.

That night after coffee, he stopped beside me.

"Son, you're wrong," he said. "The test for us is carrying on. It's the test of big men everywhere—going on to get something ordinary fellows give up."

"Not on *Saturn*," I opposed.

"No law says so," he persisted.

"Only a dozen or more: Time, manpower, outclassed speed."

"We can't quit," he insisted.

So that was that; and it was up to

me to shovel the ore.

Outside the ship I stopped to scowl at Mizart's comet which was nightly lifting higher into the heavens as it hurried in from Neptune for a dip around the sun. It seemed an omen of ill luck, that we might have regarded before that vacuuo call from the enemy.

GRUDGINGLY, I picked up a shovel, scowled at the wispy budding tail below the wide bellying bridge of moving rings. An airless sky, the rings of a long exploded moon spanning the horizon, nine variable moons, and a sun no larger than the lens of my flash-light, were weird enough in the heavens without bringing up a comet to arouse age-old superstitions.

We loaded the stuff all that night and the ore gang muttered suspiciously at the ghost in the sky as they lifted their shovels.

We thought we had an overdose of trouble then, but worse was to come. When Henniger tested the decarbonizers for the take-off, he found that shell splinters had pierced the chemical tanks so that the fluid had drained away.

There was no way to replace the lost fluid, and there was no way to clear the air without it. Sealed in the ship without decarbonizers, the haemoglobin in a man's blood would be carbon-drunk within a week.

Long before the ship could reach Jupiter, it would become a helpless satellite of the monster planet's gravitation, to drift with its cargo, a tenth dead moon.

"Going on gets you something ordinary fellows give up," Henniger insisted grimly. "When the air fouls we'll get into space suits. There's a chance for the big planet, anyway."

He was that bull-headed, I took a man-lift for the office to keep from telling him what I thought.

After a while he came up, took a long squint at the view-plates as though trying to see how far we really were from the little ball of matter we called home. He might have been thinking of men who would die bravely because we had failed to get

back first with the stuff in the hold. Or of liberties done for, which had been won by death and sacrifice generations past.

Yet what chance was there to do anything about it? The sensible thing was to give up and make ourselves comfortable in the canyon. Maybe he was praying. I don't know. One thing was plain, he hadn't an idea of quitting. His jaws were so tight, the muscles of his neck were corded. I felt an ache in my own neck just looking at him.

If there was justice he'd get a break, I thought. Justice? What did justice know about chemicals in a leaking vat?

He turned away from the view plates, set the controls for warning lights and siren. In spite of the shiver of horror in my spine, I admired him. That was the signal to clear, to take off!

I glanced past him at the air-gauge needle. It showed nineteen—heavier than at Earth sea-level, but such a little bit of help.

Up we went into the frost of the high plateau, to skim low across the bleak frozen surface that gave no quarter to any living thing. Night came quickly as we drove eastward. Mizart's comet trailed us like the threat of plague, and nine drunken moons tapered in splendor to Phoebe, no more than a distant moving star.

The bridge of wheeling rubble overhead turned ashy as sunlight faded from the spinning rocks. Under us there was frozen air. Air a man could shovel, but not breathe.

"Going on gets you something ordinary fellows give up," Henniger growled and jabbed a big forefinger at the air-snow. He was braking down, bringing the *Space-Marine* to a landing.

I gaped, slowly understanding what he proposed. Here was the answer to the immediate problem, an answer so simple only Henniger had thought of it.

EARLY next day, elevator buckets were bringing in air-snow to a crudely constructed compressor, which turned it into cakes as dense

as steel. These were stored in an almost empty hold against the time they would be brought up to evaporate.

Every available room filled with air-ice, we took off again, inspired by the trick. The chief's ingenuity had turned one handicap to his advantage. We had air. We could even make a try for Earth.

Yet for all that, no one really believed we would arrive in time to do the democracies any good. The *Johann* was more than six months out with thirty MPS to our twenty-five.

Henniger drove on stubbornly. The

He had logged the probable course of the *Johann* as well as the *Space-Marine*.

"Our luck still runs." I put my finger along the course of the comet. "We're not only behind—we'll have to detour. The comet's crossing our course, and if it hits us, we're done for."

"How do you know?" he demanded as though he had no idea of swinging out.

"We'd be crushed by the nucleus if not by the coma. The tail is harmless, sure, but what if we hit cen-

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Space-Marine took up the monotonous spinning that gives artificial gravity to an isolated little world of machinery and steel. Stars streaked past the floor windows like ribbons of fire whirled at the end of a lighted stick.

At our prow, the midget sun seemed to move not at all. Astern, Saturn slowly deflated like an overblown toy.

"The Jerries are beyond Jupiter," Henniger said one night, or morning, or afternoon, whatever one might call it where the sun runs in short half-minute circles around the nose of a ship that is hung in space.

He had a chart spread across his desk.

ter?"

"We'll tackle that problem when we get to it."

"Of all the bull-heads," I said strictly to myself. Henniger had inherited ideas of honor. He'd die for those ideas, expose his crew too, if he thought that necessary to his duty to his commission.

"Mira!" Tony was beside us pointing at the viewplate. He had come in so quietly we did not hear him.

He was pointing at the comet. Its wispy tail veiled the ringed planet we had quitted, a tenuous misty sweep of gauze that hid neither Saturn nor the cold, white stars far back in the light years of space.

The ship itself was caught in the

hydro-carbon gases of that tail. Far ahead had Tony pointed to the white, mucky funnel of the coma, clouding the eye of the sun.

"Better swing out," I cautioned.

Henniger moved not a lever. Indignantly I turned to my notes, praying now for less speed in the ship. If the comet passed ahead with the ship merely caught by its tail, there was nothing to fear.

The million mile cone was harmless. The eighty thousand mile coma didn't look so reassuring. Whatever it was, it was certainly solid enough to shut out the sun. And that was not the end of it.

Henniger was putting the *Space-Marine* along a course that threatened to contact the fifteen hundred mile nucleus at the head of the comet. He seemed determined to pace its course, like a reckless driver racing a train to the crossing and Heaven only knew what the nucleus contained.

SUDDENLY my heart came plopping into my throat. Henniger was shouting for full speed ahead!

"Don't be a fool!" I bawled.

"Don't aim to," he answered cryptically. His eyes roved about the dials. His voice broke the silence now and then, sharply commanding. Then he hitched back in his chair.

"When I was a kid," he said less harshly, "I missed the train home and was near heartbroken until I hitch-hiked with a stunt flyer. Got in way ahead of the train.

"Been figuring that comet," he went on after that had soaked in. "It will cut earth's orbit way ahead of the Jerries."

"It'll crash us, any speed we can make," I protested. "Mizart makes one hundred MPS. That would be an impact of seventy-five miles per second! A hundred times faster than the shells hit us!"

He frowned, then he grinned.

"Son, you're wrong. Remember Kepler's second law?"

Did I remember it? I hardly needed to close my eyes to see a diagram Dean Colfran chalked on the blackboard. I could almost hear the

dean's words:

"A comet moves so an imaginary line from it to the sun will sweep over equal areas in equal intervals of time."

On the blackboard were dotted radii reaching past the orbit of Jupiter to mark a short arc to subtend the chord of the long triangle, and a wide arc to touch the path of the comet near the sun, and the dean would tap it with his wooden pointer and conclude:

"So a comet moves more rapidly when near the sun than when far away."

Mizart then wasn't traveling near 100 MPS as yet. Near the sun it would, but not yet.

"My hunch is," Henniger broke into my reminiscence, "a comet's nothing more solid than air and water, lost, maybe, from planets with little gravitation. Probably a storm of the stuff atop the water-ice of Saturn. Any of you fellows with cold feet can drop off. The *Space-Marine* and I are going to hitch-hike that baby!"

One had to admire his nerve. He drove twenty hours before hitting anything. Then came the wind raising our speed until the velocity needle locked at the limit of its dial.

Fifteen days we ran with the wind, faster and faster, with the shriek of it fit to strip the buttes off a planet. Then came hail rattling fine and dry, with the stones getting big, then bigger as they burst with the sound of shrapnel upon the metal hull.

Then, when it seemed our seams must surely rip we slid into a funnel of dead silence. There we drifted in a tomb of sudden stillness until caught again in the vortex of wind and hail.

That was only the coma, though one wondered how much worse a nucleus could be. Henniger was wondering too, for he refused to quit the board even for an hour's rest. Nor was he idle when the hail caught us again. This time he set to work to pull away.

With tail and head blasts he tried to worm out, and suddenly, like a plum seed pressed between thumb and finger, we cleared. The storm roared on. It dropped us like a freight car

loosed from the funnel of a tornado.

Dead silence hurt our ears. The whole great void seemed a cavern of dusky, endless inertia. But the needle was still locked against the metal of the velocimeter. Henniger calculated we were doing more miles per second than any space-ship to be built for a century to come.

So we hung, suspended in stillness, rushing forward at incredible speed, yet to every sense hung motionless between a far off zenith and nadir of enclosing stars.

We took up the humdrum existence of space life again, with only one incident to excite us. I was half asleep at my desk. The comet had quit us weeks past by the ship's chronometer. Vaguely came a whistle of surprise, of elation.

Opening my eyes I blinked at Henniger. The radio-metric needle was behaving queerly. I glanced into the viewplate, then pressed binoculars to my eyes. Far back was the *Johann*. We had already passed it. The carnotite in its hold had shaken the needle, and then she was back, far back, so great was our velocity.

It was good to find her there in our wake, falling behind with the breadth of a world between us.

IT HAS been forty years since I began this log of the *Space-Marine*. It had taken those years and a great deal of schooling to learn better use of U-235 than blowing to bits the accumulations of human progress.

Part of the process was the quick and overpowering destruction laid upon our enemy when the yellow carnotite began to flow into the atom smashers. Most of it came later when the science of human relations slowly caught step with the more easily mastered science, Invention.

Today the good ship *Johann Kepler* runs regularly from Saturn with cargoes of carnotite to benefit all the races of Earth, a service befitting the ideals of the great discoverer whose name it bears; while the *Space-Marine*, with my stubborn chief, is loading for far out Pluto where he hopes to live just one more year, he says with defiance in his eyes. A year out there is only a hundred and sixty-four of ours.



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THE BIRTH OF GRAG

The Astonishing Facts in the Experiments of Roger Newton and Simon Wright Which Brought a Thinking Robot into Being!

THE tall red-haired man who stood in the center of the moon-laboratory stood back for a moment and surveyed the robot's body. In the laboratory itself, the humming of atomic motors could be heard, supplying light and heat, purifying the air, making the rockbound retreat livable.

But looking out through the plastex windows, he could see the barren airless landscape of Earth's satellite, covered with dark and gloomy shadows that offered almost perfect hiding places for the dangerous metal-eating moon-wolves. There, all was cold, silent, almost as empty of life and as dangerous as space itself.

Soon there would be five of them on the Moon, but at the moment there were only four—Roger Newton, the red-haired man himself; his wife, his infant son, Curtis; and Simon Wright, a grizzled old scientist who had been Roger's friend for years.

Simon was ailing, and already could see death approaching, but he had as yet no suspicion of the strange fate that would eventually be his—to live as a Brain without a body, to exist, and yet to be free of almost all human cares.

Now he was still human, with the thoughts and emotions of a man.

He was the most brilliant scientist that Earth had produced in generations, and at

the moment the most excited one. For today was to see the climax of years of careful work.

A Metal Body is Built

Roger Newton moved toward a speaking tube.

"Well, Simon," he said, "it's time for our robot to be born."

A moment later Simon entered the laboratory. The huge room was full of strange instruments and novel forms of apparatus, most of them constructed by Roger and Simon themselves, implements unknown anywhere else on the solar planets or their satellites.

But none was more wonderful than the metal body of the robot, and the matchless mechanism of hydrophilic colloid metal that was to be his brain.

The body lay upon a sturdy table, a suggestion of latent power in the motionless limbs that had been constructed so carefully of specially treated steel. No other robot possessed a body like it, but none the less it had taken the scientists little enough time to fabricate.

It was the making of the brain that had delayed the birth of Grag. The plans for it had first been drawn up ten years before by Simon. It had taken a long time for them to come to fruition, but now the task was done, with hundreds of thousands of brain paths carefully traced in the finely divided metal, each path so tiny and delicate as to be invisible, and yet possessed of sufficient strength to control the motions of the mighty monster that would soon come to life.

The brain had been placed in a temporary case of strong steel. Now Simon, with more caution than if he had been handling a new born babe, lifted it out and inserted it into the cavity prepared for it within the robot's head.

Here it would be protected by the

MEET THE FUTUREMEN!

In this department, which is a regular feature of CAPTAIN FUTURE, we acquaint you further with the companions of CAPTAIN FUTURE whom you have met in our complete book-length novel. Here you are told the off-the-record stories of their lives and anecdotes plucked from their careers. Follow this department closely, for it contains many interesting and fascinating facts to supplement those you read in our featured novels.

strongest metal yet known—magnasteel, beside which ordinary steel had the strength of wet paper. There was one more task to do, the connecting of numerous brain endings with the metal spinal cord.

Connecting the Brain

Simon's skilled hands worked quickly, while Roger Newton handled the bank of electrical instruments that sent a pulsing current through the newly made joints.

It was necessary to fuse each joint thoroughly and at the same time avoid overheating. In a half hour Simon was finished, and stepped back to examine his handiwork.

The robot was ready. Simon and Roger exchanged glances, and Roger pushed a switch toward his elderly colleague.

"You bring him to life, Simon," he said. "He's really your baby."

He could see the veins throbbing in Simon's temple as the elderly scientist's hand moved toward the switch. Emotion was a thing that had for years seemed utterly alien to Simon's nature, but now a feeling of excitement, almost of fear, seemed to pervade his every fiber.

What if somewhere he had made a tiny mistake, if the robot did not come to life, or if he came to life, and failed to possess the qualities for which Simon had toiled so painfully? Simon's fingers pressed down on the tiny knob of plastic.

The robot's photo-electric eyes suddenly glowed with light.

"Stand up," ordered Simon, and Grag arose as readily as if he had been following orders for years.

"I obey, Master," he said in a deep mechanical voice.

There was a gleam of triumph in Simon's eyes. Years of effort had been crowned with success. The robot was alive, and acting exactly as he should act.

Peril in the Lucenite Pit

It required several days before he and Roger realized that something was wrong. Neither scientist could put his finger on the thing that aroused his uneasiness, but they both felt it. Grag obeyed orders well—perhaps even too well. But it seemed absurd to find a reason for complaint in that.

Then there came the day when Roger Newton discovered the rare mineral in one of the moon craters. Simon, working in the laboratory, heard his excited voice through the audiophone the two scientists always wore when one or both of them worked afieid from the main home.

"Come quickly, Simon, I've discovered a large deposit of lucenite!"

Pausing only to slip on a space helmet and to bark a curt order to Grag to follow, Simon hastened out of the laboratory. He found Roger gazing in triumph at a deposit of pinkish-gray mineral that spread over a patch of several square yards.

Within the patch, Roger had been digging, and although he was now a dozen feet beneath the surface, the end of the lucenite

was not yet in sight.

"Here it is, Simon, enough to supply us for years! Now we'll no longer have to import rare metals from Earth!"

Simon's eyes showed his pleasure. "It'll save us valuable time," he said. And then he looked around quickly. A slight noise, transmitted through the ground, had reached his ears.

A pack of moon-wolves was approaching. The giant, long-fanged beasts, their grayish metallic bodies gleaming, had scented food. They preferred to eat metal, but in case of need would devour anything living that came their way. And neither Roger nor Simon had remembered to bring weapons.

Simon's lips tightened. "You run for it, Roger," he said. "I'll try to hold them off."

Roger shook his head as he hefted the pick he had been working with.

Simon persisted, "You've got your wife to live for—and Curt. I'm an old man. I'm going soon, anyhow."

"We'll run together—if Grag can hold them off," decided Newton.

Grag's First Trial

Together they stared at the giant robot, who was regarding the approaching and snarling beasts with great interest. "We've made him strong enough," admitted Simon. "If only he has enough intelligence—"

Roger spoke directly to the robot. "Grag, we are returning to the laboratory. Do not let the moon-wolves follow us. Do you understand?"

"Yes, Master," boomed Grag. "I shall obey."

