15¢ MARCH

SUPER SCIENCE STORIES

WORLD REBORN
by THORNTON AYRE

THE LOTUS-ENGINE
by RAYMOND Z. GALLUN

FEARN • VINCENT • E. B. LONG JR.

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A true experience of MRS. LILLIAN POKEDOFF, *Brooklyn, N. Y.*

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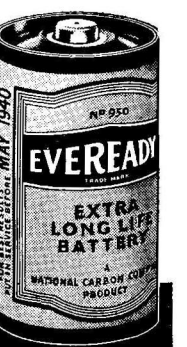
"IN THE THICK, BILLOWING SMOKE I couldn't locate the stairway. Then I heard a muffled shout from below and a beam of light bored through the darkness, showing me the way to safety.

"I STUMBLED DOWN THE STEPS just in time—for a kerosene tank exploded and the house burned to the ground! I sincerely say that I owe my life to those powerful and dependable 'Eveready' *fresh* DATED batteries!

(Signed) (Mrs.) *Lillian Pokedoff*"



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SUPER SCIENCE STORIES

VOL. 1 MARCH, 1940 NO. 1

NOVELETTES

SHORT STORIES

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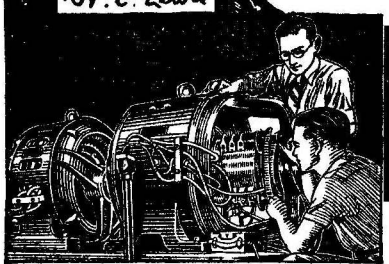

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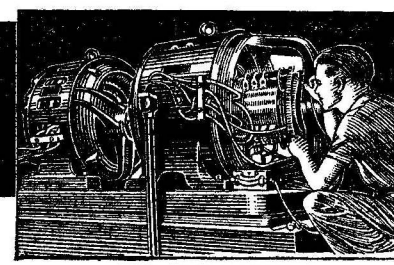

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Book Reviews

THE NEW ADAM by Stanley G. Weinbaum. Ziff-Davis Publishing Co., Chicago. $2.00

The late Stanley G. Weinbaum is remembered fondly by all readers of science fiction who ever saw one of his stories. He is tacitly acknowledged to be one of the finest masters of this form of imaginative writing, his characters appearing to be permanent additions to the folk-lore of science fiction. His stories are recognized classics. He has, among other distinctions, the honor of being the most widely posthumously printed author in the fantasy world, with the single exception of H. P. Lovecraft.

Weinbaum is now a myth, a memory of better days in science fiction. Every new author is almost instinctively compared by his critics to Weinbaum; few are found his equal. Practically none are admitted to surpass him.

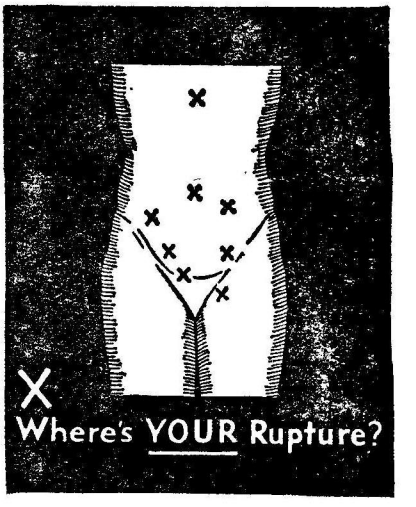
And that is why your reviewer is angry with Ziff-Davis Publishing Company. Weinbaum *was* a great writer. Like all great writers, he made some mistakes; a few of his stories were below par. When Weinbaum was alive those stories which were below par were not printed, either because no editor would accept them or because Weinbaum had foresight enough not even to submit them.

And therefore, there is no reason at all why these failures should be resurrected now. "The New Adam" *is* a failure, completely a failure. It does not put across the idea which inspired it. It is quite obvious that, had it been written by John Johnson of Punxsutawny, it would never have gotten beyond the desk of the second assistant manuscript reader.

It comes nowhere near Weinbaum's generally high standard. As a piece of literary creation it seems rather pokey, a bit archaic in style. But above all it is evident that the theme proved too difficult

(Continued on page 126)

don't Worry about Rupture



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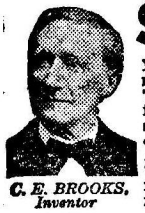

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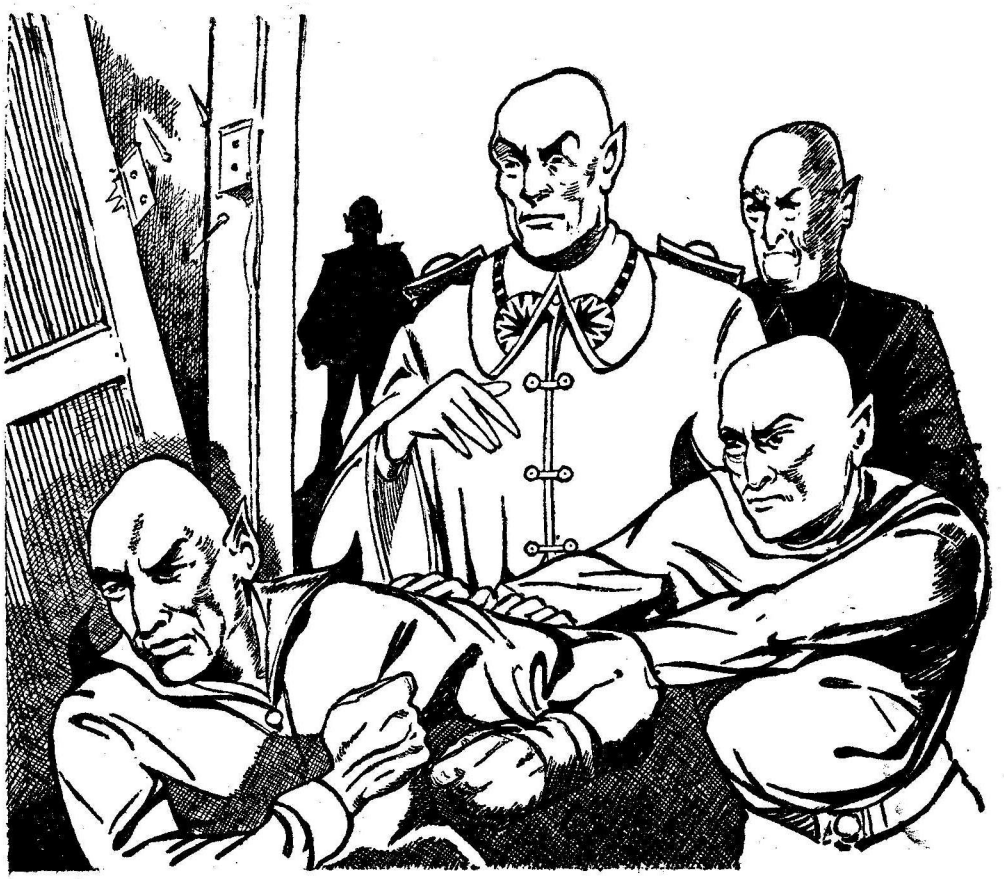
WORLD REBORN

By THORNTON AYRE

A voice came over the loud-speaker in the stratosphere globe, singing a song that had no place on Earth. Was it a girl that was singing, or was it a siren, leading the men out into space to betray their world?



A Novelette

CHAPTER ONE

The Voice From Space

STRATOSPHERE Control Globe No. 7 was at the limit of its 25-mile long anchor cable, hung like a monstrous floating orange bladder in the moonlight. Around this time, 10:00 P.M. activity was fierce and exacting within the globe's instrument-stacked and cushioned interior.

Steve Doyle, red-headed, square-shouldered weather reporter of the globe, squatted before his lighted map, poring over the electrically recorded movements of winds and air currents. From such recordings it was his essential task—in this part of the sky at least—to forecast the quality of the weather to the pilots of the countless stratosphere machines crowding the upper ways at this time of night.

In many ways Control Globe No. 7 was the master signal box of the air, demanding if possible even greater exactitude than had been the case with the old fashioned railway of forty years earlier. . . . This was 1980, with traffic almost entirely relegated to the atmosphere.

"Wind 15 mph in Upper Levels, increasing on lower air lanes. Ceiling—infinity. . . ." Steve's deep voice, mechanical in its intonation, repeated the reports constantly, varying them only as new formations appeared on the map.

One or twice he glanced up to watch a stratosphere plane go shooting past in the visiplates. . . . Liners, freighters, little

private buses, all relying on his judgment. Never once had he slipped up—But yes, just once. There was the memory of the X-46. But then that had not been his fault. . . . The liner had just vanished into thin air, had failed to pass this globe on time and had never been seen again. The mystery of the X-46 with three hundred men and women aboard had been relegated to the limbo of the unsolved. . . .

Midnight came at length, and the thick hordes of fliers were down to minimum. Steve relaxed and gave a wide yawn, swung round in his swivel chair to survey his solitary colleague, "Slats" Camberwell, the globe's engineer, upon whom devolved the responsibility of keeping the rocket engines in tip-top order. Upon them, and the system of lighter-than-air buoys on the globe's underside, rested the safety of the sphere's position and its motionless hovering.

Slats at the moment was slumped in the old canvas backed chair before the 24-inch telescope. His feet were thrust up on the table, his lazy blue eyes half closed. A thin wisp of strong smoke curled from the age-old briar he invariably sucked.

"Ever stop to think we might make something, Steve, if we could invent a fuel strong enough to drive a tub like this across space?"

Steve shrugged moodily. "Yeah, I've though about it—but what's the use? *Ampovox* is the strongest fuel we can find. It gets us this high, anyway. I guess we'll have to wait for atomic force before we can climb into space itself. Anyway, when we do, we have the ships all mapped out. They'll be just like this tub—sealed, airtight, everything we want."

Slats nodded slowly, scratched his wiry black hair pensively.

"Sitting up here for a two weeks shift, day and night, makes me feel like a god," he grinned. "Y'know, staring down on that smudge o' light that's New York. Makes one feel sort of—exalted. Get it?"

"So what?" Steve growled. "If you're a god maybe you can get the Company to fix us a raise in salary. . . ."

Slats shrugged, leaned over and switched on the radio.

"At least we have free music," he commented. "Nothing like hot rhythm to cheer up an old philosopher like me. . . ."

He sat back appreciatively, gazing at the instrument's visiplate as an ash-white blonde with sinuous shoulders undulated gently to and fro, crooning a deep contralto.

Steve snorted. "Huh! Vera Rawley, from the Ambassador's down in the city. She burns me up. . . . No sense of timing."

HE stood up and mooched to the window. The time for his special weather reports was over now. Only by special radio request would he be needed to broadcast. From now until the dawn things should be quiet again. In silence he looked up at the brazen stars so vividly clear in this rarefied height.

Slats leaned back and appreciatively watched Vera Rawley's quite attractive face and figure—then he blinked a little. The screen was slowly becoming suffused with black bars that rippled up and down like visible heat waves. At the same time, too, the girl's voice was being slightly edged by another transmission, reedy and tinny.

Steve swung round from the window, his brown eyes puzzled. "Say, what's up with that thing, anyway?"

Grunting at being disturbed Slats leaned forward and fiddled with the knobs, but try as he would he could not separate the two stations—the one dim and nearly extinct, the other warped by the overlap. . . . Then, with a thousandth of a degree twist he suddenly had the unknown clear—thin and infinitely distant. It was the voice of another woman singer, entrancingly melodious.

Even Steve's unmusical soul was stirred. "Boy, can she sling a lyric!" he whispered.

They both leaned towards the speaker with their heads on one side. Then with an impatient movement Slats tried to squeeze out more power, but failed. Either a fault had develped in the radio receiver, or else the strange broadcasting station's power was abnormally low. Usually at this height broadcast reception was uncannily clear. . . .

At least the woman's words were English. She was singing a song that ended with, ". . . when the red dust of the desert drifts by."

"Nice work!" Slats murmured. "Wonder what she looks like? Guess she'll do for me instead of Vera Rawley in future. . . ."

He altered the tuning dial of the television screen, but no image appeared! For a full five seconds he stared in blank amazement.

"But—but this is impossible!" he ejaculated, snatching his pipe from his teeth. "No station broadcasts these days without visual accompaniment."

Steve reached aside and took down the heavy log book, glanced at the reading on the dials, then commenced a search. In a few minutes he lowered the book again with an astounded face.

"There ain't no such animal!" he expostulated.

"Huh? What do you mean?"

"I mean there's no other station logged anywhere near that degree. Come to think of it, a superimposed wavelength is impossible these days. The Ether Association sorted out all wavebands way back in '60 and left ample margin for everybody. And no experimenter would broadcast so close to a normal band. . . . Besides, where the Sam Hill would an experimenter find a dame with a voice like that?"

They stared at each other in perplexity. Faintly, but noticeably dimming, that voice floated out to them in the silence.

". . . and somewhere, I know, you'll be waiting for me, when the red dust of the desert drifts by. . . ."

The song stopped amidst a faint roar of applause. A deep voice spoke from far away. Tensely the two leaned forward, only caught snatches as it faded slowly out—

". . . end of Elga Varon's song . . . happy atmosphere of the Elfoni Cafe. And now. . . ." The words vanished entirely. Slats twisted the knobs frantically, but the communication had evaporated. Baffled, he left the set on a normal waveband and ignored the voice coming from the Commercial Convention in New York City.

"Who in blazes is Elga Varon?" Steve demanded. "Who would have a name like that, anyway? And the Elfoni Cafe! Ever heard of it it?"

SLATS did not answer. He was staring in front of him with a dumbfounded expression on his face.

"Um-tiddly-um. . . ." he hummed. "When the red dust of the desert—"

"It's crazy! Whoever heard of a red desert, anyway?"

"I have—but it's on Mars."

"Mars!" Steve gave a yell of laughter. "Take it easy, feller; the altitude's gone to your head. Mars! Of all the screwy ideas! Who on that dead world would sing love songs in English, and from a cafe at that? Oh, be yourself, Slats!"

Slats pondered in silence. He glanced over the radio instruments. Certainly there was nothing the matter with them. The voice of Senator Gordon boomed pedantically through the silence.

". . . and I tell you, gentlemen that unless this world depression can be mastered by finding some outlet for our commerce we can only look ahead to a disastrous slump, to mounting figures of unemployment the world over. All buyers have more than they need; the alternative is

a depression greater than we have ever known, unless, I say, we can find an outlet– "

Slats snapped off impatiently. "We all know there's a depression putting thousands out of work," he growled, "but I'll be damned if I'll have it crammed down my throat as well. . . ."

Steve moved slowly forward, cigarette between his lips.

"Listen, Slats, this Elga Varon dame *is* a bit of a mystery at that," he said thoughtfully. "She meant all she said about red deserts, and whoever she was singing to accepted it as quite a natural business judging from the applause. Anywhere on earth a composer would get the raspberry for using such rotten local color. And she *did* sound the devil of a way off. . . ."

Slats scratched his head, then his eye caught sight of the 24-inch telescope. He got suddenly to his feet, swung it round so it was flush with the observation panel, then juggled it into the position of Mars.

"Soon settle it, anyway," he grunted.

Steve saw him look once, rub his eyes, then look again. He made a dumb motion with his arm. Steve joined him and stared through the companion eyepiece, understood in a moment what had so dumbfounded his friend.

Mars had changed! It was no longer red—but green! And the *canali* and distinctive polar caps had vanished! Instead, though only dimly visible because of the telescope's lack of power, there were the unmistakeable outlines of continents and oceans. Even clouds were faintly distinguishable.

Dazed, Slats dragged his eyes away.

"*Is* that Mars?" he asked blankly.

"Checks up, anyway," Steve said, staring at the sky. "Yeah; it's Mars all right, but what's up with it? Last night it was as red and lined as usual, but now—Say, this is a job for the Mount Palomar telescope. . . ."

He moved over to the radio, but at that identical moment the stratosphere globe rocked to and fro with sudden violence. He stumbled helplessly, then was thrown clean off his feet by a terrific upward surge.

"Hell!" Slats shrieked, clinging onto the window frame. "We've broken loose from our cable! Something's fouled it, or else—"

Steve stumbled over to him and stared below on the piece of hawser trailing ways beneath them in the moonlight. The smudge of New York City was receding rapidly.

"Nothing fouled it," he snapped. "Sky's clear of traffic in all directions. Something *pulled* us, something strong enough to break that cable. . . ."

He glanced up with a set face. The abysmal black of space itself was right over them, and by some inexplicable means they were tumbling into it with ever mounting velocity, snatched from their mother world. And, right ahead, glowed the green planet that should have been red. . . .

Leaden weights seemed to press down on them as the globe's upward speed increased. The terrific acceleration crushed the breath out of their lungs. Helpless, heads spinning, they collapsed their length on the floor. . . .

CHAPTER TWO

The Copy World

STEVE had no idea afterwards how long he had been unconscious. His only memory was of getting dazedly to his feet, stumbling over to Slats and reviving him. The crushing, weighted drag of acceleration had gone now; instead the force was just sufficient to produce a natural gravity. The globe, obviously, was still traveling.

They both floundered over to the window and thereupon received a new shock. Mars was no longer a green dot: it filled

all space in front of them. They stood looking at it helplessly, hardly able to absorb what they saw.

There were sprawling continents, parts of them lush with verdure, wherefrom came the green color; while other portions were dotted with the unmistakeable signs of thickly populated, busy cities! Upon the oceans were ships. Aircraft, too, darted about over the cities.

Half the planet lay in sunshine, and the other half was a semicircle filled with softly twinkling lights. Everywhere, life! *Life!* On the world that had been deserts, thin air, and polar caps?

"Clouds too," Steve muttered. "Look at 'em. Atmosphere down there must be pretty similar to Earth's own. . . . Slats, just what have we gotten into? Space mirage, do you think?"

"Can't be. Remember that singer. . . . No, Steve, it's real enough, but how it happened overnight has me licked. I'd give a lot to know why we were snatched too. . . ."

They turned away at last, somewhat calmer. They were aware of hunger and thirst too after their obviously long spell of unconsciousness. Once they had refreshed themselves they found Mars looming even bigger. And now, in the heart of one of the principal cities, they could distinguish something of dazzling brightness resembling a mirror. It seemed as though it might have some connecton with their globe, was perhaps even the source of the attraction pulling them.

"If it *is* magnetism it's pretty clear why we were snatched," Steve muttered. "Our globe floated at twenty-five miles altitude, remember—highest of the lot. The others were ten miles below and probably out of the influence."

Slats only grunted. He was absorbed by the view. Steve joined him at the window and they settled themselves to wait. Everything else was forgotten to them as through the hours the planet grew ever larger and the cities more distinguishable. In particular did that bright spot become more distinct. . . .

And so at last they found their speed diminishing and the bright spot was a plain of dimming metal below them, a plain set in the heart of a white stone metropolis. Lower and lower, dropping with gentle care now. They caught a glimpse of the city around them: it resembled New York itself to a startling degree. Then there were colossal power houses that probably fed this magnetic plain.

They grounded.

"Definitely magnetism," Steve said. "And definitely Mars. . . . Notice the lesser gravity?"

Slats nodded in silence. They stood for a moment staring over the metallic expanse at the city beyond, then they tensed suddenly at the sight of a small army of men racing towards them over the expanse. The nearer they came the more obvious it was that they were identical to earth people in appearance. Nor was there any apparent hostility in their excited faces. From their one piece attire they were evidently mechanics.

Steve cocked his eye at Slats.

"Well, are we dreaming, or do we step outside and give ourselves up?"

For answer Slats patted his gun holster and moved with difficulty against the lesser attraction to the airlock. He opened it slowly and stood staring out on the gathered men.

"Well-er-hallo!" he said awkwardly at last, waving his arm.

"Hi ya!" nodded Steve, grim faced.

The people looked at one another for a moment, then a variety of shouts burst forth.

"They're alive!"

"We've done it at last!"

"Is that something!"

Steve glanced at Slats in total bewilderment. This could not be Mars—the planet simply could not contain men who talked

like everyday Americans. But the lesser gravity? The smaller sun at the zenith. . . ?

THEN suddenly there was a skirmish on the outskirts of the crowd as a powerful car swept into view. From it leapt four men in immaculate suits, apparently diplomats, led by a square shouldered individual with a pointed gray beard. Instantly the crowd fell back before him and stood at attention, saluting as he passed. In the distance, around the car, mobile police swept into sight.

"My friends! My dear friends!" The man with the pointed beard came up at last and clutched Steve and Slats in each of his hands. "You arrived safely! For the first time a passage has been made across space without death as the reward! Oh, this is too wonderful!"

The two stood looking at him. He was good looking enough, even striking, with a hooked nose and piercing blue eyes. Only his mouth, shutting like a rat trap over his torpedo beard, gave a slight insight to his real nature. It was the mouth of a man governed by relentless passions and iron will. But all of a sudden he gave a broad smile of welcome, raised his soft hat in the air in greeting to reveal a high forehead and crisp iron gray hair.

"Naturally, all this puzzles you?" he asked calmly.

"What do you think?" Slats asked bluntly.

"Allow me to introduce myself. I am President Vorjak, ruler of this city and planet. These three gentlemen constitute my inner cabinet—Secretary, Diplomatic Adviser, and Controlling Attache."

The men inclined their heads gravely.

"You must understand, my friends, that you are honored guests," Vorjak went on quickly. "You are the first living beings to cross space from the pattern world. We have tried endlessly to bring a living being and now—But come! The car is waiting and everything is prepared."

Steve and Slats stepped down together and walked like somnambulists through the lines of people. The army of mechanics had been augmented now by countless men and women straining to see what was going on but held back by police. There was something uncanny about this, something that set the two Earth men's brains turning somersaults when they tried to think it out.

Save for the lesser gravity, to which they were getting inured, they had little to convince them that they were not on Earth. The car, for instance, was earthly in design. It passed down streets behind a mobile police squad who cleared the way with shrieking sirens. On either side of the streets reared enormous business edifices of white stone, the windows filled with mens' and womens' faces. Very earthly looking wastepaper baskets were emptied in a fluttering snow of welcome to the visitors.

"This conquering hero act has got me licked," Steve confessed in an aside to Slats, when they paused a moment in their bobbing acknowledgements to the lines of people. "What did we do anyway to rate this reception?"

"Came across space in one piece. Evidently that makes us tops. But I don't understand these people; they're as much like Martians as my Uncle Septimus—Say, will you look at that!" Slats finished in amazement, as they passed an open square. He pointed to a lofty collonade of granite, perhaps as high as the Statue of Liberty. At the very summit of it reposed the battered remains of a stratosphere liner from Earth.

"The X-46! Enshrined!" Steve shouted, standing up. "Holy Cat, so that's where it went to! It was stolen, like we were—"

"Hardly stolen," President Vorjak broke in, from the other side of the car. "It happened to get caught in our attractor's influence and was drawn across space. We had hoped the people within it would

be alive, but—it was useless. We buried their remains and enshrined the ship as being the first specimen to come across space practically intact. But now you have come it takes second place. In time, perhaps, your globe will replace it."

"Like hell it will!" Steve retorted, sitting down again. "We want our globe to go back home again."

"So?" Vorjak smiled amiably. "You will never go home, my friends—At least, not yet awhile."

"Now look here, Vorjak—"

He went on calmly, "You are here as models of the pattern world, my friends, and as such will shortly serve a useful purpose to us and to your own planet."

"What's this pattern world business?" Slats demanded.

"Pattern, my friend, in that Earth has been the model for our world. More than that you do not need to know as yet. Later, perhaps. . . ."

STEVE relaxed at the President's inscrutable smile. Deep within him he was beginning to sense a deadly danger somewhere in this crazy lionizing.

Lost in thought he sat looking round him, observed that the car finally moved into the drive of a solitary sprawling white building standing away from the buzz and roar of the city itself.

Once inside it, there was something almost farcical in the fashion in which servants and officials raced up and down long marble corridors to attend to Steve and Slats' every want. They were bowed by the President himself into an enormous room replete with all earthly necessities. They were brought choice foods and wines, even earthly cigars and left alone.

Slats, full of wine and light gravity, lay back on the cushions of the divan and smoked blissfully.

"Boy, if this is Mars give me more of it!" he sighed. "In my present mood I don't care if hell freezes!"

"Oh, snap out of it!" Steve grunted, clearer headed. "Don't you see what we're up against, man? Vorjak's as good as told us we're on this cockeyed planet for keeps—and for all we know about getting home he's right. . . . Hell, if only I knew what it's all about! What's your angle on it?"

"Haven't any. Either these folks are screwy or we're dead. . . ."

"Swell help that is!" Steve got impatiently to his feet.

"Maybe you'll talk sense when the wine's gone down—and don't blame *me* if you get a hangover. . . ."

"Nuts," Slats returned sleepily, and closed his eyes. In another moment Steve had picked up the fallen cigar and listened to the heavy snores pervading the vast apartment.

Just for a moment he envied Slats' calm acceptance of the inevitable, meditated that he too might as well sleep—then he looked up as the visiphone buzzer on the wall whirred urgently. He went over to it and switched on. The face of a woman with raven black hair and dark pools of eyes appeared before him on the screen.

"You—you are one of the travelers from the pattern world?" she asked quickly, and her soft voice was obviously anxious.

"Yeah—sure. Steve Doyle's the name. . . ." Steve studied her regular, beautiful features earnestly. "Anything wrong?"

"Not yet—but there may be. This is just a warning from a friend. Be wary of President Vorjak. Accept all he says with good grace and do nothing drastic until you've seen me. I can probably help you, just as you can help me. Search me out when you have the time. You'll do that?"

"You bet!" Steve grinned. "What's the name? Where do I find you?"

"My name is Elga Varon. I'm a soloist

at the Elfoni Cafe in the west end of the town. You'll find me all right. Good by."

"Elga Var—" Steve yelped; but she had cut off. He stood staring at the instrument in blank wonder, scratched his red head.

"Of all the women on this cockeyed planet it had to be *her!*" he breathed at last. "How the Sam Hill. . . . ?"

He gazed helplessly at the blank screen; then at last he gave it up and wandered to the great bed, threw himself upon it and gave himself up to meditation. But the remembrance of that perfect face, and even more perfect voice, made it imperative he seek out the Martian woman without delay. . . .

CHAPTER THREE

"Trade" Negotiations

PRESIDENT VORJAK presented himself early the next morning—just after the two had breakfasted and tidied themselves up. He said little, waved his arms to a uniformed escort, and then there began a triumphal march to another State building a mile away in the heart of the town.

Vaguely uneasy, though they did their best to conceal it, Steve and Slats finally took the places assigned to them in an enormous chamber of the edifice. They sat on a small dais, glancing round on the numberless men eyeing them steadily from tiers of seats.

At last the murmur died away and President Vorjak rose to his feet, stood with his hands holding his lapels.

"This meeting, my people, is momentous!" he boomed. "And, I might add, it is private. It will be neither relayed nor televized. We are gathered here to explain to our friends from the pattern world exactly what will be required of them, to reveal to them why they were taken from Earth."

"Now we're getting some place," Slats mumbled, holding his aching head in his hands.

"Men of Earth," Vorjak went on, and it was obvious he reveled in the sound of his voice, "you see around you a world patterned from a study of Earth, a people built up by a study of your radio broadcasts which are received quite clearly here. . . . Many of the things that puzzle you cannot, unhappily, be explained for diplomatic reasons. But what we desire more than anything else is communication between our planet and yours—space communication. That can only come by earthly engineers constructing a magnetic field identical to the one we have on this world, a magnet driven by solar power which reaches its attractive power over some seventy million miles to snatch from the high altitude of another world any flying object. We captured the X-46, and we captured you, because in both cases the airliner and your globe were free of earthly atmospheric pressure. A grounded machine is impossible to move. It was only with difficulty we tore you from your hawser."

Vorjak paused and cleared his throat. He resumed:

"So far, it has not been possible for us to reach Earth with our radio signals, though Earth's short wave system has easily reached us. Now, though, our scientists have perfected radio transmission so that it will equal Earth's own, with the result that we should be able to send clear messages across the gulf. Do you understand me?"

Steve nodded slowly, but inwardly he was trying to figure out why he had heard Elga Varon's voice across space if radio was not yet perfected. A glance assured him that Slats was thinking the same thing—but they both maintained silence.

Vorjak's tone became conciliatory. "When we communicate with Earth and suggest to them a spacial magnet, we

naturally want it to be convincing. That might not be so if we alone did it. Rightly, Earth people would think the thing a hoax because of English words being used. *But,* if two missing aeronauts, well known on Earth, were to speak *for* us, then belief would be immediate. Am I not right, my friends?"

"I guess so," Steve acknowledged. "Slats and I are known by our voices all over America, especially by air officials and weather bureaus. And our disappearance must certainly be known by now."

"It *is* known," Vorjak replied. "We have listened to Earth radio reports reporting your mysterious departure into space, together with numberless speculations regarding the change in Mars' face."

"Why *did* it change?" Slats asked bluntly. "We ought to be told."

"At present, as I have said, diplomatic reasons prevent me explaining that mystery, my friends. Later, perhaps. . . . All I ask now is that you will cooperate when the time is ready for communicating to your world?"

"Well . . . O.K.," Steve nodded, and for the life of him he could see no harm in the request. "How long are you going to be? You'd better cash in on our disappearance to make the most of the chance."

Vorjak demurred. "My scientists tell me that Mars and Earth will be in apposition in another two weeks. That means a distance of only 35,000,000 miles to cross. So in two weeks, my friends you will speak? I can take it as a foregone conclusion that your earthly people will be open to negotiation?"

"Considering Earth is being hit by a trade depression and this will give the opportunity for interplanetary exchange, there's no doubt of it," Steve answered quietly.