They watched Grag move slowly toward the approaching monsters. Then, without further delay, they turned and ran.

They were not followed. Evidently Grag was not finding it as difficult as they had feared to fight off the moon-wolves. Simon dashed into the moon-laboratory and immediately made for the cupboard where several atom-guns were stored.

They were weapons of especially large caliber, and projected beams that would drill through a moon-wolf as easily as an ordinary beam would drill through a man. They had been constructed especially for that purpose.

Each holding a pair of the guns, Simon and Roger retraced their steps. As they came within sight of the snarling beasts, Roger stared in bewilderment.

"Where is he?"

Grag was nowhere to be seen. Nevertheless, the beasts had remained in the same spot where the men had left them, and were quarreling over something that lay on the ground.

"It's Grag's brain-case," suddenly cried Simon hoarsely. "The magnasteel has resisted their teeth! But they've eaten the rest of him!"

He plunged toward the animals with a shout of rage, both guns blasting. A pair of moon-wolves fell, but another trio came leaping toward him. One howled soundlessly while still in the air, then fell motionless as an atom-ray blasted him. The

others came on.

Roger fired quickly, and the leading beast fell just as his teeth closed over Simon's leg. The other moon-wolf hesitated, turned to run, and snarled one last time in defiance at the deadly beam which penetrated his body.

Of the entire pack, only one of the creatures succeeded in gaining the nearby shadows safely.

The Mystery of Grag's Defeat

Simon's leg was torn and bleeding, but he evidently felt no pain. He picked up Grag's brain-case, his own face white. As they were to discover later, Grag's brain was functioning inside it as well as ever. But of Grag's enormously powerful body there was not a trace. The beasts, in their lust for metal, had devoured it all.

"He didn't put up a struggle!" exclaimed Roger in amazement.

"He just let them eat his body." Simon's face was working with emotion. "Roger, I've made a terrible mistake. This robot is worthless. I may as well throw this brain away and start all over again . . . except that I won't live long enough to complete another one."

"All you need do is make a slight change," suggested Roger.

"It'll require more than that. I made the mistake, Roger, of distrusting our robot, and therefore made him too obedient. It's impossible to go over each of those brain-paths again, and alter that. He'll be like this as long as he lives."

Roger was silent. Then he spoke as if to himself. "All we need do is supply him with a few reflexes that will take the place of an instinct of self-preservation. If we succeed in that, he'll continue to obey us just as he's done—and he'll resist the will of any one else."

Simon scowled. "It isn't so easy to supply only the reflexes we want, and nothing else."

"You are forgetting the lucenite," replied Roger.

There was a startled look on Simon's face. "The lucenite! Of course! We can immerse the brain in a suitable solution, subject it to lucenite radiations, and only those ions will penetrate that are sufficiently hydrophilic! And then, if we send a few telepathic currents through the solution—"

"It won't take long."

"A matter of weeks. To work," said Simon grimly. "My time is short."

The New Grag

Rebuilding Grag's body took just as long a time as making the alterations in his brain. Then, once more Simon pressed the life-giving switch, once more the inanimate metal became a living robot. Observing Grag casually, the two scientists could detect no change in him. Had the treatment of his brain produced any effect?

It was a day later that they had the answer. Simon barked out an order, received no reply, and looked around. Grag had

disappeared. He was not in the moon-laboratory, and no one had seen him go.

"He is different," observed Simon. "In his previous existence he never went away without receiving a specific order to do so."

"I wonder where he is," said Roger.

"Someplace where those moon-wolves can get at him, I suppose. Did he take an atom-gun along?"

All the atom-guns were still in the laboratory. Simon and Roger exchanged gloomy glances. If the same thing happened this time that had happened before, they would know that the robot was not worth saving.

The hours passed slowly, and within the laboratory there grew a feeling of tenseness and of irritation. Grag had not only left without receiving orders to leave, but he had done worse than that. By omitting to perform the tasks that the two scientists had counted on his performing, he had disarranged the laboratory's work.

It was more than six hours before Grag returned. When he came, he was dragging the dead bodies of half a dozen moon-wolves behind him.

"Where have you been?" asked Simon coldly.

"Out killing these beasts," boomed Grag. "I heard you talking, Master, and I realized they were pests. So I figured I'd go hunting and get rid of a bunch of them. Just to make things safer around here."

Roger smiled. Grag might be a trifle difficult to control in the future, but there was no doubt about his intelligence.

"Did it take you all this time to kill a half dozen?" asked Simon.

"I killed about fifty," growled the robot. "I just didn't want to take the trouble to bring them all back. First it was easy, because they scented me, and came running. After a time, when the others saw what happened to the first batch, I had to go look for them."

"How did you find them in the shadows?" demanded Roger.

"That was easy, Master," boasted Grag. "They're telepathic, and I could sense the mind-currents coming from them."

Grag Learns to Boast

Roger nodded. The moon-wolves were slightly telepathic, and Grag, as a result of his own brain being subjected to telepathic currents, was more sensitive to their presence than a human being would have been.

"You're sure you killed about fifty?" asked Simon, his manner still cold.

"Well, maybe it was only thirty," admitted Grag, unabashed. "But I could have killed a hundred, a thousand. It was easy, Master. I didn't need an atom-gun, I just pulled them apart."

He flexed his metallic muscles, while the two scientists stared.

"You don't realize, Master, just how strong I am. Why, there was never anybody like me. I'll show you what I can do—"

"Don't bother," interrupted Simon, smiling in spite of himself.

"Whatever you say, Master. But it was a cinch, pulling them apart. I can tear apart anything that exists. I can take a space ship, and throw it off the Moon. Why, with my atomic motors—"

"Get into the laboratory," commanded Simon. "Prepare that colloid solution for the android we're creating."

"Yes, Master," said Grag humbly, and obeyed.

Roger laughed. But Simon scowled. "He's going to be insufferable."

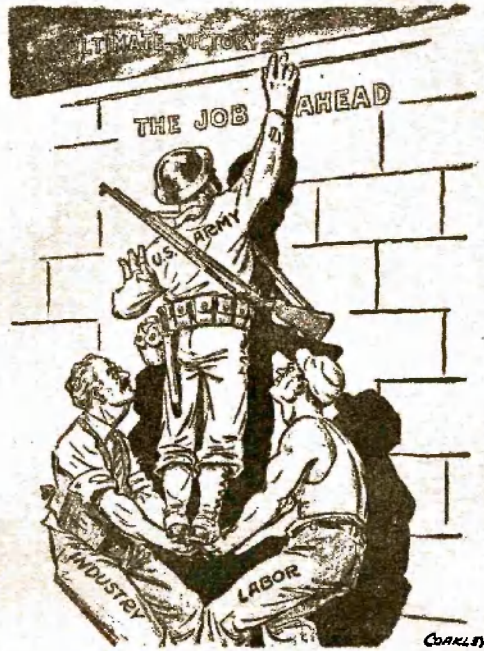
"At first. But he'll straighten out.

After all, he's only a couple of days old," reminded Roger Newton. "I think we're going to enjoy Grag."

"I hope you're right, Because if you're not—" But the implied threat was never carried out. As Roger had predicted, Grag did improve. But never again did he display the touching confidence in others that he had shown in his first incarnation.

He was always to remain slightly vain, selfish, proud of his strength, eager to show it off—in a word, he was always to remain more human. He would get along.

Labor's Stake in Victory



A
Message
from

PAUL V. McNUTT

Chairman of the War
Manpower Commission

TOTAL war is not merely a matter of armies. Total war is a struggle in which every worker, yes, every man-hour of a worker's energy, must be put to its best and most efficient use, if victory is to be gained.

Skilled mechanics, skilled machinists, railroad men, draftsmen, engineers, chemists, physicists, doctors—these are the measure of America's total strength.

Note the emphasis I have put on skill. It is not just all America's workers. It is all America's workers in terms of their mastery of jobs.

The home front must be well-manned. The right man, on the right job, at the right time, must be the first maxim of our industrial strategy.

An hour gained speeds victory. It saves lives. An hour lost means empty cartridge belts. It means ships lost for lack of planes. It means bloody hillsides that must be rewon because we lost them once.

The teamwork and solidarity and discipline of organized labor has shown us the strength of democracy. That kind of teamwork and solidarity and discipline is needed by the whole nation today.

We know that we can count on labor. For it is labor that has the greatest stake in victory.

As if by common consent, both Tinneys headed back into the mysterious booth



Better Than One

By HENRY KUTTNER

The Last Thing in the World That Bruce Wanted to Be Was a Wrestler—but That Was Before He Got Tangled in His Uncle's Fourth Dimensional Machine!

BRUCE TINNEY was smearing marmalade on toast when Uncle Wilbur screamed. It wasn't an agonized scream. It was, rather, a shout of triumph, a paean of unrestrained delight. There was a faint crackle, and the toaster at Tinney's elbow ceased to glow red.

Crockett, the butler, cook, and general handyman, continued to pour coffee, no trace of expression on his large pallid face. Nothing could dis-

turb Crockett, of course. He had worked for Uncle Wilbur much too long for that.

Bruce Tinney, a well-built young man with a pleasantly ugly face and mild blue eyes, sighed. "He's done it again," he remarked, rather thickly because of the toast-and-marmalade.

"Sir?"

"Uncle. You know. What's he been working on this time?"

"Mr. Van Dill does not confide in

me, sir. I cannot say."

Tinney munched toast. "Seems to me he said something about a fourth-dimensional gadget. Lord knows! Wonder how long he'll be gone this time?"

"I fear I cannot say," Crockett said frigidly, as the door opened to admit Wilbur Van Dill, a small gnome of a man with a wrinkled brown walnut face and fluffy gray hair.

Uncle Wilbur was carrying an empty bottle and wore an expression of blind fury.

"Crockett!" he said.

"Yes, sir?"

"Is this all the brandy there is in the house?"

"Yes, sir," said Crockett, and Uncle Wilbur assumed a look of diabolical triumph.

"Then I shall go out," he announced. "Bruce, take charge of things while I'm gone. Never thought I'd be finished with that blasted machine. Ha!"

Tinney swallowed toast and rose hastily. "Uncle Wilbur!" he objected. "At your age——"

"All the more reason for relaxation," Van Dill said. "Don't argue with me, you young pup. If you had a quarter of my brains, you'd have a right to talk. Stands to reason," he went on in a faint mutter, glaring at the empty bottle. "Great scientist. Use my mind a lot. Concentration. Got to relax. Now shut up and don't bother me. I'll be back."

"But——" said Tinney.

"And don't touch anything in my laboratory!" Van Dill flung back over his shoulder as he departed. "You butter-fingered oaf!"

He left with a slam, and Tinney choked on his toast, while he brooded on Uncle Wilbur's idiosyncrasies. True, the man was a great scientist. His filament for electric bulbs was a marvel, and a condenser he had invented brought in a small fortune.

But Uncle Wilbur was certainly not a model of propriety, and it was to that that Tinney objected. Being a rather mouselike young man himself, it seemed to him shocking that Uncle Wilbur should relax, after every successful experiment, by a round of the

local barrooms, drinking vast quantities of alcohol.

BEING his uncle's secretary was no sinecure, Tinney thought unhappily. And now this new device—what was it? Something to do with the fourth dimension. Uncle Wilbur had explained it once, rather vaguely, but Tinney had scarcely listened. He did not at all understand the first principles of the machine.

Crockett appeared, with a full bottle. "I had forgotten this," he said. "Has Mr. Van Dill left?"

At Tinney's nod he sighed and put the bottle into a sideboard. Then he stood ominously waiting till the young man, cringing under the butler's cold glance, hastily gulped down the rest of his coffee and crumpled his napkin.

"Er—better fix the lighting system," Tinney said, rising. "I think Uncle Wilbur blew a fuse."

"Yes, sir. Immediately."

Tinney wandered off, feeling low. At the door of his uncle's laboratory he paused. Better see that everything was in place there. Once a fire had started, ignored by the erratic Van Dill. Tinney opened the door and looked in.

Fair enough. All was as usual, except for an oddly-shaped contrivance in the center of the floor. It looked rather like an oversized telephone booth, with walls on only two sides. On its floor lay Uncle Wilbur's hat.

Since one of Tinney's passions was neatness, he immediately hurried forward after the hat. As he entered the booth and bent over a curious clicking sounded. Simultaneously a red light bathed him.

Crockett had replaced the fuse, and the machine had been turned on!

Tinney felt a wrenching jar, fell forward, and clutched wildly at a set of complicated controls on one wall. Dials spun under his hands. Briefly he had the extraordinary sensation of being in two places at once. There were *two* Bruce Tinneys!

They merged. A grinding whirr came from the device. The two Tinneys spun apart again, reeling out of

the booth. For a horrified moment each of them regarded the other.

Yes—there were two. Perfect duplicates.

The red glow still bathed the machine. As if by common consent, both Tinneys dived back into the booth, clutching at the controls. Fingers fumbled. Return the dials to their original positions—that was right.

The clicking sounded again. The Tinneys drew together, feeling an indescribable sensation of merging. And, gasping, Bruce Tinney—no longer twins—leaped hastily away from the infernal device.

That *had* been close! It was always safer to stay away from Uncle Wilbur's inventions. But, luckily, there was no harm done.

Gulping, Tinney lifted his hands to brush back his disheveled hair. That was a mistake. For a moment he had the odd impression that someone was in back of him, reaching around as though to cover Tinney's eyes and say "Guess who?"

With justifiable irritation, the young man swung around. He was alone. Puzzled, he glanced down at his hands.

He had *four* hands. . . . *Yipe! He had four arms!*

TINNEY remained perfectly motionless, staring. The upper set of arms were his usual ones. The others sprouted from his armpits, and there were rents in the thin silk of his pajama jacket where they had burst through. He must look rather like an Oriental goddess, he thought wildly.

Four arms!

Tinney staggered to a chair and sat down, not pleased. He looked at the booth. That had done it, of course. Uncle Wilbur—blast Uncle Wilbur!

Apparently one of the attributes of a fourth-dimensional gadget was to split people into half—create twins. Duplication of atomic structure or something. The operation could be reversed, but not by an unskilled hand. Tinney licked his lips.

He stood up and moved slowly toward the device. Then he paused.

Suppose he made another mistake? This time it might be fatal. Two Bruce Tinneys had been squeezed into one, plus a set of additional arms. One Bruce Tinney might be squeezed into half a man!

No—better not to meddle. How could you turn the machine off? It was difficult to say. The red light still glared down, and a faint humming hung in the air. Tinney sat down again and considered.

Uncle Wilbur was the answer. He was the one to remedy this—this embarrassing development. Two additional arms! Good Lord! Tinney shut his eyes.

"Crockett!" he called, and hesitated, feeling a natural dislike of showing his sudden deformity to the butler. But already Crockett's footsteps sounded in the hall. Acting on impulse, Tinney put his lower set of arms behind his back, thus concealing them fairly well.

"Sir?"

"Uh—do you have an idea where Uncle Wilbur went?"

"No, sir. I do not."

Some dive, probably, Tinney thought bitterly. Some low haunt of toppers. Why the devil couldn't Uncle Wilbur act like a normal human being? It wasn't fair for him to run off and leave his nephew in this condition. Not for the first time, Tinney had an impulse to tell his uncle to go to the devil.

But of course he couldn't. He was penniless. Uncle Wilbur supported him. Tinney sighed. If he could only raise a thousand—enough to buy that stationery store on 72nd Street. He could be very happy there, in his quiet way, not continually having his life upset by such things as this.

And Van Dill might not return for days!

"Thanks, Crockett," Tinney said, and the butler went out.

What now? Obviously, he couldn't go looking for Uncle Wilbur in this condition!

And yet—why not? An overcoat would easily conceal the extra pair of arms. Things weren't as bad as they had seemed. Tinney actually gave a little relieved sigh as he rose. A

shower, now—

He had some difficulty shaving, but found it fantastically easy to scrub his back. He took his time. Better let Uncle Wilbur get tight enough to be hazy and good-tempered, else he might refuse to accompany his nephew back to the laboratory.

SINCE Tinney rose late, it was nearly two o'clock before he descended the stairs, dressed and ready, his supernumerary arms dangling, hidden by the topcoat he wore. The weather was blazingly hot, but—oh, well.

Crockett, he saw, was engaged in an altercation at the door. A burly man with the face of a belligerent ape snarled remarks.