"Excellent. And remember that upon your own shoulders, when you give the speech, relies your chance of returning home. You obviously cannot unless earthly engineers build a magnet. For my part I shall use your globe as a pattern for other globes of our own to be put in work without delay. . . . And now there are other matters. . . ."

BUT they were not important to Slats or Steve. For an hour Vorjak held forth on the ideals and policy of his strange government, which seemed to be a mixture of both fascism and democracy, with the balance by no means clear on either side. It was pretty clear Vorjak did not intend to give anything away. Not one hint of Mars' strange transformation escaped him.

He came to the end of the speech by turning back to the two.

"And you, my friends, have all the liberty of the city. You may go wherever you wish, and use your present rooms in the Administrative Building as your abode. Only one request do I make—stay within the city in case the opportunity for communicating with Earth should arise sooner than I have anticipated."

Vorjak bowed and smiled, stepped down from the platform. The assembly began to break up. Steve and Slats glanced at each other at finding themselves left entirely alone. At length they strolled over to the main doors and stood looking out on the busy street.

At length Slats scratched his head. "Well anyway, there was nothing phony about Vorjak's request. That's certain."

"I wonder," Steve muttered. "Last night when you were sleeping it off I got a visiphone call from Elga Varon—"

"The—the singer?"

"In person. She warned me to do nothing drastic until I had seen her. . . . Now don't start asking why she rang, or anything about it, because I'm as puzzled as you are. What's got me worried is why we could hear her voice across space when Vorjak says they haven't perfected spacial radio so far. . . . Anyway, right

now our job is to find the Elfoni Cafe at the west end of this town. And remember, keep quiet about our being Earthlings. We can't be told from Martians anyway. . . . Now come on."

Frowning, Slats obeyed. They found their way across the town at last to the garish exterior of the Elfoni Cafe, a creation of black agate and chromium fittings. As they entered the foyer a fat manager came forward and eyed them suspiciously.

"Miss Varon is not here to strangers," he snapped, when Steve had finished speaking. "And in any case she does not sing until the evening."

"You can tell her its the fellow she spoke to last night on the visiphone," Steve retorted. "We'll wait. . . ."

The manager hesitated, then went off shrugging. In a few minutes he returned with the girl who was undoubtedly the one Steve had seen on the screen the previous night. The pale face, the big dark eyes and raven black hair. She held out a slim hand in welcome, then stood for a moment watching the manager's receding back.

"You're Steve Doyle, of course?" she asked quickly.

"Yes, and this is my pal, Slats Camberwell."

"Glad to meet you," he nodded briefly.

"I can't tell you anything here," the girl went on, buttoning up her coat. "You'll have to come to my place. You were lucky to catch me here in a morning; I was doing a rehearsal. . . . Come with me."

She led the way out into the street, walking after that through an infinity of side roads until they came to a less congested part of the city, and ultimately to a small house. She let herself in with a latchkey, made her way through a modestly comfortable, typically feminine home to a flight of steps leading downward into a cellar. A flood of light revealed a wealth of instruments that obviously had a connection with radio.

"My home," she smiled, tugging off her hat and coat and waving her arm round the place. "We're safe enough here. Make yourselves comfortable—we've a lot to talk about."

CHAPTER FOUR

The Plot Against Earth

"JUST how much did President Vorjak tell you?" the girl asked.

"He told nothing," Steve growled. "All he did was ask me to broadcast a message to Earth with the idea of having a magnetic field built. For trade purposes. . . . Sounded like a good idea to me."

Elga gave a bitter smile. "And suppose I were to tell you that if you do communicate you will sell your world to a devil? To a man who has waited for years for this chance to carry armaments across the gulf with the express intention of making war on Earth and taking the planet for his own!"

Steve looked up sharply. "But—it's not possible! Vorjak may be a queer sort of guy, but I'll swear he's not that bad."

"I know him better than you do, Steve Doyle. You're walking into a trap, just as I suspected you would. . . . But all this is vague to you of course. I'd better start at the beginning . . . I am not really Elga Varon; that's an assumed name. I am—or was—Princes Elfia, potential queen of this entire planet, until the scientific revolution came. Then I was ordered to be put to death. With the help of friends I escaped, altered my appearance as much as possible—I was formerly a blonde—and so became a singer. But with only one thought in my mind—revenge!" She looked round the laboratory with smoldering eyes.

"I suppose you know that this world of Mars was reported dead by Earth astronomers until recently?" Steve asked quietly.

"Yes, I know: radio broadcasts from Earth revealed that fact many a time—and President Vorjak did not explain the truth because it would have meant putting himself in an unfavorable light. I'll tell you what happened. . . . Ages ago this planet was threatened by an armada from space. We—that is my ancestors of course—got wind of the approaching invasion in time and our scientists hit on the idea of covering the entire planet with an unbreakable shell of metal. Ultimately they managed it, and in consequence our planet floated in the center of a globe of metal, stopping there by the law of gravity. Outside, the magnetic quality of the metal attracted cosmic dust and iron ore. Escaping water and air residue through controlled vents produced a faint water vapor outside. Rust took place. The shell turned deep red. Then came the invasion, and under its onslaught the shell was cracked from end to end, but it did not altogether collapse."

"Would those cracks be the *canali?*" Slats cried suddenly.

The girl nodded slowly. "That, I believe, was the earthly idea of it, just as our ejected sewage water, collected at the poles to finally form oceans, were mistaken for ice caps. . . . However, the enemy got inside our world. We were overpowered. Our civilization fell in ruins. . . . By force, the men of the invasion made Martian women mate with them—the children that came afterwards were half Martian and half invader, but with the physical characteristics of a Martian predominating. . . .

"By degrees, as the hard fight to regain power and security went on, it became impossible to tell which were genuine Martians and which were not. There was no ordered form of Government . . . Maybe for centuries an order of wandering barbarism lasted. Then came the time when my father became ruler of the planet, but he was at his wit's end to know how to reconstruct a sane order from the chaos. Finally, by sheer chance, the scientists discovered that they were getting radio waves from a neighbor planet—Earth. These constant broadcasts, in which the English language seemed to predominate, were relayed to the people. A mixture of Martian languages was molded into one—English. By common consent it was decided we would pattern our world after our neighbor. So by constant listening to radio speeches and descriptions, aided by X-ray telescopes which could pierce the metal globe surrounding us, we rebuilt. . . ."

"Clear so far," Steve nodded. "Then?"

"Trouble came. Vorjak, a child of the original invasion, had his forbears' spirit strongly developed. He was not content with listening to what he called a democracy, over the radio: he had listened to other languages as well and favored a scheme of dictatorship. He launched a revolution in which my father was killed and I was ordered to be put to death. As I told you, I escaped. . . ."

The girl gave a heavy sigh. "In the time I have been living as a singer I have watched Vorjak's progress. He had our covering globe investigated, decided finally to have it removed. With schemes of earth conquest in his mind he had tried with magnetic fields to snatch living people from Earth. All he got was the remains of an airplane. The removal of the surrounding shield, he believed, would increase his power. At any rate, it was blown in pieces and has become a mass of dust floating with our planet in the sky. No harm came to us, of course. Our air remained the same, held down by Mars' gravity, and we had the heavens open to us for the first time. . . ."

"Hmmm. . . ." Steve muttered. "Odd, isn't it, that you Martians look so like us?"

"Why is it? Our air pressure is fourteen pounds to the square inch, the same as yours. Only our gravity is different, but not enough to produce drastic physical changes. And don't forget that living like the people of the pattern world has, in a sense, molded us like them. My ancestors were not so earthly as I am, for instance."

"Just what do you hope to achieve against Vorjak?" Slats asked slowly.

"One girl alone against him and his unholy crowd. . . ."

SHE turned and nodded to her instruments. "I have here a radio equipment on which I've been working ever since father was deposed and killed. It is based on the knowledge of the scientists who served my father. It is long distance short-wave radio, a branch of radio art as yet not perfected by Vorjak, though I know he is now experimenting on similar lines in order to contact Earth. I hope to have mine finished first. My idea, before I knew you two had arrived here alive, was to get in touch with Earth and warn them of Vorjak's intentions, or else somehow enlist their aid in crushing him. . . . So far I have only experimented once—secretly. I connected this radio here to the equipment at the cafe, worked by remote control. I hoped that my voice would carry to Earth, and if so I'd be sure to know about it from radio broadcasts. Evidently I failed since no reports came through. It was a risk, of course: if Vorjak had heard the reports too he would have demanded to know the truth. But by that time I would have given my warning to Earth and forestalled him. If I had died in defeating him it would not have mattered."

"But your broadcast *did* get through!" Steve cried. "Slats and I heard you distinctly. Of course, we were twenty-five miles up from Earth, and your song faded out. Something about red dust of the desert—"

"Yes—yes!" the girl cried, her eyes shining. "It's the song of the moment. It's about the breakup of the globe around the planet. But—you heard me?"

"Sure. That's why I was surprised when I heard your name over the visiphone last night. . . ."

"Ah, so. . . ." She pondered. "There was a power leak on the night I made the experiment. That would account for the fade out. But you *heard* me! That's the point. Since you were twenty five miles up in your atmosphere it is pretty clear that I had not sufficient power, or else the wavelength was wrong, to penetrate through Earth's atmosphere to the lower reaches. We can remedy that."

"Say, if we could do that we could radio Earth and tell them to ignore the request for a magnetic field when you make it!" Slats put in eagerly. "Then Vorjak could never even land!"

"Yeah, and that would mean you and me stopping here for the rest of our lives," Steve growled. "That won't do. We need space travel if we can get it, but not for war purposes of course. We might warn Earth to stand by with an armada with which to wipe up Vorjak when he arrives."

"It depends on the power of his attacking weapons," Elga said anxiously. "I don't know his resources. . . . But right now that isn't the point. We've got to get this radio improved, and with your help it can be done inside a week. I suppose you can help me?"

"We'll be here every minute," Steve said earnestly. "At least, plenty of the time. And we'll keep the thing quiet, don't fret!"

She nodded. "All right, then. Until you're accustomed to the city meet me at the Elfoni Cafe every night at ten thirty. My night's singing is over then. O.K.?"

For answer Steve gripped her hand reassuringly.

CHAPTER FIVE

Radio to Earth

EVEN though they had been given absolute freedom of the city until they should be needed, Steve and Slats were inwardly astonished at the ease with which they met the girl every night and went along, unquestioned, to her workshop.

Steve's highly technical knowledge, added to the girl's own, began to have rapid effect on the radio instruments.

"More I work on this," Steve said, on the sixth night, "the more I see how simple it would be to convert any normal radio for spacial communication and range. All in the coils and tube cadences. I always figured it was something like that—"

"How long before we finish?" Elga broke in eagerly.

"So far as I can make out we ought to be able to start communicating tonight. What about those generators? Enough power in them, do you think?"

"Considering they're using solar power there ought to be."

Steve nodded silently, busy with the screwdriver.

"Another couple of hours, then we'll contact Grayson at the New York Stratosphere Bureau. And will his hair curl!"

"Curly already," Slats said artlessly; then went on with the work at the glare he received. For a long time after that there was silence, then Steve stood up and patted the apparatus affectionately.

"We made it!" he announced triumphantly. "O.K., Elga—the juice!"

Her slender hand reached out and closed the master switches controlling the generators. Power surged instantly through transmitter and receiver speaker alike. Even so, it would demand several minutes before the carrier wave hurdled the gulf to Earth. Steve sat rigid, hands on the controls, then at a final whistle from the speaker he gave a twist that brought a multitude of Earth stations blaring in.

Immediately he tuned to the wavelength of the New York Stratosphere Bureau, graded the transmitter to the same wavelength.

"Hallo there, Grayson!" he intoned into the microphone. "This is Steve Doyle calling from Mars . . . Will await reply."

There was a long pause then suddenly Grayson's astounded voice burst through the speaker.

"Steve Doyle! What is this? A joke? O.K.—waiting to hear your communication. . . ."

Steve nodded in delight and started to speak, then he stopped at a sudden rend-

ing crash from the laboratory door. It flew open under the impact of heavy shoulders. Three guards entered with leveled guns, and behind them came President Vorjak, set faced.

Elga's hand flashed to the master switches, cut out the power. In the dead silence that ensued both parties stared at each other. Then Vorjak smiled—that bland, inscrutable smile.

"HOW interesting," he commented lightly. "Naturally, my Earth friends, I have had your movements watched, even though you were given the freedom of the city. Your constant association every night with Elga Varon seemed suspicious. I decided on personal investigation. Now I know the truth. I am so sorry, Princess, that you did not die after all. Maybe that can be remedied. . . ."

"Now wait a minute, Vorjak—" Steve began savagely, but he was waved aside.

"A clever attempt to communicate with Earth by radio, eh?" Vorjak went on, his eyes glittering. "And from what I heard from outside the door, you have even succeeded. Congratulations! But after all, you can forgive me not wishing you to give away *too* much, can't you?"

"Well, what the hell are you going to do about it?" Slats demanded.

"Naturally I am going to use the opportunity," Vorjak smiled. He moved to the switchboard and slammed in the switches once more. "What sense is there in waiting a week or two for my instruments to be finished when we have one here already? You have started to communicate. You may as well finish. . . ." He turned aside, took up a sheet of paper and started to write busily. By the time the communication with Earth had been re-established he had his message written.

"Repeat what is written, and try no tricks," he said quietly, handing the paper to Steve. "Remember, guns are right behind you. Now. . . ." He snapped a switch and the microphone was alive again.

"Hallo there!" bawled Grayson's insistent voice from the loud speaker. "Earth calling Steve Doyle! All lines are cleared. . . . Speak, Steve. . . . Over to you."

Steve spoke in cold clipped tones, uttering every word that was written down for him. Their honeyed promises made him writhe. Trade, prosperity, friendship. . . . He could do nothing else but what he was told, sat hunched in silence at the delighted babblings of Grayson and the Bureau officials after he had finished.

"Tell them Martian engineers will instruct them how to build a magnetic plate," Vorjak hissed.

Steve obeyed, sat glaring at the control panel.

"O.K., Steve," came Grayson's voice finally. "We get the idea and we'll stand by night and day for the next communication. . . . Cutting off for now. . . ."

The radio became dead. Vorjak stood grimly smiling and rubbing his hands.

"Ready, my friend, you did excellently," he chuckled. "I shall not need to bother you again. If I speak myself with the necessary scientific instructions it will be quite in order. I will be believed. In a few more days my own radio equipment will be ready, far more powerful than this one. This can be destroyed."

"You can't!" Elga shouted hoarsely. "It represents a lifetime of work and endeavor and—"

"It has enabled me to get the first seed sown sooner than I thought, and that is all that concerns me," Vorjak snapped. "It cannot be left here, so—destroy it!" he commanded the nearest guard.

The man nodded, raised his gun and brought it down with savage impact on the transmitter. Instantly the invaluable instrument flew into pieces, its vital coils and wires dropping out onto the floor, its tubes in shards of broken glass.

"So sorry," Vorjak murmured, seeing the dazed looks of the three as they glanced at each other.

They moved slowly together as the guards advanced—then for the briefest instant Steve leaned toward the girl.

"Faint!" he whispered. "Quick—*faint!*"

She had too much sense to ask questions, puzzled though she was. Abruptly she allowed her knees to buckle under her, went her length on the floor and lay still.

"O.K., I'll pick her up," Steve growled, as Vorjak gazed down at her in surprise. He went down on his knees and gathered her up in his arms, but he did something else at the same time that passed unnoticed, and that was to scoop up two small coils that had been smashed from the set. In maneuvering the girl into his grip he also maneuvered the coils into his pocket.

"Well, what now?" he demanded bitterly.

"Prison!" Vorjak retorted. He wheeled to the guards. "Take them along, and send a guard to watch over this place. . . . Get moving!"

STEVE remained quiet about his coils. In the sanctuary of the prison he had the chance to fasten them inside his shirt, and there they would remain until he had the chance to play the hunch that was at the back of his mind. Even Slats knew nothing about them. . . .

They were imprisoned for several weeks, Elga in the cell next to them, but they needed no imagination to guess that in the time Vorjak had been busy with his own radio, giving instructions to Earth how to make a magnetic field.

In fact, it was a foregone conclusion since, from their cell window, the three of them had occasional glimpses of heavy globes, designed identically after the earth stratosphere globe, being loaded with all manner of armaments and equipment for war.

"Say," Slats whispered, one morning, "there must be nearly twenty globes finished by now—and it's a cert that Earth has the magnetic plate ready. What do we do to defeat this Vorjak guy?"

"I dunno—yet. All depends whether we're to be bumped off or given the chance to go with him. . . ."

A silence dropped between them after that, beyond occasional encouraging calls to Elga in the next cell. . . . Then towards noon President Vorjak himself arrived, a guard on either side of him. His irritating smile became immediately apparent.

"My friends, I have come to a decision," he remarked, strolling into the cell. "All is ready for our flight to Earth—your people have built a magnetic plate and our space radio is in perfect form. I have decided that you shall accompany us to earth since your special knowledge of your own planet will be invaluable to us once we have conquered it. One cannot learn

everything from a telescope, unfortunately."

Steve's eyes gleamed faintly, but his voice was quiet.

"I see. Are we to use our own original globe?"

Vorjak demurred, then shrugged. "I see no reason why not. It is identical with all the others. . . . In any case a guard will be mounted over you."

"And Elga?" Steve asked quietly.

"She too will go on the voyage. I cannot leave her here while I am away with my advisers, and further, her knowledge of radio may be useful later on. I have decided she shall travel with you—and for a very good reason. If you decide on some heroic feat to destroy us and yourselves you will refrain for fear of taking her life as well. She is, shall I say, the white mouse?"

Steve said nothing to that. Vorjak shrugged slightly.

"We are ready to depart," he said briefly. "Within the hour. The guard will take the three of you to your globe. . . ."

CHAPTER SIX

Back to Earth

THEY found the globe standing at the forefront of twenty others, fully loaded and manned. Without a word they permitted themselves to be escorted into the interior, then a massive guard with two guns followed behind them and stood with his back to the closed airlock, eyes alert for the first sign of mischief. . . .

But there was none. Steve lounged before the radio, Slats at the rocket controls, the girl by the window. Then presently the live radio came into action and Earth spoke.

"Hallo, Mars! We're all set. Power has been applied to magnetic field. Rise to Martian stratosphere and our field will pull you over the gulf. Right. . . .!"

"Contact!" barked Vorjak's voice from the speaker, immediately afterwards.

Slats automatically thrust in the engine switches and the globe began to rise swiftly. Steve glanced back at the rest of the fleet rising up all around them. Quietly he turned to one side and wrote down a few apparently observational notes, handed them over to Slats. He nodded grimly at what he read—

"When I say 'Go!' knock this guy cold!"

For several minutes Steve moved idly in front of the radio instruments, then as the guard gave the briefest of yawns he snapped out the command. Immediately the guard found himself hurled off his feet, his guns whirling into space, his jaw stinging from the impact of Steve's knuckles. Another terrific uppercut sent him plunging his length across the control room, to fall knocked out against the wall.

"Throw him in the locker," Steve panted. "I've work to do. In this trip we have the last chance of wrecking Vorjak and saving Earth and ourselves. . . ."

He tore open his shirt and tugged out the coils fastened to the inner side.

"From your set, Elga," he tossed out, seeing the girl's look of surprise, "Grabbed them when you fainted. I believe that if I incorporate these coils inside this set here, and alter the setting of the tubes, I might be able to reach Earth from space here. The ordinary set wouldn't do it, but these coils, specially designed, should fix it, just as they did back on Mars. I've just about enough juice to make it, too, since we use solar power as you did."

"Yeah, but if Earth replies, Vorjak will hear them," Slats objected.

Steve was already busy on the set. "I'll use a cut-out band on my transmission which will stop him contacting it—and for reception I'll give a different wavelength to be used. Vorjak, tuned in to the other wavelength, won't hear a thing. Leave it to me. . . . Give me a hand, can't you? Time's precious!"

At that both Slats and the girl lent their aid, worked with an unceasing energy following out Steve's directions.

"Darned good job there isn't as much acceleration this time out," Slats grunted presently. "We'd be laid out cold if there was. . . ."

Steve did not answer. Hastily he reassembled the parts of the set he had taken out, then snapped on the cut-out band, which stopped transmission to anywhere local but permitted it to take on power beyond a five-mile limit.

His hand closed down upon the main switches.

"Hallo there! Urgent call from Steve Doyle! Reply on special wavelength of 4798. *Not on usual band.* Note that, Earth. *Not on usual band!* Urgent! Steve Doyle calling! Clear all waves. . . ."

He waited tensely, eyes fixed on the speaker for the answer, the receiver exactly hairlined to 4798.

Suddenly Earth replied over the specified wave.

"Magnetic Field, Earth, answering. Give message, Steve Doyle. . . . Over to you."

"It worked! The coils did it," Steve whispered; then aloud. "Hallo! What are your instructions in regard to Magnetic Field power?"

Pause. Then, "To cut down gradually by seventy five percent after ships are sighted in Mount Wilson reflector. Then to lower power gradually to zero as ships reach stratosphere."

"Countermand those orders!" Steve rapped out. "Listen, Earth—this is a matter of life and death. It is not a friendly race which is coming, but an army of warmongers who will devastate our planet. I was tricked into giving those earlier messages: I'm staking everything now on a reversal of orders. Here are my orders. Leave the magnet on one hundred per cent efficiency and do not cut down a vestige of power until every Martian globe has crashed. Get everybody clear of the magnets for a distance of ten miles radius. Understand. . . .?"

Long pause. "You'll crash yourself, Steve Doyle! You'll be ground to powder!"

"That's our worry. Slats Camberwell knows tricks with a strato globe that no Martian ever heard of. Flying one of these tubs is his specialty. Think you can make it, Slats?" Steve whirled round on him. "Pull free of the magnetism?"

"A cinch," Slats said calmly.

"Well, what about it, Earth?" Steve demanded.

The extra long pause seemed to suggest consultation at the other end. Then the operator spoke again.

"O.K., Steve, we get the angle. But you're taking a hell of a chance. . . ."

"I've got to! And don't forget to evacuate the magnet area. . . ."

Steve switched off and whirled round, caught Slats by the arm.

"Slats, you've the hell of a job on board."

He grinned. "Listen, juggling this football is a mug's game. . . . But boy, I'm glad I'm not in one of those other globes! Have they got something coming to them. . . .!"

HE sat down before the massive control board, started to check out his course of action. At intervals as the long journey persisted the three of them slept, ignoring the thumpings of the recovered guard in the locker. . . .

Then, after what must have been days, when all Earth filled the sky, the influence of the magnetic field—visible as a tiny glowing speck near New York—became noticeable. Slats sat motionless at the controls, Steve beside him. The girl lay full length on the wall bed anxiously watching.

Slats' fingers twitched over the controls, waiting to feel the first pull of the atmosphere on the controlling fins, waiting to

fire the blast tubes. His narrowed eyes watched the instruments for the first flicker of the needle that would reveal external air pressure—and at last it came!

Instantly he slammed home the blast tube switches. Spurts of fire shot out from beneath the globe. The sphere itself quivered in its breathtaking downward rush, strained mightily against the savage downward pull of the full strength magnetism and planetary gravity.

The people in the globe could feel the fluttering of their almost-streamlined vessel as it tore through the stratosphere. Like a bit of paper it was, every slight projection on its side caught and held by the almost-solid atmosphere it was passing through. And still it tore down to Earth, seeming certain to crash and destroy utterly everyone within it.

"More power, man!" Steve panted, sweat streaming down his face.

"Can't!" Slats wheezed. "Be O.K. in a second. Want denser atmosphere for a grip. . . ."

Steve nodded desperately, watched with his whole being rigid as the globe creaked and groaned in its effort to pull sideways. Once he glanced through the windows. The other globes, not aware of what to expect, were continuing on a straight tumultuous course to earth.

Death seemed imminent. The Earth was coming closer with terrifying rapidity, the roaring rockets impotent against the titanic gravitational and magnetic pull. It seemed as though the walls of the globe were heating with the friction of their passage. And then there was a motion which was not caused by the rockets or by the air currents, a faint sidewise jerk.

"We're moving!" Slats shrieked suddenly. "Going sideways—!"

To himself, Steve whispered a hope that their fuel would hold out. Nothing like this reckless expenditure of power had been thought of when the globe was designed. It was impossible that there could be much more—enough for another ten minutes, he estimated silently. He walked, straining under the pressure of the forces at work, over to where the girl lay and took her hand in his. Not saying a word, she pressed his hand.

Exhaust smoke started to curl up from the firing chambers of the rocket tubes. Savagely Steve went over to them and opened the emergency vents, cleared the air somewhat. . . . Inch by inch the globe moved diagonally, swept downwards with dizzying speed into a maw of dense cloud. Rocking and swaying, its rivets strained to bursting point, it tore suddenly free of the straight vertical tug of the magnetic field, raced on through the atmosphere as a free falling body.

"Made it!" Slats exulted, jerking in the brake fins. "Gosh, but it was close—!"

He climbed again for altitude, the globe under full control now. Then, sure of his bearings again, he began to drop slowly. They burst free of the clouds at last and for a moment stared at a two mile distant scene in amazement. . . . The other globes of the fleet, helpless in the magnetism, were slamming towards earth with incredible speed, still with the momentum they had achieved in outer space. Two of them caught fire with atmospheric friction; others tore in pieces under the terrific pressure. Still others made the full drop and finished with an impact that ended in a terrific explosion. Munitions aboard vomited to the skies. For miles round the Magnetic Field earth and sky met in a mad conglomeration.

Nothing alive could have remained so in the hole in the Earth that had once been Magnetic Field. Steve could scarcely believe that even the city of New York, twenty miles away, could still stand. It was holocaust that had happened.

"Thank God I warned them to evacuate," Steve whispered, white faced. "Thank God. . . ."

IN THE hours of feting and lionizing that followed Steve and Slats both learned that the ruse had succeeded. President Vorjak and his advisers were but a memory of pounded metal. Their plans were atomic dust. Not one globe had escaped destruction. The only Martian to survive at all, excepting Elga, was the guard who had been locked up, and he was promptly handed to the authorities. . . .

New York had rocked to its depths at the impact of the Martian globes, but that did not stop New Yorkers from pouring out in their thousands to see the three mile crater where the Magnetic Field had been.

Wreckage of buildings and other structures for miles around bore testimony to the potency of the Martians weapons. Had they been permitted to land. . . .

"But, ladies and gentlemen," Steve said the following night, when he, Slats, and Elga attended the banquet in New York given in their honor, "the Magnetic Field will be built again. The journey we made to Mars was not in vain. Beside me is the Princess Elfia, who will now become the queen of the red planet. Vorjak and his rule is finished with. Elfia will, I know, only too readily agree to friendly relations between our two worlds. And we, for our part, can look forward to an outlet for our impeded trade. . . . Shortly, Elfia will send orders to Mars for the magnets to be switched on. I shall go back with her, to arrange the details attendant on her taking over the queenship. . . .

"In fact, I shall *have* to go with her," Steve added, smiling at the audience and transmitters. "We are to be married on that other world. What better proof could you have of security for the future, than for the Queen of Mars to marry an Earthling? From now on, my friends, let history be rewritten—the history of Mars, a world reborn. . . ."

THE END

THE LOTUS-ENGINE

By RAYMOND Z. GALLUN

The power from the billion-year old sun engine had to go *somewhere*, but there was no way of telling where that somewhere was. And then the dreams came.

"WE'VE got it started, Milt! The sun-engine's running, after a billion years! Look! Darn it, look, Milt! . . . . ."

My pal, old Russ Abfall, was dancing up and down there, in that dusty valley on the surface of Io, first large moon of the planet Jupiter. I could hear his high, cracked voice through the helmet radiophones of my space suit. His normally small eyes seemed very big, through the window of his own headgear, as he looked back at me along the cold, arid trail.

And his thin face was red with excitement, and maybe a touch of scare, too. Russ is past sixty. He's been a hopeful space rover for better than forty years. But now he was acting as tickled as a kid.

I didn't blame him, though I'm more phlegmatic than he is, and bigger—and red-headed and less than half his age. He

used to say sometimes, that I—Milt Claire's my name, by the way—missed a lot of the pleasures of life by not letting my feelings go, enough.

But I was plenty thrilled just then, too—and a bit uneasy and tense. I realized that we were confronted by a mystery that might easily prove dangerous.

A big, ugly-looking machine was working once more there in that valley, after its creators, the humans of Io—large-chested, furry, and goblin-like—had been extinct for an inconceivable time—the victims of a water famine on their dying world.

The thousands of reflecting mirrors of that solar motor, mounted on their slanted, circular frame, were collecting the feeble rays of the tiny, far-distant sun, and concentrating them on the blackened boiler at the center of the frame. The boiler was made like a squatting image of one of those last natives. It had a great beard, carved out of iron, ruby eyes, long goblin nose and ears, and a strange, mocking, secret grin on its lips—a grin that was sinister in itself.

Steam, generated by focussed solar heat, was turning a turbine, flywheel, and dynamo, the last shaped like a gigantic pocket-watch. Condenser coils were cooling the spent steam, and returning the water efficiently to the boiler.

It was all a most interesting spectacle—interesting, with a secretive threat in it somewhere. . . .

RUSS ABFALL and I had gone out there to Io in a rickety space ship, *Sun Spot,* three months back. Our hope had been to explore that almost untouched Jovian satellite, and maybe find a deposite of some rich metal. Free-lance space wanderers generally don't brave the rigors of near-dead worlds, except for the very human reason of making money. That was our idea, backed up by certain life-long dreams.

Our luck had exceeded our wildest optimisms. No, we hadn't discovered a mine. Instead, we'd located a deserted, underground city. Its galleries and chambers had been dug out of the sullen, almost airless hills, by those final Ionians. In it was a treasure-trove of small, easily transportable relics. Bowls, beautiful vases, queer clocks. Odd, ornate lamps that didn't give light any more, because the radium salts in them had worn out with age. There was a fortune in the stuff, selling to museums on Earth, and to wealthy individuals making collections.

But we had stopped our feverish crating of ordinary antiques when Russ had found that solar engine, all but buried by an ancient rockslide from the desolate mountains. On two Ionian days—forty-two hours long, they are—we put in protracted work-shifts, digging the thing out of the rubble that had preserved it.

It must have weighed a hundred tons, even in that weak gravity. We could never get it carted back to Earth. It didn't look like a good financial prospect. But lots of times enigmas are more fascinating than filthy lucre.

"We'll never have any peace until we see whether the engine'll run, Milt," old Russ had told me. And I knew he was right. Though later I was aware we should have left well-enough alone.

So we'd polished the reflecting mirrors of the sun-plant. We'd patched and repaired the leaks and dents in the boiler, turbine, and other parts. We'd filled the dried-out boiler from our ship's precious supply of water. We'd applied oil liberally, where necessary. Just at evening we'd got that huge, tip-tilted reflector frame turned around on its pivot, so it would face the sun at dawn.

And now, coming back from our ship in the early afternoon, we were flabbergasted to see that world-old engine already in operation, its throttle evidently opened by an automatic device!

Russ Abfall scrambled around to the dynamo.

"Is it really delivering juice, Russ?" I demanded, running after him.

"Yeah! Plenty!" he responded after a moment, pointing through a glass-covered peephole in its side. Peering there, I saw fat blue sparks of electricity playing steadily about some peculiarly-formed metal brushes.

"But where is all that juice going?" I asked. "The Ionians didn't use electricity much. They had those radioactive lamps to light up their digs, for instance."

Russ shrugged and pointed to the enamel-insulated wires leading out of the generator, and into a heavy iron pipe that went right down into the rocky ground, to some hidden destination. Tracing it to its end would be difficult, if we wanted to avoid the possibility of breaking an important part of the whole mechanism.

"We'll find out one way or another what's happening to the current," Russ reassured me. "Right now let's watch—here. There's enough to see."

HE spoke briskly, but I could tell he was getting worried. As for myself, I felt an unpleasant tautening of the hide along my back, and the nape of my neck. It was like a premonition of disaster.

There really was plenty to see, just watching the sun-engine itself. As the hours went by, a gear-system became active, turning and tilting the reflector frame on its pivot and gimbals, keeping the great, iron ring and its mirrors faced toward the sun, so as to collect all the heat possible for the boiler.

After a while I went to a grotto nearbye—part of that last Ionian city—while Russ, who is a much better mechanic and scientist than I am, stayed behind to keep an eye on the solar engine. For hours and hours I walked down bas-relief-flanked passages, and through gloomy halls, searching for some sign of where that electric current was disappearing to; but long search by the light of my ato-flash revealed no trace of an answer.

It was there, in that dust and silence, and wreckage of quaint household fittings, that a definite wave of intense mental discomfort came over me. It was as sudden as a hammer-blow. I hurried back to the surface, a vague suspicion in me becoming half conviction. It was already late afternoon.

Russ was walking around and around the sun-plant, his nerves and mind evidently responding to the same weird influence as were mine.

He had one arm drawn out of the sleeve of his space suit. His hand, thus freed, was thrust up under the collar of his oxygen helmet, and this way he was smoking a cigarette.

"Something's happened, Russ," I grated. "But what?"

"I know it!" he returned, swinging around to face me. "I feel queer as the deuce, Milt! I'm all tense and tight inside; I want to do something, though just what it is I can't say. I've got to get these arms and legs of mine busy. I can't relax at all. It's like I was about ready to explode!"

The sun plant. We both stared at it, accusation in our hearts. Russ was fingering the pistol at his belt, as though he wanted to fire a dynamium capsule at that ancient mechanism, and blow it to smithereens.

"Maybe," he said slowly, his voice shriller, even, than usual. "—maybe we ought to anyway shut this damned thing off. That electricity the dynamo is delivering—It's going down there under ground. It's energizing something. It's making us feel the way we do. . . ."

"I suppose we should trace that pipe—that carries those wires—right away, Russ," I added. "We'll have to, eventually, I suppose, to see what kind of a funny apparatus they're hooked to."

ROCKING on his metal-shod heels, Russ seemed to consider; but he vetoed what I had suggested, at last, just as we'd both vetoed it before.

"No, not yet, Milt," he said, barely audible, as though his heavy breathing made it hard for him to speak. "Some circumstance might turn up by itself, to explain everything to us. Meanwhile we can't take the chance of wrecking any important works. If we did, we might never learn the—truth. This seems to be big stuff, Milt."

That ugly, bearded image, which was the boiler of the solar engine, grinned its secret grin. The sun was dropping lower and lower in the dark firmament. It was already very close to the sullen hills. Soon, frigid darkness would come. Jupiter, as always, hung with just about one fourth of its great grey-and-red streaked disc above the horizon.

"It'll be sundown soon, Russ," I said, trying to reassure not only him, but myself as well—trying to ignore that increasing and nameless tension within me. "Then, deprived of energy to keep up steam, the engine'll have to stop."

I was right, of course. True to my predictions, the turbine and generator ceased turning at sunset. But the sinister spell that had come over Russ and me, didn't quit! Somewhere, energy from the power-plant must have been stored up, to operate whatever apparatus and force it was, that was acting on our nervous systems.

"I guess it's about time to do something about—all this!" Russ grumbled, his voice wavering.

"Yeah!" I seconded.

I was thinking, somehow, of all the skeletons I'd seen on Io—and mummies, too. White-furred bodies, dehydrated and preserved by the dryness. Everywhere those old Ionians had died at their tasks. Digging canals and reservoirs to collect and hoard the precious water of the rare snows. The conditions under which they had lived, in those final days, must have been terrible. Yet many of the mummies still wore eternal and mysteriously happy smiles on their withered faces. The Ionians seemed to have perished in joy. But why? How? In that question there was a blood-chilling enigma.

Well, we started back for our ship, to get our blast-excavators. We were going to dig down and see just what was hidden under the solar engine. But as we hurried through the swift-gathering night, I heard a dim rattle behind me, transmitted by the tenuous atmosphere.

STARTLED, we looked back at the machine—the sun-plant—which was now a hundred yards away. The whole frame of it was turning around slowly, majestically, a black, bizarre silhouette against the still-lighted west. It was turning to face the east—to wait for the dawn. Gears were moving it. As to where the power came from—well, I could guess on that point. An electric generator is built just about like a motor, and can serve as one, if electricity is fed back to it. So I figured juice was coming up along those wires that led into the ground—enough stored juice to revolve the dynamo and work the gears, turning the ring, and the reflector of the power plant east.

At sight of that eerie, automatic motion, Russ gave an inarticulate gurgle. We both knew then, that with its efficient steam condensers keeping the boiler always full, the engine could run every day, indefinitely, till it wore out. But we didn't get a chance to discuss the situation, or to act. Strange events happened too suddenly, bewildering us.

I can't say just what it was that reminded me, not of those final Ionians, but of their still more ancient ancestors, who had lived in the warm age of Io's youth.

Maybe it was my increasing hatred of the starkness of my surroundings, and of the greater and greater menace in them.

I glanced along the mountain gorge, toward the small desert plain beyond, where those last cultivated fields of Io had been. I expected to see, in the harsh, bluish twilight, only those dry irrigation trenches, and the twisted iron pillars that had supported the glass roofs of those hot-house fields, smashed long ago by infrequent meteor showers. Beyond that mass of rock there, the cigar-shape of the *Sun Spot* should be resting, still hidden from view.

But—there was something else—collecting and forming against the picture of that dreary scene. Call it a kind of mirage—something that resembled a photograph superimposed upon another photograph by double-exposure. And the second of the two was becoming more solid, more real, every moment.

THERE was a lake there, on that dry plain—or there seemed to be. It was a beautiful lake ruffled by little moving wavelets. Along its shores were odd trees. Beyond them loomed a city wall, covered with vines. And rearing up over the rampart were high buildings topped by carved pavillion-like structures, orinate as Burmese pagodas. Over it all was a sky, soft and blue as if it belonged to a summer evening on Earth—except for the many moons that hung in it, not almost airless moons like those of the present, for each was clad in the cloudy veil of an atmosphere.

And there was Jupiter, still three-quarters hidden below the horizon, but not streaked and cold anymore. It glowed with a dusky, luminous redness, and it seemed that I could feel its warmth.

I knew then, at least, what the mirage, or whatever you care to call it, represented. Primitive Io, long before the last

days—when the whole Jovian system was new. I had thought of those times, and here, somehow, it was crystallizing before me. Real.

"Russ," I gasped. "Russ—I see a city—like the ruins of the most ancient cities here on Io. The ones whose foundations you can hardly trace! Down there on the plain at the end of the gorge!"

I pointed with an extended arm, while I babbled on, describing what I seemed to see. I was too bewildered to think of danger.

Russ, beside me, gave a nervous grunt. Then he stammered: "No, I can't make out—anything—Milt. But I feel damned—funny!. . . ."

He paused there, as if startled. Pretty soon he gasped in sheer surprise. "You're right, Milt!" he grated. "I see it now—the city—the details filling themselves in, each one as you describe it. The lake, the wall, the vines! It's what you'd imagine one of those oldest cities to be—from the ruins. . . . And I see a city gate. People are coming out of it—goblin people, very slender and pallid, and without the great lungs and chests of their descendants. They're like those original folk must have been! Except for their natural fur, white, and much less heavy than that of the last men, they wear no clothing—only metal ornaments. And I hear strange music. . . ."

Russ and I stood there, staring, at the mouth of the gorge. And—it was funny! I hadn't seen that gate my pal spoke of, before! But I did now! I hadn't seen the people either, or heard the music. But these parts of the vision were all there, now, clear and vivid! It was as though everything was imaginary, somehow, though it all seemed so real, and that Russ' descriptive words were helping my imagination to fill in the details. From what Russ had just said, it had been the same with him. He hadn't seen the ancient city at all, until I had described it to him. Apparently, then, I had reached the nameless stage of being able to observe the impossible, a moment or so ahead of Russ.

I was in a kind of drunken fuddle. The lake there, fascinated me. I saw goblin-folk wading into it, the cool water splashing around their thin knees. . . . Suddenly I was aware of a tremendous yearning, stronger than any perhaps more logical fear.

"Russ," I mumbled. "The lake. . . . Let's go swimming. It's been so damned long. Out here on Io we never could—before. Dust, and skeletons, and cold stars. That's all we've been living with—for a month. . . ."

WELL, right then Russ Abfall began to swear at me. "You loony nut!" he shrilled at last in his cracked voice. "Don't you realize this is all a fake—a mental phantasmagoria of some kind? It's one of the enigmas of a dying race—something they must have employed in desperation! You don't want to get mixed up any more than you are with something like that, do you? . . . . That damned sun-plant—and what ever its underground-wires are attached to! Visions! Hallucinations! Somehow that hidden apparatus causes them! And we can't even guess what kind of a hellish end this thing we've tangled with, can have! It must be like a drug—opium or hashish! It can't work like them of course—but—"

He stopped and stared at me. His tone was changed utterly, when he spoke again. "Milt," he said in wondering simplicity. "You've got a swim-suit on."

I examined myself quickly. Yep, it was true! My heavy space armor had apparently vanished. And I was clad in a one-piece outfit of blue cellutex fabric, common on Earthly beaches. Looking at Russ, through that antique dusk and its weird illumination, I saw that he was

rigged out just as I was! We were two contemporary Earthmen on primal Io!

"You're ready for the water too, I see, Russ," I told him.

His confusion was almost humorous when he looked down at himself. He swore rather weakly. Then he wheeled about, as if to search for the sun engine with his eyes. I looked too, but what I saw was—not a desolate expanse at the foot of the northern cliffs, but a dense forest. A soft mild wind blew against my body. And the stars overhead were pale. . . . The mirage or hallucination had closed in on me almost completely.

Russ' voice was a bit odd, and far away, when he spoke; but I was sure that it, at least, was still real. Sure because of the worry in it, and the momentary groping for fact.

"It isn't there, Milt!" he was stammering. "The sun-plant, I mean. . . At least I can't see it. Can you?"

"No!" I shouted, straining, so that I would be sure to reach him. "I see just trees. . . ."

"So do I, Milt," he returned. "It's natural we'd imagine the same thing, there. Old Io. We both know the archeology, Milt. How things were. . . ." And then Russ sighed in capitulation. "I wonder if it matters—really," he continued. "Maybe you were right, Milt—about a swim. I've been a space-man off and on for forty-one years. You get sick of things out here on these damned silent worlds sometimes—damned sick. . . ." His voice seemed to trail away.

BUT I knew from my own experience just what was back of what he had said. Space. That awful nostalgia that grows on you. It was largely the humanness in old Russ, and the intriguing pull of the visions that had surrounded us, that had made him give up. And it was the same with me. We both knew that we were toying with something that justly should have made our flesh crawl; but we didn't care. I wasn't worried a bit. And I had the oddest idea that anything I wanted would happen.

Russ and I walked down to the lake together. Or anyway seemed to. Perhaps we were already going our separate ways, along separate dream-channels, as our individual fancies dictated. We waded out into the water, mingling with those ancient Ionians. Their voices echoed around me, speaking a beautiful, liquid language. Or was it a language at all? Probably it was just a lot of pleasing sounds which my mind created for itself. But those ancients paid no attention to me, however—most likely because I wanted to think, alone—then. I swam far out from the shore, feeling the heady glory of that tropic night. . . .

Yes, I knew it was just a dream. But what did that matter? Pretty soon I began to wish that I wasn't on Io—that I was back on Earth instead. Almost at once, then, the scene around me, vanished. I was riding a San Francisco belt-walk—one I knew well. Ahead of me, in the morning sunshine, was the new Farwell building, finished in 2314. Chet Robbins, an old friend of mine, was with me. He works for the Wenz Rocket Motor Company, and he likes magic.

"Got a new card trick to spring on the gang tonight, Milt," he was saying, his broad face all pleased good-nature. "It's a real honey! Boy, it'll make your eyes pop!"

I'd never been able to catch on to those clever stunts of Chet's, and sometimes this had made me kind of mad. But now, in this dream, I was sure I had him. All I had to do was imagine—for instance—the Farwell building floating up into the sky. . . .

I saw that two thousand foot spire doing just that. I heard a rending of metal, as the aerial street-spans connecting it with other buildings, parted. I

heard people scream distantly. And I could see Chet's face turn suddenly pale and foolish. He gasped, speechless.

"Never mind, Chet," I said, laughing. "I'll bring it down again. And I did. A moment later the Farwell building was back in place on the ground once more, and the street-spans were intact. Chet was looking at me utterly flabbergasted.

It made me feel a little silly. This wasn't the real Chet Robbins at all. Petty revenge was out of place. So I shifted the scene again—I don't remember to what.

BUT it's easy to see what I'd started for myself. Anything was possible in my imaginary environment. I could imagine myself Caesar or Alexander the Great, if I wanted to, and my fancies would seem perfectly real around me. Historical accuracy would depend on my limited knowledge in each case, if history happened to be involved. For instance, I don't know much about how Caesar's Roman legions were organized, and their equipment is hazy to me—but still I could construct for myself a vivid living picture.

I didn't ever try Roman times more than briefly, but I tried countless other things. Pulled by a strong nostalgia, I relived fragments of my own life. I'd played football for California Tech, and I did so again, now. Saturday afternoons. Yelling crowds. Coach McKay giving us his hardboiled lectures. Fun and fight all over again. And then the training school at Vananis, Mars, where I'd learned to fly rockets. We'd had some nice blowouts—our class—in that quaint old city, which twenty-five thousand Earth people had colonized, replacing the Martian race, dead in some ancient plague. Dances. Parties. The faces of friends.

Maybe it was all sort of silly. But it was relief from that lonely stay on Io, where not a real thing grew any more, except some rock lichens. And I could enjoy luxuries I'd never had before.

Sometimes I remembered—danger. But not till I was aware of the passage of time, as dream succeeded dream, literally in thousands. Weeks, maybe months, must have already been used up by now. And I'd never emerged from that curtain of rosy visions, which I realized was the result of a science of the mind developed by the last men of Io, for a purpose of their own.

And I wondered: "Where am I really? Where is my actual body? How is it feeding itself? What is it doing? There are air-purifiers in its space suit, of course; but there are so many other things to consider!"

I DIDN'T know how to answer these questions. So, in moments of panic, I tried to break the spell of dreams, and fight my way back to truth. It was then that I discovered that I was in a trap. I couldn't get rid of those visions—or if it was possible to do so, it would require a tremendous effort. And I didn't seem equal to that, now. Still, it didn't seem to trouble me much. "What of it?" I kept telling myself. "What of it?" So my visionary magic carpet continued to function.

But I wondered about old Russ Abfall. How was he faring? Doubtless his situation was the same as mine. Doubtless he was lost in a web of dreams, too. What were they like? I was pretty sure I could guess. Old Russ, weary of the life of a space man, wanted to retire. He wanted to build himself a laboratory on Earth, and spend the rest of his days in research for the improvement of space craft. It had been a dream of his since he was a kid. He'd hoped to win enough money from his various ventures in out-of-the-way corners of the solar system, to finance his costly experiments. So doubtless, now, he was getting a kind of vivid if

unsubstantial fulfillment to his ambitions, just as I was frequently imagining the success of that interplanetary tourist line I wanted to start, if I ever had the means. There'd be contacts, people, movement and color. I'd own ships. I wouldn't be just a space bum any more.

Another thing about Russ. He'd had a wife once, when he was young. But she'd been killed, when they were married a year. Killed in the smash of a rocket-plane racer she was piloting. Rhoda, her name had been. Once in a great while, Russ used to rave about her. He'd show me her picture then. She'd been dark and snappy, and pretty. Perhaps Russ was imagining himself with her now, young again. . . .

I WAS on the bridge of a big Earth-Mars Liner, giving orders as its captain, when, finally, the break in the dream-curtain came. From out of nowhere, I knew that a hand was on my shoulder, shaking it with insistent violence.

"Hey, Milt!" someone was calling, in tones as faint as if they originated a thousand miles away. "Good night! We've got to snap out of this! If we don't, it's our finish, sure!"

It was Russ, of course. I knew that voice was truly his, and not another phantom. I couldn't see him, but I could tell how hoarse he was. When he stopped speaking, he began to cough. It was a hollow, horrible sort of cough, that made my blood run cold for a second. But terror starting up in me, caused me to make a mighty effort to win my way back to solid reality, and find out just what sort of a predicament we were in. I struggled furiously, using all the will I could muster. And the dream fought back.

But at last those instruments on the control panels of my make-believe space liner began to grow faint and transparent. So did the comfortable fitting of the bridge. Sleek chromium fittings, and soft dark rugs and chairs, turned to ghosts, hovering at the vanishing-point. And around me, maintained only by force of will, was grim fact!

I was in a deep, vertical shaft—a sort of well. Jagged walls of stone were around me, towering up toward a circle of daylight, far aloft. I was clad in a space armor again. Russ Abfall was there beside me, leaning weakly against the wall of the pit. Io, it was—the real Io—though I'd never seen this excavation before.

Instead of feeling languid and comfortable, though in tip-top shape, as I had a moment ago, I felt rotten! I was sick, and worn out with work and half starvation. My hands and arms—my whole body, in fact—were so emaciated they fairly rattle inside my space armor. Still I didn't get the significance of all this—quite. Though I was pretty certain that, weak as I was, I could never

climb out of this pit. I'd starve here—die of thirst.

Naturally I looked to Russ for explanations—because he's smart, figuring things out. "What's it—all about, Russ?" I grumbled thickly, still battling to keep those comfortable visions out of my tired brain—visions I yearned for now in this hell-hole, as I had never yearned for anything before.

Russ Abfall, probably because of his age, was in even worse shape than I was. His face, in his oxygen helmet, looked like the face of a corpse in a coffin. But he came through with the answers. He was too tired to be excited any more. But he spoke, swiftly, tensely, in his cracked and now hoarse voice, aware that we couldn't hold onto real things for long.

"You know what reverie, or daydreaming is, Milt?" he asked. "Naturally you do, but let me give my own definition: It's a mental mechanism which enables one to escape from something unpleasant. If you've a routine kind of job that you don't like, you generally do it while thinking about something nice.

"The phenomenon that has tricked us, is just a kind of reverie, enormously improved by artificial means. To understand its purpose here, you've got to understand the position of those last Ionians. The climate was bitterly cold. They had little food or water. The future prospect was hopeless. But still they wanted to keep going as long as they could—getting as much out of life as they could.

"Some genius of a scientist found them the means. But in some respects, it's an old trick to us on Earth. In a crude way, drugs like opium and hashish accomplish the same thing—produce dreams of strange beauty and vividness.

"But agents other than drugs might do this far more perfectly, without, in themselves, putting one's body out of kilter. We're both sick, but from different causes.

"The brain responds to quite a number of stimuli. When one has a fever—when one's brain is being thrown off balance by heat—there's a tendency toward the hallucinations of delirium. Sun spot radiations have long been believed to cause mental and emotional excitement, producing wars and other forms of mass and individual violence. Music—sound waves, enriched by tone and mathematical rhythm—soothe the mind and emotions, generally.

"We must be dealing with a form of radiation here, Milt. Something that beats on the nerve and brain cells. The sun-plant, you know, and that concealed apparatus its electricity is fed into. It detaches the visionary part of our minds from fact, and allows our imaginations to roam, free, while the mechanical portions of our brain, and our bodies, can go on with unpleasant tasks.

"THAT'S the way I've doped it out, Milt. It's beautiful and insidious. But of course the mess we're in isn't the fault of the old Ionians—or their intention. We just got tangled with the Lethean influence they used on themselves, probably at the very last. We monkeyed with their sun-plant—and so, liberated again what might be called the drug of a hopelessly doomed and dying race."

Russ Abfall stopped speaking. He was panting heavily. My will tensed against the blur of visions trying to envelope me once more. I was looking around. Some of Russ' explanation, I had worked out myself, when I had pondered in that dream region.

I saw the walls of that deep well, around me, grey and stark. Tools—blast excavators, which we had brought from our ship, were lying in the thick dust. We'd been digging here—perhaps for months. In the wall of the pit, chinks were cut, one above the other—a kind of ladder, going up and up. We'd been

out of the pit often, going back to the ship for supplies, driven by some perhaps subconscious urge like sleep-walkers. We'd been working here, using up our strength until we were no longer able to climb out of that deep hole which we'd been digging deeper from some ancient Ionian beginning. We'd even rigged up a system of buckets and cables to remove the dust our blast-excavators knocked loose from the rock.

"Digging down for water," I grumbled. "Subterranean water which can't be there any more. The Ionians wanted water. The urge to get it was stamped in the radiations of their reverie machine and—we got a dose of it too. . . ."

"I think so" Russ commented.

"But" I asked "what was it that snapped you out of the dream-world in the first place? Did you just realize and fight your way out or—?"

Russ raised his right arm. I could see, even with the space suit sleeve around it, that it was badly swelled. "A falling rock dropped on my wrist," he told me. "And the pain was strong enough to get through to me. It almost woke me up, so to speak —showed me how things were. And I was scared enough to use every bit of will I had, to go the rest of the way. . . ."

Well, what were we to do now? Starvation and death in that pit was staring us in the face, if we couldn't climb out of that hole. We tried doing just this, using that crude ladder of chinks. But we could do only a few steps before dizziness, and the weakness in our muscles overcame us, and we had to drop back. Then, impelled by a forlorn idea, we staggered around, half-awake, searching for some sign of that Ionian reverie machine. We blasted into the walls with our excavators—but we found nothing tangible to smash—to fight. But in the dust under our booted feet, we stumbled on more mummified Ionian corpses, each elfin face smiling a happy smile which we understood now. Maybe we'd be like that soon—mummies. The tools of those Ionians were beside them—complicated, sharp-ended rods, which may have employed some powerful principle. But they were useless now.

And as we plied the disintegrating flame of our excavators, our wills grew tired.

The strain of hanging on to cold, uninviting facts, was too strong.

"T'hell with it!" Russ croaked at last. And then he muttered a name—"Rhoda." His young wife, of long ago.

"No, Russ!" I grated. "Don't slip! Try not to—think—"

BUT my voice trailed off—and I was somewhere else—reminiscing. I was a kid again, reading a book. There was sunshine on the piano keys in the living room.

And my brain was saying: "What's the difference? The Ionian scientist who made the dreams possible, was a great guy. His invention can give a beautiful, quiet death. Better than feeling starvation creeping on you, anyway. Better than seeing this hole, and that circle of stars, way up there. . . ."

Like that. I guess anyone can understand how it was with Russ and me, all right. We were exhausted physically from the strain of constant work. And Russ had been chasing an ambition in the void for more than forty years, seeking the funds to set up that lab he wanted. No one could criticize that tough old bird for lack of nerve because he had crumpled. The trail had been too long and too hard. Besides there was Rhoda, whom he could reach only in fancy.

But suddenly I wanted things real, myself. The real Earth, and not these empty phantoms. I wanted the real people I had known. It would be the same with Russ, if he had the chance. And he was my pal.

So, after a little while I gained some strength back. I didn't know whether it would accomplish any good, but I brought my will into play again, for all I was worth. The well materialized around me, with its grey, volcanic stone. I felt as ill as before. And I thought desperately: "What'll I do? What'll I do?"

There was adrenalin in the emergency pack of my space suit. I'd of course remembered all the time that it was there, but I hadn't thought that injecting some of this powerful gland extract into my blood, would do much good. Nor did I think so now. I just hoped.

Everything was swaying and blurred around me. But I got out the emergency pack. Filling a hypodermic syringe with that powerful, treacherous fluid, was no snap, since my fingers were trembling like castanets. And always I had to keep those visions out of my eyes, and those softening dream-sounds of music and wind and water, out of my ears. It was like balancing on a tightrope, when you're a novice.

Grimly I unfastened the wrist-band of my space suit sleeve, exposing part of my arm to the cold half-vacuum. Quivering, I jabbed the needle home, and pressed the plunger. Then I fumbled to refasten the wrist-band.

Russ was lying there, half imbedded in the dust, like a drunken sot. I kicked him in the ribs to try to bring him around, but it was no good. So I had to doctor him without his assistance. Never before had I had to fight so hard to concentrate on a purpose. But after some minutes I got an adrenalin shot into him too.

BY THE time I was finished with him, the gland extract was beginning to take effect on me. My heart was pounding until I thought it would burst itself wide open. But otherwise I felt a little more competent. Maybe that was an illusion produced by the adrenalin. My arms waved crazily, as if to push back, by physical action, the mental phantasms of Ionian mind magic, still hammering in my imagination. They seemed to cling around me like smoke, trying to develop solidity again.

Suddenly, though, I was more sure than ever that all my efforts were going to fail. I was certain that the adrenalin wouldn't do any good—that I couldn't have taken enough to have the needed effect of combating the weakness in my body, and that, still, I had injected too much into my veins—enough to kill me.

Then I heard Russ in my helmet phones. I looked around. He had staggered to his feet, braced to that extent by the adrenalin.

"What—?" he stammered thickly.

"I gave you a shot in the arm," I told him. "Now come on—quick! Let's try again to climb out of this hole!"

"How?" he questioned. "Don't be dumb, Milt! Don't be crazy!"

But he came forward anyway. I put his foot in the first step of the chink-ladder, and boosted him—one step up. Oh, it looked like a futile business, all right! He slipped on that first chink, and whacked his shin. He cursed with the pain of the jolt. I was nearly thrown off my feet, as his body came down upon me.

Then, however, all at once, his face took on a furious, mad brightness. "That's it, Milt!" he growled weakly, coughing a little. "That's our one chance! Get angry—think of things to make us angry. Concentrate on hating! It's wonderful what emotions like that can do to strengthen an enfeebled carcass! Come on, boy! Hate! Hate Io! Hate the cold of it, and the loneliness! Hate the circumstances that are killing us! Hate those damned dreams! Hate the sun-plant, working up there! We've got to smash it! Let your blood boil with just that one idea! Don't think about life or death.

Think of the fun we're going to have, blasting that ugly contraption to bits! Come on Milt! If it's the last thing we do. . . ."

LIKE half-starved cats we clawed our way over the lip of the well. Madness was in us, filming dreams tried to enfold us again. We were exhausted there on the cold plain among the hills. But our job wasn't finished yet. We couldn't delay, because if we did we'd slip back into the clutch of that Ionian mind magic that had enslaved us, making us work beyond our limits. And if we did slip, there never would be another chance. We had to hang on—somehow.

We hardly knew where we were. We didn't remember being in this spot before. Getting oriented properly took more time, there in the confusing labyrinth of passes between the hills and mountains. But our tracks in the dust, made when we were like sleep-walking robots, finally offered a solution. Following them, we found our way to the sun machine, a quarter-mile distant.

The thing's flywheel still spun steadily. Peering at it with blurred, wobbly vision, I saw the secret grin on the face of the boiler image. Then Russ and I raised our pistols. As twin dynamium capsules struck the machine, there was a thin, distant-sounding, though mighty, explosion. Iron, reflector fragments, and bits of the generator, boiler, steam condenser and turbine, flew in every direction. And there was a white puff of steam that expanded quickly into rainbow frost crystals there in the weak sunshine.