"I'm sorry, sir. Mr. Van Dill is not at home."

"Yeah? Who's that coming downstairs, then? Lemme by!" And the burly man brushed Crockett aside.

Tinney hastily dived through the nearest door, finding himself in the laboratory. The guest followed him. He had a broken nose, cauliflower ears, and tiny eyes set in little pits of gristle.

Now he looked disappointed. "You ain't Van Dill," he growled. Then he brightened. "A relative, maybe? Huh?"

"I—uh—I'm Mr. Van Dill's nephew. Can I help you?" Tinney asked, feeling slightly uneasy.

"Yeah," said the newcomer. "I'm Twister Haggerty. I'm the guy your uncle kicked in the pants an hour ago." He moved forward, fists clenched.

"Oh," said Tinney, hastily retreating. "That was my uncle. Not me. You're a little mixed up, aren't you?"

"Not a bit," said Twister Haggerty. "Grandpa ran out of the bar before I could stand up, but I found out who he was. So I come to his place to push his teeth in. If he ain't home, I'll wait. Meantime, I don't like Grandpa or any of his relatives. So I'm gonna push your teeth in while I'm waiting."

"New look," Tinney gulped. "You don't seem to understand. I didn't do anything to you."

"But I'm gonna do something to

you," Haggerty said happily, continuing his slow advance. "To your face. Yeah."

"Crockett!" Tinney called.

No answer. The butler, of course, was well out of harm's way. Tinney stepped backward slowly.

"I warn you—" he began, but did not finish. Twister Haggerty grinned. He looked like a ravenous gargoyle.

"And me billed for a fight tonight. My manager says I gotta keep from worrying. Well, I'll be worried stiff till I take a poke at Grandpa. He ain't here, but you'll do."

"No," said Tinney hopelessly, and just then Haggerty lurched forward.

Tinney squeaked, staggered back, and felt his heel catch on something. As he twisted to keep his balance, the burly man was upon him. Automatically Tinney flung his arms around Haggerty's body. All four arms. The topcoat burst open, and the extra pair shot out like tentacles of an octopus.

"Hey!" Haggerty yelped, and said no more.

For the two men, swaying off-balance, had toppled into Uncle Wilbur's fourth-dimensional machine.

TINNEY felt again that brief vertigo, and the crawling sense of compression. With an effort he hurled himself out of the booth, and braced himself to meet Haggerty's attack.

But Haggerty was nowhere in evidence.

"Say," the man's voice whispered, in Tinney's ear. "Say, I feel funny. What—"

Something was pressing against Tinney's right cheek. His collar, he discovered, was torn. Where was Haggerty?

Turning slowly, Tinney came to rest facing a large mirror set in the wall. He stayed motionless.

It wasn't the sight of his face that gave him pause. That was familiar enough. Nor, indeed, was it the fact that he was wearing Haggerty's clothes. That wasn't the worst, by any means.

The body reflected in the glass had two heads. One belonged to Tinney. One was Haggerty's. Both sprouted

from the shoulders, cheek to cheek, in an insanely Siamese-twin fashion.

Haggerty's unshaved jowl rubbed Tinney's jaw. The ape-faced man opened his mouth and his eyes. They got wider and wider.

Then Haggerty turned his head. So did Tinney. As the two faces collided, nose to nose, Haggerty gave a coughing grunt and passed out. His eyes rolled up. His head fell forward and lay limply on Tinney's chest.

As for Tinney himself—he didn't quite faint. But he felt a warning giddiness overcome him. As a result, he did something he had never before contemplated. Gasping, he fled into the sun-parlor, jerked open the sideboard, and dragged out the bottle Crockett had placed there. Then he uncorked it and fell into a chair.

The brandy gurgled hotly down his throat, bringing tears to his eyes. But it probably saved his sanity.

"Good lord," Tinney said, shutting his eyes and swigging away. "It hasn't happened. I mustn't think about it. I—how much of this stuff should I drink? Uncle Wilbur drinks lots of it. I'll need a couple of bottles, I guess."

Tinney, of course, had never tasted liquor before, except a glass of port in his infancy for the colic.

Being healthy, he absorbed the alcohol without immediate nausea, and by the time the bottle was half empty, he felt well enough to open his eyes. Haggerty's head lay on his bosom.

Tinney moved unsteadily to a couch, pressed his companion's head backward, and covered it with a cushion. If the—creature suffocated, that was all to the good. But of course he couldn't. The two heads had only one pair of lungs, and Tinney was keeping them well supplied.

He drank more brandy and looked down. Why was he wearing Haggerty's clothes? He investigated. He was, in fact, wearing Haggerty's body.

That awful fourth-dimensional machine! It was set for compression, and it was doing its job in a fantastically complete way. Or, rather, an incomplete way. Was he two men or one, Tinney wondered?

A STRAY thought had struck Tinney: Two heads were better than one. He laughed. He had thought of a use for Uncle Wilbur's machine. If a cat had kittens, instead of drowning them, you could put them in the booth and turn the power on. The result would be *one* kitten.

"Reduce excess population," Tinney said thickly, and fumbled the bottle, dropping it. It broke.

He had, however, made another discovery. He still had four arms. Four arms and two heads. And Haggerty's body. Tinney decided he wanted more brandy. He'd have to find Uncle Wilbur.

At this moment, Crockett appeared, looking down his nose. Since Haggerty's face was covered by a cushion, the butler saw nothing amiss immediately.

"Has the gentleman left, sir?" he inquired.

"Gen'lman? Yesh—yes," Tinney amended.

"You have dropped a bottle, sir," Crockett remarked, and ice seemed to hang on his words.

Stung, Tinney looked up. He was reminded that he didn't like the butler.

"True," he said. "I d-dropped a bottle. I have four arms, too."

"I fear you have been drinking——"

Crockett didn't finish. He turned slightly gray. It was all too obvious that, despite Tinney's potations, the drunken young man was speaking the horrid truth. He *had* four arms, and all four of them were extended toward Crockett, the fingers scabbling greedily in the air.

"Guh——" said Crockett.

"And an extra head. Friend of mine. *Close* friend," Tinney explained, seizing Haggerty by the hair and pulling his face to view. "Seems to be asleep now, but that's all right. Say hello to the gentleman, Crockett." He rose and stalked forward.

The butler made no remark. He was quite green now. The drunken Tinney felt happy.

"Shake hands," he commanded. "Meet my new hands. Both of them. That's right." He gripped Crockett's palms, and with his other pair of

hands, suddenly seized the butler by the throat.

That finished Crockett. He tore himself free and fled, screaming. Tinney laughed and turned to the door.

"Gotta find Uncle Wilbur. And get 'nother bottle. Wait a minute! Can't go out *this* way. People'd talk. Mustn't let 'em see I've got four arms."

Following this incomplete chain of reasoning, he located another topcoat, donned it, and concealed his extra arms. At the door he was reminded of Haggerty's head. It was still unconscious, possibly overcome by the alcohol that Tinney had absorbed.

TINNEY made adjustments with his coat. But that wouldn't work. The bulge was too suspicious. And the coat kept slipping off. Seeing a package on the hall table, Tinney had an idea. He went back to the kitchen, found a sheet of wrapping paper, and wrapped up Haggerty's head completely, sealing it shut with gummed tape.

The man wouldn't suffocate, of course. And, by this method, it would seem merely as though Tinney was carrying a heavy parcel on his shoulder. To foster the illusion, he placed one hand atop it as if to keep it in place.

Now he looked reasonably human. He could venture forth. And he did, hailing a taxi and going down-town. There was a well-filled wallet in Haggerty's pocket, and Tinney had no compunction about using it. When a man needed a drink, he needed it. Liquor was pretty good, at that. Why hadn't anyone told him these things?

As a matter of fact, if Tinney hadn't been drunk, he might have gone mad. But he was definitely tipsy, and, too, he knew that Uncle Wilbur was a scientific wizard. What had Van Dill said yesterday? The words came back vaguely:

"Organisms naturally tend to unity. . . . My machine can duplicate the atomic pattern, but the thing has to be handled carefully. I might get two and a half rabbits, or three rabbits and an ear—and when I reversed the machine, I might get a rabbit and sev-

eral extra ears. They'd probably be on the rabbit, though—physiological unity—"

Whatever that meant. Tinney yelled at the taxi-driver as he caught sight of a bar. It was the Green Stocking, and his uncle had occasionally spoken of it. It catered to the sporting element, of which Uncle Wilbur was a confirmed member. A good portion of his time was spent on the telephone, laying bets with an unknown person named Joe.

BRUCE TINNEY went into the bar and ordered a bottle of brandy. The bartender, a large man with a suspicious face, stared.

"Gonna drink it here?" he demanded.

"Sure. Maybe more. Who knows?" Tinney made an expansive gesture, and his topcoat fluttered as his extra arms sought for freedom.

"Yeah. Well. Here you are. Say!" The bartender leaned forward confidentially. "What you got under that coat? A chicken?"

"Chicken?" Tinney poured brandy and stared. "What do you mean?"

But the bartender's attention had been arrested by a new phenomenon. "How the devil do you keep that bundle balanced on your shoulder? Got it pinned on?"

At that point the bundle fell forward on Tinney's chest and dangled there. A faint voice said, "Rye. Straight."

"Okay." The bartender had turned away automatically, but abruptly he swung back. "Was that you?"

"No," said Tinney, just as another voice said, "Yeah."

"Now, look," the bartender said gently, placing his elbows on the bar. "I don't want no trouble, see? I work hard. I don't go for practical jokes. If you want that brandy, say so. If you want rye, okay. But—"

"Oh Gawd," howled that all-too-familiar voice. "I'm blind! Blind as a bat! Help!"

THE bundle on Tinney's chest bounced up and shook itself vigorously. The bartender hastily retreated and armed himself with a

bung-starter.

"A ventriloquist, huh?" he inquired. "I—*yaah!*"

It was at this point that Tinney's extra pair of arms burst out of hiding. There was a flailing windmill of arms. Hands tore at the brown paper covering Haggerty's head. The man's face emerged, crimson and glaring.

"What's the idea putting a paper bag over my head?" he demanded. His voice was somewhat thick, since he was quite as drunk as Tinney.

The only other occupant of the bar, a thin man in a corner, rose quietly and shambled forward. He tapped Tinney on the shoulder.

"I beg your pardon," he said, "but you seem to have two heads."

"Lord, yes," said the bartender hoarsely. "Look at 'em!"

"You see them, too?" the thin man asked, and his jaw dropped. "I—I thought I was drunk. Oh-h!" He slid to the floor in a dead faint.

"Rye!" Haggerty yelped.

"Yeah," said the bartender. "Rye. Here it is."

He put a bottle and a glass on the mahogany and began to tiptoe away. He was muttering softly to himself. He was, it seemed, going upstairs and lie down. He hadn't touched a drop for years. Maybe it was the smell of the liquor that was getting him. He was going away.

He went away, leaving the two-headed Tinney alone, save for the unconscious figure on the floor.

The two heads turned to face each other, and then, as if by common consent, four hands shot out and seized the bottles. Tinney tilted the brandy bottle, Haggerty took the rye. There was no sound but a faint gurgling.

It went on.

"Funny," Haggerty said finally. "I keep thinking I've got two heads."

"It's not funny at all," Tinney said moodily. "It's my uncle's fault. The guy that kicked you in the pants. Remember?"

"I don't get it. If I wasn't drunk, I'd faint." Haggerty looked unwell, anyhow. Tinney sighed.

"It's that fourth-dimensional machine."

"Oh. Science!" Haggerty nodded,

as if that explained everything.

"If you'll just listen a minute, I'll explain," Tinney told him.

He tried to do it, between pulls at the bottle, and finally it seemed as if Haggerty understood, albeit only hazily.

"Science. As long as it ain't black magic, okay. I ain't a sap. I'll take your word for it. Especially since you say your uncle can fix us up all right again. Only—*two heads!*"

"And four arms," Tinney pointed out unkindly.

"Well, we gotta find your uncle!"

"We can't go out on the street this way. One of us has got to have his head wrapped up again."

Haggerty considered. "Let's look behind the bar. Maybe——"

THEY found a thin cloth bag, with a drawstring, that would just do. Rather unwillingly, Haggerty consented to having it pulled over his head.

"I can see out," he announced. "Can you see me?"

"Nope. Looks like I'm carrying a bundle on my shoulder, that's all. Where'll we go?"

"Try the Peacock. Fiftieth and Seventh Avenue."

Tinney concealed his extra arms and departed, rather unsteadily. He felt somewhat better for having an ally. Now if they could only find Uncle Wilbur——

They couldn't. At five o'clock Haggerty called a halt.

"I gotta fight tonight. Let's phone your house."

"Fight? How——"

"At the Garden. I'm on the card. Wrestling Turk Zorion."

"Well, I'll phone Uncle Wilbur."

But Van Dill hadn't arrived home. Tinney groaned.

They kept looking, in vain. Eventually Haggerty paused outside a coffee shop.

"Listen," he said. "I gotta wrestle tonight. And it's almost time."

"You can't wrestle like this, man!"

"Why not?" Haggerty asked stubbornly.

"Two heads—and four arms!"

"There ain't any rules about how

many arms you got. And you can keep your head wrapped up in this bag, so nobody'll notice. I know!" A note of plaintiveness crept into Haggerty's voice. "They think I threw my last fight. My manager's down on me. If I miss this bout, I'm sunk."

"You're crazy!"

"I'm fighting tonight," Haggerty said stubbornly. "With four arms, I ought to have a swell chance. Anyhow, I'm taking it. You won't get hurt."

He kept talking. Presently he had convinced Tinney. It even seemed like a good idea. A man with four arms was practically certain to win a wrestling bout!

"Gotta sober up," Haggerty said. "Let's drink coffee. Here!" He plucked the cloth bag from his own head and affixed it over Tinney's. "Let me take over, for a while."

That was fair enough. Tinney had nearly passed out. He relapsed into slumber, waking occasionally to peer through the bag. He could see out, all right.

The coffee, in their common stomach, sobered both heads. Tinney awoke again and had an idea. He explained it to Haggerty, and they went to a phone booth.

First they tried the Van Dill house. Uncle Wilbur wasn't there. A chastened Crockett said he might be at the Garden, for the fights.

"Hadh't thought of that," Tinney said to his companion. "We might run into him there."

"I hope we do," Haggerty muttered. "The dirty——"

"Sh-h! I'm trying to remember that number."

HE REMEMBERED it at last—the number of the man named Joe with whom Uncle Wilbur placed his bets. He dialed.

"Joe?"

"Yeah. Who's this?"

"Bruce Tinney."

"Oh, Mr. Van Dill's nephew. Sure. What's up?"

"I want to place a bet on the fight tonight. On Twister Haggerty. Can—er—can you do that?"

"Twister — t h a t stumble - bum!

Who's it for? Your uncle?"

"No. For me. I've inside information."

"Maybe," Joe said skeptically. "But I'll be glad to oblige. How much? Odds are about eight to one."

"Two hundred dollars," Tinney said, gulping.

He had just that much in the bank, painfully saved, by dint of much scrimping. Some day he had hoped to have enough to buy that stationery store. Now he was risking it on a gamble.

No, it wasn't a gamble. Haggerty had assured him of that.

"Okay. Two hundred. On Twister."

"Right," said Tinney, and hung up.

Then he relapsed completely. From now on, everything was up to Haggerty.

There was a confusion of bright lights, a sweaty dressing-room, a number of frantic questions, and Haggerty's responses. He wouldn't let anyone in but his manager. And he refused to explain to that worthy how he had happened to acquire an extra set of arms, and what was in that bag on his shoulder.

"Just let it lay. It's legal, ain't it?"

"Sure, but——"

Then came the moment when Haggerty clambered over the ropes. Tinney awoke and peered through the bag. A gasp went up from the crowd at sight of the wrestler's unusual physique. Typewriters began to hammer busily.

"Fake? Must be. No, they look real. Am I crazy——"

Turk Zorion entered the ring, a burly, hairy man with the face of a mad murderer. Tinney shuddered.

"Take it easy," Haggerty whispered. "Leave everything to me. With four arms, this'll be a cinch."

Just then, someone whooped in a familiar raucous voice from the front row. Tinney turned his head, peering through the cloth of the bag. It was Uncle Wilbur, a quart bottle in his lap, eating peanuts.