It wasn't quite over even yet—for there was that unknown thing underground, and still active, for it stored electricity. Without speaking, we fired more dynamium capsules, until we had a hole fifty feet deep blasted in the crust of Io. In it there were just a few pieces of metal and other materials that could tell little about the miracle that had been concealed there, throwing off strange radiations. Bits of wire, there were. Some pitchy, insulating substance, and glass. The latter may have been part of a storage battery.

Russ gave one look down into the hole. Then he sagged to his knees and rolled over on the rocky ground. When I tried to rouse him, he grumbled sleepily: "All over, Milt. Beat it. Nuts!" In the next instant the plucky old devil was snoring, and I had to drag him back to the ship as best I could. I was sleepy as hell. Maybe we'd slept on our feet before, but it couldn't have been quite natural sleep.

I guess that's about all. Our trade in Ionian relics was a financial success. We're back on Earth. Russ has the lab he wanted all these years—testing new space craft principles. And I'm negotiating to buy some ships for my interplanetary tourist line. . . .

THE END

··● GUYON 45X ●··

By DEAN D. O'BRIEN

Castor, the mad Dictator of Jupiter, had the proud "Z" of the Scientists after his name, sign that no ordinary mortal could hope to defeat his plan to conquer the Solar System. But his adversary was no ordinary mortal, for "Guyon 45X" means "Guyon Courage!"

Full-Length Novelette

CHAPTER ONE

Red Spot on Jupiter

GUYON WALFORD started as he saw it. "Is that—"

"Yes, a radium powered disintegrator-gun," finished John Castor. He threw over a lever near the intersection of the two halves of the dome and silently, like the shells of a clam, they swung apart and sank in their receptacles."

Guyon looked around. From this vantage point, every corner of this radium-impregnated valley of Jupiter could be seen.

Then he looked again at the dis-gun. It could be turned in any direction, and at any angle to the ground, on its swiveled bearings.

The whole instrument, light and compact, was portable and could be moved on its wheeled base to any side of the observation room.

"Perfect, isn't it?" chuckled John Castor, also known in the valley as "The Master." "Any sign of rebellion, trouble, rioting, and I simply wheel it to the desired spot along the rampart and trip the lever. Oh, there have been riots. Once this little machine of mine whiffed a dozen

discontented Mercurians and Jovians to nothingness, when they tried to wreck the tables. But they haven't tried it since. They are properly afraid of this pet of mine!"

Guyon shuddered at the indifferent, cold-blooded tones of the man. Life meant nothing to him when it stood in his way. But just what goal did he have in mind?

"Now see over there—your ship," pointed Castor.

Guyon saw it, at the rim of the valley, perhaps a mile away. He hoped to get its motor repaired and leave hot, uncomfortable Jupiter. Then his eyes opened wide.

"What are you doing?" he shouted, as Castor aimed the radium-gun.

"Stand back!" commanded The Master, holding him off with a pistol he had whipped out.

Guyon raged inwardly, but could do nothing. Castor calmly sighted the dis-gun, and tripped a lever. No sign of activity came from the gun's ugly snout, but Guyon saw his ship suddenly melt into a ball of rosy mist. A breath of wind swept past the spot and dispelled the mist. Then there was nothing!

GUYON'S nerves were grated by the triumphant laugh that came from Castor. He turned in a fury, blind with rage at the wanton destruction. He started to fling himself at the green-eyed man, checked himself, and relaxed against the rampart.

"That's better," nodded Castor. "Guyon, it is necessary that you know what my project is, here in the Red Spot. Had you had an inkling yesterday when you arrived, and escaped, you would bring the armed forces of the Solar System on me!"

Guyon sucked in his breath sharply. "Go on," he said hoarsely.

"I have been mining radium here in this valley of the Great Red Spot for ten years, with the help of the Mercurians. On Mercury, thousands of warships are being secretly built for me. Each of them will be armed with a radium dis-gun. When the great day comes, and it will be soon now, my fleet will sweep into the Solar System, destroy all existing governments, and I will become absolute dictator of all the planets!"

Castor had spoken all this in one breath, as though he had learned it by heart through endless nights of repetitious thinking.

"You're mad!" panted Guyon.

The Master bent livid eyes on him. "No, I'm supernaturally sane. While I was a common scientist, and worked peacefully in my laboratory on Earth, something kept telling me that I was meant for bigger things—that I could become the greatest figure in all history! I left my lab, knocked about the planets, found this rich radium bed—and conceived my plan."

Guyon was tensing himself. John Castor, self-appointed Napoleon, could well bring about the ruin of civilization. In this valley there was enough radium to give him the destructive power for such a stupendous plan. He was a danger and a menace—it would be best that he die. Guyon was young and strong. Castor was old, almost senile. A little scuffle and it would be over. His muscles bunched for a spring.

"Stop!" warned Castor suddenly, seeing this and leveling his pistol. Guyon mumbled a curse and relaxed again.

The Master of the valley laughed. "You don't think that with my plans for monarchy, I failed to make my person invulnerable? Why, even my faithful Mercurians have plotted against me, driven mad by the thought of the immense power and wealth of radium I control. Underneath my silken suit is a complete covering of very light and comfortable chain-mail, yet so strong that no bullet or sharpened weapon can pierce it. As a second precaution, I am armed with two pistols,

operated by a secret catch that you would never find in a hundred years. As a third and final measure, around my chest is a belt fitted with numerous little tubes which can shoot out anesthetic gases at my will, all around me. To attack my person, Guyon, is sheer suicide, never forget that!"

Castor leered confidently at the younger man.

"And now," he concluded, "that you know my story, you see why it is impossible for me to ever let you leave alive. You are a chemist. I can use you, in the laborious extraction of radium from its native ore. If you refuse to help, you are stupid."

"I refuse!" snapped Guyon instantly.

John Castor laughed. "Very well," he said. "Do as you like. My person is invulnerable. You have no ship, nor any weapons. No one has weapons except me, in this valley. You cannot incite the Mercurians, for they hate Earthpeople. You cannot escape the Red Spot for it is 5,000 miles to the nearest border! If you run away, you will die of radium emanations, without my Protection Salt. I will let you live, Guyon, but you can do nothing against me!"

GUYON fled from the aggravation of listening to the smug laugh of the man who called himself The Master. Outside the domed building, he looked around at the scene of activity with despair.

Guyon-45X-Walford wished now that he hadn't tried to shave time, speeding from Callisto to Ganymede, by skimming over Jupiter's Red Spot. The stormy atmosphere had caught his space ship, flung it down. Miraculously, the landing had been gentle, at the edge of this valley. That had been but yesterday. Guyon had been astounded at first—the valley was like an industrial center, totally out of place on undeveloped Jupiter. Then he had been overjoyed, to find rescue at hand. But now he knew the truth.

Wearily—though an anti-gravity belt kept his weight normal—he trudged to the hut that was to be his home. It was the end of another short Jovian day. Already the blackness of night was descending. Before he reached the door, a flood of powerful radium-lights burst into life, lighting up the valley from end to end. The progress and industry of the community went on without interruption.

Stella-16S-Brinkley and her brother Cleve-21T, whom he had met the day before, were eating when Guyon came in. He accepted their invitation silently and ate with them.

Finally Cleve broke the silence. His voice was toneless, weary.

"Did The Master tell you—everything?"

"Yes, too much," nodded Guyon. "Asked me to help as a chemist. I refused." He looked at them suddenly. "And you two—you actually do work here? Actually help Castor in—"

"Hold on, Guyon!" exclaimed Cleve, flushing. "Wait till you've been here as long as we have! We refused, too, cursed him, denounced him. He laughed and told us we could do as we wished. But you don't know yet, Guyon, the torture of doing nothing in this ultra-tropical world of monotony. We couldn't go anywhere without inviting death, and there is nothing to keep one occupied. You just sit and think and think and—it is the way to madness! Several weeks of that hell of idleness and we gave in. At least our work keeps our minds off the hopelessness of our situation."

"I'm sorry," said Guyon simply. "I didn't think of it that way. How long have you been here?"

"We landed about two months ago, earth time," supplied Stella. "A countless nightmare of Jovian days and nights."

Guyon looked at her sympathetically. A young and pretty girl forced to live in this brew-pot of evil—it was unthinkably

cruel. She was a strange picture of beauty trying to overcome the handicaps of dulled eyes, pale cheeks and wasted flesh, occasioned by the trials of a hard world.

"Curiosity was our downfall," went on the girl in the same toneless voice her brother had used. "Going from Io to Callisto during their conjunction, our course took us over the Red Spot. We wented to take a closer look at the colored effects around it—and our motors failed. Almost the next thing we knew we were on the ground, miraculously alive after a twisting plunge through the upper air storms. We thought we were saved when we found this valley—" Her voice trailed away to bitterness.

Guyon related his equalling gruelling experience. "I think," he finished, "that the radium emanation from the Red Spot accounts for the failure of our motors."

Cleve nodded. "The excess radiation that streams upward from the Spot burns out the reactor-screens. Perhaps dozens, or even hundreds of ships in the past have been similarly brought down into the Spot. But none of the passengers lived to tell the tale, except us. Some twice-occurring freak of fortune saved our two ships—only to have them destroyed by Castor in front of our eyes. If he hadn't destroyed my ship, I could have repaired it. But he took that last hope away."

Guyon looked all around him, then spoke in a whisper. "Wouldn't it be possible to steal a ship? There must be some space ships here."

Cleve shook his head. "We thought of that too. Only The Master has a ship, in his steel hangar, and only he knows how to open it."

There was silence for a while. Then Guyon spoke again. "Sounds like checkmate. But I won't admit it—yet."

"Of course not, with an "X" in your name," said Stella. A smile warmed her pale face like the rising sun of Earth. Guyon smiled back, but more grimly.

"It might be well for Castor," he said slowly, "to remember that 'X' too. People of the 'X' class have had a lot to do with the destinies of the different worlds of the system."

"That's true," agreed Cleve. "But Castor himself is '8Z'—scientific genius that is often associated with 'X' and even 'Y' qualities."

"Whatever his classification," returned Guyon, "he's a menace, an insane threat to civilization. I defied him to his face, and I won't rest till I've done what I can against him."

Stella and Cleve looked at each other and Guyon read the despair that passed between them.

"Even in the face of the seemingly impossible," he added.

"Count us in," cried Stella quickly. "We have little hope, but more courage. And Guyon, your coming has about saved me from—oh, I don't know what!" And she burst out crying.

Guyon thrilled at the compliment.

TALKING it over with his two companions, Guyon decided to accept Castor's offer of work, more to give an air of complete resignation than anything else. It was a bitter dose and he left the presence of The Master with cold rage in his breast, almost berserk at the scathing laugh that ended the short conference. Castor derived an unholy glee from this submission.

The Master arranged for Stella to show the new recruit the general scope of the enterprise. They visited first the huge chemical factory. It contained hundreds of vats, oxidizing towers, giant distilleries, heating ovens, crystallizing pans, and other paraphernalia of the chemical industry. It rivaled in extent some of the largest establishments on the civilized worlds. Every chemical reagent needed in the intricate process of radium extraction was produced here.

"Where do they get their raw material?" asked Guyon.

"Right here on Jupiter," answered Stella. "There seems to be every kind of natural deposit here in the Spot that they need. Of course, that's not strange—the total area of the Spot alone is many times greater than the total land surface of Earth.

"The processes used are all modern, modified as conditions demand, or as Castor himself alters them. In the many years he has been here, he has used much of his time eliminating lengthy routine. He is working toward a goal, and time is an important element in his plans."

Guyon soon grew sick of the sight of Mercurians, who overran the valley. They were green of skin, eight feet tall, thin and cadaverous, dragging a long tail useful on Mercury mountainous surface. They were a bisexual race, and clannish to a greater degree than any other race in the Solar System.

Taciturn, ugly, and totally lacking in human attributes, they quickly repelled Guyon's sensibilities.

"Seems Castor could at least have chosen a better class of helpers than these damned green-skins," he growled.

"That's where he showed wisdom," contradicted the girl. "The Mercurians, because of their clannishness, the antipathy toward all other races, are ideal for the purpose of universal conquest. Castor knows that once he leads the way, they will finish the job for him—thoroughly."

"But some day he may find them turning against him," predicted Guyon savagely.

"Not till the conquest of the Solar System would be over," said Stella, still taking the practical attitude. "They know they need his organizing genius. After that—well, Castor will have other plans to keep himself in power. He thinks of—everything."

From here Stella took him to the far end of the valley. It was a long walk and Guyon drank often of the canteen that one carried around to renew the standard of bodily moisture that was so seriously disturbed by the sweat-draining atmosphere.

"These damned Mercurians look too comfortable to please me," grunted Guyon enviously.

"They're practically at home here," said the girl. "With the gravi-belts to ease Jupiter-weight, they have no trouble with gravity. And as for heat, the Twilight Zone of their world is just as hot, so they're in their glory here."

When they had to cross the tracks of the miniature train system, Stella always looked carefully both ways for approaching trains. Powered by the silent radium motors, they made no noise except for a subdued clank of wheel on rail. Power was cheap here in the Red Spot. Everything glowed from the wealth of radium in the loam. And radium was power.

They stopped before the shallow holes that marked the locations of mines. Not much could be seen, but trainload after trainload of loam rumbled away, headed for the open-air laboratory, nearby.

"The rate of production," informed Stella, "is about a pound of radium metal per month, Earth measure."

Guyon turned unbelieving eyes on the girl. "Why, that's more than the production in the rich Martian beds."

Stella nodded. "Can you wonder now that Castor is so sure of himself?"

Guyon felt suddenly afraid. More than ever before he saw the scope of Castor's project. He had been mining for ten years. With that immense power, and with his cunning genius, the renegade scientist had things all his own way. The System would be helpless before such might, such limitless power resource.

How queer it was. Up above, out in space, were the many worlds, thriving, happy communities. The 25th Century

was an era of great advancement, universal peace, widespread contentment. Yet in the very center of that great and fruitful empire was a cancerous sore, a neglected boil that might soon burst and spatter its insidious poison, drenching those other worlds. Beneath the eternal red pall that overhung the radium beds was being hatched a spawn of evil and ruthlessness. And the worst of it was that nothing was known of it!

Stella led the way to the open-air laboratory, walking slowly, as too much exertion in that dense atmosphere brought dizziness and incapacity to Earthly lungs, used to thinner mediums. When they came to the huge glass vats in which the raw ores were treated with certain acids to bring the radium compounds into solution, Guyon got his first close-up of a Jovian, native to this planet.

They were short, squat creatures with four boneless arms that looked like tentacles. But the thing that startled Guyon was that instead of feet or legs, they had two large rimmed wheels of flesh and bone! He watched one of them carrying a sack. Balancing on one of the wheel-legs, the Jovian leaned forward. Like a well-oiled machine, the wheel rolled along, and the upper body with it. Then, quick as a flash, and without lessening his forward progress, the creature leaned to its other side and the second wheel rolled him along. His speed was at least equal to that of a Mercurian, which was very fast.

Guyon turned to his companion. "Impossible! Tell me I'm dreaming! A wheel in nature—unthinkable!"

Stella smiled. "Not quite a wheel, Guyon. Notice that as one wheel moves him along, the other is coincidentally *unwinding*. They are really modified legs with very flexible ankles that can make about ten turns before tightening to a knot. Then all the Jovian does is use the other wheel and let the ankle unwind to normal."

Guyon saw those things as he looked closer. They were a different form of leg admirably suited to a gravity which made the ordinary up and down movement of feet a wasteful, tiring, and laborious sort of progress. Here the Jovian wasted none of his energy lifting his feet directly against gravity. He simply shifted his center of gravity and applied muscular power to the ankles, which were the 'axles' of his wheel-legs. The resultant motion was eminently satisfactory, as Guyon could see by the ease with which the Jovians moved.

GUYON now looked around the immensity of the open-air laboratory. The Jovians for the most part stood before huge dishes of opaque glass, stirring them with large ladies. Walking up and down the aisles were Mercurians, who acted as slave-drivers. They had long, weighted sticks with which they whacked the Jovians at times, apparently to keep up the routine stirring.

"What an abominable record Castor is putting behind him!" said Guyon with inner rage. "Subjugation of native races was prohibited two centuries ago. He is reverting to practices long illegal in the Solar System."

But the worst of it was, and both knew it without saying, that there was no one to stop him. And when Guyon looked at Stella and saw again the utter weariness in her step, the despair in her face, the marks of an ultra-tropical environment on her woman's body, he thought that not the least of the traitor scientist's sins was what he was making her go through.

Guyon's black thoughts were interrupted by the words of Stella. She began explaining the long process by which the pure radium was obtained. Most of the initial refining steps took place out here in the open, where endless crystallizations went on under the influence of heat and dry air. Then various reagents

were added in the giant glass vats. Then the solutions were concentrated in smaller pans on long tables. The final concentrates went to The Master's house, where it was understood there was a laboratory, although only a few highly trusted Mercurians were ever allowed in there. In this laboratory, the final processes were gone through which separated the radium from the barium compounds. There also it was stored, underground, in heavy lead-lined chambers.

"All of it?" asked Guyon. "Hasn't Castor shipped any of it to Mercury yet, to his warships?"

"No, because he fears the loss of the balance of power, I suppose. If those ships were powered, the Mercurians could easily sweep down here and end his reign. And I rather think they have little love for him. He is a hard task-master. He is waiting till he has sufficient radium to power all the ships and also all the disguns. Each ship has one, and that takes a lot of radium. He will not strike till production passes the point of powering all war equipment."

As they returned to their hut in the glare of the night lights, a figure approached them. Guyon clenched his fists and frowned.

"Greetings!" hailed Castor, coming up. "So now, Guyon, you have an idea of how invincibly my plans go along. Ah, Stella, you look worn and tired. Poor soul! But there is no need for it. You know my offer is always open. My house is Heaven compared to the rest of the open valley. It is artificially refrigerated and comfortably furnished. Just like a home on Earth. Good food, cool water. Say just a word, take me as your lord and master—and lover, and you will live in comfort!"

Stella said not a word, but glared at him eloquently.

Castor shrugged, and smirked confidently. "Some day, Stella—" He turned to Guyon, who had listened with fits of angered trembling. "And you, Guyon. Has the resourceful man with the tattooed 'X' on his arm devised a way to save the universe?"

They left abruptly with the triumphant, deriding laughter of the scientist ringing in their ears.

"I see now why he let me live," muttered Guyon. *"In pure malicious spite!"*

CHAPTER TWO

The Mark of Courage

LIFE on Jupiter, in the radium valley of the Great Red Spot, settled down to monotonous, heartbreaking routine for Guyon. The Master assigned him to the chemical factory as an analytical expert. Guyon was glad to do something that could keep his mind off the smothering heat, the thick nauseous air, the bothersome red glow, and the inexorable doom of civilization. Not far away, within eyesight, worked Stella. The smiles she occasionally flashed him made his lot easier to bear.

In fact, except for her, Guyon might long ago have flung himself at Castor and fought the fight that could have ended in only one way—death to the younger man. Almost every day the scientist came to taunt him with polite-sounding, claw-sheathed words. Guyon suppressed all signs of resistance or aggravation. He could sense that Castor would have liked nothing better than to see the snap of his fortitude.

And Castor was invulnerable.

Every week of Jovian days, Guyon got his ration of Protection Salt, along with Stella and Cleve. It took the form of a pill of drugs, which, acting through the blood stream, built up tissue chemically to the point where deadly radium rays did no harm. Castor had had to solve this problem before invading the Red Spot,

which even the hardiest of explorers shunned. The vials of pills were brought by a Mercurian, sometimes by Castor himself. In the latter case, each of them preserved a stony silence, refusing to be baited into showing their despair and misery.

Short though the days were, Guyon was glad to lie down after five hours of wakefulness. His body ached from dawn to dark with the ache of hardship. Sometimes he looked at Stella and wondered what marvelous fortitude upheld her woman's body. Uncomplaining, at times actually cheerful, she brought rays of sunshine where otherwise there would have been deep depression. Her smile, the one thing that even the trials of Jovian existence could not eradicate, reminded Guyon of the silver moonlight of summering Earth.

Every night before he fell asleep, Guyon told himself—"There must be a way! There must be a way!" But each day, as he learned more and more of the clever web of defense and forethought displayed by Castor, his hope grew fainter.

One night, sitting at their evening meal, Guyon wiped the perspiration from his brow and broke a depressed silence.

"Cleve and Stella, we've done nothing. And yet something should be done. If we cannot escape and warn the System, we must then do the one thing left. And that is kill Castor himself! Without him the Mercurians couldn't carry on."

Cleve raised horrified eyes. "Kill him! You wouldn't dare try!"

Guyon wrenched the short sleeve of his right arm upward. "Look—'45X'. What is that?"

"Courage!" breathed Stella.

"But it's a futile move in the first place," argued Cleve, his eyes still dilated with horror. "The Master is invulnerable—chain-mail, weapons, poison gas. Why, we haven't even a knife."

Guyon paced up and down for a moment, meal forgotten. Stella followed him with wide eyes. She dropped them and flushed once as he glanced at her.

"Invulnerable, is he?" hissed Guyon suddenly, stopping. "Suppose, Cleve, that you and I were to come upon him alone, in darkness. Suppose you tackled him first around the legs and threw him down. Suppose I then grabbed away his weapons, out of his reach, and put my fingers about his throat and squeezed—and squeezed—and squeezed—" His hands were working around an invisible neck.

"Yes, but the gas!" cried Cleve.

"Suppose we held our breaths—"

THE daring plan was carried out two nights later, when Stella rushed in and informed them that The Master was walking to the house—alone. Furthermore, it was just the time of day when the sun was setting and the night lights were not yet on, so that it was quite gloomy outside.

As the scientist approached, Cleve and Guyon crouched on the other side of the hut. No Mercurians were within eyesight. As Castor passed the corner, Guyon nudged Cleve. The latter, pale and trembling, darted around the corner and flung himself frenziedly at the green-eyed man's legs. Not a second later Guyon ripped away the silken robe as Castor crashed to the ground, jerked away the two pistols, and reached for his throat. Tensed for the gas, he promptly held his breath as it puffed from the little tubes, and gripped the bared throat eagerly. It was the scientist's Achilles heel!

Even as Guyon jammed his thumb down on the man's Adam's apple, he wondered why Castor hadn't made a sound. Perhaps the fall had stunned him. But no, for there were those hideous green eyes, staring at him—staring with a disdain that seemed entirely out of place. But this was no time for idle conjecture.

"Snake of hell!" hissed Guyon, as he pressed tighter.

Then, suddenly, he sagged limply to the ground. Castor staggered erect, pulling apart the arms of the likewise incapacitated Cleve. He kicked at Guyon.

"Fool! Did you think you'd succeed? Do you know what happened? My faithful slaves in the house that I inhabit are instructed to keep me under observance whenever I come here to your hut, for just this sort of emergency. They have a projector, also operated by radium, which sprays a paralyzing ray. Whomever it touches simply loses all muscular control. You will recover in a few minutes. For your attempt at my life, I should kill you, as I would any wild animal that attacked me. But I will let you live. You will suffer more alive—" He laughed harshly.

Guyon, completely paralyzed on the ground, heard the receding laughter of the turncoat scientist, as he left.

A few minutes later he staggered to his feet, shook his fist in the direction of The Master's house, and thereby showed he was not yet beaten. But he found it harder after that to say, before falling asleep—"There must be a way!"

GUYON one day trembled as he ate his evening meal. Stella noticed it. "Is there something wrong, Guyon?" she asked quickly.

He pushed the food away abruptly and turned to Cleve. "I've just thought of something. If we could somehow build a radio and power it with some filched radium—Cleve, you've had enough higher physics to devise a simple radio. There's lots of wire and other odds and ends in the plant that we could sneak away."

Cleve at first had said dubiously, "Pretty hard to make a seven-prong tube, which is necessary for long-range broadcasting through space."

"But, man, it's worth a try!" Guyon insisted.

"We can't get at Castor himself, it seems. Regardless of the difficulties, we've got to try this radio idea."

And try they did. Cleve lost sleep and weight over the problem of constructing a workable seven-prong tube. Guyon filched the odd parts they needed from the electro-chemical laboratory. It was Stella, however, who got the radium. She sneaked it from the power-box of a train when it stood idle and unguarded.

Finally it was ready and they prepared for the attempt at spatial communication with the crude apparatus. Cleve, nervous and keyed-up, sent out the SOS call while Stella stood guard at the door. For a half hour this went on, the two men alternating in calling the distress signal and giving the approximate frequency for a return call. They were using the Ganymedian frequency as nearly as the crudeness of the affair would admit.

But the tiny diaphragm of the receiver only buzzed and crackled with static. No human voice greeted them from the void.

Suddenly Stella screamed. Even before she cried out, "The Master!", he was in the room, leering at them.

"So, Guyon of Ganymede, one of the respected class of 'X', has made attempt number two!" The scientist laughed shortly. "Again a useless attempt. I could have told you before you started that radio communication is impossible from and into the Red Spot, because of the blanketing effect of radium emanation!"

He picked up the seven-prong tube and toyed with it. "You are clever, but not clever enough. Perhaps by now you realize that Castor, the future dictator of the Solar System, cannot be circumvented. I should put you two men out of the way. Your plotting, futile as it is, is becoming annoying."

He turned to the girl, who stood by the door, as coldly silent and depressed as the men.

"But that would sadden sweet Stella. I will let you live, Guyon and Cleve, till existence becomes obnoxious to you. As for Stella—I think she would rather have me than death."

"You flatter yourself!" she snapped.

Castor departed with his laugh of triumph resounding from outside. Sadly, in the throes of utter despair, they discarded the radio.

"Well, after all," said Guyon in forced tones, "it was worth a try, and we haven't lost anything."

But he knew he was lying, for they had lost the last shred of hope.

UNENDING monotony. Ceaseless torture from the heat and the thick, miasmic air. Hopeless, purposeless existence. Red glare. Constant drain of vitality. Biting sarcasm from the man who was no longer a man but a green-eyed fiend. The daily round of fagging spirit. Dismal, feverish, mind-searing sameness.

"It's all right for the Mercurians," raged Cleve one evening. "They are more or less at home in this heat and they come from a world just a little less harsh and trying. Castor—worms of space eat

his rotten heart!—is comfortable enough in his refrigerated rooms. But with us—good God!"

Guyon was a little more sturdy by nature. Stella seemed imbued with almost divine strength and courage. But one and all, they called it hell.

Then Guyon again lived up to the "X" in his name. Stella dispiritedly related, while eating one evening, of her overhearing Castor telling one of his Mercurians that he was taking a trip in his space ship and would be back four days later. Guyon sprang erect with an exclamation.

"Now's our chance! Cleve—Stella—the hangar is turned partially away from The Master's headquarters. When he comes out of the front end, he will be out of sight of the Mercurian at the paralysis gun. There is the time and place to attack him. Only the intervention of the paralyzing ray last time saved him. This time he won't have that timely help!"

The attempt was made, four days later, and this time success seemed theirs. They were able to ambush The Master out of view of his quarters, throw him down, disarm him, and begin choking him, holding their breaths against the anesthetic gases.

Then Guyon groaned as he realized they had again lost, for the numbing paralysis that they had avoided so carefully swept over them. His limp fingers fell away from the red-marked throat.

Castor pushed Guyon's limp body aside and staggered to his feet without a word. Guyon saw his saturnine face leering down at him. He had retrieved the pistols.

Castor rubbed his sore neck and the black frown on his face presaged evil. Guyon wished he could close his eyes. Then the scientist spoke. "What defeated you this time is that I have telepathic contact with my Mercurian officers at all times. It was simple to tell them by this means that I was being attacked, although we were hidden from view. I see now that you will never give up, Guyon of Ganymede. I thought to break your spirit, but it seems adamant. Although you are no danger, you are annoying."

His voice seemed to hold suppressed anger and Guyon saw him toy with a pistol and look at it speculatively. But suddenly he put it aside, in its holster. "You and Cleve must be punished," he went on, his voice low but ominous. "Not only punished but put out of the way. I know of no better way than to deprive you both of the Protection Salt! Radium emanations are all around you, constantly arising from the loam. Without the Salt, your flesh will waste away. You will literally die by fire—only the torture of that slow death is far worse than burning at the stake. About fourteen Jovian days and all will be over. When you are gone, I will take Stella to my rooms with me!"

The curdling laugh of the monster above them throbbed in their ear-drums. It died suddenly.

"I will give you something to think about for the short time of life left to you. My plans are coming to a head. A month of Jovian days from now my fleet will rise and make me emperor of the Solar System! Pleasant dreams, Guyon of Ganymede. And now one more thing—if you make any more foolish attempts at my life, I will pour a solution of radium salt down your throats and let the flesh burn away from your bones!"

CHAPTER THREE

Fourteen Days to Live!

NEXT day a Mercurian came to the hut and handed Stella a vial, but there was only one pill in it. "The Master will send one pill each day," explained the Mercurian, eyeing them maliciously. "It is for the girl." He left.

They stayed in the hut, the three Earth people. It would have been a sorry farce to have gone to their old places in the chemical plant. Cleve rested inertly on his bunk all day. Stella offered food and water, and glanced at Guyon at times. He seemed in a trance, either standing looking out of the door, or seated in a chair. Cleve dozed once and awoke screaming from a nightmare. Their nerves were tattered to jangling shreds. Already that first day without the Protection Salt, the irksome prickling came to the men. Next morning it was worse.

By the third day the itching and tingling became intense, and at night Guyon was tortured in his sleep by an endless dream of a horrible trek across beds of shining coals. By the sixth day Cleve's mind snapped under the strain and it took all of Guyon's waning strength to keep him from killing himself. He was finally quieted and put to bed. But for days after that he babbled like a child and seemed to have lost all cognizance of where or who he was. Stella wept often.