Sure, he'd have bought a first-row seat for the fights from some scalper. Uncle Wilbur never missed a scrap in the Garden.

But Haggerty had seen the man, too.

The wrestler made a growling sound deep in his throat. Then he rose and hurled himself over the ropes at Uncle Wilbur.

"Haggerty!" Tinney yelled. "For Heaven's sake!"

It was too late. Haggerty was doing his best to strangle Van Dill. The scientist's face went purple. Frantically Tinney struggled to get control of his hands. They were completely Haggerty's hands now.

Uncle Wilbur lifted the bottle and smashed it down on the wrestler's head.

Haggerty's eyes glazed. His head fell forward. He was knocked out—cold!

THERE was confusion. Tinney, again in command of his body, managed to struggle to his feet. People were all around him, asking questions.

"What's the idea? You hurt?" Haggerty's manager was plunging forward.

The wrestler's head hung forward on his chest, eyes closed. Tinney's own head, of course, was still hidden by the cloth bag. He could see through it—and what he saw wasn't comforting.

Instinctively he dived back into the ring and found his stool. "Haggerty!" he whispered frantically. "Wake up! Wake up, man!" He slapped the wrestler's cheeks with all four hands. To the onlookers, it seemed as though Haggerty was sitting with his head down, beating his face in an endeavor to clear his brain.

Uncle Wilbur had resumed his seat, apparently unhurt. Tinney gulped. The full horror of his position came home to him.

He felt panicky. This wasn't real. He, Bruce Tinney, couldn't be sitting here in trunks, with two heads and four arms, across from Turk Zorion—

The Garden was in an uproar. Tinney thought of his two hundred dollars and cursed Haggerty. "Wake up!" he gasped.

No answer.

What now? Retreat, obviously. But that would mean the loss of the two

hundred dollars, and all Tinney's hopes for the future. Haggerty might revive at any time. If Tinney could only stall the Turk until then—

It might be done. After all, he had four arms!

Yes, he'd go through with it. Until Haggerty awoke and took over, and unless Bruce was murdered in the meantime.

There were some consolations. Tinney had Haggerty's muscular wrestler's body. And the four arms. So—

It started. There was no trouble at first, except for the look of blank amazement on the Turk's face, and the cries that went up from the audience.

Haggerty fought with his face down. People wondered how he could see what he was doing. His head lolled forward drunkenly. Also, how could that white linen bag stay in place on his shoulder? And those four arms!

The Turk got over his puzzlement and closed. He picked Tinney up and attempted a flying mare. But never before had he wrestled a man with four arms. It was like trying to throw an octopus.

Tinney gradually climbed down the Turk's body, in a spidery fashion.

The Turk was so astounded that he fell easy victim to Tinney. Tinney was thrown, but his four arms enabled him to somersault, so his opponent missed him entirely. Before the Turk could rise, he was seized, twisted over on his back, and four hands were pressing him down vigorously. The referee slapped Tinney's back.

One fall. The Turk foamed unpleasantly. Tinney retreated and hissed, "Haggerty! Wake up!"

Then the Turk was on him again. This time Tinney was flung down bodily, but he managed to roll away. As he rose, the Turk came flying at him feet first, and a pile-driver hit Tinney in the middle. He collapsed.

The Turk leaped upon him and pressed his shoulders down. The referee was slightly puzzled. It was difficult to know where Tinney's shoulders were.

However, Turk Zorion got the fall. Tinney rose groggily. Sweat stung

his nostrils. "Haggerty!" he gasped.

STILL no response. Haggerty's head lolled forward. The sight was unorthodox in the extreme—a wrestler who fled around the ring, looking apparently at his feet, with a white bag on his shoulder, and Turk Zorion pursuing him.

Boos went up.

It was getting difficult to see through the linen bag. Tinney ran headlong into the Turk. Before he could break free, he was slammed down, and his opponent had sprung on his chest. The referee ran forward.

Tinney acted on impulse. All four of his hands shot forward. He got his palms under the Turk's chin, overlapping, and shoved with all his strength. The Turk was dislodged.

As the man went over backward, Tinney sprang after him. He swarmed all over the other. Arms and legs tangled in a mad mêlée.

Perhaps the sight of Haggerty's obviously unconscious face, hanging droopily above him, unnerved the Turk. At any rate, his nerve broke completely, and he went all to pieces, screaming hysterically, and making scarcely any resistance when Tinney slammed his shoulders against the canvas.

"Take him off!" the wretched Turk shrieked. "He's a devil! He's a zombie! Help!"

Tinney felt his back slapped. He stood up, wavering, and made his way to his corner.

An uproar of shouts was booming up from all over the Garden. Hats sailed into the air. Never before had such an extraordinary battle been

staged in the ring.

"Uh—" said a familiar voice. "What happened? Who hit me?"

Haggerty lifted his head. "Oh, I get it. I'll take over now, kid. Just relax. I'll finish the Turk before he's out of his corner."

Tinney gritted his teeth, fighting back fury. Hastily he whispered to Haggerty what had happened.

"Huh? Oh, well, what d'ya know! Thanks!"

He arose, strode to the center of the canvas, and shook hands with himself. Four hands.

Newspapermen and spectators were converging on the ring. Tinney whispered to Haggerty as he caught sight of Uncle Wilbur making his way to one of the aisles.

"Yeah? Okay. I get the idea."

"Sure you understand? Get him into a taxi, take him home, and make him reverse the fourth-dimensional machine. Once that's done, we'll be two people again. Uncle Wilbur can do it all right—if he's willing."

"He'll be willing," Haggerty promised grimly, and strode forward, pushing through the crowd. "Lemme by, there!" His voice was raised to a bull's bellow. "Lemme past! I gotta see a guy."

Tinney, safe in the linen bag, relaxed happily. All was well. Van Dill would restore him and Haggerty to their rightful forms. Better than that, he had won the fight. Two hundred dollars, at eight to one—certainly enough to buy that stationery store and settle down.

All was well.

Tinney grinned. The old saying was right. Two heads were better than one!



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THE WORLDS OF TOMORROW

THE TWIN PLANETS

An Odd Dual Planetary System Revolves About One of the Most Amazing Stars in the Sagittarian Group!

IT WAS not until men succeeded in penetrating beyond the boundaries of the Solar System that they encountered planetary configurations different from those with which they had long been familiar. One of the most striking of these is the dumbbell combination of Davor and Lagon, twin planets that circle with one tiny moon together about a star in Sagittarius.

Strictly speaking, neither planet is a satellite of the other—or, from another point of view, each is a satellite of the other. Separated by a mere one hundred thousand miles—the distance varies periodically—the planets are approximately equal in mass.

Lagon, with a diameter of 5,000 miles, has a volume almost twice that of Davor, whose diameter is a trifle under 4,000 miles. But the average density of the former is 2.12, that of the latter 4.05. The two planets contain approximately equal quantities of matter.

Sagittarian scientists have puzzled their heads in vain to discover a plausible reason for this strange equality. One of the many suggestions—vigorously discounted by the majority of those qualified to judge—is that the planets were constructed artificially by colonies sent out from Deneb.

The one striking bit of evidence in favor of this theory is the presence of exhausted bismuth mines on Lagon, which has been airless and uninhabited ever since Davor was colonized.

Korb Ind's Theory

However, most astronomers favor a mathematical theory propounded by Korb Ind, which assumes a single large planet to start with, and presupposes certain internal forces which led to the concentration of mass about two nuclei, followed by separation of the latter.

According to Korb Ind, the process greatly resembled that which takes place during cell-division. Korb Ind's theory has been called derisively the "live planet theory," and most astronomers admit that the facts must undergo a considerable amount of stretching before they fit into its framework.

Among the many unexpected differences between the two planets, it may be mentioned that whereas Lagon has no atmosphere whatever, Davor is surrounded by a thick blanket of air rich in oxygen, nitrogen, helium, water vapor, and carbon dioxide.

Lagon is accordingly free of aerobic life. Silicon creatures have reportedly been observed on it, but the observation has been unconfirmed by reliable scientists.

Fauna and Flora

Davor, on the other hand, is a paradise for the most varied sorts of life forms—one of them, it may be remarked, indigenous. For it is a noteworthy fact that this planet was absolutely devoid of life until human-type colonists arrived, bringing with them a carefully selected assortment of flora and fauna chosen from several different planets in the Sagittarian system.

The animals have thrived as well as they did in their native habitats, the intermediate life forms have done even better, and the plants, spreading with amazing rapidity, once threatened to overwhelm the planet's entire surface in a mass of tangled vegetation. It is only the presence of human beings that keeps them under control.

The cause for the terrific rate of plant growth has been traced to the presence in the soil of compounds of certain carbon isotopes, which stimulate the formation of hormone-like substances within the plant cells.

Because of the sparsity of metallic deposits suitable for smelting, the inhabitants of Davor have cannily made use of its plant life to furnish themselves with the most varied implements, as well as with habitations.

Natural Plastics

Making use of hormones extracted from the soil, the Davorians inject them into either the trunk or the branches of the different plants. The result is an enormously accelerated growth of the plant in certain directions. Different branches fuse together to form a single broad sheet of woody material.

It is possible to cause this fusing at different levels, and thus to produce plant buildings of many stories, although tall one-story buildings are most common.

Because of the peculiar nature of its plant architecture there are, properly speaking, no cities on Davor. The whole planet, with the exception of a few areas, is covered with plant buildings, and although there are certain neighborhoods which are more populated than others, they hardly deserve to be called cities.

Actually there is no need for urban life, as most of the industry familiar to the inhabitants of the Solar System is unknown on Davor.

The chemicals and materials obtained on Earth, for instance, by means of high pressures and temperatures, are produced to a large extent on Davor under ordinary conditions by forms of microscopic plant life.

Even plastics have been thus produced, although it is more convenient to secure them from plastogenic trees. Heavy metals

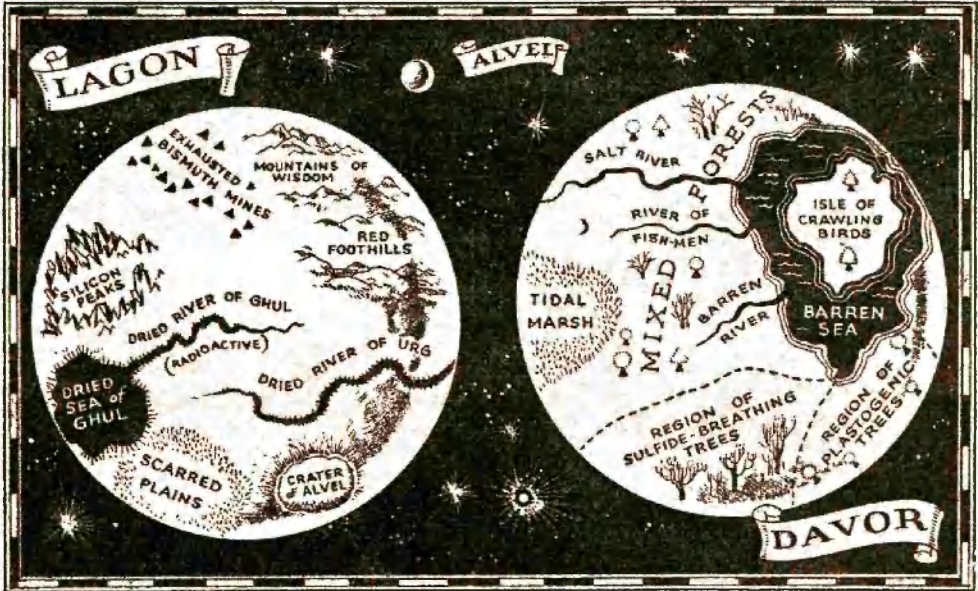
reason than that their peaks were once regarded as inaccessible. These are no more than 30,000 feet high at best, an easy climb on a low-gravity planet, even when oxygen tanks must be carried. Some distance away are the Silicon Peaks, which consist not of ordinary silicon dioxide, but of the free element itself.

Its unoxidized condition is eloquent evidence of the lack of oxygen on the planet.

This in itself is the more puzzling, as there are clear indications that the planet was once inhabited. In addition to the exhausted Bismuth mines, already mentioned, there are two low-altitude areas that have all the appearance of dried seas, and there are dried river beds leading to each.

However, no trace has ever been found of the supposed former inhabitants, and it has been suggested that the appearance of "seas" and "rivers" is coincidental.

Lagon possesses an area of Scarred Plains, several hundred miles in width, supposed to have been produced either by meteor bombardment or by a terrific space-



must of course be imported, but in general the people of Davor prefer to use substitutes, and heavy metals are infrequently seen.

Davor is regarded by the dwellers of other Sagittarian worlds as the ideal holiday planet.

The high concentration of oxygen in the air, and the low gravity, combine to give a feeling of exhilaration which can be intensified by the use of liquors extracted from different plants.

The Davorians themselves, accustomed to the attractions of their planets, are a sober race who regard visitors chiefly as a source of income.

Topography

On both Davor and Lagon, mountains are rare. Lagon has one small range, known as the Mountains of Wisdom for no other

ship barrage. The latter suggestion is usually derided as fanciful. In addition, a noteworthy feature is the Crater of Alvel, from which the satellite of the two planets undoubtedly came.

Davor has a few isolated peaks, which like the rest of the planet are covered with plants. One extensive area on Davor that remains unwooded is the so-called Barren Sea.

The name, given in the planet's early days, is now completely unjustified. The Barren Sea teems with both animal and semi-plant life, and is the scene of many combined hunting and fishing expeditions.

Legends

The Isle of Crawling Birds, located within the Barren Sea, was once a favorite vacation spot, but has been more or less deserted in late years. There have been

rumors that the Crawling Birds, apparently very low in the evolutionary scale, are in reality more highly developed than men.

However, they appear to be harmless, and the few deaths that have occurred on the island must be attributed to natural causes.

Because of the importance of plastic building materials, a large section of Davor is devoted to plastogenic trees. Nearby are the sulfide-breathers, a useful source of many complex organic compounds. Several hundred miles away is the famous Tidal Marsh, fed by the remarkable Salt River.

The liquid mud of the Marsh rises to a height of several feet in response to the gravitational pull of the companion planet.

There have been strange reports concerning the river of Fishmen, and it is unfortunate that vacationists have taken to giving it a wide berth. The Fishmen, rarely seen, and then only from a distance, have been said to be metamorphosed forms of the Crawling Birds, and are reputed to be highly ferocious, possessed of the power of killing by mental means alone.

Both these rumors, it is hardly necessary to say, are utterly fantastic. No more than a score of deaths have been reported as caused by the Fishmen, and the methods used have been purely physical.

No description of Lagon and Davor would be complete without mention of the small, almost negligible satellite they possess in common.

This is a roughly ellipsoidal mass of rock, known as Alvel, no more than a hundred miles in its greatest diameter, and devoid of any features of interest other than its remarkable orbit. It travels in a giant ellipse several millions of miles in diameter about both Davor and Lagon.

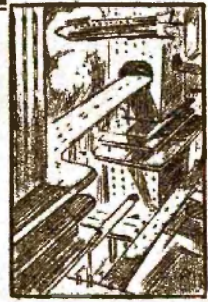
The ellipse precesses slowly, with the result that Alvel describes an exceedingly complicated path in space, of sufficient interest to be the basis of many mathematical studies, and to stimulate the creation of several new branches of abstract mathematics.

There is no foundation whatever to the rumor that space-dwelling creatures occasionally visit Alvel.



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COMING NEXT ISSUE





Muhn cried out and clapped both his hands to his eyes.

GABRIEL'S HORN

By RAY BRADBURY and HENRY HASSE

*When the World Fell into Troublesome Days, a Hero
Blew a Blast of Valor, and Evil Came Tumbling Down!*

GAB returned from the hunting in the hills with a deer slung across his back. It was a tender, wonderfully plump animal. He paused at the edge of the little wood, and peered out of the trees toward the low line of cliffs facing him. Most of the others he saw had returned.

Gab shifted the deer to an easier position on his right shoulder. On his left shoulder he adjusted the frayed silken cord from which dan-

gled the bright, brazen trumpet, his proudest possession. He touched the trumpet lightly, almost caressingly, then he strode down the grassy slope and into the Council Circle.

Almost at once his gaze sought the soft, large eyes of Llya, the golden-skinned and honey-haired one—his chosen mate. Expectantly she looked up at him, and Gab proudly deposited the deer at her feet.

The others acknowledged him with

grunts of approval as they squatted there, faces streaked with the sweat of summer and the welcome dirt of Am-Erka. They glanced at Gab's deer and noticed, without jealousy, that it was the biggest and choicest of all. It was usually thus, and this was as it should be.

ONE man stepped forth. "Did—did you use the weapon this time?" he asked, and glanced at the brass trumpet hanging at Gab's side.

"No," Gab was forced to answer, and there was a certain bitterness in his voice. "I used the knife as usual." He glanced down at the trumpet again and was filled with a curious wonderment.

Would it never work? He had told them it would work, and they were expecting it. Gab was sure this wonderful weapon would slay, and many times had he tried it, but so far without effect. Perhaps he did not yet have the proper knack.

But now Gab noticed that each man stood impatiently by his own deer, the air swam with blood odors and hungry mouths watered.

"Is everyone here?" he asked.

"Yes," came the answer.

"Did everyone catch?"

"I did not catch!" came an anger-sodden voice from the gathering. It was Muhn who glowered and spoke in his usual surly tone. He was an angry ape of a man, dark-browed and sullen-eyed, the only one in a hundred warriors who had failed.

"You did not catch?" Gab's lips curled, and his eyes flashed fire. "You mean you did not hunt! Muhn, the lazy one!"

"My foot is hurt!" Muhn growled back in his mouth. "I cannot catch. But," he gestured to the food, "there is enough for all."

"These warriors have children to feed, and mates. You will not ask them to feed your stomach!"

"You have not children!" roared Muhn, his thick brows drawn down to shadow his dark eyes. "So I will eat with you."

"You will not eat with me. But," Gab rubbed his muscled stomach with

an open hand, "when my belly bulges and when Llya, here, is contented, you may have the teeth and hooves of this deer!"

"Gab!" The cry burst from Llya's lips, but Gab did not need the warning.

Muhn charged forward, his thick face twisted in impotent rage. A club was grasped menacingly in one hairy paw. The tribe moved back with a sigh, but some of them were chuckling. This was a familiar scene, the fight between Muhn and Gab for the leadership of the Council.

Muhn's club came down in a murderous arc, but Gab twisted lithely out of the way. At the same time both hands snatched at the deer carcass. He came up quickly, and Muhn was surprised to find the heavy carcass slammed full into his ugly face.

Blood, partly the deer's and partly his own, streamed down over him. He roared, tumbled back and fell half into the smoking campfire. Then, burnt and howling and clutching crisped arms to his body, Muhn charged off into the bushes and dived to cool his wounds in the river.

The tribe howled too—with amusement. Gab was pleased. Laughter was a rare and welcome thing here. There was little time for it in these perilous days after the Great War; these days when the Invaders were still a menace.

And hardly had the laughter died away, setting up strange echoes in the hills, when Gab's keen ears caught another sound. It was a curious but familiar humming. Gab looked up, quickly scanned the sky; and over the brow of the nearest hill, out of the sunset a long, silvery shape came drifting lazily.

Gab jerked suddenly erect, pointed a finger and bellowed:

"The Invaders are here! Quick, get to your hideouts!"

Two tiny dots came hurtling down, and two explosions ripped the air apart! For an instant the tribe stood as frozen as their own laughter that hung on the evening air. Then, as before a great wind, they scattered, knowing that the next two explosions would be much nearer. It had always

been thus. Women clutched their children and ran wailing. All thoughts of hunger and the evening meal were gone.

GAB fled with Llya at his side, her long, golden hair streaming behind her, and her tiny voice crying out. Her slender body pressed against him, and then she stumbled. Gab swept her up as one would pluck a straw from the wind, and hurried on.

Bullets kissed the ground with a hungry splatter, sending up quick cloudlets behind the running men. Tongues of soil lashed high where a few light bombs hit, comfortably far behind them. Shrapnel shrieked as it sliced the breeze.

Gab was sure that these Invaders could take a quick toll of them if they desired, but they did not so desire. This was only the preliminary, intended to frighten and disperse them. Later, the real game would start. Gab had seen it happen so many times. His lips pressed tight as he thought of it.

Now Gab didn't stay with the others, but carried Llya in a new direction, up the side of Echo Mountain to the left.

"Gab! Where are we going?" Llya cried.

"To the Cave of Voices," he gasped, speeding his retreat.

"But the Gods live there, I'd rather stay here and die than go there!" She began to whimper, afraid.

"You talk like the tribe! There is nothing to fear there!"

"It is the place of death, where the souls hang upside down!"

"No time, Llya! Not now! For here we are." He had reached the cavern on the side of the hill, and unhesitatingly strode into the gloom. Llya clung to his chest. He set her down and shoved her away as he turned back to the entrance and stared below. The Invaders had just landed their ship in the narrow place between river and cliff.

"I'm afraid, Gab."

"Better to be afraid than dead!" He whirled upon her, eyes flashing. She shrank away in surprise, seeing that he was angry. She had never

seen him like this before.

"Listen, Llya!" he cried. "There is no cave as big as this. I have been deep down into its stomach. It is long and there are many side-tunnels! The Invaders would get lost in it, so we are safe here! And here I shall plan to destroy them."

"Oh, Gab, do not think of that! You will only destroy yourself!"

Gab seized her bronzed shoulders in his two powerful hands, and faced her squarely. His anger was gone but his determination was not.

"Why shouldn't I think of it? One of us must think of it, and do it—or the whole tribe will never rest again!" He led her over to the cave entrance, and pointed toward the Invaders.

"Look, they are getting out of their ship. Luckily they are only a few this time, ten or twelve—but they will not be satisfied until they have hunted down and slain four or five of us. Well, they can die too!"

Llya paled at the words.

"Gab! You must not even—"

"Why must I not? You are like the other superstitious ones! These Invaders are only men, not gods! There is some way to destroy them and I will find it! I have thought long upon the problem."

Gab fingered the knife at his waist, but it was useless. His caressing fingers touched the shiny trumpet-weapon, but so far it had been useless too; it would not even slay a deer!

They lay on their stomachs in the cave entrance and peered downward. The dozen Invaders had divided into two parties, and one party was moving slowly in their direction.

THE Invaders all wore peculiar thick-lensed glasses, sort of goggles fitting close about their eyes. Their dress was of cloth, snug and gray. Gab noticed that in their hands, as usual, they carried the long lean weapons that spat bullets at the pressure of a thumb.

These men Gab knew. These, or others like them, came many times a year to kill; for sport, presumably, and their methods and actions were weird.

"If they come too close," Gab muttered, "we will flee back into the caves where they cannot find us."

Llya began to tremble, but Gab's hand on her arm comforted her; and as they lay there and watched, Gab continued to talk:

"No one knows it, Llya, but now I will tell you. This is the cave where I found my weapon!" He fingered the trumpet. "And I did not really find it, either. It was left to me by Jahn, the Crazy One. But I do not think he was crazy, I think he just remembered too much. He was very, very old, you know.

"I attended him deep down in this cave when he died. Before that he told me things about the Invaders and about ourselves.

"He said that in time past, there was a Great War which blasted almost all of us from this life. The Invaders came across the land and water and destroyed our homes. A few of us survived, he said, to live as we do now.

"He said also there are only a few thousand of the Invaders left in the world, and that they probably dwell in a ruined place once called a—city—far off from here.

"They fought so furiously in the Last Great War and it lasted so long, that now they know nothing but to kill. And they have to wear those thick glass things over their eyes because of something called a 'blinding gas' that was used in the last stages of the war."

"But—but the weapon," Llya asked, looking down at the trumpet. "Didn't he say how to use it?"

Gab's forehead knit in a puzzled frown.

"He showed it to me just before he died. He said something about using it in time of sorrow, and it would blow all my troubles away. And he said it would be hard to learn to operate it properly, but if I practiced long every day it would suddenly come to me.

"He often used a certain word when speaking of this. I think the word was something like—musik. Do you know that word?"

Llya pondered. "Musik. . . . No, I do not know it."

"And I do not know it. I have practiced long every day, just as Jahn said I should. On some days I have bruised my lips, so hard have I tried. The weapon only speaks with a long, shrill voice, and nothing happens—except that I have frightened many deer away."

Suddenly Llya cried out: "Gab, look!" She was pointing down the slope toward the river. "There is Muhn! He has fled down the river in this direction, but now he is trapped there in the reeds! Already one of the Invaders has seen him."

This was true. Gab peered sharply to the left and saw that the half-dozen Invaders had spread out fanwise in the foothills, several hundred yards apart. They stalked silently, guns in hand, eyes sharp for the human game they hunted. The evening sun glanced off their garish glasses.

The one nearest the river was creeping swiftly toward the little clump of reeds where Muhn was crouching. Undeniably he had spotted Muhn there, but Muhn as yet was ignorant of his danger.

IN a fascinated horror the two in the cave peered down. They saw the Invader come nearer and nearer to the reeds, until he was very close. Suddenly Muhn shot up in full view. Gab expected at any moment to hear the crack of the Invader's rifle. But it did not come! The Invader did not even raise his weapon immediately! Instead he stood there, a few scant yards away from Muhn, and stared at him amusedly for ten seconds.

Muhn was in a paralysis of terror, but finally he began to advance from the weeds. The Invader saw him, that was certain, for there was an amused little smile on his lips. He took out a small notebook and glanced at it, pondering.

Gab's face was a fury of curiosity and wonder. Why did not the Invader kill Muhn when it was so easy? Why? And then the strangest thing of all happened. As Muhn crept away, cowering, expecting death at any moment, the Invader turned abruptly and walked off in the opposite direction.

This was no way to hunt, thought

Gab! To find the prey, then let him go. The Invader kept marching off, until he was fifty yards from Muhn. Muhn took to his heels recklessly, weak and stumbling.

Then the Invader whirled, took quick aim and fired. A bullet kicked a hole in the soil at Muhn's feet. Gab could see a keen smile on the Invader's face as he took aim a second time. Another shot and another miss.

Muhn was halfway up the slope now, coming toward the cave where Gab and Llya lurked. The Invader ceased smiling suddenly, and took extra-special care with his next aim. Gab knew that he would not miss this time.

He waited apparently until Muhn was limned against a patch of lucid sky. Then he let loose the bullet! And just as the trigger was depressed, Muhn collapsed with exhaustion! The bullet tore a ridge in Muhn's shoulder.

Much as Gab disliked Muhn, he nearly shouted with joy at his escape. And Gab could see the Invader's violent disapproval. He slammed the gun down impatiently and raised an arm. Something glittered on the wrist, something round and glass-like with a metal band around it. The Invader looked at the sun, then at the dial on his wrist. He was waiting for something.

Muhn climbed, moaning, to his feet and staggered on, blood streaming from his flesh wound. He looked back fearfully once. The Invader stared impatiently after him, but made no other attempt to bring him down.

Suddenly Gab thought he understood! There were certain rules to this game that the Invaders must follow! A quarry had to be always a certain distance away! And perhaps they were not allowed more than three bullets to a quarry!

These thoughts surged like the pounding sea against Gab's brain, and he leaped to his feet just as Muhn managed to reach the cave and collapse across the entrance.

"Llya, quick!" Gab dragged the unconscious Muhn back into the cool gloom. "Fix his wound, Llya, then take him far back in the cave and wait there for me. I have a plan!"

Llya looked up at him with anxious eyes, but she obeyed uncomplainingly now. Gab stood at the entrance and looked down at the Invader, who still gazed at the dial on his wrist as though waiting for something.

Occasional shots echoed from other parts of the hills, and once a far-away scream was heard that made Gab wince. That meant an Invader had succeeded somewhere else.

WHEN Llya had finally gone into the darkness of the cave with Muhn, Gab removed his knife and put it in his belt behind him, so the Invader would not see it. His precious trumpet he left reluctantly on the floor of the cave. Then drawing a deep breath, he stepped out onto the slope and started walking down toward the Invader!

Not until he was halfway there did the latter see him, then he swooped for his rifle which still lay at his feet. Instantly Gab began running toward him! The man came up with the rifle, pointed it—and then seemed to remember something. He half lowered it again, but kept his finger on the trigger.

By that time Gab was very close, and they stood facing each other. The Invader seemed stupefied with amazement, as though such a thing as this had never happened before and was not supposed to happen!

Gab was amazed too, and terribly frightened by his own boldness. However, he took advantage of this close proximity to study the Invader. The man, for now Gab was sure it was only a man like himself, was tall and well muscled, with square, grim facial features.

The lips were a hard straight slash across his unshaven face. But the eyes were what had always frightened Gab's people and almost frightened Gab now. They seemed large and bulging and grotesquely non-human behind the blue-tinted lenses.

For perhaps ten seconds they stood tensely thus, surveying each other, then with a lightning move the Invader swung the gun up again. His lips opened and three words slashed out:

"Scram, you! Scram!"

Despite himself Gab cringed from the menacing muzzle of that death dealing weapon. Those curious foreign syllables he did not understand, he had never heard them before, but he thought the man was telling him to run.

But Gab stood stock still, and he moved his head slowly in the eternal negative. He knew that so long as he stayed silent, he would be safe. It was like coming on a nest of young birds, or a fawn caught in the brambles. Even Gab had experienced the sensation.

You do not wish to kill helpless things without giving them a chance to escape—there is no sport in that. So the Invader would not shoot him down in cold blood, he would wait for Gab to escape. Then, when Gab had run a decent interval, a bullet would shatter his spine!

But now the Invader seemed surprised, and he repeated his warning urgently:

"Scram! Go on, beat it!"

Gab smiled and seated himself gently on the grassy slope, hands clasped around his knees. The Invader's lips tightened, he swung the weapon down and jabbed it significantly forward.

It almost seemed to Gab that his finger tightened on the trigger, and for a moment Gab's heart jumped sickeningly. Maybe he had been wrong in his calculations, for after all these Invaders were very cruel.

The Invader aimed keenly, squinting grotesquely along the barrel. Gab remained stolid, and even forced the smile to remain on his lips.

At last the Invader lowered the gun, squared his shoulders and grunted something in his throat. He turned and walked off.

But Gab knew about that too. He knew that the Invader would pace only so far, then whirl and shoot. So Gab arose and paced persistently after him.

This irritated the Invader no end. This was something he had never encountered before! He paused and opened his rule-book to consult it, cursing under his breath.

And this was the moment Gab awaited! The heavy rock concealed in his palm went hurtling, and Gab was an expert at that sort of thing. It struck the Invader above the left ear, and he toppled without a sound.

Gab was not satisfied with that. Fair play was all right in its place, but these Invaders had killed many of his people. In a single quick movement he was astride the man and his knife plunged accurately into the throat.

GAB clutched the man in one hand and the rifle in the other, and staggered back up toward the cave. The body was heavy but Gab did not notice that now, in his fierce exultation. He had killed one of the Invaders! He had overthrown a superstition!

Not until he was halfway back to the cave was he aware of a new danger. There came a shout from below him, and two more Invaders hove into view. Gab didn't waste time looking back, but increased his speed. He maintained his grip on the rifle and the body.

He heard two rifles crack behind him almost simultaneously. One bullet zinged overhead and the other ploughed into the ground dangerously near his feet. Heart pounding frantically, Gab stumbled on, dragging the dead weight behind him.

Again the rifles cracked and Gab felt one of the bullets clang against a metal part of the rifle he carried, nearly jarring it from his hand. Then a few more steps and he was safe within the gloomy confines of the cave.

He dropped the heavy body, and leaned panting against the stone wall—but only for a moment. He knew those others would be coming up here now. He sprang to peer out, but luckily they weren't coming yet. They stood down there jabbering excitedly to each other.

Now, thought Gab, was another opportunity. Quickly he held the rifle to his shoulder as he had seen the others do, and took clumsy aim. He pulled at the trigger but nothing happened. Perhaps that clanging bullet

nad shattered the mechanism. He didn't look to see, but flung the weapon down in an ecstasy of anger.

He glared fiercely around and saw his trumpet on the cave floor. Here at least was a weapon he knew! True, it had not worked before, but perhaps it would now. He snatched it up and faced the entrance, and saw that the two Invaders were climbing the slope toward him.

Gab raised the trumpet to his puckered lips, carefully aimed it at the advancing pair, and drew a deeper breath than he had ever drawn before. Then in a perfect frenzy of purpose he blew!