One day when the girl re-entered the hut after having been out, Guyon met her at the door, looking at her sternly.

"What did you throw in that empty train-car?"

Stella tried to deny any such thing, then broke down and admitted that from the first day the men had been without the Protection Salt, she had thrown her pills away.

"I don't want to live after you and Cleve are gone!" she sobbed wildly. "I'd rather die than live with the man who murdered you both!"

And Guyon comforted her in his arms as Cleve was no longer able to. She needed comforting. "Brave girl!" murdered Guyon. "Brave girl, and wonderful!"

IT WAS the tenth day of their existence without the life preserving Protection Salt.

Cleve, strangely, had come out of his mind affliction and was once again normal, although in a state of deathly melancholy.

Four more days of life! Four short days. And Guyon's eyes gleamed while he tapped the tattoo of his right arm with the fingers of his left. Stella saw and wondered. She did not know how desperately he had been thinking—and that gleam in his eyes marked the culmination of his efforts.

Then Guyon called them together, talked excitedly, eagerly. A new hope, a new spirit was born in them. Forgotten was the misery of heat, stiflement, prickling. A plan had come to lighten their leaden hearts.

When the Mercurian came with the daily pill for Stella, two silent, determined men assaulted him. Guyon's strong fingers cut off his cries and they left him on the floor dead. Rapidly, without a word, Guyon took the gravi-belt from the body and substituted it for his own.

He tested it, leaping to the roof with the slightest reflex of his feet. The gravi-belt for a Mercurian was adjusted to extreme lightness to duplicate the small gravity of Mercury. Guyon was even lighter now than he would have been on Ganymede. His upward leaps would have terrific range.

When the night shift of Mercurians streamed out of their large living quarters, and the returning shift disappeared within to indulge in rest, three figures moved with the tide. They stepped in the dense shadows at the rear of the steel headquarters of The Master, where the flood lights sent no prying beams. They whispered together a moment, then two of the figures crept silently toward the space-ship hangar.

Guyon watched till they were safely hidden in the shadow of the hangar. In his hand he had the steel leg of one of the beds in the hut. It had taken many hours for the two men to finally detach it

from its frame. Its end was hard, angular and sharp.

Guyon looked around, took a deep breath, then worked his way to the front of the building, to a point just below the metal dome which housed the radium dis-gun. That dome was made of sheet aluminum. And sheet aluminum was soft.

Lightened to a mere child's weight by the Mercurian gravi-belt, Guyon's muscles propelled his body upward in a mighty leap. He fell back twice before his free hand caught at the edge of the rampart. Then a bit of effort pulled him to its narrow vantage. He worked his way to the separation of the halves of the bi-valvular dome and began scraping madly with the steel instrument.

The aluminum yielded easily to the steel and came away in thin shavings and filings. An hour later Guyon had scraped through a circle of metal. A few ringing blows that he deadened with a piece of cloth, and the piece fell inward. Exultantly he reached an arm through the hole and felt around for the lever that he had seen the scientist use to swing the dome halves apart. For a moment he was panic-stricken as his fingers failed to find the handle.

Then he suppressed an exclamation of triumph. He had it!

Now came the crucial moment. He would have to work fast. The down swing of the dome halves might register its movement below in the building somehow. He would have to leap in and carry out his plan as rapidly as possible.

He looked over at the hangar. He could not see his companions, but knew they were there waiting in fearful anxiety. For this could end in only one of two ways—victory or death!

Guyon jerked over the lever and pulled his arm out almost simultaneously. Silently, ponderously, the dome sections sank to the rampart level. Guyon leaped to the dis-gun, gasping in anxious haste. He wheeled it toward the rampart and sighted at the hangar's front wall. He pressed the button. Cleve and Stella were safe, as prearranged, at the back end. The steel front of the hangar dissolved into a rosy cloud and Guyon released the button. Even as he did so, he saw Cleve and Stella dash into the opened end of the hangar like frightened rabbits.

GUYON looked quickly around. The busy Mercurians of the night shift, far away at the other end of the valley, had noticed nothing. He began to think there would be no resistance at all, when several Mercurians leaped out from the door below, shooting at him with hissing pistols. Fortune was with Guyon. Their aim was bad in the gloom and in a moment Guyon swung the easily-operated dis-gun at them and flicked them to mists. He had watched Castor carefully that other time he had been in this dome chamber. The operation of the gun had impressed itself indelibly on his mind.

Guyon waited on guard for more of the enemy, but none came. He began sweating impatiently. Was Cleve having trouble with the space ship? He shouldn't have, for he was experienced at their standard controls.

Then Guyon breathed a sigh of relief. The space ship, Castor's own, shot out of the disintegrated front gap of the hangar and zoomed to the waiting man. When the ship hung just above his head—suspended by anti-gravity forces—Stella's anxious face peered down at him from the open lower lock. Guyon heaved the dis-gun up with Herculean effort and willing hands pulled it up into the ship. Guyon leaped in.

"Now we've got him!" he shouted. "Here, Cleve, help me set the gun so that its spout points downward through the lock."

"The Master!" gasped Stella. "Where is he? What has he done?"

"Not a thing!" returned Guyon. "Waiting for our next move, I think. Well, he'll get it right away. We'll ray down his walls and trap him like a rat."

Just as Guyon prepared to send the ray of destruction on the building, a loud voice was heard. It came from an aperture that opened in the side of the wall over which the ship hung.

"Turn on your radio!"

Stella snapped the switch and the suave, untroubled voice of Castor reverberated through the cabin.

"Fools! What are you doing?"

"We're ending your reign of power, Castor!" cried Guyon back. "We've got the dis-gun in the ship and are going to ray you to death, as you deserve!"

The confident laugh of the scientist rang out. "Impossible! The beam won't do it. My rooms are insulated against its effect!"

"We'll see about that!" shot back Guyon grimly. But three white faces looked at one another. Was it the hopeless truth?

"Wait!" came the voice of Castor, and Guyon thought he detected a slight note of fear. "Guyon, listen to me. I am impregnable, but I have a proposition to make. Although I am safe, you are in a position to do a lot of damage with that gun you have in your hands. So if you will land the ship at the door and surrender it, I'll promise you immunity from harm from now on. I will give you Protection Salt, and after the great conquest of the Solar System, I'll preserve your neutrality to the end of your natural lives. I swear it! I am offering this only to save the valley from the destruction you could engineer."

Cleve and Stella looked at Guyon in bewilderment. It was a strange problem. Time was ticking by.

Guyon snapped off the radio and turned to them. Hurriedly he spoke, "It's a trick —a bluff. I don't think he's impregnable and he wants us down there so he can switch the paralyzing ray on us or shoot us." He seemed to be talking to himself as much as to them.

"Before we accept any such proposition," cried Guyon, throwing the radio switch again, "we will try and see how invulnerable you are. I will count ten and then turn on the ray. If you are bluffing, you still have a chance to save your life by coming out and surrendering."

A suggestion of an exclamation came from the scientist, whether of fright or derision Guyon could not determine. But he counted, As he came to "nine", all the lights in the valley suddenly went out and it became pitch dark.

"Quick, the searchlight!" cried Guyon. "And keep it centered on the door below."

Cleve swung the beam downward.

"There he goes!" gasped Stella. "He just ran out!"

"Back!" yelled Guyon. "Send the ship back, for your life!"

Hardly had Cleve shot the craft a hundred yards backward when the steel house flew apart, with the accompaniment of a thunderous concussion. Pieces of steel hammered against the hull of the ship.

"Quick now," said Guyon, "keep the beam just ahead of the ship and send it in the direction he ran."

As the ship crawled slowly forward, away from the debris of the bombed building, they heard behind them the concerted moan of thousands of frightened Mercurians and Jovians, who knew no reason for the failure of the lights and the awful explosion that had rocked the floor of the valley.

But Castor could not be found. He had escaped in the darkness. "No use looking for him in the dark," decided Guyon. "But we'll find him in the morning. He can't escape from the valley any more than we could. This night will be a taste of his own medicine, for he knows we have the upper hand now."

"We must get him!" hissed Cleve. "I won't feel that we—or the System—are safe until I see him die!"

Guyon smiled grimly as he patted the sleek outlines of the dis-gun. "At dawn," he promised.

CHAPTER FOUR

The End of the Radium Master

WORN out by the excitement and their own physical condition, they were glad to lie down and rest for the short night hours, though they could not sleep. Strange sounds were heard from the black pit of the valley as their ship was suspended a thousand feet above. Shrill imprecations from Mercurian tongues were intermingled with the hoarse, angry grunts of Jovians. Out of curiosity, Guyon switched on the searchlight beam and vaguely made out a tangle of green and black bodies struggling fiercely.

"The Jovians are revolting!" whispered Stella. "The Master's dream empire is crumbling at the core."

All night long the sounds of vicious fighting went on. The battle upset many of the tables at one end of the valley and bowls of glowing radium solution were spilled. Agonized screams arose from luckless Mercurians who were splashed with the fiery, flesh-searing liquid. The struggle spread to every corner of the darksome valley. A growing conviction came to Guyon that maddened, revengeful Jovians were pouring into the valley from outside, to help their enslaved fellows to complete the massacre of the hated Mercurian slave-drivers.

Castor was somewhere down there in that holocaust of shrieking blood-madness. What was he doing? Where hiding?

Guyon's eyes gleamed thoughtfully. Suddenly he sprang erect with a sharp exclamation. "By God, those Jovians can see in the dark!" he grunted.

"They can!" exulted Cleve. "Looks like they're going to finish our job for us—killing off the Mercurians."

But Guyon seemed suddenly to have gone mad. "They'll find Castor!" he raved. "Damn them, they'll kill him! And I wanted to reserve that pleasure for myself!"

He jumped to the controls and spun the ship down, just over the heads of the milling combatants. Frantically, as though his life depended on it, he swept the searchlight beam around, searching. The days and weeks of torture, grinding hopelessness, and sharp misery under the renegade scientist's cruel thumb had come to a head, and Guyon felt that only one thing could atone for all that—the death of Castor at his own hands!

But the scientist was not found till the red haze of dawn lit up the valley. Then they saw him, crouching behind a half ruined steel wall of what had been his stronghold, a trembling, cringing creature. He no longer resembled the regal, commanding figure of power he had once been. He was only a spindly-legged, tottering old man, weak and senile. Evidently he had barely escaped with his life from the vengeful hands that had torn off all his clothes and bruised his body. Only the chain-mail had saved him from being torn to pieces.

Startled, they landed the ship near him. Approaching, they found him digging with already bleeding hands, a vacant stare in his eyes. The would-be emperor of the Solar System was no more, except as a babbling, mindless idiot. He showed no recognition when they confronted them.

"Castor!" Guyon cried. "Castor, don't you know us?"

"Must dig," mumbled the creature. "Much radium buried here—precious—must get it—radium—power—"

He was bleeding from a hundred bruises beneath the blood-soaked chain-mail. The supergravity was slowly bending that

back that had once been so arrogantly straight and stiff. His gravi-belt was gone. They saw he was close to the end. Even as they were about to help him to the ship, out of common pity, he crumpled to the ground, gasping fitfully.

A moment later his eyes opened, green eyes that had formerly been so venomous, but were now pale and tired. Recognition flooded them. They were fixed on Guyon.

"Guyon of Ganymede," he gasped out. "You won after all. And I'm glad—now. It was an insane dream—my dream of empire—tyranny. I realized that, through the black, hideous night!"

He gulped, went on brokenly. "Guyon, you must finish your work—destroy all in valley—Mercurians. And I leave a legacy of radium!"

He groaned, with the death-rattle in his throat. "Guyon, one more thing. Let them remember me as a scientist, not as —what you saw me—"

A new sort of madness had sprung into the dying man's eyes, a passionate madness that came from the bottom of his scientist's soul. "Promise me, Guyon—a scientist—"

Guyon nodded and the green eyes closed, the body stiffened. Castor was one with eternity.

IT WAS the next day that the lone ship soared away from the valley. Cleve looked back. It was bare, desolate. The dis-ray had done its work well. Cleve shuddered a bit. It had not been pleasant to hunt down the few remaining Mercurians, screeching in fear, trying to escape the inexorable ray from above as it turned everything to rosy mists. But they had been merciless—no one of the Mercurians must be left alive of that insidious cabal.

Only the Jovians had been spared. They had been driven out of the valley.

Then Cleve's mind reeled again as he thought of the precious cargo in the hold —a part of the radium that had been stored in the underground vault. They would come back for the rest, or more likely the Interworld Council would take care of it, some other time. Right now they wanted to get away from the horrors of Jupiter and walk once more on gentler, quieter planets.

"That," Cleve remarked, "is the end of the Radium Master's mad dream!"

As the other two made no answer, he turned to see what had come upon them. His eyes widened momentarily. Then he grinned and turned away.

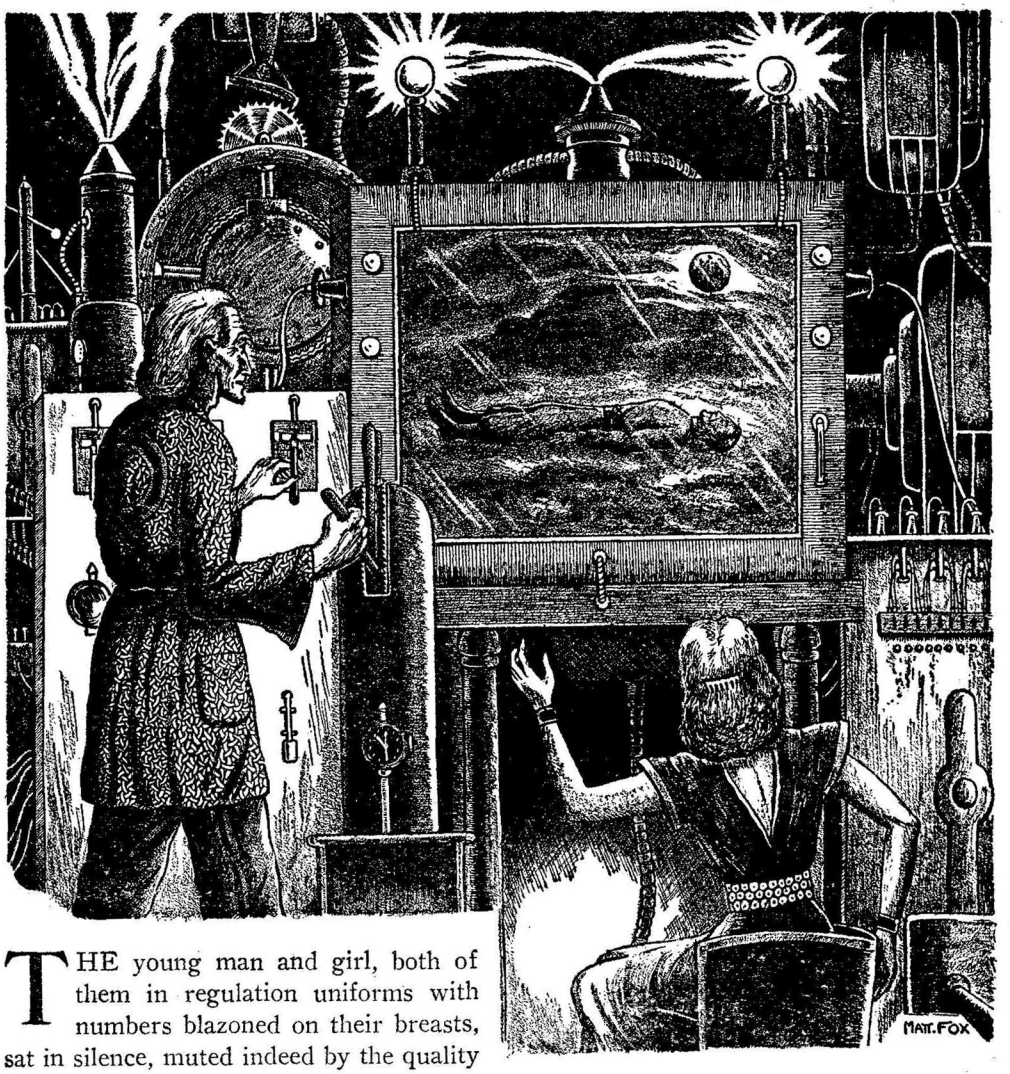
"And the beginning of a radium romance!" he said to himself.

THE END

PHANTOM FROM SPACE

By JOHN RUSSELL FEARN

Space-Death was horrible and agonizingly painful. But was it final? The Venusian masters of the Earth in the year 2314 had cause to wonder when Eward Hilto, whom they had executed for treason, came back to avenge!



THE young man and girl, both of them in regulation uniforms with numbers blazoned on their breasts, sat in silence, muted indeed by the quality of their thoughts.

They were alone here in one of the countless parks dotted about the lower quarters of the city for the convenience of the workers. Convenience! The workers never saw anything beyond the parks except the mightiness of the city that held them in its grip—New York, metropolis of the earth, master-city of 2314. . . . But no Earth man ruled that city. No dicta-

tor had brought it into being. War had begun to die in 1950. By 1960 it had become an abomination of the past.

Then after thirty glorious years of freedom had come the menace from Venus with its shadow of vast armaments. Invasion—a world undefended in arms and science—the destruction of a world lay at the feet of the slug-like hordes. Rapidly the victors had commandeered the bodies of newly slain Earthlings, transferred brains into them, breathed life into them, mated them, and now—

Hardly anybody knew which were true Earthlings and which were the children of the original Venusians. It was only known that the Venusians under the control of the Presence, ruled the earth.

"And what a rule!" breathed the young man, as his thoughts followed the path of history. "Merciless subjection! No quarter—no chance! We're held down here by those master intelligences. Up there is power and science beyond our knowledge. Think what has been mastered—what *will* be mastered. . . You and I, Lyra dear, all in the world to each other, born down here, hardly remembering our parents, never knowing that world wherein, according to some far gone stateman, men are created free and equal. . . But why not? *Why* not?" he demanded.

"Hush, Eward!" the girl murmured, glancing round. "A spy radio may hear you. It sounds so much like treason. . ." She shrugged slender shoulders. "After all, what can we do?" Her serious blue eyes searched the young man's strong face in the lights from the city. "We're powerless! Remember, your father tried just after you were born to overthrow this rule. . . You have heard what happened to him."

"Exiled for life—to Callisto," Eward breathed, his fists clenched. "To rot out his bones for these filthy, inhuman devils—"

"Hush!" The girl's voice was sick with anxiety. "Please, please hush! That'll do you no good—"

Eward Hilto, to give him his full name—LT4516Z6 to give his number—stared up with bitter gray eyes at the city. As always, that terrific expanse of buildings overpowered him. He put his hands to his ears as if to shut out the thunderous, everlasting roar of the machines in these lower quarters, closed his eyes and visualized it all. . .

The eternal workers, working for they knew not what. It was rumored that mastery over the entire universe was the ultimate aim of the Venusians. Everywhere machines of stupefying size. Mastery of the atom's forces, of space travel, of electrical intricacies, mind science. . . Had not the Presence picked the twelve finest brains of earth, had them disembodied and placed in machines, from which he absorbed all the knowledge he needed and added it to his own? Nothing, declared the oppressed, could stand against that!

"And until somebody has the courage to fight these monsters we'll remain under their yoke," Eward breathed, looking up again. "Lyra, why *should* we?"

Lyra Garfane smiled emptily. The lights caught the copper gold of her hair as she glanced at the city. "You'd defy that?" she muttered.

"Yes," he answered quietly, then suddenly took her shoulders in his hands and shook her gently. "Lyra, we're human beings, not animals. We *own* this planet; it's our birthright, same as it is the birthright of millions of other rightful earthlings the world over."

The girl got suddenly to her feet. "It's empty talk, Eward, and you know it! You can't possibly—"

SHE broke off with a start as a shadow fell suddenly before her. A massive guard in official uniform stood grimly regarding them both.

"Need I warn you," he said slowly, "that such talk as yours is treasonable? This time you have been warned. Next time you know what the answer will be. Return to your lodge houses—instantly!"

"Why should we?" Eward demanded, jumping to his feet. "It's time there was a change—a revolt! We're forever taking orders, or else being spied on by rotten little pickups hidden in the trees of these damned parks and relayed to your headquarters— I'll see you in hell before I'll obey!" he finished with roar, and simultaneously he lashed out with a powerful fist.

But the blow never landed. Lyra screamed a hoarse warning. Eward was aware of something smiting across his head with unbearable pressure. His knees gave way beneath him as he fell into darkness.

EWARD returned to his senses slowly, aware of the sweet smelling fluids of the great workers' hospital. He opened his eyes to dazzle-proof lights, found himself gazing into a face of considerable age—a mass of lines and seams from an apparent lifetime of concentration. The eyes were those of an earthman, kindly and thoughtful. Very dark, they seemed, unless it was contrast of the white face and hair.

"All right," the man murmured, putting an instrument back into his smock. "You're O.K. now. . . I'm Elman Dalmer, the head surgeon," he added briefly. "You got a pretty nasty knock from that paralyser beam. . . Guess you shouldn't have resisted. As it is, I'm afraid I've only revived you so you can be sent to your death. . ."

He turned away gravely, and as his figure moved Eward found himself looking at the dejected figure of Lyra in the grip of the guard. The man came forward with a cold, bitter smile, his deadly gun leveled.

"You were warned," he stated callously. "Now the Council must decide the issue. Come! And try no tricks this time!"

Eward got up slowly from the long table, mastered his dizziness and walked forward. He looked at the girl, but she averted her face—not so quickly that he didn't see the tears in her eyes, however.

Under enforced silence they marched steadily through the endless galleries between the stifling, pounding machine rooms—into elevators, along more passages, into an area of gathering opulence, and so at last to the places where the two had never been, the administrative sections of the giant city.

Finally, they were thrust into an immense office with black lined walls, its only furniture a mammoth control desk with three granite faced men in dead black, direct descendants of the original Venusian conquerors, seated before it. Two were busy writing, did not even look up. The centermost raised a pallid, implacable visage, spoke in a voice that reminded Eward of a twanging steel wire.

"Well?"

"Disobedience, sir, following deliberate statements tending to insult the Presence and his Council."

"Both?" The eyes were like those of a snake.

"Man, sir—Eward Hilto. Woman, Lyra Garfane, agreed, but tried to stop man's remarks. I thought it unnecessary to report direct to the Presence, so I brought them to you."

The thin lips smiled cruelly. "Naturally the Presence cannot be disturbed with such trifles. All right—you know the rules. Space death for the man, week in solitary for the woman. That's all."

"You can't do it!" Eward burst out passionately, dumbfounded at the inhuman nature of the sentences. "You just can't! We've got to have a fair trial! I demand to see the Presence—"

"Take them out!" The man turned back to his papers.

THE guard was far too strong to overpower. He whirled the pair outside as though they were children, pressed a button in the wall and waited a moment. When two more guards finally came up he thrust the struggling, kicking girl into their waiting hands.

"Eward!" she screamed frantically. "Eward! Oh, my God— Not space death! Anything but that. . ." Her voice faded down the passage as she was marched away in the direction of the prison cells. Eward stood staring bleakly after her, then his dazed eyes turned back to the leveled gun of the guard.

"Move!" came the cold command.

He turned very slowly, his fists clenched, jaws taut. Thoughts were tumbling through his mind—thoughts of horror that he could not properly marshall. A week in solitary darkness for Lyra; death for himself!

To be fired from that heinous space gun, without protection, without anything —a human projectile into space to meet instant destruction.

"No!" he screamed suddenly. "It's beyond all reason! No!"

"Keep going!" the guard snapped, and shoved and bounced him along brutally until at last he found himself in the projection room facing that devilish contrivance that had come to be looked upon as the guillotine of 2314, though not half so swift in its effects.

He struggled with the ferocity of a madman as he was bound with manacles to the firing mechanism. He screamed threats, insults and abuse, all without avail. . . Then he subsided into muted horror as he saw the vent at the end of the machine's long chute open wide—wide to the starry black of the night sky.

"Treason is its own reward," the guard said stonily. Then he drew himself up and raised an arm aloft, muttered mechanically, "The Presence is just! All honor to the Presence!"

His hand dropped, slammed home a massive pole switch. Broodingly he watched Eward's helpless body hurtle like a thunderbolt up the chute, impelled by irresistible forces, until he vanished at the end, a living being hurled into infinity.

LYRA GARFANE knew better than to ask for reprieve. The officials of the city, and the Presence least of all, never granted mercy, never recanted. So she took the only other course, submitted to her sentence without a word and for a week lay in her pitch dark cell thinking and grieving by turns, only stirring to eat the food brought to her at regular intervals.

As she lay on her hard bed, accompanied by the eternal muffled thunder of the city, strange thoughts chased through her mind—thoughts that somehow she could not relegate to any voluntary desire. She was acutely conscious of the death of Eward. She saw him pass into space with a vividness that made her wince. All around her she felt space's awful darkness, its crushing cold, saw the friendless, blazing stars, the icy moon.

Time and again her efforts at sleep were disturbed by this vision; until after a day or two it was replaced by another one. She saw the earth with its teeming cities and busy seas, saw New York in particular, pyramidical in design—pyramids of windows and in each window shone a light. Beacon towers, mammoth aircraft, endless people, ceaseless industry. And over it all brooded the one on whom no worker had ever gazed. . . The Presence. She could not see him distinctly.

Indeed she wondered why she should see these things at all, when never in her life had she had the opportunity to see anything beyond this drab quarter of the

workers. Yet somehow, deep within her, she knew that what she saw was absolutely correct.

Only when she was finally released from solitary into the blinding light of day did the visions become dim, and finally cease altogether. She returned to her work as a machine minder, crushed and beaten in spirit, mourning the death of Eward. He had become known among his loyal friends as the man who had dared too much.

A dulled mind is little use for concentrating on a complex machine. Lyra found that out. It was two weeks after her return from solitary; her thoughts had wandered to the dead Eward—then suddenly a fearful wrenching pain at her hands brought her back to agonized life.

She screamed wildly, tore frantically at fingers already in the grip of whirling cogs. Fingers, hands, sleeves, crushing bone. . . The workroom spun in a mist of anguish before her eyes. . .

She came out of the darkness again with an aching head and immovable arms. Little by little she recognized the white cot of the hospital, the clean fresh smell that always hung about the place. Before her was the face Eward had seen when he had recovered—Elman Dalmer, the chief surgeon.

"All right," he murmured, patting her shoulder gently. "You'll be O.K. now. Crushed hands and broken arms. . ." He smiled. "Soon put you right with our modern surgery, my dear. You should have been more careful."

Lyra licked her dry lips. "I—I was thinking. . ."

"Of Eward Hilto?"

She nodded slowly, closed her eyes to compress bitter tears. The master surgeon patted her copper hair gently.

"Poor child," he murmured; then more cheerfully, "But don't worry. I'm the master of this department, and my orders are inviolate. I have decided that you need extra special care—and you know what that means. . ."

The girl opened her eyes again. "That—that I become a patient in your private sanitarium?" she breathed.

"More than that. Until I see fit to release you you will become my ward. Nobody save me knows the extent of your injuries, even their nature. I have hinted at non-existent internal complications needing months to heal. . ." Dalmer stopped, his rugged old face smiling a little. "I know the circumstances of Eward Hilto's death," he said softly. "I realise the ruthless treatment that was meted out to him and you. I am still an Earthman, and my heart goes out to you, my dear. So young, so much you could do. . ."

He broke off, shrugged. "It's settled then. You shall become my ward. Later, maybe, I'll use my influence to get you out of that infernal workers' department. . . Now sleep."

Lyra could only smile her thanks. Movement was impossible and words were inadequate. With eyes that were still moist she watched Dalmer get to his feet from beside her and resume his normal work. . .

DALMER was as good as his word, and of course his authority was completely unquestioned. In two weeks, her hands and arms healed, Lyra left the hospital—but she did not return to work. Under special orders a private car took her to Dalmer's luxurious home in the influential quarters of the city and there she was handed over to a matron.

But even so the girl could not fully understand it all. It was too unbelievable, too good to be true that Dalmer, for all his well known humanitarian aims, should make such terrific efforts to single her out for comfort and happiness. Her own rooms, good food, every want attended to. . . Incredible!

She spent that first day in an atmosphere approaching what she imagined Heaven must be like—then when night had settled over the vast city there came a knock on her door and Dalmer himself entered, smiling, dressed in ordinary civilian clothes.

"Everything all right?" he asked, in his quiet, grave voice, pulling up a chair.

Lyra smoothed her silken gown in mute confirmation.

Her eyes searched his face—that very old face with its infinite wisdom, so compassionate and different from those who were in command.

"Nothing could disturb me if it were not for a memory," she said slowly, staring at the city. "The memory of Eward, hurled into space. Ruthlessly, horribly killed. . ."

Dalmer said nothing, but his eyes watched her steadily. She swung round to him abruptly.

"Why do you do these things for me?" she demanded. "Oh, don't think I'm not grateful; I am indeed—but I do wonder. Girls have lost their loved ones in the workers' quarters before now, have suffered worse things than me, yet you singled me out in this particular instance. I—I don't understand. Really, I don't."

"I hardly expected you would," the surgeon shrugged, "but you may be perfectly sure I did not pick you out of all those unhappy souls for purely sentimental reasons. I had a very definite reason—and part of it I intend to make clear tonight." He got to his feet suddenly. "Put on a wrap and come with me. I've something special to show you."

LYRA looked her surprise for a moment or two, then she obeyed and preceded the surgeon out of the cosy room. He walked by her side down the spacious corridor, led the way down the broad staircase with its chromium cased lights, and so at last to a panel that slid aside in the wall. Together they stepped into a brightly lighted but rather cold laboratory.

"Surprised?" Dalmer smiled, as the girl gazed round in astonishment.

"Well—yes," she admitted. "I don't understand how—"

"My private workshop." Dalmer surveyed the machinery. "The work of a lifetime, known only to a trusted few, myself, and now you. Unless—" He paused, pondering.

"Unless what?"

"Unless those infernal Venusian scientists have been clever enough to track me down with their instruments. They know so much. . ." and the girl saw the surgeon's lean, powerful hands clench remorselessly. Then he turned back to her and smiled a little. "So, my dear, you are privileged," he murmured. "Nor have I the slightest hesitation at placing my trust in you. Now come here. . ."

He led the way to a maze of machinery. From her own experience, the girl recognized electrical apparatus of remarkable design, in the midst of which, held at the approximate center of four massive bar magnets, was a screen of ground glass.

The surgeon pushed a chair forward, the girl sat down to watch him finger an array of switches. By degrees the screen came to life, finally gave a perfect image of the blackness of space, smudged with a gray speck. Instantly the speck leapt nearer under the force of more controls.

"X-ray telescope," Dalmer said briefly.

The girl hardly heard him. Her whole being was concentrated on that gray speck; her heart was slamming against her ribs with the twin emotions of wonder and joy. . . For that speck was a man! A man of stone gray, even crystallized, his very clothes merging with his flesh. He was motionless, lying on his back in the depths of space apparently in an orbit between earth and moon. His

arms were straight at his sides, his eyes closed. . . An incredible phantom of a man, but none the less—Eward Hilto!

"Eward!" Lyra whispered, between half parted lips. "Eward—! But—but it can't be!" she gasped, staring at Dalmer as he brooded over the vision. "Space would destroy him! He would burst apart—"

"Not so, my dear. No breath in his body and no pressure outside. His body remains intact. So does his brain," the surgeon went on tensely. "Every part of him is intact! Out there in space is Eward Hilto, the man who wanted to avenge this Godless Age, and if the fates permit, he shall! The time has come!"

"But how is he—? Why does he—?" Lyra stopped, torn between conflicting emotions of fear, bewilderment, and hope. She did not know what to say: so much was unexplained. Definitely, Eward ought to be dead—torn asunder, and yet. . .

She watched Dalmer again as he snapped another powerful electrical machine into action. The tensity of electrical forces gathered in the laboratory. Lyra felt her limbs tingling. Fascinated, she watched the play of nameless forces between electrodes, the savage lavender glowing of a mighty bar projector reaching to the roof.

"Stimulus," Dalmer whispered, sweeping back the white hair from his face. "Stimulus! Life current—energy to bring the spark of life into that floating body, to give power to that superhuman brain—"

"Superhuman!" Lyra echoed.

"In time you'll see why," the scientist breathed. "Watch as this power hurtles over the gulf of space to him and—There!" he finished dramatically, and pointed.

The girl jumped up from her chair, hands to her lips in amazement, eyes wide. The figure of Eward Hilto *had* stirred. About his gray head there hung the remotest suggestion of a lavender beam. . .

"Dalmer!" she screamed, swinging round. "What does it mean? You've got to tell me what—"

THEN she broke off and turned in alarm at a sudden ripping, tearing noise. Instantly Dalmer slammed off the switches of his apparatus and swung round to face a cordon of uniformed men as they marched into the laboratory, taking care to avoid the hot edges of the secret door their flame guns had sliced open.

"So!" the foremost guard said smoothly, leveling his gun—and Lyra recognized him as the one who had arrested her and Eward. "We finally found you out, Dalmer! For months we've been taping you. Even the Presence himself has been at work with the Twelve Brain Computer, and now. . ." He shrugged. "You'd do well to explain your secrets. . ."

"I'll explain nothing!" Dalmer's rugged face set obstinately.

"This girl," the guard went on, his cruel eyes turning to her. "She is with you, is she? She was the one who also plotted treason with Eward Hilto. I remember her now. So all three of you were in on it, eh? Very, very interesting. If you won't talk, Dalmer, she undoubtedly will. We have methods, remember—"

"Don't tell them anything, Doctor!" Lyra cried hoarsely, as her arms were firmly seized. "Don't give anything away, please! I can stand all they can do to me."

"That," said the guard, "remains to be seen. Now march—both of you. We'll see how much flesh and blood can stand, girl."

REALISING only too well the futility of resistance the two submitted to being forced from the great house—all of

it under guard, they noticed, as they passed through it—and afterwards being led through interminable routes to the city's great prison regions.

Lyra at last looked up, upon an array of glittering instruments, tremendously improved versions of old torture instruments brought into being by the mysterious Presence and his hellish minions.

"In God's name, you can't do this!" Dalmer panted, as the girl was forced, kicking and struggling, to a device resembling a new style of the Iron Maiden. "I'll speak—"

"No!" Lyra screamed. "No—not yet! They can't use me as a means to—"

"A fool's courage," the guard murmured, as the clamps closed round the girl. "Don't you realise, woman, that that instrument will break your limbs one by one? Don't you realise the delicacy of its adjustment, its brilliant system of extracting the last ounce of suffering from a victim before bringing death? You would dare *that?*"

Lyra hung her head, made a futile effort to move. Two of the guards moved to the controls.

"First, your suffering to wring confession from Dalmer," the leader murmured softly. "Then, audience with the Council. . ." He raised his hand to give the signal for the torture to commence—but he never got that far. He stood with his hand half raised, lips parted, staring fixedly at something gray and indeterminate moving out of the shadows. How it had gotten there he could not imagine, neither could the rest of the men as they stood gazing. Only Dalmer gave a faint smile.

"What the hell is it?" demanded one.

The Thing became clearer—the figure of a man of stone gray, as though he were covered in chain mail. His eyes stared with wide, openly baleful hypnotism. The tight shut mouth was a carven line. Certainly he did not speak, but his thoughts battered into the brains of captors and captives alike.

"I come—to avenge!"

With that his two hands rose, the fingers pointing at the Iron Maiden. What happened nobody could properly tell, but the bolts and bars of the terrible instrument flew apart like dust and sent the fainting girl reeling to the floor.

"To such as you— *This!*" came the thought, utterly implacable.

The guards swung round to run, but they didn't even take two steps. The hands went up again: from them there sprang visible streamers of electric energy, lashing forces which brought the guards to their knees. Their writhing bodies were stabbed through and through, hurled them into instant death.

Then the vision was gone—as though it had never been. Slowly Dalmer moved forward, lifted the slowly recovering girl in his arms.

"It's—it's all right," he whispered gently. "Quite all right, my dear. . . That was Eward. He's come. . . I knew he'd come. We're safe—all the earth is safe. The day of reckoning has arrived. Courage, Lyra; all this was planned—by me. Now let's try and get back to my laboratory."

THE slaying of the guards in the dungeons was unquestionably the foundation stone in a reign of terror for the Venusian masters of the world.

At first they refused to credit the rumors of a gray avenger in the form of the dead Eward Hilto who smote down without question—then as strange things began to happen, as their most careful plans were ruined, they had to believe.

Their ships of war were mysteriously destroyed overnight. Five thousand of them were permeated with some mysterious energy which had so altered their molecular structure as to cause them to fall steadily to pieces.

Two nights afterwards every armament dump in the city was rendered useless. Again, enigmatic radiations had been at work, this time to render explosive gases incapable of instant release. Instead they dissipated slowly of their own accord, without harm to the workers.

Nor were these mysterious assaults confined entirely to New York. From every city came the same cry of baffling attacks on the Venusians. Finally, the Presence himself went to work, got busy with the Twelve Brain Computer to make a perfect plan of counter-attack. His plan failed utterly. Desperate with fury he ordered the instant projection of one thousand suspected Earthling traitors. . . The projector broke down, utterly jammed.

Then a new tale reached the Presence. In all there were five underlings in his rule of the world, scattered about different countries in giant controlling offices —and Granjik, first of the Five, had seen the Gray Avenger! Five minutes afterwards he was found—stone dead.

One by one the controllers died—horribly. The Presence felt—saw—his rule crumbling. His minions had already panicked. Earthlings were revolting in their millions and gaining the upper hand, realising the Gray Avenger was their friend.

The Presence made a last desperate effort to avert the end. He locked himself behind his invulnerable walls and figured out details of a scheme to trap this illusive mystery man who struck without mercy. . . But through all the walls, through all the thousands of traps, the Gray Avenger appeared untouched. For the first time the Gray Avenger and the enshrined Presence of the world met. . .

Only the Gray Avenger was seen thereafter. In the controlling chair of the Presence was a mass of ashes fanned by the roof ventilator. . .

And with the passing of the Presence hell broke loose over the world as the Earthlings made their final drive, aided as ever by the being who seemed to have the forces of the very cosmos at his fingerends. . . Even when victory was assured and man had resumed his rightful heritage, the Gray Avenger did not depart.

He appeared again in a secret laboratory owned by Dr. Dalmer. Transfixed, still dazed by the events of the weeks, Lyra stood gazing at the gray, terrible being who had been the man she had loved. But Dalmer merely looked thoughtful, moved a switch on the board behind him.

For a moment the ghost of an expression crept over the gray, inexorable face —then Eward suddenly relaxed and crashed full length to the floor.

"Wait!" Dalmer snapped, as the girl moved forward. "Leave him. My ap-

paratus will lift him. He has the cold of space about him and to you or me that would mean death. Wait a moment. . ."

Lyra nodded and stood aside as a cradle device lifted Eward onto the table. Dalmer went to work with thermostatic devices, and then started in on an operation in which the girl found herself forced to be an assistant. She saw scales removed and flesh grafted in place of them, saw the skull trepanned and brain surgery at its best. It seemed an endless procedure. . . . But at last it was done.

Yet even then weeks had to elapse for results, weeks which crept into months whilst Earthlings reformed their laws and fought their way back to normalcy.

Then one day the eyes of Eward Hilto opened, looked around him. From then on he recovered rapidly, at last was able to hear the reason for the strange memories which plagued him, and the girl too heard the explanation of countless things that puzzled her. . .

"IN the first place, Eward," Dalmer said, seated in an armchair in the corner of the bedroom, "when I operated on you for that blow over the head with the paralyser beam, I trepanned a portion of your skull as well and fixed inside a metal connection between the normal and subconscious areas of your brain. That, by medical law, gave you a complete brain. Normally we use a fifth of our brains, of course, the rest probably being there for evolutive reasons later. . . Also, I did something else.

"I infused into your blood stream a drug which I knew would so harden your body and heart that neither could be destroyed in your terrific rush out into space. Naturally, I knew when I worked that you would receive the death penalty. Clear so far?"

"Yeah, I guess so," Eward nodded, frowning. "What then?"

"I took a gamble with the cosmos," Dalmer said slowly. "I knew that with my drug your body and brain would be intact, though you yourself would be dead. I knew too that if your brain could be brought back to life it would be capable of terrific powers, as also would your body.

"I knew too that if the cosmos is what science claims it to be—that is, the very structure of infinite thought and power itself—you would unquestionably, once revived, come under the influence of that thought-sea all around you. I relied on the original theory of Jeans that the ether *is* mind, an observation proven by our later scientists. . .

"After you had finally reached a position where the gravities of moon and earth held you in a neutral field, I sent across space a radiation corresponding to the one which begot life on this earth in the first instance. My judgment was right, for it infused life back into your still undamaged body. Shock alone had been the cause of your first death. Life returned. Little by little your body built itself up to stand spatial conditions, even as a man can stand increasingly powerful electric charges by slow acclimatization. It was the law of adaptability, of course. You became a man of space.

"But with that return came knowledge, and the rememberance of your fate. And to your knowledge was added the even greater knowledge of the cosmos itself. Infinite knowledge of dimensions, powers, radiations—things denied to ordinary mortals. Further, your body was a medium for these forces and radiations, as a bulb is the medium for electric light. You could allow terrific powers to pass through you without harm because with a mind like yours you had mastered them, not they you! You see? Almost in a literal sense, you 'held the wind in your fist'.

"The Twelve Brain Computer made things easier for you. It made the plans of the Presence twelve times clearer to

you. With your power to pass through solids and in any dimension you accomplished the destruction of those beings you so bitterly hated, saved the girl you loved —Lyra, and the man who had protected her—myself. Again because of your love for Lyra you returned to this laboratory when your work was done. I closed a switch powerful enough to send a current forth to heterodyne your powers for a moment. In that brief period I hastily trepanned and broke your brain connection. The rest was simply a matter of restoration to normal by synthetic grafting and so forth. . ."

"Then," said Lyra slowly, "the thoughts I kept getting whilst in solitary were from Eward?"

"Of course. His mind was not dead. Mind cannot die."

EWARD pondered through an interval. "Slowly the memory of it is fading," he muttered. "For a while I was a God, impelled by only one purpose—vengeance. But now— You said you planned it all?"

"For twenty years and more," Dalmer admitted quietly. "I couldn't go into space myself because somebody was needed to control the instruments, and only I had the knowledge. I waited for the right man to come. I knew where he was. I knew that if Providence was with me he would finally reach me. At last he came— An accident with a paralyser beam, and you!"

"And—and you also sought out Lyra and protected her," Eward breathed. "Why? Why us particularly?"

Dalmer smiled slowly. "Because, Eward, you are my son!"

Both Eward and the girl stared in dumbfounded amazement.

"So strange?" Dalmer chuckled; then shook his head. "No! I was exiled to Callisto, but I escaped, came back. I fought my way with medical knowledge to the place of head surgeon, always with my plans of revenge on the way. I knew where my son was; I knew of his aims. I knew where his loved one was too. I resolved my son should some day be the Gray Avenger. What more could a parent do than watch over his daughter to be whilst his son was destroying a Godless persecution?"

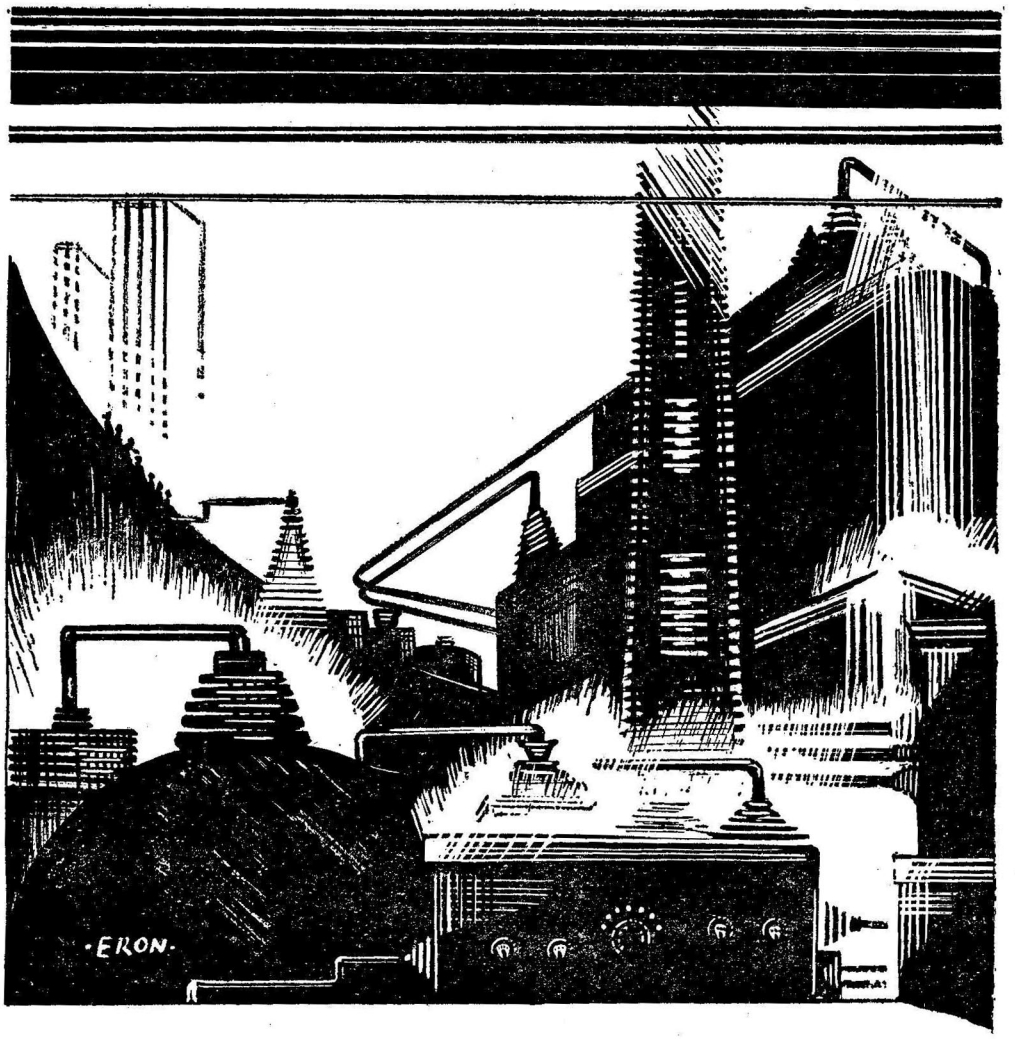
Dalmer said no more. He could not. Regardless of instructions Eward leapt out of bed and tore across to the armchair. Not a second later the girl was on top of him. Together they smothered the helpless scientist under the enthusiasm of their affection.

THE SONG OF THE ROCKET

They live and die in the empty sky between Earth and Sun and Mars,
The thin, hard men who turn again to the comet and the stars.
You can hear them talk of the things that stalk; of alien plant and beast;
In Saturn's towers they pass the hours with many a lonely feast.
They tell of the wings of the vampire-things that prowl the Venerian night,
And some may speak of the chilled and bleak Neptunian things of light.
But go where they may, they never stay, for the ship that soars like a bird
Calls every man of this rawhide clan, and its song is ever heard.
And go where they will, they stand not still, for never can they stay
While the rockets dart through the brain and heart, and their song is from far away.

GABRIEL BARCLAY.

By HARL VINCENT



GRAVITY ISLAND

The Asterites were small, like their world, but deadly. Even the air they breathed was poison. And with the tremendous power of their strange gravity-weapons, it seemed as though they could realize their dream of conquering the Earth!

"YOU feel it, too?" Boyle's eyes shifted from the altimeter dial to meet those of his co-pilot and he saw mystification, even fear, in the gaze that met his own. "The *pull,* I mean."

"Sure I feel it. Seems to hold me tighter to my seat, if you get what I mean." Conlon's eyes shifted nervously and he peered at the inductor compass. "Sure of our course?" he asked.

"Far from it. Both compasses are haywire now and we're losing altitude fast."

"You're telling me!" Conlon squinted anxiously at the altimeter. "Twelve thousand—eleven," he intoned. "Passengers'll be getting panicky—all three of them."

"Yeah—swell pay load this time." Boyle had revved up the motors to their maximum and was trying to nose up the big transport plane. To no avail. Relentlessly the powerful ship was being drawn closer to the black waters of the Pacific, unseen but lurking below. And he did not know where they were!

"'Twon't be long now," he muttered. Without hope, Boyle snapped the headphones over his ears, turned the switch of the radio. It had been dead for a half hour and no sound came from it now. Disgustedly, he tore the harness from his head and wrenched once more at the wheel.

No use. It was utterly impossible to turn from the course they were following willy-nilly.

All had been serene when he took off from Honolulu airport that afternoon and headed southward and westward along

the radio beacon lane. Hours later had come the storm warning and he had left the beacon lane to circle the hurricane; if possible, to get above it. They had missed the storm center but lost their way when the radio went dead just after the black Pacific night enveloped them. And now this inexplicable force had drawn them down through the cloud layer and was sending them God only knew where. Seven thousand feet, the altimeter read. Six.

The door from the passenger compartment opened and closed softly. Cool and trim in her white uniform, Mary Parquet faced the two pilots. "What's wrong?" she asked Boyle.

"Search me." The broad shoulders of the pilot shrugged with a leisurely fatalism. Boyle could not bring himself to look into the blue eyes he knew were boring into his hunched-up back. He had hoped that Mary and he. . . .

"What shall I tell the passengers?" The voice of the hostess was calm and collected but the keen ears of the men were not to be deceived. Mary was as worried as they. "I can hardly walk," she added. "I feel as if I weigh a ton. Just have to drag myself around. The two men back there are growling about it and I can't explain. The girl takes it as a huge joke."

Conlon, his broad face furrowed, rose to his feet stiffly, wearily it seemed, and plodded through the communicating door without a word.

"Does he know about the freight we're carrying?" the hostess asked.

"No. At least I don't believe so—he hasn't said anything." For the first time, Boyle's gray eyes met Mary's blue ones squarely. A question was forming; crystallizing suddenly, it passed wordlessly between them. Neither could answer.

Had the valuable cargo they were carrying anything to do with the strange actions of the ship? They did not even know what the cargo was; they only knew it was extremely compact in its cases and extremely valuable. For it was insured at a million dollars and the insurance people had hidden two armed guards in the tail compartment to keep constant watch on it until it reached its destination.

"I still don't know what to tell them inside." Mary Parquet's knees sagged momentarily and it was with distinct effort that she remained erect.

"Is it as bad as that?" Boyle asked with concern. He struggled to his own feet, then sat heavily. "It is," he answered himself.

"What in the world is it?" Mary's eyes were wide. "Bill, we'll have to—"

The door from the passenger compartment burst open and Conlon literally fell into the pilot's cabin. He was bleeding from a badly cut lip; one of his eyes was swelling rapidly shut; his collar was ripped from his shirt. "One of the passengers—Thompson—has gone nuts," he gasped. "Raising hell back there. I couldn't—"

The hostess stifled a little cry, went swiftly though heavily through to her charges.

"Here, take the controls," gritted Boyle. "Much good that they are."

HE flung himself with great muscular effort after Mary. A last look at the altimeter told him they were down to three thousand feet. Boyle's weight increased steadily as he tried to run.

The passenger compartment was a shambles. The man Thompson had knocked out Carlson, the other male passenger and was advancing toward the girl, who was backing off, screaming, fumbling with a parachute pack, trying to strap it on. Mary was fighting off the man, trying to quiet the girl. An insurance guard was in the rear door, gun in hand.

Without further ado, Boyle flung him-

self on the crazed Thompson, dragging him away from the two girls. He straightened him up with a swift uppercut, then slashed across a right which sent him down in a crashing heap. Thompson lay where he had fallen.

Boyle was shouting now: "Back to your seats! There's nothing to be done. You're safest there. And buckle your safety belts. You, too, Mary. Parachutes are no good, with this weight we've taken on. We'd sink in water or be dashed to death on land. I'm going to set this ship down—safely!"

His words seemed to have effect. The girl passenger and the guards, the hostess too, did as bidden. Even Thompson dragged himself to a seat. Boyle, his knees almost buckling under him from his own increased weight, picked up the unconscious Carlson and strapped him in where he belonged. Then, staggering, he fled to the control cabin.

Seconds only remained. Conlon, white and perspiring, relinquished the pilot's seat. Fifteen hundred, the altimeter read. And still the ship was being dragged relentlessly downward. Boyle wrenched mightily at the wheel. The nose came up a fraction of an inch. He fought the mysterious power from beneath with every ounce of strength in him. The controls scarcely responded at all. It was no use. The needle of the altimeter registered zero. Boyle braced himself for the crash. Conlon yelled despairingly. In the murk outside, the pilot saw dimly a looming black wall directly ahead, rushing toward them. He ducked instinctively.

But there came no crash. Instead, the force which had clamped him down was suddenly released. A light was ahead; they were swooping into an enormous, lighted, high-roofed cavern at terrific speed. Astonished, Boyle cut his motors, zoomed up as high as he dared to lose headway, then banked over sharply and circled the cavern several times before he had cut down to safe landing speed. There was the torrent of an underground river down there and a broad tableland where motionless living beings could be seen. Another plane rested not far from the river. Boyle came down finally in a perfect landing beside it, braked to a screeching stop.

HE was outside then, with Conlon—neither of them waited for the passengers to disembark. As soon as they had set foot on ground the two men were dragged to their knees by a sudden terrific increase in gravitation. The grotesque impish figures they had seen surrounding the ship awakened from a frozen immobility to furious action. They swarmed over the struggling pilots and into the ship. Boyle squirmed at the screaming from inside of the two girls, at the crashing of pistols, the babble of shouting. He was helpless to do anything. And Mary Parquet in there. . . .

"What in hell," gasped Conlon, "is this all about? What're they doing to them? Ever see such twisted, queer dwarfs? Masked, too, it looked like. They're not human."

"Not the way they get around in this gravity," groaned Boyle "or whatever force it is." He had dropped prone to relieve his straining muscles. "And I can't help; must weigh a thousand pounds.

"Me too." Conlon likewise stretched out and relaxed as much as he could. "Look," he said then. "Look at that other plane."

Boyle turned his head with an effort, then exclaimed sharply, "By God, Tommy, it's Emily Eckert's crate. Missing three years now. What the devil have we got ourselves into?"

"Sort of a port of mising planes," grunted Conlon. "And we're in along with Eckert. Great life."

"This damned weight that's holding

us," panted Boyle, trying to roll over. "Wonder how—say, Tommy, look what they're doing!" He worked madly attempting to get up but to no avail. He groaned his horror.

The gnarled dwarfs were lifting bodies out of the transport. Bodies! First came the two insurance guards, then those two male passengers. All of them corpses, heads dangling and gory. Boyle yelled fiercely, futilely. If they had harmed Mary. . . .

But the two girls were brought out alive and kicking, biting and scratching feebly. Gags had been put in their mouths; they were unable to cry out. Swiftly they were carried away to a far end of the cavern as Boyle's curses followed the retreating party of dwarfs. The bodies of the men had been laid in a row beside the ship. Others of the dwarfs were here, examining them and searching their clothing. None of the cargo of the transport had been removed, however.

When they had finished with their ghoulish work, the undersized but menacing monstrosities advanced to where Boyle and Conlon lay, after they had dumped the bodies of the others into the swiftly running river. One who seemed to be a leader of the stunted creatures bent over Conlon and grunted a sharp command. Two blue flames spat out sharply from weapons in the hands of his men and Conlon was writhing in his death throes. A sickening odor of scorched flesh was in Boyle's nostrils; madness was in his brain. He struggled against the weight that pinned him down.

"You devils!" he croaked. "You unadulterated, rotten murderers; you scum!" With a tremendous effort, he raised to one knee. Perspiration stood out on his brow in great beads. He drew himself up slowly and with intense pain to his feet. With arms he could hardly raise he tried to reach the one who was leader of these cutthroats, whatever they were.

The flame weapons were raised, but the leader, looking through the lenses of his mask at Boyle, waved them down. Then, to the pilot, he said: "You live. For your —what you say—guts, you live." In another tongue, a tongue with crackling, staccato syllables, he addressed a sharp command to one of his followers.

At once, and just as Boyle was sagging under a weight he could no longer support, the squat little imp was belting a metal box to his mid-section. When this contraption was in place it commenced a faint but high-pitched droning. The belt tightened around Boyle's middle and he felt himself buoyed up instantly. His weight again was normal. He could walk; he could use his limbs; he could fight if need be. But discretion warned him against any rashness. He had not seen where they took Mary and that other girl, June Carver her name had been on the list. He *had* seen what happened to Conlon. And a dead man can do no one any good. He'd curb his impulses and see this thing through.

THEY had tied his hands behind him then and were hurrying him along the bank of the river toward the far wall in the direction in which the girls had been taken. Boyle could not identify the creatures surrounding him as any known race; they were, on an average, about four feet in height, with extreme bowlegs, knotty calf muscles, prominent chicken breasts, ears that stuck out from behind their masks saucerlike in size and flapping ludicrously. Only a topknot of hair was visible above each mask and their features, of course, were hidden. Between the shoulders of each of them was strapped a cylinder from which a tube connected with the mask. Evidently they had to breath something different from the air in the cavern, which to Boyle was sweet and good, though oppressively hot.

The cavern itself seemed perfectly cir-

cular and was perhaps three miles across, its smooth domed top, where unseen lights illuminated the whole, more than a mile high. Boyle could not see the opening from the outside through which his ship had come. It made no sense, any of it. And these queer, bloodthirsty little devils scurried along beside him effortlessly, without any mechanisms belted to their odd leather jerkins. Either they were tremendously powerful of muscle or their structural density was so low that the enormous gravity just suited them.

They came to the wall of the cavern. It was smoothly finished, showing on its surface the unmistakable marks of tools. The great cavern had been hollowed from the solid rock by human agencies! Or at least had been finished to its perfect circular form. The door through which they passed was of white metal and circular, like the door of a bank vault, and swung open noiselessly on a spoken command from the leader. It opened into a chamber which was obviously an airlock. Here an unfamiliar gas choked Boyle, smarted his eyes, was drawn burning like fire into his lungs. His captors removed their own masks, fitted one of somewhat different design over Boyle's face, strapped a cylinder to his shoulders. He drew in a deep draught of blessed oxygen.

The faces around him were even more hideous with the masks removed. Flat, expressionless features, cruel thin mouths, staring eyes that seemed about to pop from their sockets. And skin the hue of eggplant. They were ghastly caricatures of midget humans, these strange beings, ghastly and revolting to gaze upon.

From the gaslock, they emerged into a downward sloping passage that led to a level corridor into which Boyle was shoved. Everywhere the lighting was the same soft glow that emanated apparently from nowhere—or from everywhere, for there were no shadows the pilot could see. They had come to another of the white metal doors; this, too, opened at a word. Boyle was literally tossed through the opening and the door clanged behind him.