The sound went shrilling out among the hills, long and wavering. It was a more powerful blast, Gab knew, than he had ever blown. And it had an effect, although not quite the desired one. The two Invaders did not drop dead, but they stopped dead in their tracks.

Gab smiled grimly to himself, and drew another deep breath. The first blast had stopped them, perhaps the next would send them fleeing! Again he blew and again the sound went clamoring across the hills.

But the men below did not flee. In fact there was an opposite effect, for now Gab could see other Invaders running toward the sound, coming from all directions! In a few minutes the entire party of Invaders was gathered there below, looking curiously upward as the first two gesticulated excitedly, explaining something.

Gab had an awful foreboding that this was more than he had bargained for. Still, he kept his wits about him, as he whirled back to the dead Invader and explored his carcass with his eyes. The belt about its middle was full of the little leaden things he knew as bullets. These he ignored.

Hanging from the belt was another weapon, short with a shiny end, and a button on it. Gab lifted it out and pointed it carefully back into the cave, to see how it worked.

He pressed the button gingerly. A beam of light sprang out! Sunlight in a tube! He played it upon the dead body, but nothing happened, so he decided it wasn't a weapon at all,

but some strange magic.

He noticed the Invader's wrist-band, upon which was fastened an oval of glass, under which were little markings in a circle, and two dark lines of metal. He tugged at it but it wouldn't come off.

A CRISP sound of voices came up to Gab. He whirled to the cave mouth and saw the Invaders trudging determinedly up the slope toward him!

Gab had a feeling that perhaps the rules of the game didn't apply at this moment, and he retreated back into the darkness. He knew these caves so well that it didn't occur to him to use the strange, cold light in the tube which he had thrust into his belt. He did, however, remember to drag the body of the dead Invader along behind him. He felt that this body was what the others were coming for.

Well, let them come! Gab was not so sure he didn't desire it that way. Let them all come at once, and then if they would only get lost in these caves and never find their way out again. . . .

"Gab!" Llya's voice sprang out of the darkness ahead, and Gab answered. Then he felt the warmth of her in his arms. Muhn was standing there too. Gab brushed against him as they moved forward again.

"We must hurry," Gab said. "The Invaders are coming in here, all of them! We must hide deeper and yet deeper, clear down to the Chamber of Souls if necessary! I have one of their dead ones here, and they are coming after it."

"Gab!" Llya gasped. "You—you have killed one of them."

"Yes," Gab agreed, and there was both fright and a queer elation in his voice. "It is just as I told you for a long time, Llya. They are only men like ourselves."

The tunnel they followed was narrow and twisted, leading gently downward. Gab's feet were steady and swift in the darkness, for he had traversed this route before. Occasionally it widened into other caverns from which numerous tun-

nels led, but the main passage was unmistakable, and Gab followed it.

"Why do you bring him?" Muhn growled out of the darkness, referring to the body which Gab dragged so persistently behind him.

"It is a lure! They would not follow me alone into here, when there is so much better hunting in the hills. But they will follow me to recover their dead. Even we try to recover our dead."

"We will be trapped in here," Muhn grumbled deep in his throat. "We would have done better to stay outside." He seemed to have forgotten that he had fled voluntarily to the cave. "How do you expect to slay them? They are many, and they still have the strange weapons."

Gab didn't know how he expected to slay them, so he answered nothing except to say:

"We will not be trapped, I know a secret exit that even the Invaders cannot find. Jahn the Crazy One showed it to me." He stopped suddenly and said: "Listen!"

From far behind came a faint sound of voices. Peering back, Gab thought he glimpsed a pale glimmer of light.

"We must hurry!" he gasped. He no longer tried to hide the anxiety in his voice. "I hoped they might become lost and never find their way out, but I forgot they have the tubes of sunlight."

He touched the tube thrust in his belt, but decided not to use it yet. As they plunged onward through the dark tunnels, he knew that they must be very near the Chamber of Souls by now. And suddenly they stumbled out into it.

An abrupt chamber stretched a hundred feet high and as many wide, faintly luminous with certain glowing rocks. Weird formations raised gaping, greenish heads to the ceiling and gigantic stone knives cut down at them from the walls. Water dripped monotonously from the walls to form a small, unobtrusive stream across the floor.

Gab had often described this place to Llya, but now she was seeing it for the first time. She shuddered and clung to him as she peered fear-

fully at the souls that clustered on ceiling and walls like a thick blanket. Their fierce eyes glittered between folded black wings as they hung there, upside-down. Again Llya shuddered.

BUT Gab didn't pause there. He led them across the gloomy place, between two crystalline pillars that reached from floor to ceiling, and then into a wide alcove.

"This," he said, "was the dwelling place of Jahn the Crazy One. See, I buried him over there." He pointed to a long mound of rocks. "And up there is the outside world."

They gazed upward. Several hundreds of feet overhead, the cave roof opened onto a tiny patch of sky. There was the source of the light that filtered dimly into this cave.

Now Gab caught a glimpse of Muhn's glowering face again, and knew he was going to have more trouble. Muhn was clutching at his wounded shoulder which Llya had bandaged roughly. He looked around, his face distorted in anger and pain.

"It is your fault that I am hurt!" he grunted loudly.

Gab didn't try to follow this reasoning.

"Be still, you ox!" he hissed. "The Invader will hear!"

But Muhn was not quiet. He seemed to have been waiting for this moment.

"I will kill you!" he snarled. "I will kill you now and be leader of the tribe!" He glanced covetously at Llya.

"There will be no tribe if the Invader finds us!" Gab whispered hoarsely. "I will gladly fight you later, but this is no time!" He sighed, remembering the many times he had had to thrash Muhn when Muhn wouldn't listen to reason. And this was another of those times.

"You will fight me now!" Muhn growled, moving purposefully forward. "I have waited long for—"

"Stay!" Gab plucked the tube from his belt and leveled it. "Another step and I will blind you!"

Muhn came on. Gab clicked a button, and a vivid white light sprang out into Muhn's face. He cried in

surprise and fear rather than pain, and clapped both hands to his eyes as he staggered back. Gab swung the light away, it brushed the ceiling, and several of the souls detached themselves to go soaring away.

"Now!" cried Gab, a new boldness born within him. "Now you will stay and help. If you do not, I will call down the souls that hang upside down. Look!" With a fierce abandon he swept the light in a criss-cross overhead, and up and down the walls.

The result was even more than Gab expected. Dark furry wings flurried, and evil voices shrilled from hundreds of tiny throats. A few of the souls broke away with a noisy flutter of wings, which only served to dislodge more of them.

In the space of a few seconds a fierce black cascade was sweeping dangerously near, with a continuous uncanny chittering. Llya screamed. Muhn trembled like the mountain stream. Gab yelled something, and they pressed far back into their little alcove, out of danger.

FOR perhaps a full minute the black exodus continued, back along the tunnels they had just traversed. And now Gab wondered if he had not unwittingly done a good thing, for he heard startled cries from the Invaders who were following. They were being overwhelmed by the black souls!

Gab's heart leaped exultantly. But only for a moment. The huge cave of souls was suddenly empty, the rocky roof was clear and crystalline again.

Then, as Gab peered cautiously out of the alcove, there came several beams of light and a chatter of voices from the opposite side of the chamber. The Invaders, after all, had escaped the black souls and were now entering this nethermost place!

"We are not lost yet," Gab muttered, moving back. "Remember the secret exit I told you about! Here, I will show you."

At the rear of the alcove he seized upon a stone about four feet high, and with great effort rolled it aside, to reveal a dark, rocky path leading upward.

"It is steep," Gab whispered, "but it will lead to the surface high up on the hill! You two go, and I will come up later. I have yet one more thing to do!" His eyes were gleaming feverishly now, and he held his trumpet purposefully in his hands.

But Muhn did not move to leave, nor did Llya. Llya shook her head stubbornly.

"If you will stay, Gab," she said, "I will stay. I do not know what your plan is, but—"

"You must leave now, quickly!" Gab whispered fiercely again as he peered out into the huge central chamber. He saw that the Invaders had already entered, and were moving about cautiously, perhaps searching for their dead companion but at the same time admiring the huge crystalline columns.

"Quickly! In another minute they will find us here!" Gab raised the trumpet to his lips with one hand, and with the other gestured frantically for them to leave.

He should have noticed the sudden fanatic light in Muhn's eyes, but he did not. He only saw Muhn leaping suddenly toward him, and he didn't know why. Muhn reached out for the trumpet and one hand closed upon it just as Gab snatched it away. They grappled, silently, but with a fury neither had experienced in their several years of rivalry for leadership of the tribe. The struggle was brief.

Gab had one hand free, and with it he pounded at Muhn's face. Muhn took the blows. His face became a bloody mask and yet he held fast to the trumpet with one hand. With the other he felt along the floor behind him, and at last snatched up a clump of crystalline rock.

Llya cried a feeble warning, but it was too late. Muhn's free hand came up and down again, the rock crushed into Gab's skull and Gab lay limp.

Muhn leaped up with a fierce elation on his face. He held the trumpet now and he waved it wildly about his head.

"The weapon!" he cried. "Now it is I who will use it to slay the Invaders, and I will be leader of the tribe!" He peered out into the central chamber

toward the Invaders who were moving nearer.

He placed the trumpet to his lips, which were puckered in the manner he had so often seen Gab use. Then he turned back to Llya and hesitated, frowning.

"I will give you time to leave," Muhn growled, "but you must hurry."

IT SEEMED to Llya that she moved in a nightmare, as she seized Gab's limp form and dragged it into the secret exit.

It seemed that she stopped a dozen times to rest, but it couldn't have been more than a few.

She didn't know what Muhn was going to do or what Gab would have done. She had a vague notion that this time Gab's weapon was going to work, but she didn't know how or why.

Gab stirred and groaned feebly, then he staggered to his feet and placed a hand to his bruised head. Together then, helping each other, they climbed the rest of the short distance.

They stumbled out into the late evening air. They looked down the slope and saw the last line of the black souls ribboning out of the cave entrance, to go sweeping across a full moon in the dusky sky.

Not until then did Gab seem to remember fully what had happened—or what was going to happen. He jerked suddenly erect and said: "Listen!"

Almost simultaneously, there came the sound of the trumpet, faintly and then louder and louder, and still louder, blown by huge, full lungs that could only have been Muhn's! It echoed up to them, and the alter echoes stumbled over each other!

Shots were fired. Muhn's thunderous voice was added faintly, as though swearing an oath. Again the trumpet . . . but it was suddenly cut short amidst an ominous crackling, a crumbling avalanche of sound!

"Back! Get back quickly." Gab seized Llya's hand and literally dragged her behind him as he fled the spot. The hillside shook as if a giant were turning over in his sleep beneath them. Then the entire slope collapsed downward into a gigantic hol-

low, and a dangerous cliff yawned at their very feet. It was several seconds before the last roaring echo subsided.

"That's the last of the Invaders," Gab murmured, awe creeping into his voice despite himself. "And poor Muhn—I guess he is dead too."

"But you would have been dead," Llya cried, a sudden fit of trembling coming over her. "You were going to do what Muhn did!"

"I—I didn't realize it would be that bad. I remembered that Jahn, the Crazy One, used to blow upon the weapon down there, and those tall shiny rock pillars would tremble. He explained to me once that the only thing that kept them from crashing was the horde of black souls that clustered over the ceiling and walls—only he called them something else, a very short name, I have forgotten it now. They muffled the—the—something he called 'vibration.' But I still do not understand how Muhn knew what I was trying to do! I was not even sure of it myself, and I was taking a very desperate chance."

Llya's forehead was a frown of puzzlement.

"I do not think he knew," she said at last. "Perhaps he realized that your weapon was going to work this time—at least he was as sure of it as you were. For such a long time he has tried to thwart you in everything, so perhaps even in this—"

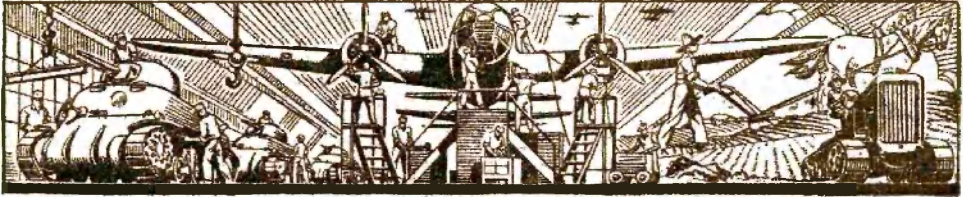
Gab took her arm and led her gently away.

"He was a hero, Llya. Whatever Muhn was in the past, he was a hero here, and we must tell the tribe of it. The Invaders are dead. Others may come, but for a while anyway we will be free."

Gab suddenly pointed below, to where the moonlight splashed upon a long, silvery shape.

"Their airship, Llya! But it is ours now, and we can study it, and we may have something to fight with at last!"

They walked silently down toward the river where the others would be gathering. The night was dark but the moon was glowing brighter, and there seemed to be more stars now than they had ever noticed before.



THE SINEWS OF VICTORY

A Tribute to America's Heroes of Production

By MAJOR GENERAL E. B. GREGORY

Quartermaster General, United States Army



Photo U. S. Army Signal Corps
MAJOR GENERAL GREGORY

THE production side of this war will be won by Americans who do the small things well, whether it is making a rivet for a tank or sewing a sleeve in an Army uniform.

The casual onlooker is too apt to think of war production just in terms of big tanks, giant bombers, long-range guns and fighting ships.

These are vitally necessary. But in this war, as in every war, the men who fight are human beings. They must have food, clothing and shelter before they can be expected to fly their planes, fire their guns or sail their ships.

Throughout America today, there are millions of workers turning out clothing and tents, growing and processing food-stuffs, building barracks, raising horses and mules—all absolute necessities to the Army, all direct contributions to ultimate victory.

When historians write down the heroes of production in this war, they will spotlight those who served faithfully in the production of necessities that keep our fighting men and equipment in operation. The heroes will be the men and women who did their duty at every place in the production line.



UNDER OBSERVATION (Continued from page 12)

along with my application for the Futuremen. It's a darn shame that I have to tear off the name strip to send in with my application as it ruins the cover. Is it okay if I send in the name strip from the contents page (which I'm doing)? It has the date.

How about making CF a monthly or bi-monthly mag (I have to read fifth-rate mags while waiting for the next issue of CF), or is Ed Hamilton too lazy to write any more CF novels? Where does he get those ideas for vibration drive, electrified Cometae and time-thruster? Does he find them at the bottom of a jug of your Xeno Juice? Speaking of Xeno Juice, your jug of it came floating down on the last flood. So I, like a (censored) fool, rescued it from a watery grave. For this brave deed I was awarded the Distinguished Bottle Savers medal, which was pinned on me by the kleptomaniac in the East Side Booby Hatch—*glug, glug, glug*—saay, what, hic, do you put in this stuff? I was just chasing a couple of purple octopusses. I think I'll send them over to take care of Tom Brackett who's been hogging all the Xeno Juice.

How about making the back issues of CF available for us Xeno guzzling fans?

They ought to put jerks like Russ Milner in the booby hatch. It's dangerous with him around. Imagine an atmosphere on the Goon, I mean Moon!

How about cutting out the short stories in an issue of CF and cram all the chapters of "The Man Who Awoke" into it instead?

Hurry up and get the next issue of CF out as I'm running out of Xeno Juice.—1232 Webster Ave., New York, N. Y.

I think, Lefty, if you'll check again you'll find that the vibration drive lets the Comet exceed the speed of light. How much? Who cares? The Futuremen don't keep a log of dull stuff or routine spacing just to fill pages. But if you're still going to act cantankerous, take a good gander at the gadget they use in this present issue to superimpose on the vibration drive. A dimension short-cutter, no less. If that doesn't answer your technicalities in a general way, you'd better start reading Einstein and let science fiction go by the board.

We are not running any Hall of Fame serial reprints in CAPTAIN FUTURE at present, because it takes too long to get the entire story to you wildcats. Instead, we are letting the Captain Future novel run longer. And about your wish to see CAPTAIN FUTURE go bi-monthly—keep digging.

THE SSFA REPORT

By George V. Fair

Dear Sarge: I have written to you before, that is, when I had occasion to write about SS and TWS. But this is the first time, I believe, that I have written to CAPTAIN FUTURE magazine.

Before I go any further let me say that this is no ordinary letter. Not by a long shot. Sometimes I write to editors of readers' departments in an official capacity and more often I do it because of personal reasons. This gem of literary writing is sent to you in an official capacity. Because I am president of the SSFA (Supporters of Science-Fiction in America) it is my duty to write in to the leading nine magazines in the sf and ff field and tell my organization's opinions, ideas, and constructive criticisms, whether they will be used accordingly or not.

The following opinions and facts are only tabulated if a majority of over sixty members agree. To the members scattered about the state and country are sent small questionnaires, then these are sent back to main headquarters, quickly tabulated, deductions and facts made, put on record, and then sent in to the magazines.

Let us take the stories first. We have noticed

that in practically every sf magazine the first issue is nearly always the best where the stories are concerned. It seems that most editors want to start out the new year with a bang. Anyway, that is what CAPTAIN FUTURE has done. "Quest Beyond the Stars" was one of the finest science-fiction stories printed in any magazine in the year 1942. We have developed a "Best Science-Fiction Stories of the Year" list that has tabulated in it the cream of the crop from all of the hundreds of stories printed in the past year. The only requirement specified is that a story must be excellent and that a minimum number of seventy members must agree that it belongs among the best of stories of the year. "Quest Beyond the Stars" is ranked as the fourth highest story on the list! First place went to one of your contemporaries which printed a four-part serial, and so did third place go to this contemporary which printed a two-part serial. So you see that serials seem to cop the top prizes. A hint, dear sir. A hint. Forty members have already requested that you put in a few serials in TWS or SS. The serials in this magazine (CAPTAIN FUTURE) are reprints and are not eligible for the list. By the way, are you muttering, "You've accounted for first, third, and fourth places, but what about second place?" Well, kid, all I've got to say is READ MY LETTER TO TWS!

Getting back to "Quest Beyond the Stars" again, tell Hamilton, will you? Writing the fourth best sf story of the year is no mean feat. "Outlaws of the Moon" was good but not enough so to make the list. "The Comet Kings" was the poorest Captain Future of the year even though it was good. It was poor if you used "Quest Beyond the Stars" as a standard of comparison. Well, he did it again. I hereby announce that Edmond Hamilton's "Planets in Peril" has copped sixth place!! What a guy. He not only writes the fourth best but the sixth as well.

We all agree that the best serial found in CAPTAIN FUTURE was that one about the giant termites. The current reprint serial, "The Alien Intelligence," was the worst one printed yet. Nevertheless, the concluding installment was very good according to the members and the grading system. Personally, though, some of us believe that this concluding part received a good grading because of the relief of the members that it was over. On the whole, though, your reprints have been very good. The best short stories were these:

"The Fruits of Prejudice," Fall issue. "Guinea Pig," Spring issue. "Secret Weapon," Fall issue.

Now for the covers. It seems that in every issue of CF, so far, someone insisted that the artists' names be kept out of the picture. We grade artists for their covers, so could you tell us who was the originator of that swell Winter cover? The Fall, Summer, and Spring? About the only serious thing that is wrong with CF is that you do not put down in the contents page the name of the artist that drew the cover. You do it in SS and TWS, so how about CAPTAIN FUTURE? There is no need for the artists to be ashamed of their work. Far from it. How about seeing what can be done about letting the readers find the name of the artist for each issue's cover on the contents page?

"The Futuremen" department is very popular and seems to be getting more popular every issue. "The World of Tomorrow" seems to be losing its appeal. "The Future of Captain Future" is very good, keep it up.

Now we get into home territory, Sarge. Now don't get burned up, but the following opinions belong to seventy-two people, to be exact. So here it comes. Kick out that space lingo. You were actually dignified in your answers to a letter or two in one of "our" mags. It was wonderfully received by the members. We want you to stick to that. Being dignified. That Xeno malarky is sickening to the majority of us and we want you to stop it. How about it?

And if you still insist on ignoring our pleas, the pleas of countless readers (not only the SSFA), why don't you try a column in only one of the magazines and stick to being dignified in it? And you could still stick to your style in the other two mags. By the way, Sarge, the Greeks have a word for it. In Greek there is a word that is pronounced like your corny and worn-out beverage. The only difference being that the last syllable in Greek is stressed. That way it is Xeno. In Greek this word means "sour"! I am hereby delegated to say, "Ain't

it the truth!" It is a statement not a question.

Sarge, believe me when I say that you can be just as funny if not more so if you leave out such sour phraseology as xeno, pee-lot, kiwi, etc., etc., etc., etc., and more etceteras.

CAPTAIN FUTURE has made an excellent record for itself this year, and we sincerely hope it will be better next year. Be writing you in '44 reporting on '42.—Science Fictionally yours, George . . . — Fair, 1029 E. Gutierrez Street, Santa Barbara, California.

Well, here we go on the merry-go-round again. George, that was really a nice and constructive letter, and the old Sarge will see what he can do about following some of your suggestions—for instance, the one about putting the artist's name on the contents page.

Getting back to the space slanguage, I was unaware that I had slopped it on by the bucketful during 1942. Such terms as kiwi (wingless bird, and taken from our air corps parlance) pee-lot (meaning a junior pilot) and such, are merely terms of address for the junior astrogators. As for Xeno—do you mean that you space monkeys want to deprive the old Sarge of his only solace and consolation?

Otherwise, maybe your points are well taken, although I try to answer each letter in like vein. Perhaps you SSFA birds had better re-read some of the old departments. There's more in them than meets the eye at first glance. Just expose the slightest crevice in your armor, and the old Sarge will gladly slip the dagger point of *double entente* between your ribs. And that's no rib.

I'll be watching out for your letter to

THRILLING WONDER STORIES when I get around to the next THE READER SPEAKS department.

HAMILTON REPEATS

By Harry Loren Sinn

Just finished "Planets in Peril." Hamilton is beginning to repeat ideas; take for instance "disembodied entities." This chapter was practically a reprint from a certain chapter in a certain previous novel the name of which I do not recall at the moment.

And a word of praise for the now concluded reprint "Alien Intelligence" by Williamson. It left me breathless. Only 3 other reprints affected me favorably and I list them in order of enjoyment.

(1) "The Man Who Evolved"—Hamilton.

(2) "The Space Visitors"—Hamilton.

(3) "The Man-Beast of Torea"—Jones.

You can see that Hamilton is my favorite author, from the above.

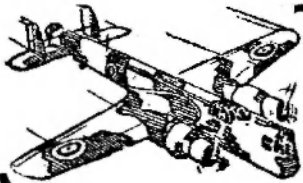
Now for a few queries, Sarge. What artist (?) does the cover? After Hamilton enters the army who will take over the Captain Future yarns? When, oh when, do we get that TWS Annual?

So! You're going to lengthen the lead novel! Evidently you've finally come to the realization that the short stories are pure hack and fill-ins.

I second Cecil Purdy's request for "Green Man of Graypeck." Also how about "Exiles of the Skies," Vaughn; "World of the Mist," Manning; and the "Robot Aliens," by Binder?—*Carnation, Et. I, Wash.*

You'll find the artist-cover question already answered, Harry; also the business of Hall of Fame reprints for the present. Don't worry about who'll do the Captain Future yarns in the future. We are introducing a new author to you with this very issue. Be sure to write in and tell us how

[Turn page]



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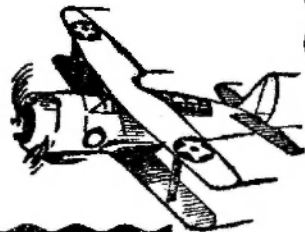
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HAMILTON IS TOPS

By Jack Addleman

I've just finished reading the Fall issue of CAPTAIN FUTURE. I liked it so much that I had to sit down immediately and write you about it. Hamilton is tops in my book.

The cover was swell except for one thing. In the story the "Tarasts" are marbly white in color, while on the cover they are green monstrosities. Who was the artist? Do I recognize Bergey?

Now to the story "Planets in Peril." First, one thing stands out clearly wrong. If ultra-violet rays were deadly to the "Cold ones" how could they attack the Tarasts world which still had a feebly burning sun without being hit by the sun's rays?

Aside from this the story was swell. The shorts were as good as shorts can be with "Secret Weapon" being first.

All the departments were very good—keep it up.—1921A Bacon St., St. Louis, Mo.

Pin your ears back, Kiwi Addleman. You're not going to coax me into an argument on ultra-violet rays. Your guess is as good as mine. Probably it was a matter of degree. You recognized Belarski, not Bergey.

Now let's get further fast because I have a lot of ethergrams to cram in here.

KP DUTY

By Ronald Young

I am sending a stamped and self-addressed envelope for my membership. This is my first letter to this or any mag. In fact, it is the first time I have ever seen this mag at my favorite bookstand. Truly I would like to see more of it if they only keep getting it in. I'm not going to say a word against it, just keep it as it is and it'll suit me fine. Well, so long, Sergeant, I've got to peel potatoes for dinner—nuts.—Hampton, Iowa, R. R. No. 1.

Thanks, Pee-lot Young. You peel potatoes while I peel the ears of a few recalcitrant junior astrologers. Maybe we're both nuts. Look! The next space yardbird agrees with me.

THREE CHEERS

By Elvin Almorrd

I have just read the Fall issue of CAPTAIN FUTURE and the cover—incredible but true—does illustrate the story. Amazing!

Pretty good novel but—ahem—aren't you going a little too far in going to another universe? think so! Stay in our own universe. You haven't had Future on Saturn or Pluto or other outer planets. Always in the inner planets rut.

Three cheers for "The Futuremen" and "The Worlds of Tomorrow." You have got something in those departments.

To sum it up, I think you got a good mag there. But don't let Sergeant Saturn get too bossy; he's crazy.—Capron, Okla.

Crazy, am I? Who wouldn't be, chasing you space apes around with a left-handed spanner wrench? I've already talked about covers until I'm ready to put the lid on. Next ethergram, Wart-ears.

WHY GRIPE?

By Cecil Purdy

I just bought the new CAPTAIN FUTURE and sure was surprised to see my letter in Under Observation.

"Planets in Peril" was the best story since "Calling Captain Future."

The short stories was swell, also. I hope you do print "The Green Man from Graypec" next. The art work was good this time. Morley did a good job on the novel, but top honors goes to Finlay for his pic for "The Fruits of Prejudice."

I would like to see Finlay on the cover. How about it? Why do some guys have to write and gripe about everything from the cover to Sergeant Saturn? Yes, Mr. Ebey, I mean you.—Cullman, Ala.

Now don't you boys start a ruckus in the rocket room. The hours for rumpuses are between twelve and two—when the old Sarge is taking his siesta in the dog watch. I'll mention your request about Finlay to the art editor.

FUTURE SUGGESTIONS

By Albert Shapiro

A Futureman's Opinion.
To be brief, CAPTAIN FUTURE Magazine is

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the best in scientfiction. I still can't see how Edmond Hamilton can write issue after issue of such fine stories. So far I have read every single issue since CAPTAIN FUTURE started.

I read both of your companion magazines and I think they're swell. I just finished reading "Planets in Peril" and my opinion of it is—an excellent piece of work.

I have no criticism to make, but I have a few suggestions:

(1) Otho and Grag should wisecrack about each other more often.

(2) Oog and Bek should play a more important part in the story.

(3) Otho should disguise himself more often.

(4) Captain Future should visit the 20th Century and have an adventure.

(5) There should be more master criminals with their identity to guess. It makes the story more interesting.

(6) Edmond Hamilton should show more of Grag's and Otho's amazing abilities.

I would like to have CAPTAIN FUTURE Magazine come out bi-monthly. But I guess Edmond Hamilton can't produce such good stories in so short a time.

I can tell you now, that I'm one Futureman you can count on to do his best to aid the advancement of scientfiction.—2607 W. Evergreen Ave., Chicago, Ill.

Thanks for the orchids, Albert. We'll see what adventures Brett Sterling can cook up in the future about the Futuremen. It's harder to keep Curt Newton in the Solar System than it is to ride herd on you junior astrogators.

SCIENCE FOR SOLDIERS

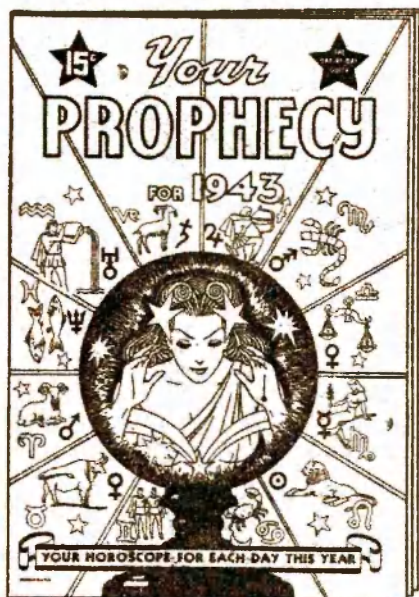
By Gwen Cunningham

"Planets in Peril" was marvelous! That smashing anti-climax, too, was so unexpected to me that you can bet I enjoyed the story extra swell. To think that it was time, and not distance they had bridged—and to think of the way Hamilton put that story together, like pieces of a jig-saw puzzle! Congratulations on a fine magazine! And a fine author!

In passing, I want to suggest that the very

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human Otho and Grag deserve and would appreciate mates (of their own kind). I can't help but picture Otho up a sweetheart, every time I read about him. Also, think of the extra plot possible by adding a female android and a female robot! Naturally, the association would be mental more than physical, because they're all synthetic. But I can't help picturing the many fixes the "girls" could get into, and out of!

I like your magazine as it stands, though it ends all too soon, and the wait between issues is a hard one. I hope some day it can come out twice a month and be more fully illustrated and contain between fifteen and twenty stories of various lengths. Until then, you're still okay!

By the way, Sarge, I've about seventy mags or so, all science fiction, collected the last three years and a half. I wanted to have a book-case library. But I'll never have a chance now, as I guess I'll still be in a one room apartment till after the war; and since all those mags are a problem, though still beloved, I feel it is my duty to let Uncle Sam's boys have them to read. I'd appreciate it if you'd publish the address or name of the proper contacts for doing this, and no doubt many readers would, too. I'm sure we all want to help.—*Norfolk, Virginia.*

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Nice letter, Gwen. Does the old Sarge roll over and scratch himself with glee when he gets a flash from a gal reader. I'll pass your suggestions on to Brett Sterling, but I can't guarantee what he'll do with them. About your magazines, why not ask your local librarian how to get them to the U.S.O. or camp libraries? There are pick-up stations almost everywhere.

DONAL IN DANIEL'S DEN

By Donal Buchanan

Dear Sarge: I agree thoroughly with Joe Daniel in saying that those yippers that have been heckling you since the beginning of C.F. should go jump into the Red Spot and stay there. It burns me up to hear those space-drunk

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sons of moon-pups growling at your heels all the time. Why don't you push them into the transformer and use them for fuel?! C.F. is okay!

I do agree with some of the gripers though, because I think that C.F. should be published bi-monthly. A fellow gets restless trying to save 15c for three months.

About the C.F. cover, I agree with the gripers that it should have a few rocket ships traveling through space now and then, and have the illustration on the cover match the story.

Daniel's wrong when he says no romance; a little romance makes the story more interesting.

"The Comet Kings" was swell (I mean a peach), and I'm telling you the two shorts and the serial were right up to par!

"The Worlds of Tomorrow" and "The Future-men" just hits the spot.

Enclosed find two C.F. Name strips (one I had trouble getting off, and I sent two because I didn't know which you wanted) a coupon and a stamped, self-addressed envelope.

P.S. I would like to get acquainted with an Arlington S.F. Fan.—3623 Sixth St. So., Arlington, Virginia.

The old Sarge has pretty well been blasted already by the points you bring up, Donal, so there's little left to say to you—except I hope you find a local SCIENCE FICTION LEAGUE chapter and jine up.