"Welcome to our city," coughed a sarcastic voice. "Take off your mask; it was only a bad draft you brought in."

Amazed, Boyle wheeled on the one who had spoken. Gaunt, sunken of cheek, wild of eye, emaciated beyond belief, his clothing in rags, the man yet was recognizable. He wore no mask, but had one of the singing contrivances belted around him.

"Raoul Constantin!" exclaimed the pilot.

"None other—in the flesh, what there is of it," grinned the other. "Take off your mask; the air's all right now."

Boyle complied. "Bill Boyle!" said Constantin.

They faced each other in a long moment of silence.

"W-WHAT became of Emily Eckert?" the pilot finally asked.

The skeleton of the man who had been the famous woman flyer's navigator shrugged. "It is not nice to think about, much less to repeat. What those devils did to her. . . ."

Boyle shuddered. "Good Lord!" he exclaimed, "they have two girls from my ship. Mary, the one I . . . well, I think a lot of her. And a girl passenger from the transport I was piloting."

"Both pretty girls?" Constantin leered evilly.

"Very." Boyle bridled. "What do you mean?"

The navigator was seized with a fit of violent coughing. Flecks of bloody foam appeared on his lips. "Sorry," he gasped. "But you'll have to know sooner or later. They're butchers, these asterites; they have tortured and killed a hundred since I've been here. They. . . ."

A spasm of coughing cut him short. Constantin had not long of life remaining himself. "Too many doses of their gas,

I've had," he apologized. "I'm a goner—but I've learned some things. Maybe you. . . ."

Again he had to stop talking. His cheeks flushed alarmingly in a new spasm that doubled up his wasted body. "Take your time," Boyle said gently. "Asterites, you said. And I gather you think maybe I will be able to do something about things. When you get your breath, give me the lowdown. But, take it easy, old man."

Constantin's story came out haltingly and between frequent spells of coughing that racked his meagre frame and left him always gasping and wiping away the blood that came from those tortured lungs.

This was no island but a hollowed-out asteroid six miles in diameter. It had, for more than a century out in its normal orbit in space, been the home of a people exiled from the planet Jupiter for their lawlessness and savagery of disposition. They, being greatly advanced in science, had made a veritable spaceship of their asteroid, wrenched it out of its orbit, and navigated it to where it now rested on the bed of the Pacific with a scant mile of its nearly spherical bulk above the tossing waters. What appeared like an island up there was well off the traveled steamship and air lanes, so visitors were infrequent and then only by accident. None from the outside world who had been so unfortunate as to be cast up here had ever left alive. Constantin's descriptions of the butchery and the unnameable tortures he had witnessed caused Boyle's blood to run cold. He had seen with his own eyes what they did to those on his transport; he quailed at thought of what, even now, they might be doing with Mary Parquet and June Carver, the girl passenger. He broke away and rushed blindly to the door.

"No good!" Constantin yelled after him. "The gas is out there in the corridor. You'd suffocate without the mask. And, even with it on, you'd not get far. Wait—your time'll come."

Boyle subsided. But he was seething with fury, shaking with fear for Mary and that other girl after what he had heard. "Okay," he said wearily and sat down again. "Tell me some more, Raoul."

The navigator continued in sporadic outbursts, interspersed with paroxysms that grew ever more alarming in intensity. The asterites, it appeared, had everything conceivable in the realm of advanced science, atomic power, gravity control, transmutation of elements, and all. They were so constructed physically that they could move about freely only in a gravity field six times greater than that of the earth. They manufactured their own gravity here and could turn it off or on at will. Further than this, Constantin had learned, they were able if they so desired to communicate the force to great sections of the earth's surface and thus render its inhabitants temporarily helpless. They were able to breathe only an unidentified gas which was extremely poisonous to terrestrians. This, too, they could disseminate in enormous clouds if ever they should attack mankind.

And there was on foot some plan to take control of things in this world to which they had brought their evil asteroid. Constantin had not learned the details of the plan.

"But," he said, "you'll have your opportunity. They'll be coming for you soon to take you around and gloat. It has always been that way; every party that is marooned here is treated the same way. They torture some, kill most of the party, then reserve one or two for the more exquisite torture of the longer life here and the threats of world disaster, the gas. . . ."

The circular door to their prison swung inward. "Quick, your mask," barked the navigator. "And close that door before too much of the gas gets in. They're after you now."

Swiftly, Boyle donned the mask which had dangled from its tube, more quickly

he was through the door and had it closed on Constantin's wretched coughing fit. He found himself flanked by two expressionless asterites.

BY PRODDINGS of their flame weapons the two guards urged him along the passage. Evidently these two spoke no English, for they conversed between themselves in the grating, clucking syllables of their own tongue. They passed through several swinging doors—there was no sealing of them in the inner realm—and eventually came out into a great chamber which was a roaring hive of huge machines. It was like nothing Boyle had ever seen. They were on a gallery that swung high above the floor. Great spherical retorts were down there, a maze of piping, huge vertical coils of metallic cable that rose to a height of more than a hundred feet in a gradually tapering diameter, squat engines of outlandish design that showed no moving parts yet throbbed monotonously with a deep note of tremendous energy. The heat that was wafted upward was almost unbearable. And Boyle's scalp tingled in this place to the electrification of the very hairs of his head. The chamber was charged with energy.

There followed an endless march through winding passages and the descent of what must have been more than a mile in a cableless gravity-control lift. More passages through which Boyle knew he could never have retraced his steps alone. Then a great vaulted room, circular in shape and walled with charts, control boards and what seemed to be some sort of master indicating board where myriads of tiny red, yellow and green lights flashed on and off in ever changing pattern. Facing this board was an asterite somewhat larger in size than the others. His bearing as he turned to face the newcomers was that of the leader of them all.

And never had Boyle beheld so loathsome a countenance, so brutally cruel and gloating an expression. The popping eyes were flecked with red and had pinpoint pupils that were fixed on the terrestrian with unutterable malice. The creature spoke in clipped English:

"You flew where not intend, eh?" the asterite gloated. "You not like what you see, eh? Well, you see much more you not like. Your people up there,"—the misshapen creature waved a chunky, twisted arm in a sweeping gesture that included the entire outside world—"they find much they not like too—very quick. You want to see?"

Boyle nodded dumbly. Flame pistols were digging into his ribs, effectually curbing his impulse to get at the hunched figure before him with flying fists. "What have you done with the rest of my companions?" he demanded.

"The so beautiful females?" The flat, purple face of the asterite crinkled in a horrible grimace. "Thorus show you. Come."

The monstrosity then slid from the stool before the board of many lights and drew up to its full four and a half feet of ludicrous dignity. "I, Thorus," the creature rasped. "I take soon your world—fellow!"

This last was hissed out in utter contempt of Boyle and his kind.

"Maybe," muttered the pilot.

"What you say?" Thorus demanded.

"Nothing." Boyle decided to curb his tongue and his temper.

He was taken now to a heavily barred door from behind which came a muffled sound of sobbing. Thorus drew the bars, clucking delightedly as he did so, and thrust the airman inside.

IT WAS a rusty, green-moulded, metal-walled chamber not more than fifteen feet square. Manacled to the far wall, with arms stretched above them, masked against the poisonous gas breathed by the asterites, were Mary Parquet and June

Carver. Their clothing had been torn almost from their smooth white young bodies. The heads of both were drooping with utter weariness, the bright blond hair of the hostess hanging in a glorious disarray to her waist, the glossy brunette tresses of the young passenger a snarled tangled mass twisted in one of her chains.

Boyle ground his teeth at the sight, the sound startling Thorus.

"Don't do that," the asterite warned.

Mary raised her head with infinite weariness. "Bill!" she cried out, then slumped in a faint.

"Ah-h!" gloated Thorus. "So that one you care for. So?"

Deliberately and unaccountably he clumped over and unchained from the wall, not Mary but the Carver girl. She tumbled in a sobbing heap at the asterite's feet.

"Please, oh please, let me go!" she moaned. "I haven't done anything. Please!"

For answer, Thorus kicked the girl brutally in the ribs. Boyle heard the crack of bone. The girl's scream infuriated him and, heedless of the consequences, he lashed out with his right and knocked the asterite kicking.

Instantly there was the keening hiss of one of the guards' weapons and a searing flame that stabbed through the biceps of his left arm, the odor of scorched flesh and smouldering cloth. Boyle wheeled to face the guards, his face muscles working, his eyes flashing, his jaw set in hard lines.

"Look out, Bill!" yelled Mary.

He dropped just as a searing flame from the floor behind him singed the hair of his head. Thorus had taken a pot shot at him from where he lay. He lurched up from his crouch and into a noose of leather that slipped down over his arms, pinioning them to his sides.

"Now you be good?" said Thorus, leaping to his feet and thrusting his hideous face into Boyle's. "You not fight. No use. You just watch. See how Thorus treat girl prisoner."

A pedestal was in the middle of the room, a standard on which were mounted several indicating instruments and from which projected a lever that moved in a ball and socket joint like an old-fashioned automobile gear shift or an antique airplane joy-stick. Thorus moved the lever and June Carver yelled out with pain. He moved it a bit further and she screamed insanely. Her brown eyes were wide, imploring. The guards held fast to the airman and their grips were like steel.

He could not see at first what was happening to the Carver girl. He knew only that she was in intense pain. Thorus inched the lever a mite further over. Bones crunched in the girl's body; she flattened to a quivering heap of flesh; her screaming ceased. Thorus snatched the mask from her face, where her head was twisted and weirdly soft against the metal plate set in the floor beneath her. Blood gushed from her twisted lips.

"A hundred gravities!" Thorus yelped gleefully.

Sickened by what he had seen, maddened by Mary's muffled sobbing, dazed by this forecast of what was in for her later, Boyle went completely berserk. He wrenched at the thong which bound his arms and, with a tremendous effort and the gouging of flesh from his wrist, had his right arm free. A lightning jab lifted one of the guards from his feet and hurled him bodily into a corner, where he lay still. A well planted kick bent the second one double, hands clasped to his middle. Boyle was roaring like a madman, charging like an infuriated bull. There came the sharp hiss of Thorus's weapon, a searing pain in his thigh. Then:

"Look out, Bill!" screamed Mary. "Behind you."

Something seemed to burst within his skull. Abruptly the pilot lost consciousness.

WHEN he came to, slowly and painfully, it was to find himself back in the cell with Constantin. The navigator, cheeks more drawn than before and eyes more unnaturally bright, leaned anxiously over him. He heaved a sigh of relief when he saw the pilot's eyes flutter open.

"Thought they had done you in," he said.

"I'm too tough," Boyle grinned weakly. Then he sat up.

His head thumped abominably and his left arm and right leg were shot through with searing pain. He hobbled when he got to his feet and tried to walk. The wounded arm was numb and almost lifeless.

"The burns aren't serious," Constantin told him. "Self-cauterized and clean. But they'll hurt like the devil for a while."

This speech started another fit of coughing, another hemorrhage. A blind man could have seen that the navigator was on his last legs.

"Better lie down, old man," Boyle suggested gently.

"Guess—I will." Constantin stretched out on his cot, smiled wanly. "Something I've got to tell you," he whispered. "Maps and drawings of the place under my mattress. Dope on the machines, too. Couldn't make some of it out. Maybe you can."

His eyes closed and Boyle saw that the unnatural flush of his sunken cheeks was paling rapidly. The wasted body was racked with coughing for a moment, shuddered once and lay still. The pilot crossed the thin hands over the poor devil's breast. Constantin would cough no more.

Boyle found the papers the navigator had hidden in his cot. The unfortunate fellow must have stolen them some time previously. They were well thumbed, obviously having been thoroughly studied. Boyle spread them out and examined them carefully. Then he became absorbed in what he saw. Though now a pilot, he had been a graduate engineer and was qualified to analyze what he saw, even though dimensions and notations were in queer, untranslatable characters.

There were complete plans of the workings inside the asteroid, a charting of all the passages, lift shafts, and traveling belt crossways. Better yet, there were working drawings of the machines, power generators and gravity mechanisms and controls. There was an intimately detailed representation of the master controls which had navigated the body from out in space. And a chart of the heavens, or of the solar system, with the orbits of the inner planets clearly plotted, connecting lines drawn between Earth and Mars as well as Earth and Venus at inferior conjunction. Boyle had studied astronomy, too; he wrinkled his brow in thought. It required many hours of study before he was able to arrive at a solution of what the asterites were planning. And when finally it did come to him he sat gazing into nothing in amazement. Hurriedly he folded the papers and secreted them once more.

He had hardly done this before the door opened and two guards came in. They left the door open this time and with them came a sweep of acrid fumes which burned swiftly down Boyle's throat to his lungs. With all possible haste he adjusted his mask and inhaled the fresh air gratefully. These guards did not pay any attention to the still form of Constantin; they merely indicated that the pilot was to follow them.

And now, going for the second time into the inner realm of the asterites, Boyle carried in his retentive memory a picture of its maze of passages, pictures of its main chambers, details of its mechanisms. A good idea of Thorus's plans as well. But he was unarmed, helpless to do anything unless some unforeseen break might come his way. And Mary Parquet was at the mercy of these fiends in quasi-human form.

THORUS greeted him with an evil smirk in the great chamber which housed the gravity generators. A number of small cases were at his feet. The valuable cargo from the S.P.A.T. transport! This was something Boyle had completely forgotten.

"You know soon now what happen," Thorus told him. "You see how I take your world. Your own people doom themselves." A twisted finger indicated the cases. "Radium. Most big shipment ever sent to what you say—Awstrala? We get. We need more than Awstrala."

"But you obtain all your needed elements by transmutation," Boyle objected.

"Not radium. It only one we not make. Uranium break down farther, not to radium. And we need radium—bad—for work to do."

Looking over the rail to a mechanism Boyle knew from the plans was a repulsion wave projector, he saw an asterite mechanic burning away a giant steel beam with a tiny hand tool. The thick metal fused away in a display of brilliance that far exceeded the flare of an acetylene cutting torch. The heat generated must be terrific. Once the blast of the cutting tool went wide of its mark for an instant; Boyle saw a thin, almost invisible needle of energy lick across the huge room and drop a blob of molten metal from a handrail stanchion. What a weapon this would make!

Thorus was telling him his plans, some of which Boyle had already gleaned from the drawings. The asterite gloated, bragged, pranced to and fro pompously as he elaborated:

"When I say we take world I mean. We take it to belt of asteroids. First we make great volumes of our air to kill every people. Then charge melted core of world with gravity energy to hundred times normal. Earth fly from orbit into space. We control by attraction from fourth planet you call Mars. Send Earth in new orbit way out there where we can live in temperature and sun we used to. No such ultra-violet as here. We have new world then and can live outside instead inside."

"Nice program," Boyle commented wryly. He had gathered this much from Constantin's stolen plans. "But where does the radium fit in?"

Thorus made a sound like a bursting toy balloon. "We need for exciter in breakdown energy process. That why we come your world two years ago. We wait long for what we want. You have it here."

Yes, the devils were all set now to go ahead with their dirty work. But if Boyle could throw a wrench in the gears he was going to do it. He knew now the secret of their internal gravity in the asteroid, knew how they insulated themselves from greater outside gravitational fields, either natural or artificial, knew the location of all the controls. And he had several hunches from what he had observed on the drawings.

"Why are you telling me all this?" he asked Thorus.

"I like see you suffer before you go. Before we go." It was the creed of the asterites.

There flashed into Boyle's mind a picture of Mary Parquet chained to that corroded wall, another picture of the layout of the passages leading there. Pictures, too, of Conlon in death, of the Carver girl, of poor Constantin. His eyes swept the great engine room, took in the location of every asterite in the place. He looked hard at Thorus, measured the distance separating him from the guards, the distance to the asterite who was using the disintegrating apparatus down there. Then, bunching his muscles, he leaped over the rail.

Thorus shouted. Pencils of hissing blue flame stabbed all around him. But he was on his man's back; he wrenched the roaring disintegrator from his hands, swung it around to the balcony on which Thorus

and the two guards stood yelling and trying desperately to seady their aim. He had taken them completely by surprise. White flame enveloped them as his new weapon contacted each in turn with its beam. In scintillating light flecks that drifted and burst in little puffs of incandescence.

Pandemonium reigned throughout the engine room. Asterites ran to and fro aimlessly. Evidently these were all workmen, unarmed, and not knowing what to do without a leader. Boyle sprang to the main gravity control lever for the asteroid itself. He pulled it back, felt himself lighten swiftly until it seemed he would float from his feet into the gas the others breathed. Then he unbelted the contrivance which had neutralized the excessive gravity to which the asterites were accustomed. His feet were firm on the floorplates now; he was in normal gravity.

Having accomplished this, he burned off the lever with the ray so it could not be used. All around him, asterites were blundering about in an almost weightless condition, utterly incapable of keeping to their feet.

Grinning, Boyle ran easily and naturally up the iron stair to the passage he knew would take him to Mary.

HE FOUND her as he had last seen her, manacled to that ghastly wall. But by now she was unconscious, drooping limply in the chains. Silent. But she breathed; her heart pumped steadily. It was the work of but a moment to burn away the chains and throw the slight form over his stiff left shoulder. Then, with the ray machine in his free hand, he pushed out into the corridor.

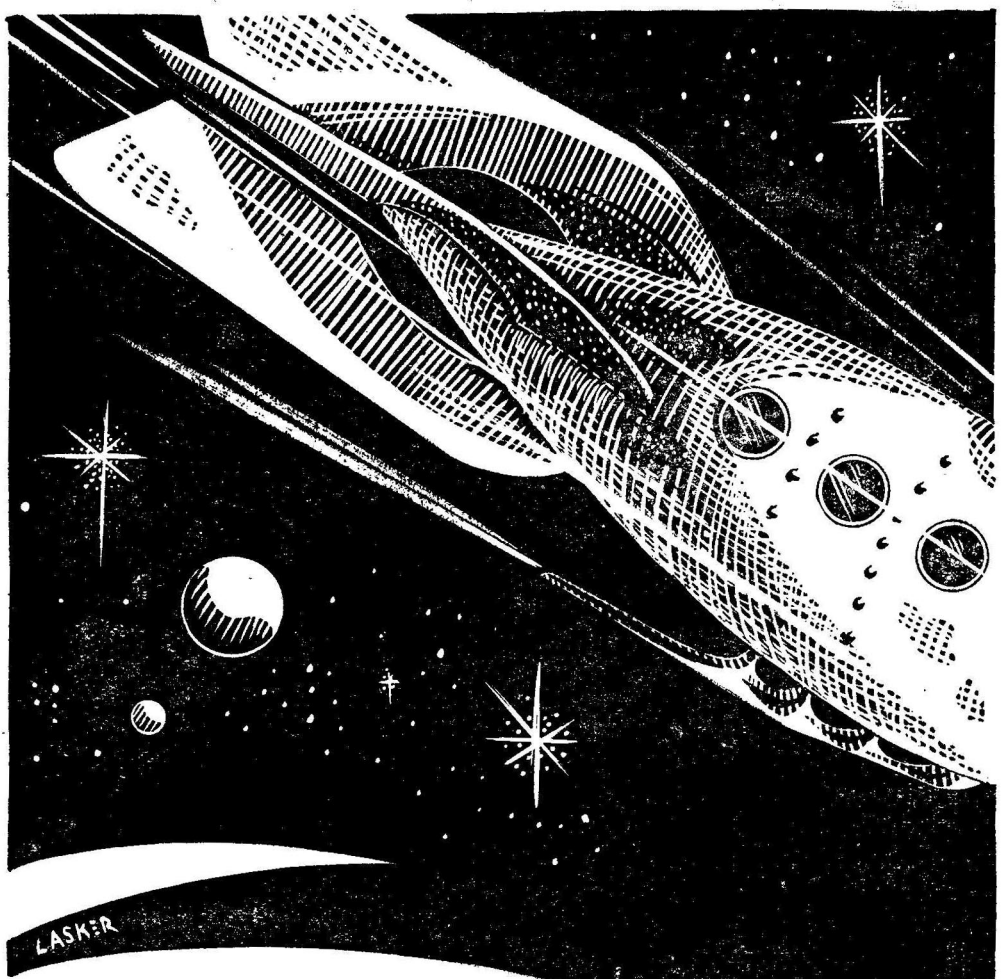
They could not stop him now. Hardly aware of his precious burden, he burned his way through to the main controls. He'd get rid of this asteroid once and for all. Another lever, there was, which controlled not its internal gravity but the force which attracted the asteroid as a whole toward other heavenly bodies, which could multiply its relative weight many times or reduce it if required. Boyle pulled this lever, found it had a midpoint where all the instruments before his eyes came to a rest at zero. But the scales of the instruments extended both ways from zero. That was it! Either attractive or repulsive energy was available here. The pilot pulled the lever all the way back, felt a rocking of the floor beneath his feet. Gravity increased slightly; the asteroid was rising from the depths of the Pacific!

The rest was confusion. Dazedly he fought his way out of the place and seared time and again by the blue flame of the asterites. But his ray apparatus swept the way clear as he advanced. Then, clinging desperately to Mary, he was in a lift. It seemed ages until he staggered out into the great cavern where the two planes still stood, more ages until he had Mary safely in the cabin of the transport. Gently he laid her on the floor and sprang into the pilot's seat. The great motors roared into life at his touch of the starter button. He lifted the transport off the floor of the cavern, circled once to locate the opening through which they had entered, circled once more and was out.

He had burned off the hinges of the gaslock doors as he came through with Mary. Soon the gaseous atmosphere of the asterites would escape into the vacuum of space. The thing would be an airless, frozen tomb, a wanderer through the cosmos forever, repelled by every body of the universe until its power was finally exhausted.

He had lost passengers, cargo and guards. He'd be grounded for this. But he had saved his world—he'd never tell anyone that, for they'd never believe him—and he'd won the only girl. Wasn't that enough for any man?

THE END



CHAPTER ONE

Beyond Pluto

THE Terrestrial Planetary Exploration Bureau ship *Explorer* nosed through the void beyond Pluto at a crawling speed. Her proton blasts were invisible tendrils of energy, pushing her lightly along into the unknown.

A voice, young in timbre, crackled through the starboard engine room annunciator.

"We're well beyond Pluto's gravitational influence, now, Brassin. Shut off the Wittenbergs."

The annunciator clicked off.

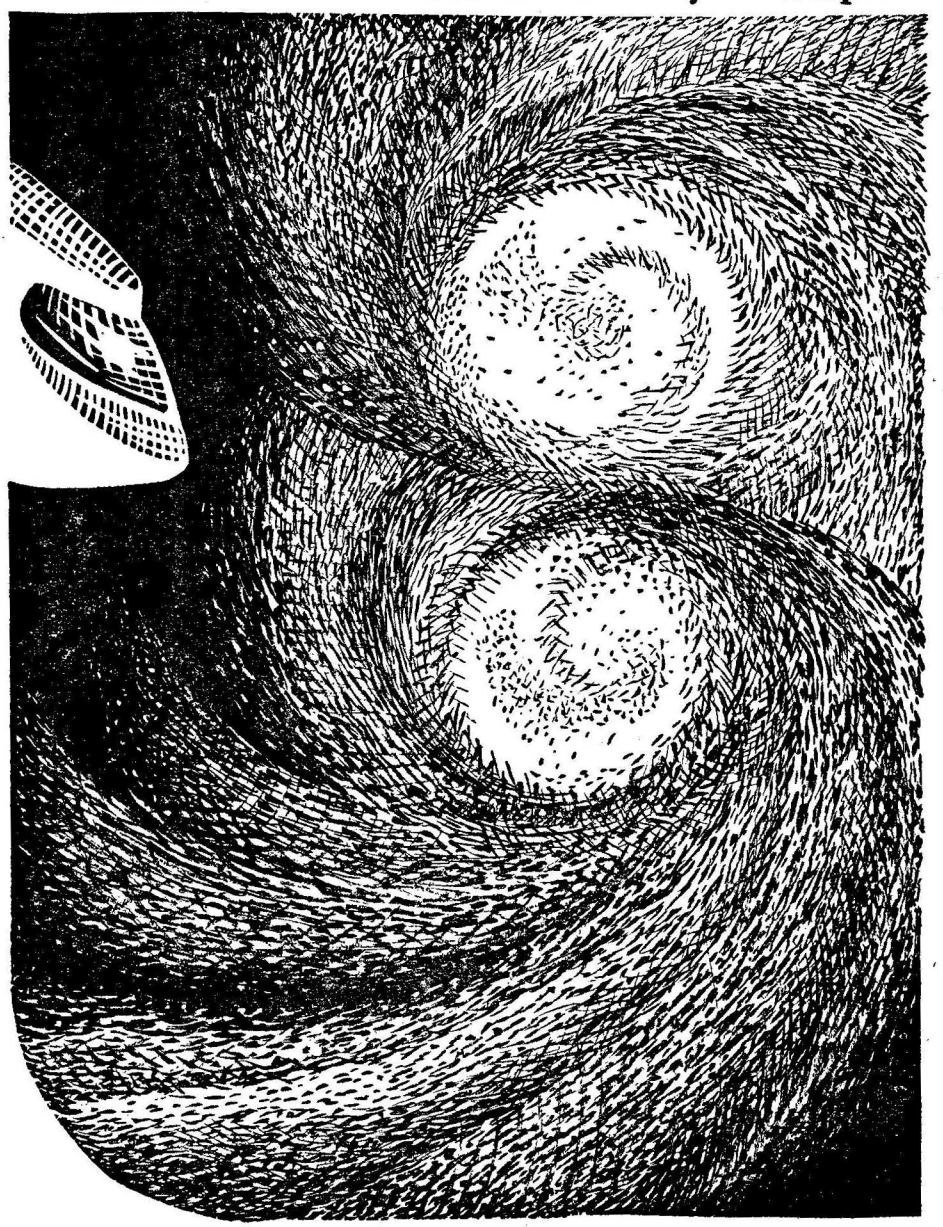
By ROSS ROCKLYNNE

Chief Engineer Brassin pushed his almost-white cap back from a grease stained forehead, and looked insultingly at the annunciator, and then bulged out his thick lips and expectorated a thick stream of yellow juice into a waste chute.

"Him!" he said, staring around at the crew. Of course, they couldn't hear him,

TRANS-PLUTONIAN TRAP

What was the object which held the Explorer in this strangest of all traps? It couldn't be a planet, because the ship fell right through it. Captain Raney learned the answer—and the one way to escape!



the ear-piercing howl of the Witterberg lead disrupters being a sound which destroyed all others. But the *Explorer's* crew, living a good many hours of the day within earshot of that penetrating scream, had learned long before, the art of lip-reading.

"Him!" said Chief Engineer Brassin's lips insultingly. "*Him,* that thinks he can go orderin' us around like he was old Captain Janzen. Damn young squirt, that's what he is. Why, I wouldn't be surprised if we *wasn't* beyond Pluto's gravity. What the hell does he know about space navigation? I ask you!"

His immediate assistant frowned at him nervously. "I don't know about that," he said uncertainly. "Doesn't look like they'd put somebody in charge of the ship if they didn't think he could handle it, would they?"

Brassin burst into a short laugh. "In sympathy with 'im, eh! Or else too lily-livered to get off the fence!" He thrust his face close to that of his assistant.

His assistant laughed nervously. "You're supposed to shut off the Wittenbergs, chief."

"Why should I shut 'em off?" growled Brassin. Other men in the engine room, perched on high chairs before dials and gauges, making notes for later entry in the log, looked up. Brassin put his massive, hairy fists on his hips and looked around. "How do we know that papa's boy hasn't miscalculated the distance from Pluto?"

The other men knew well enough what Brassin's pet peeve was; and it was their own, too. Old Captain Janzen had commanded the *Explorer* for some ten odd years, and when he had retired there had been only two logical successors to the captain's berth—Duncan, first mate; and Brassin, chief engineer. Thus, when a new man, fresh out of the Marto-Tellurian Spacial Navigation Academy, had been chosen for the post, and all too obviously because he was the son of one of the directors of Terrestrial Planetary Exploration Bureau, Brassin had gone up in smoke.

Brassin expectorated again, onto the clean, scrubbed, metal floor. He looked around at the crew. "How long," he demanded in an ugly tone, "are we gonna bow an' scrape in front of teacher's pet, I ask you? How long you gonna let him assign you clean-up jobs? Scrubbin' and moppin' and polishin'? I ask you!" His oil-stained face became grieved. "Me, that's been part and parcel of this ship ever since she came out of the docks, and him, that don't know port-packin' from the cotton in his mattress. I'll be damned if I'm gonna take orders from him one second longer!"

He looked around challengingly.

One of the accumulator men, older, greyer, more patient, looked up from a rewiring job. "Maybe we agree with you," his lips said slowly. "But I'd advise you to watch your step. Captain John Raney hasn't cracked yet, except for what you think are screwy orders now and then. Of course, we all know he's incompetent. If he is—well, wait until you get a good excuse before you start any rough stuff." He smiled at Brassin. "Just because you had to carry his high-speed camera equipment aboard, and because it looks like he's one of these here dandified faddists, don't make any excuse, Brassy. You better shut off the Wittenbergs."

Brassin, big, rough, looked at him angrily. Then his stubborn eyes shifted, and, grumbling, he signalled the Holloway vaccum feeder man. The man pressed a button, and the lead cable stopped uncoiling. Brassin threw a knife switch, and the Wittenberg howl crescendoed down to nothing, leaving an aching, abnormal silence.

CAPTAIN JOHN RANEY, hovering before the mirror in his cabin, once more set his white, gold-braided cap at the

correct angle on his well-shaped head, and then pulled white kid gloves on over strong, blunt fingers. He straightened out his coat once more, and then, his pleasant, almost blank face set in a slight frown, he opened the door, and stepped into the corridor. He walked briskly down it toward the control room.