MORE FLOWERS

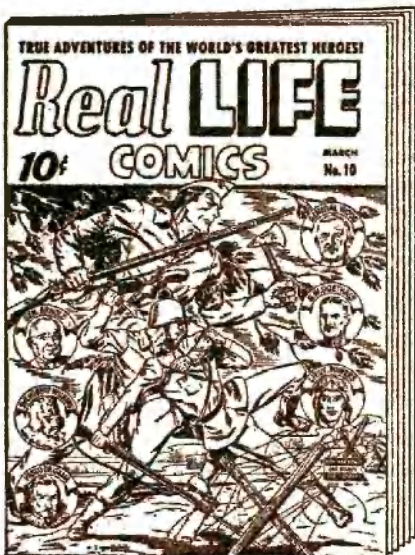
By Merle Franklin

Sarge, I am just a kiwi, so go easy on me. You said you'd like to hear from some new space explorers as well as the old, so here I am. I have been reading C.F. stories for a long time, and I have patiently seen, pardon me, heard, pee-lots say awful things in their letters to you. I think it a disgrace to write such trash as what you receive in letters. My first C.F. story I ever read was about seven stones of space, or something or other. Since then I have read every CAPTAIN FUTURE in print. And let me say, they get better by the season. Each one is better than the last.

Such guys as George Ebey and Frank Shaney should be cast in space in an air-proof space suit, no weapons, and of course, something they never did have: no brains. Within a week they'd crash

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on some satellite and perish at the fangs of a Rolango or Marneero. Well, Sarge, I better get back to my Fall issue of C.F.—12919 Brackland, Cleveland, Ohio.

I know this procession of letters reads like a nineteenth century flower garden, but darned if the old space dog is going to insert ugly cracks in 'em just to have something to growl about. Let me dream on. Pass me a fresh jug of Xeno, Wart-ears.

A SESSION WITH THE ENCYCLOPEDIA

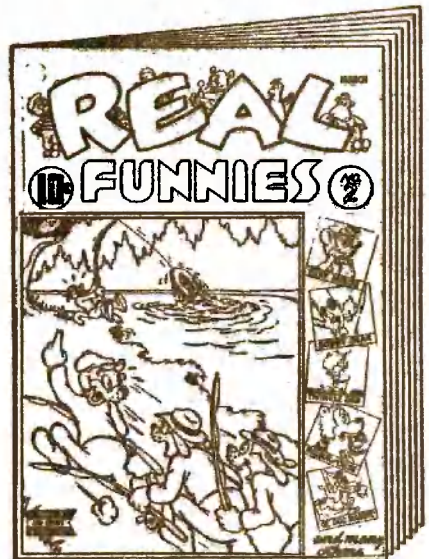
By Robert Sanberg

Dear Sarge: By now, writing to you has become something of an ordeal. But I feel in the interest of whatever scientific knowledge I possess I am justified. At any rate, having started to read "Planets in Peril" this unworthy soul once again noted a couple of mistakes that Author Hamilton allowed to seep in, and, though not detracting from the interest of a fine story, were none the less irritating. First of all, in several places Cap Future's ship, the *Comet*, exceeds a number of times the velocity of light. Now, as Hamilton adheres to the principle of Relativity, I shall use it as a reference.

Among the conclusions resulting from this principle are: that there can be no greater velocity than that of light; that time and space are dependent on each other, time forming with the three dimensions of space a single four-dimensional manifold.

On page 90, column 2, paragraph 7, Simon Wright, otherwise the Brain, stated that "The coordinates recorded in my apparatus show that we did not move even one mile in space!" And yet, as the principle of Relativity so clearly advances, time and space are dependent on each other; therefore movement in time means movement in space! Maybe I'm wrong. But I had a

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good session with the encyclopedia anyway.—
642 Stony Island Avenue, Chicago, Illinois.

Say, Robert, you're not one of the Quiz Kids, are you? You positively awe me. The old Sarge is more or less an armchair mechanic. On cold mornings I just like to step on the starter and have things happen without having to worry about what makes the engine go. I wish you'd explain things to Lefty Gorlich. You'll find him a couple of cyclotrons back in this department.

And who says there can be no greater velocity than that of light? Remember, Captain Future lives in the future—and they've got things speeded up there. (I'll read the encyclopedia tonight.)

FIRST AND LAST

By Robert A. Young

I have a bad crack in the breach of my main rocket tube, and it looks like she'll let go any minute, so jump into your space suit and man the life-ships.

I have read practically every space-time fiction mag. published in the last two years, and I've never seen a better written or better handled readers' department than "Under Observation."

Having just finished the fall issue of CAPTAIN FUTURE, let me congratulate Patricia Venuto upon a really excellent letter. Hurray for the female kiwis!

Now, Sarge, take a good stiff swig of Xeno and listen to my pet gripea.

[Turn page]

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First, must Author Hamilton use the terms "spare stick" and "cyspedal"? It sounds like Captain Future is piloting an atmosphere craft rather than a space ship. If only he would leave out those terms, his stories would be super.

Second, and most important, can't you do something about those covers? By all the ungodly imps of infinite space, they're disgraceful. You hire top-flight writers, men with real imagination and brains, and then proceed to cover up these masterpieces with lurid, tawdry covers! Jumpin' Plutonian Pigmies! Those covers make one ashamed to show the magazine to his friends—actually!

Well, the explosion is over, and we have made a cross landing on a passing meteor, but as we have a Jug of Xeno along, I feel certain we'll make Earthport safely.

I, Sarge, am a kiwi what actually is. I have enlisted in the Navy Air Corps for flight training, and am now awaiting my call to active duty. Hence, this, my first, will probably be my last fan letter. And here's hoping that when space travel actually does get here, I'll be among the first to get a crack at it.

And by the way, Sarge, how's about a shot of this Xeno to help me along in the flight training now and then? What's the stuff made of, distilled cosmic rays?

As a parting shot, I'd like to hand it to Ed Hamilton for putting out both quality and quantity.

I sincerely wish that I could continue reading science fiction, and especially CAPTAIN FUTURE, as I have for the past two years, but for the next ten months I'll be too busy getting over being a kiwi, and after that I'll be too busy knocking Japs out of the sky or dropping eggs on Hirohito.—U. S. Veterans' Hospital, Minneapolis, Minn.

All the old Sarge can say to you, Bob Young, is God bless you, and good luck. Take an extra sock at the Japanese foes of democracy for me, will you? And who says you can't keep reading CAPTAIN FUTURE? You'll find the magazine in the service with you. Write me again—senior pilot!

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NO BEMS—GOODY!

By Henry Scholl

I can't believe my eyes! A cover without BEMS! And one to illustrate the story, but there's one error. The story says they were to be unbodied by the tarasts who were human like Captain Future, but the cover shows they are being unbodied by Green Men. The story is the best Captain Future I've read yet. I hope you have another story of that type by Hamilton. The two shorts were good. I didn't read the "Hall of Fame" story because I didn't like the first two parts. Oh, yes! Please put my vote on the continuation of the "Norman Winter" series. The next novel, "The Face of the Deep," sounds good. Please have the illustration drawn by Orban.—9738 49th Street, Ozon Park, New York.

Please don't mention the PLANETS IN PERIL cover again, he said wearily, as he picked up an extra large jug of Xeno and bopped himself over the head.

How about the cover for THE FACE OF THE DEEP? How about this cover for Brett Sterling's WORLDS TO COME? Why live in the past? We are Futuremen!

WHAT'S A PEE-LOT?

By Norman Wegemer

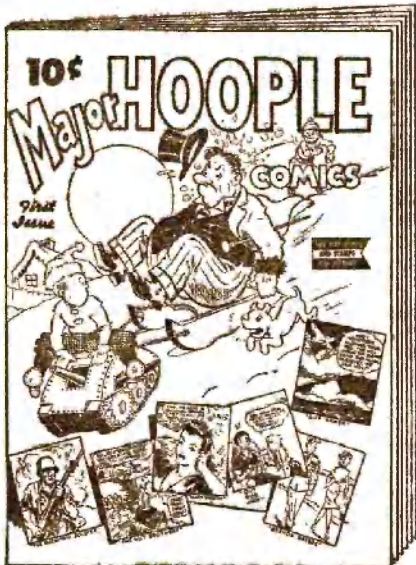
If you will set the robot control and pull up a jug of Xeno I'll tell you what I want. In the last issue of C.F. a Kiwi Palmer said to put out the article, The Futureman. I think that is a poor idea. And while I am at it I will ask you to please ask the editor to put in a diagram of C.F. trophy chamber.

Well, that's all now, Sarge, and don't peel the crust off a meteor with your stern rockets. Say, what is a pee-lot?—322 Benedict St., St. Marys, Pa.

I guess the old Sarge doesn't have to answer your question, pee-lot. Not if you

[Turn page]

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read my answer to Pee-lot Fair. If you didn't, go back and do your home work.

EXCEPT FOR THE COVER—
E. V. Easterling, Jr.

I thought you said that there would be nothing to holler about when we looked at the cover on this book (Planets in Peril). At first it seemed okay. But read paragraph one, column two, on page eighteen and compare the description there with the picture. I'll name a few things which are wrong in it. (1) It says on page eighteen that their skin was a pure, marble white, without a trace of color. The picture shows Shiri with pink skin and all the Tarasts with green skin. (2) It also mentions on page eighteen that their hair was of a platinum shade that was almost white. Shiri's hair is yellow and the men look as if they had no hair at all. Outside of these and a few more odds and ends, which are too numerous to mention, you did pretty well. The next time though, you better have the artist read the story before trying to draw a cover.

The stories and special features are swell, especially "Under Observation." More power to you.—619 No. 8th St., Temple, Texas.

Dear E. V., d'you mind very much reading my reply to Kiwi Scholl and my cutting snub at Pee-lot Almorrd? You birds will soon have me thinking we put the wrong cover on the magazine.

A COMPLETE FILE
By Ray Lee

Your latest book, "The Face of the Deep," was good, but not nearly as good as the "Lost World of Time" or "Quest Beyond the Stars."

I like for Joan Randall to be in the story but I don't like it when Captain Future makes too much love to her. I like it when he teases and kids her.

One thing I don't understand is in the story "Quest Beyond the Stars." Captain Future and the Brain invented the vibration drive, but only he and the Futuramen knew how it worked, but in the latest book the space ship *Vulcan* had the vibration drive. How did that happen?

And another thing get Grag and Otho into more arguments. Their arguments make the book extra good. And, please, bring back that boy Johnny Kirk that you had in one of your other books.

I have read all thirteen of the CAPTAIN FUTURE books, and I am saving all his books. And if there's more than thirteen I'd be glad if you'd let me know. Is the first book "Captain Future and the Space Emperor"?—213 Blake Street, Indianapolis, Ind.

You're hitting on all six, Ray. CAPTAIN FUTURE AND THE SPACE EMPEROR was the first Captain Future novel, and THE FACE OF THE DEEP was the thirteenth. This present novel, WORLDS TO COME, by Brett Sterling, is the fourteenth Captain Future story. If you will re-read the story containing the space ship *Vulcan* you will find that the vibration



drive was installed in the vessel. And let this be a lesson to you.

How about a final rocket salute from—sure, you space yardbirds guessed it—a gal reader!

FINE WEATHER ALL AROUND

By Inez M. Holcomb

Dear Sarge: Believe it or not I have just discovered your department in the back of CAPTAIN FUTURE magazine. Imagine my amazement to find a really unbiased columnist.

I hope I started this letter correctly. You see, I've never written to a magazine before. But after reading your department I had to put my "two cents" in.

I've been reading about Captain Future and his pals ever since my brother brought the first issue home. Now that he is in the Army though I have to bring them home myself.

I've saved all the back issues or tried to, but sometimes Mother goes through them and some disappear.

I'm writing this mainly to see if it would be all right for a girl to join your Futuremen. I really would like to.

I want to tell you that I have enjoyed all of the Captain Future stories. Especially that one about the "Chameleon" in your Fall, 1942, issue.

Don't you drink too much Xeno. Yes, the weather is fine, out here.—1154 Viola Ave., Glendale, California.

Honey chile, the weather is fine here, too—now that you've written in to the old Sarge. And you can bet your last lipstick that it's plenty all right for a gal to join the Futuremen Club. There wouldn't be any sense at all in being a Futureman if there were no Futurewomen.

Before I close the hatch on this department this issue, I want all you kiwis to write in and tell me how you like this Captain Future novel by our new author, Brett Sterling. And be very careful what you say and how you say it. The old Sarge has a hide-out gun up his sleeve. Folks say I'm a tricky sort of fellow at times.

There, that's all for now, and if you didn't like the cargo this voyage, it's your own fault. You loaded it.

Wart-ears, spray me gently with Xeno—about twice over, please.

Until next issue, you pleasant little—apes!

—SERGEANT SATURN.

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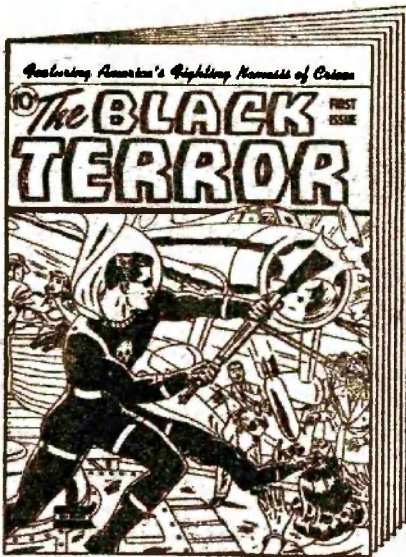
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THE FUTURE OF CAPTAIN FUTURE A Forecast for Next Issue



WITH this issue we present **WORLDS TO COME**, a Captain Future novel, by Brett Sterling. You will find it an excellent story which brings you the latest and most exciting adventures of Curt Newton and the Futuremen.

Just a word about Brett Sterling. With Edmond Hamilton joining our armed

forces to do his loyal and patriotic bit for Uncle Sam, Mr. Sterling has taken over the task of writing the Captain Future stories for the duration, and we are happy and proud to say that they are doing a swell job—both of them!

With increasing frequency Captain Future is running into stray bits of data and references about the distant star, Deneb, from which system sprang the human race that has colonized much of our island universe. To say that these various fragments pertaining to the ancient and all but forgotten history of man has not stirred and deeply interested Curt Newton and his fellow Futuremen would be an untruth.

So, at long last, in the next issue of CAPTAIN FUTURE the intrepid little band of Futuremen run into a treasure trove of lore pertaining to Deneb and then into a perilous set of circumstances which practically force them to make that long-anticipated voyage to the parent star.

THE STAR OF DREAD begins on one of the wild moons of Uranus. Curt Newton and the Futuremen are collaborating with a party of planetary archeologists and other scientists in excavating certain ancient ruins which Captain Future previously located in the jungles here.

These are archaic ruins of structures once built by men from the star system of Deneb. In spite of the fact that the Denebians colonized much of the galaxy ages ago, their empire collapsed, and their stellar colonies lapsed back into barbarism or savagery—as in our own Solar System. But Deneb has traditionally remained a star of mystery and importance in the vague racial memory of most races of man.

That persistent superstition now makes trouble for Captain Future and his fellow-workers. These ruins are invested with sacred sanctity and awe by the primitive humans who dwell in the jungles of this Uranian moon. They resent Curt and the others digging in "the sacred stones."

They've become more and more sullen and threatening.

But Captain Future and the others dig on. And they uncover a lengthy inscription in the ancient Denebian language. Curt and the Brain can read that language, thanks to their past studies, although none of the other scientists can do so.

"This inscription is the clue to a tremendous secret of the past," Curt says. "The greatest secret of Denebian science—their mastery over evolution!"

Which announcement precipitates an amazing situation fraught with great peril and danger. The upshot of it all is that Captain Future is compelled to seek out the mysteries of ancient Deneb in order to protect the Solar System and the rest of our universe from the most terrible man-made calamity the galaxy has ever faced.

How he does so, and what strange further discoveries he makes after he reaches Deneb constitutes the most amazing adventures that the Futuramen have yet experienced. By all means, you must make the voyage to THE STAR OF DREAD with Curt Newton and his famous companions to solve the ancient riddle of mankind's origin and to avert an awful catastrophe. And when you run into another amazing denouement in the climax which rolls the obscuring mists of unrecorded history still further back—don't say you haven't been warned.

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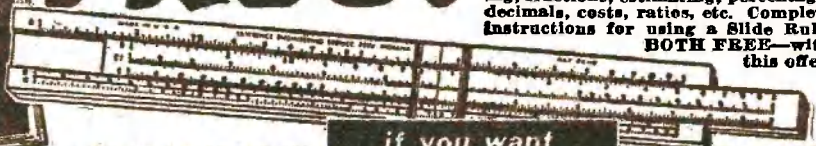
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