"Mornin', captain," said a crew member who passed him. The man's voice had been mechanical, and his salute had no enthusiasm in it.

Raney frowned even more, and felt a sinking sensation in his stomach.

He opened the transparent door leading into the main control room, stepped in and closed it after him. Duncan, first mate, remained bending over his spacial charts, apparently not having heard Raney's entrance.

Raney slid into the swivel chair before his shiny console, and snapped on the vision plate. The utter black of what was now interstellar space, sprinkled with cold-white stars, leaped into clear sight. With a series of mechanical movements, Raney spoke into various communication tubes, and received the spoken reports of the air refiner, humidity regulator, and water distiller men.

In turn, he spoke to the electrician and cook and airlock tender. The reports from a half dozen other varied posts added up to make the *Explorer* a perfectly functioning craft.

Raney twisted his lean, blue and gold clad figure toward Duncan. His young, pleasant lips managed a slight smile, though he did not feel like smiling, in view of the unpleasantness to which he had been subjected almost daily, since he had taken over.

"How's our orbit, Duncan?" he asked lightly.

Duncan hunched closer over his chart. He was an older man, with a stomach beginning to show with more than normal prominence, and gray hair showing beneath his firmly placed officer's cap. "It ain't an orbit—sir," he said gruffly. "It's a straight-line trajectory. At least, that's what we always called 'em."

Raney felt a dull red flush creeping up around a neck that was tanned from long days spent on the Martian equator. He said stiffly, his gloved fist clenching, "Very good. Hereafter, we'll refer to our path beyond Pluto as a straight-line trajectory —although we both know that the two terms are interchangeable."

Duncan still remained hunched over his charts. "Seven degrees out of the ecliptic," he muttered. "North. About seven million miles out from Pluto." He clamped his lips, and Raney's lips began to clamp dangerously.

He turned in his swivel chair and faced Duncan full. His eyes were hard steel points. "You think," he said slowly, "that we're on a wild goose chase, don't you?"

Duncan looked up slowly, met Raney's eyes with ill-concealed contempt. "No, sir," he said briefly.

There was storm in Raney's eyes. His white gloved hands roved slowly over the flanged edge of the console. He gritted his teeth.

"I happen to know," he said, with a too-casual tone, "that you think we are on a wild-goose chase."

Duncan picked up his slide rule with a groping hand. "All right, then, I do," he growled, his eyes challenging.

"What's causing the perturbations in the orbit of Pluto then?"

"I don't know where the fool notion came from," Duncan growled, and Raney could tell that he was keeping the disrespect out of his voice only by an effort.

"But it happens," he said slowly, "that it's true."

"All right," Duncan almost snapped. "What of it? Probably the astronomers were wrong. They could be, couldn't they?"

"No, they couldn't. They know exactly

where to put the blame for the perturbation of all the other major planets. They can even account for part of Pluto's wabble. But the other part, they can't! There's another disturbance, coming from an outside force—a force outside Pluto."

Duncan slammed his slide rule down hard. "Bunk!" he snapped, his face suddenly flaming. He pointed a finger at Raney. "You're young! I might say you're green! If old Captain Janzen, the man that should be on this boat, had your assignment, he'd thumb his nose at the authorities, because he'd have sense enough to know there wasn't anything out here. I hope," he said, leaning back suddenly and staring at Raney out of fierce blue eyes, "I hope you pardon my disrespect."

Raney felt the red creeping into his face. With a deliberate effort of the will, he sent it back, and forced his face into a pleasant, expressionless blankness.

"I do—for the moment," he said coldly. "But if it isn't justified, you'll find yourself in irons before the hour is out. Now, if you've got something to say, go ahead."

"The men don't like you," Duncan continued brutally. "And I don't like you. The men think you're a dandified fop, dressing up on a ship that never did and never should have formality such as you insist on. Look at you! White gloves! As far as I'm concerned, you're a young squirt that was shoved into this berth by a proud papa—who didn't give a damn that there were men, experienced men, who deserved the job when Janzen retired."

RANEY had half-slid to his feet. "You were one of them," he nodded coolly.

"Right! And what's more, I think I'm justified when I say that I was *the* man for the job. You can't blame us—everybody that's been here the last years—for getting sore when they bring somebody from higher up, and a young squirt, at that. All right, let that go. A couple of screwy astronomers suddenly notice that Pluto is wobbling. Are they too damn dumb to know that even the 100-inchers on Pluto doesn't show any sign of *anything* outside Pluto that might cause the trouble?"

"It doesn't. But the two screwy astronomers know it's out here."

Duncan snorted. "That shows *your* common sense. It's all any of us could expect of you. Old Janzen would have cruised around here for a month or two —but you have to look for it, as if it might actually be out here!" He subsided for a moment. Raney's face was still composed, and Duncan, lashed to a fury, plunged. "Besides, that," he snapped, thrusting his grizzled chin forward, "it turns out you're everything none of us are. A dandy—and a high-speed camera addict into the bargain. What you going to do with that—take pictures of the innards of a Wittenberg, and send it to some kid's magazine and win a first prize."

Raney's face suddenly went white, and he slid to his feet. "That's enough," he blazed, and clenched his fists at his sides. Duncan laughed harshly, and without a moment's warning came to his own feet, and lunged out at Raney furiously. He missed, and Raney brought his own fist up blindly. *Crack!* Duncan staggered slightly, then clamped his lips. He came in slowly, with ponderous menace, and then stepped forward, quickly, light on his feet in spite of his years. His huge, pile-driver fist lashed out, landed square on Raney's chin. Raney fell back, stumbling, blindly knew he was falling. The world went black. He did not see Duncan step forward and catch him. Duncan's face was screwed up with chagrin and remorse as he eased Raney to the floor. Several of the junior officers came in, but Duncan waved them violently back to their posts.

When Raney came to, he knew that Duncan was slapping life into him. He shoved Duncan aside, and staggered to his

feet, his first thought for his ship. He made a hurried check-up, and then turned, stood straight as he could, facing Duncan. Two spots of red burned on his high cheek-bones.

"You are to be put in irons," he said in a coldly civil tone, "and you are to remain there for the duration of the voyage. Then, possibly, courtmartialed! Charge to be endangering the safety of your ship in the pursuit of a personal grudge."

Duncan stared at him in unbelief. "You're going to put *me* in the clinker?" he whispered incredulously.

"For endangering the safety of the ship."

Duncan's shoulders slumped, and then straightened again. He laughed harshly. "Bunk!" He snapped. "As if there was anything out here that could endanger it! Oh, I'll go!" and his shoulders thrown back, Duncan followed the two uneasy officers who appeared at Raney's summons.

Captain John Raney went back to his controls. "The damn fool," he said bitterly. "The damned old fool!" He forced a lump back into his throat, and watched the heavens as the *Explorer* coasted slowly through the void, ever outward into interstellar space, looking for the planet that could not exist.

CHAPTER TWO

Mutiny!

BRASSIN came tumbling down the starboard companionway, his yellow-stained teeth showing in a grimace of rage. His bull voice brought every man in the crew on his toes. Brassin took the center of the stage, and smashed one greasy hand into the other.

"He done it!" he panted wildly. "He done it!"

"Did what?" asked one of the older men patiently.

"He put Duncan in irons! Good old Duncan," almost sobbed Brassin, "what's been on this ship ten years if a day."

"He must have had a reason, Brassy."

Brassin shoved out his battle-scarred jaw. "He didn't, I tell you!" he panted. "Duncan just told him there wasn't nothin' out here, that he was just wasting his time! We all know that's the truth, don't we? Sure we do. You there," he shouted at what looked like the single disbeliever, "that's true, ain't it? Well, that's better. Now look." He extended a rigid forefinger. "He swung at Duncan and missed him, and Duncan, an older man too, wiped up the floor with 'im! Ask anybody. Then he jails poor Duncan, and him that swung at first! Is that right now? I ask you!"

"Listen, Brassy. You're going off half-cocked. Maybe Duncan said something that was just as good as a first blow on his part. How about it?"

Brassin jumped off the stairs, and strode up to the other man. He rapped against the man's chest with a stiff finger, a menacing glint in his eye. "He swung first, see?" he growled. "And we ain't gonna stand for it! What about it, gang? Are we gonna stand by and see poor Duncan treated bad, him that should have been cap'n of the *Explorer?* You bet we ain't!"

The man who was being so disagreeably jabbed fell back with a sigh, while the others, with oaths and exclamations of rage fell in behind Brassin.

Brassin was triumphant. He waved a hand and bounded up the stairs. "Come on, gang!" They were after him with a will. Thus it was that Duncan's own resentment was the excuse which brought to boiling point a mutiny which had been simmering ever since young Captain John Raney had taken over the ill-fated *Explorer.*

For it was ill-fated. Even now, less than fifty miles off the quarter-beam, a strange influence, from an invisible source,

was making itself felt, though not yet did instruments appraise the fact.

CAPTAIN JOHN RANEY looked briefly at his acceleration dials. He frowned. The needles were on zero, except that one which registered in centimeters. It was quivering slightly. Raney bent over it, looking more sharply.

Then he sat down at his console, pushed on his photo-amplifiers. Except that the number of stars in the plate diminished, there was nothing he could see that was out of the way.

But why did that acceleration gauge tremble. Was there some force, entirely unexpected, acting on the *Explorer?* He felt a slight chill creep up his spine, and then tightened his lips. Of course, the gauge must simply be out of order, but, in view of the strange object which the *Explorer* was in quest of, it would be a good idea to send the *Explorer* directly *away* from whatever force might be pulling it.

He spoke into the engine room tube. There was no answering reply. He spoke again, sharply; and then came to his feet, whitening.

"They've done it," he gasped. He swung around, leaning back against the flanged edge of the console, his high cheek bones suddenly going devoid of color. A slow boiling started in his stomach.

He could see all the way down the corridor, through the transparent door of the control room, all the way down to the starboard engine room companionway. Along the corridor, Brassin in the lead, his long, ape-like arms swinging as he swaggered ahead of a crowd of determined looking men, came what looked like the worst trouble that Raney had ever faced.

He looked around wildly. No fear for himself here, but a deathly fear that this mutiny, and mutiny it must be, had come at the worst time possible. For even now, as he turned his head, he saw the centimeter gauge swing violently over against the checks. Saw the meter dial do the same. And even the kilometer needle was beginning to register.

He took one more look at Brassin, at his jutting, purposeful, entirely merciless jaw, and then turned frantically.

He snatched the general communications tube out of its socket, started to speak.

"Attention all!" he barked. "The *Explorer* is falling! Falling—" The door opened behind him. With a snarl he turned. Brassin came forward implacably, his heavy, grease-stained face leering.

"Come on and fight, papa's boy!" he said softly. "I'll give you something a little bit worse than what poor old Duncan did." He deliberately took Raney's right on his granite chin, and then lashed out gently with his own three pound paw. Raney's world rocked. "Fallin', is she?" he heard Brassin's soft mockery. "When they ain't nowhere to fall! That's a laugh!"

Raney lunged out, blindly clinched with Brassin. "She's falling," he whispered. "Falling, I tell you. Save her, you fools!"

But Brassin only pushed him away, almost playfully pushed out his fist again—and Raney himself was falling, into a deep blackness that knew no end.

RANEY must have come to long after. He choked and groaned, and his hand fumbled up toward his aching head. He felt a dull pain in his jaw, that throbbed painfully and without let-up. He drew his eyes open, was conscious that he was lying prone on a hard metal floor. He saw, above him, three squares of yellow light, and his mind lanced back to what had taken place in the control room. Mutiny! And the ship falling to what must be a swift crack-up!

He staggered to his feet, and moved toward the door of his cell. For he knew now they had freed Duncan, and put him, Raney, in his place. He placed two hands against the bars, and looked out into the corridor. From somewhere, he heard the shouts of terror-stricken men. Once a member of the muttering crew ran at full speed down the corridor, but Raney refused to lower himself by calling after him. Let the fools go to their hell, since they had picked it out!

Suddenly, beginning as a low whine, the Wittenberg howl commenced. It grew upward from a whine to a roar, to a throbbing, aching, shrieking howl, and flowed through the ship, and set the floor vibrating beneath Raney's feet. He felt a surge of relief, though he knew, now, that his own hard-won position as captain of a famous ship was lost, forever. The ship would escape whatever force was acting on it, the same force that wobbled Pluto, and would go back to Earth; and no amount of talking would convince anybody against the crew's word. He was incompetent, he didn't know how to handle men. He slowly fell back away from the door, and sank back on his haunches. He stared dully,

blankly, at his hands, without seeing them.

Not more than two minutes could have passed, when Raney heard swift, purposeful steps in the corridor. He heard a key grate in the lock, and sprang to his feet as the door was thrown open. Duncan was outlined in the door-way, pulling at his grizzled beard.

"All right, cap'n," he said gruffly. "Come on out, if you want to. You might as well watch this, too."

"What happened?" asked Raney, slowly coming forward.

Duncan's voice was strange. "I don't know. I don't know!" he jerked out, staring at Raney. "Look—it hasn't been more than ten minutes since they took me out of here, and put you in. During that time—something's happened. And I don't know what to make of it. Nobody does."

"Are we falling?" Raney demanded.

"Y-Yes."

"Who's acting captain?"

Duncan's eyes avoided his. "I am," he said huskily. "There's nothing I can do. I don't even know what's happening. But it's something strange. Just by luck I happened to look at the acceleration gauges. Brassin and the rest of them didn't pay any attention when you said the ship was falling—they thought it was a gag! But I looked at 'em, and I saw we were falling! Even I didn't believe it. But I looked at the vision plates—and I saw an atmosphere!"

"An—atmosphere?"

"Without a planet," said Duncan, his voice unnatural. "An atmosphere without a planet. And inside the atmosphere, there were—I calculated it—*five gravities!* And we hit the atmosphere before I could even move . . . . . The Wittenbergs didn't do any good. Brassin's still got 'em on, but they're useless. Listen to that wind!"

Raney listened, and above the Wittenberg howl caught the higher pitched, more violent scream of a rushing wind, as the *Explorer* plowed through it. So even the proton blasts didn't help—and no wonder! Five gravities was a man's job to get away from!

He started hurriedly toward the control room, pulling at Duncan. "We're bound to crack up soon!" he snapped.

"That's just it," said Duncan, pulling him to a stop. His face paled. "We ain't going to crack up, it looks like."

Raney studied him closely. "What do you mean? " he said slowly.

Duncan went toward the control room again, his shoulders slumped as if the mystery of the universe had fastened itself on him.

IN THE control room, with officers standing about in nervous idleness, Raney sat down before the console, peered into the vision plate. He could see stars, dim, wavering, distorted, which proved well enough the existence of an atmosphere about the ship.

"Whatever is pulling us should show up in that plate," Duncan said huskily. Then his gnarled finger pointed at the acceleration and velocity gauges. "Watch them," he said insinuatingly.

The needles were crawling down toward the zero mark. They hit. The *Explorer* was now motionless. Then the needles began crawling up again, the acceleration growing greater by the second. Raney could *feel* the speed of the ship in the tremble of his chair. And that speed was building. Now it suddenly rushed higher, as if something had hurled it into motion. Then—

"It's decelerating again," Raney said blankly.

He watched the needle as it again went to zero. Again the ship fell back, reached another moment of motionlessness.

Raney sank back, his chin supported by his gloved hand.

"What is it?" Duncan demanded apprehensively. "What the hell does it mean?"

"I don't know . . . . Damn! Maybe I do!" His eyes sparkled. "Let me do some figuring here, for a minute."

He made a few hurried calculations. He verified Duncan's calculation of five gravities, and also, by what was purely guesswork, managed to put the diameter of this planetless atmosphere at about twelve or thirteen thousand feet. That figure almost sent the breath soughing out of his lungs. Five gravities—hidden in the heart of that thirteen thousand foot mass of churning atmosphere? It was incredible.

Yet, he thought he held a vague solution. He said to Duncan: "This idea ties in with what I thought might be the case before I ever took over the ship." He rubbed at his jaw, where a stubble of beard was beginning to show. Suddenly he levered himself to his feet, stood over the gauge, two tiny wrinkles forming between his eye-brows. "It should go to zero," he muttered. "Then it should start building up again, as we fell back."

He watched the gauge closely, and when it seemed about to hit the zero mark, indicating that the ship was motionless, he snatched the engine room communications tube from its socket.

"Brassin!" he snapped. "The ship is motionless now. Suppose you throw in every ounce of power you can!"

"Ye gods!" Brassin almost screamed. "I'm throwing in lead cable as fast as the feeder will shove it into the Wittenbergs. Even the damned anatherm tubes are gettin' hot!"

"Then," said Raney, firmly, "you might as well shut off the Wittenbergs. They're not helping, and they're only wasting power which we'll need when we figure a way out of this mess. And—Brassin." Raney smiled briefly to himself, as Brassin groaned, "Yeah!"

"Go to my cabin on the double and bring my camera up here. You know, the high-speed affair. You know where it is: you put it there."

Brassin was apoplectically silent for a full thirty seconds. Then he said, in a voice which had equal quantities of snarl and heartbreak in it, "Yes—sir." He groaned and broke connection with the control room.

RANEY turned to Duncan, and studied the grim stubborn face. He had freed Raney, had plainly asked him if he could do anything to help. And now that he hadn't helped, the old resentment was showing in his eyes.

"Do you understand what's happening?" he demanded.

"I've got only a vague suspicion, that I couldn't even put into words," Raney admitted calmly. "Now look here," he said, choosing his words carefully, "you've told me that I'm nothing but a young squirt, that doesn't know a damn thing about navigation in space. Does that still stand?"

Duncan stared at him, thunderstruck. "Of course!" he snapped. "It sticks. Do you think old Janzen would have stood for me criticizing him? He'd have hit me over the head with a crowbar, if his fists weren't big enough—which they were."

"Yet," pointed out Raney, "I told you definitely, there was something out here. You, an old spacer, didn't believe it and said I was crazy."

"That's still your fault," charged Duncan. "Brassin and me are used to being treated rough. Of course, with your Academy training," he sneered, "you don't believe in them things."

"Of course not," Raney agreed coolly.

"You're supposed to *know* things, and even if it ain't true your fist should be able to convince us it is. That's the kind of captain the *Explorer's* always had."

Raney's eyebrows lifted quizzically. "I'm afraid," he said gravely, "that there's a new order of things."

"Bah!" Duncan turned to the plate and pointed a finger. "But what is *that?* There

ain't nothin' like it in the whole universe."

"It's there."

"Then it's invisible, is it? That's stretching things too far!"

Raney said pointedly, "It's all according to what you call invisible. What's your definition of the term?"

"Well—something that light passes through, or around—or something you just can't see. Hell!" Duncan looked disgusted.

Raney smiled briefly. "Or," he suggested, "something that moves so fast the eye isn't able to catch sight of it?"

"That's crazy, Raney! No matter how fast the planet was rotating, you'd still see it, all right."

"Of course." Raney shrugged. "But this doesn't happen to be a planet."

"Then what is it, you fool! Ugh!" Duncan pressed his hands to his aching head.

Brassin came in then, with the heavy camera in his arms. He put it on the console and eyed Raney distastefully. "What good is that?" he demanded, in a disgruntled tone which he strove not to make too curious.

"I'll let you know," said Raney, "in a few minutes."

He placed the camera on the console, inserted a roll of micro-film, and then spent several minutes carefully focussing the lens. He plugged in the power, and then touched the shutter-release as the *Explorer* reached the top of her swing and started down. A high pitched whirring resulted.

"Five thousand separate pictures a second," said Raney softly.

At the end of a minute and a half, at the central point of the swing, he touched a button on the console, and the stars in the vision plate, changed pattern.

"What's that for?" Brassin demanded, staring.

"Camera's focussed so it takes in the range of the vision given us by the forward vision plate. When we reach the middle, then, I think, what we want to see on the film is happening *behind* the ship. So now we're looking at a stern view. The camera keeps on taking pictures, and that'll give us an almost continuous picture of what's taking place."

IN THE next few minutes, Raney and Duncan and Brassin watched the acceleration dials as they registered a truly marvelous occurrence.

For some untoward reason, the *Explorer* was shifting back and forth through space like the bob of a gigantic pendulum. Like a pendulum, the time of each swing was exactly the same—three minutes and some seconds; unlike a pendulum, the length of the swing remained constant—only a few feet on the plus or minus side of three thousand feet. At the apex of each swing, the *Explorer* would be motionless momentarily, then back she would fall, accelerating. Her top speed, invariably at the half-way point, came with a rush. At that point, she seemed literally to be forced outward again, in the same line of direction, for the latter half of the swing.

And outside? Only the screaming of an ungodly atmosphere which apparently had no planet!

During this time, Raney had changed views, every minute and a half. At the end of fifteen minutes he stopped the camera and extracted the film. He patted it. "This is going to tell us a lot."

"Little sense I see to it," said Duncan grudgingly, though his eyes were alight with interest.

Raney turned to Brassin, said carelessly, "Get my projector, will you, Brassin? You know where it is. You—"

"—put it there!" Brassin finished acidly, and departed.

Raney called after him, "And oh yes. Take it to the main salon, and take the curtains away from the motion picture screen." He turned to Duncan. "Come

on. We'll go across to my cabin and give this film a bath."

CHAPTER THREE

The Twin Worlds

IN THE main salon, with only the three of them present, Raney set up the projector, focussed it, and then said carefully to Duncan and Brassin,

"We started out on this trip with the intentions of discovering a planet whose gravitation was causing perturbations in the orbit of Pluto. The most powerful telescopes available were trained on that sector of space which, mathematically figured, should contain the disturbing influence. No telescopes could pick it out—for two reasons.

"The astronomers thought they were looking for something immense. Something with, possibly, even a greater diameter than Jupiter, because there were a number of gravities involved. So, looking for a great object, they would not have sighted a smaller one. And—second reason—even if they had looked for something smaller than normal, their telescopes were not powerful enough to define it, or even photograph it.

"For the influence is small, in size. I really don't know any more than you two do at present, Duncan—Brassin. But I suspect a hell of a lot. Why we keep on shuttling back and forth somewhat like the bob of a pendulum, I don't know. But I do know this: Where our speed is greatest, there is where the planet should be—if there were a planet."

Brassin rubbed his head desperately, and made choking noises.

"What is it, then?" he blurted. "If it ain't a planet, what is it?"

"It might," said Raney, breaking into a slow grin, "be *two* planets."

And immediately, as if in answer, the screen lighted up.

At first it was blank as the whirling projector rolled off a few feet of blank film. Then something startling leaped into sight.

In the very center of the screen were two dead black, circular objects. They completed a quarter circle around each other, and then seemed to be whipped, slowly, away from each other, and disappeared, as the three men watched, into opposite sides and corners of the screen, beyond which, apparently, the camera had not been able to reach. They grew visibly larger as they disappeared, and this was obviously arising from the fact that the *Explorer* had been falling toward them.

Then, the *Explorer* still nearing them, they swept back from slightly different directions, approached each other in ever steepening curves. They became larger in apparent size as they moved, and suddenly were filling a large portion of the screen. They started to curve around each other, and now so filled the screen that the only blank space remaining was in the shape of a double concave lens, extending from top to bottom of the screen.

There was a moment of rushing swirling blankness, and then, as the camera reeled off the stern view, the objects were visible again. They had evidently whipped around each other at frightful velocity, and as the *Explorer* had reached the peak of her upswing, and started to fall back again, the planets had disappeared, and then appeared again, moving toward each other from opposite corners of the screen, had curved swiftly around each other and departed again, much larger in size as the *Explorer* fell toward them. Then back they came again, still growing larger, and finally filled the whole screen again save for the double-concave space—between which, every evidently, the *Explorer* rushed, at immense, accelerating velocity. But the camera could not photograph that, because, in that rushing instant, there was a planet to each side of the *Explorer*. And

as the *Explorer* rose, the planets again were snapped away from each other, each into the same general direction from which it had appeared.

The whirring of the projector sounded higher. Suddenly the two circling planets were rushing together, snapping around each other, disappearing, coming back, snapping around, disappearing. Raney increased the speed even more, to such an extent that the screen was—blank. The planets disappeared into the pure invisibility which was their natural state.

"Too fast to see with the naked eye," said Raney. He snapped off the projector. "Now you know about as much as I do."

Duncan and Brassin were silent for a long moment, and then slowly released pent-up breaths.

Duncan shook himself. "Phew! And to think we're shuttling back and forth through that! What if those damned things should crash, and us between 'em." He paled and stammered, "How fast do they—do they revolve around each other?"

"Well, you saw it. The ship makes one swing across in three minutes. The planets make two complete revolutions every time we make a swing. Therefore, time of revolution is one and a half minutes."

"Once in one and a half minutes," said Duncan in an awed tone. "For God's sake, Raney, how big are they? Are they, you think—neutronium?" The word barely passed his lips.

"You can draw your own conclusions, Duncan," Raney shrugged. "I suppose they are neutronium. Protons packed together so tightly the matter is practically continuous. And since I know they can't be more than a thousand feet in diameter —and together, exerting five gravities—I guess they have to be something like neutronium, anyway.

"Now," he murmured, folding up the tripod legs of the projector, "we've solved that mystery at least—why we don't hit. But exactly why we keep on shuttling back and forth, through the space formed by the planets where they always intersect each other's orbits, and perpendicular to the plane of revolution, there's mystery that will take some solving."

Brassin mechanically picked up the projector in his brawny arms. "And if the proton blasts won't take us out," he said blankly, "it looks like we keep on shuttling back and forth the rest of our lives, don't it?"

RANEY, in succeeding days, worked on the problem. He made more high speed studies, and discovered a few facts which he thought might have a bearing on the case, but eventually proved otherwise. The planets were about the same size—something like 1000 feet. Evidently they revolved as quickly as they did because they themselves had such a terrific attraction for each other; any other speed would have caused them to crash into each other, though, with their low friction, they would likely have bounced away on new orbits. The major axes of revolution were in the nature of five thousand feet. Great wind currents whipped viciously through the atmosphere, but Raney never made an attempt to plot the wind system, though he knew it was caused entirely by the frightfully rapid motion of the planets.

But one day slipped into two, and two into three; and the third was almost over when Raney got the clue he was looking for, and it was so staggering that it was past belief.

Duncan was a grim, stubborn man. "Technically," he growled at Raney, "you're not captain of the *Explorer,* in spite of what you've done."

"But technically I am," expostulated Raney.

"Listen," said Duncan, "the only authority for a captain of the *Explorer* lies vested in her crew. And the authorities at home realize that, too, but of course it isn't in their silly rule books. You still

aren't the man this crew wants, not by a damn sight. Look at you—" he gestured scornfully "—white gloves, nice white pants. What the hell do you think you look like to a bunch that's always had a roarin' tootin', tobacco-spittin' son-of-a-gun for a captain?"

Raney looked at his spotless gloves, pulled them tighter on his fingers. "I expect," he said, grimly, "that I'll always be wearing these gloves, and I haven't got the temperament to go around in baggy pants. And I'll be damned if I go around chewing tobacco." He grinned.

Duncan made a disgusted sound. "You ain't long for the *Explorer,*" he prophesied, and stuffed a pinch of rough-cut into his mouth. "Tobacco's the thing for a man, Raney," he growled. "Chewin' tobacco, too. Cigarettes are effeminate. How do ya think it looks to puff smoke in, puff it out, puff it in, puff it—"

"—out," finished Raney, holding up a protesting hand. In the same second, his eyes widened, and his hand stayed up as if he had caught a thought in that position and dared not move lest it go forever.

"Say that again," he said softly. "No, I'll say it. Puff it in, puff it out. Exhalation, inhalation. What happens in a lung when that happens, Duncan? Never mind. The walls of the lung contract and expand. I wonder." He turned around, moved past Duncan, almost pushing him off his feet as he bumped into him, but not noticing it. He sat down at the chart table, and picked up a pencil. The pencil moved slowly at first, and then more swiftly, and then so energetically it became almost a blur to Duncan, who watched curiously.

Raney finally turned around, smiling one-sidedly. "This is the damnedest thing," he said in a conversational tone. "I've finally found something, and it's probably the most beautiful thing I've ever run into. It's a classic in mechanics. I wonder if we'll ever have the chance to tell people about it."

DUNCAN'S jaws barely moved as he chewed, for he was meticulous. "You'll have the chance to tell me about it," he said menacingly, and smiled slightly. Raney hopped to his feet, and began pacing up and down the control room, his hands behind his back.

Then he stopped. "It's the only explanation," he announced. "I wonder if you can take it, Duncan."

"What is it?" Duncan was phlegmatic, but curious just the same.

"It's the damnedest thing. It's all about a giant lung."

The first mate's eyes squinted. Then he drew back. "You're loony" he snapped. "Crazy!"

Raney grabbed his gnarled arm and shouted with sudden laughter. "This is good!" he chuckled, and then was abruptly intense. "Listen! Can you imagine the *Explorer* as a small piece of—of dust, say? A fleck of dust, being drawn into a bellows, and then expelled?"

Duncan was shaking his head very slowly, and drawing away from Raney. "You're crazy," he gasped. "I can see it coming."

Raney jabbed a finger against his chest. "Instead of being drawn in and forced out of one end," he continued, his eyes sparkling, "imagine it's being drawn in one end and forced out the other."

"I knew it!" groaned Duncan, still backing up as Raney pecked him insistently on the chest. "You're going to say the *Explorer* is that fleck of dust."

"And the planets are the bellows! Or the giant lung, you might say. It's got an atmosphere—and what's going to happen when those two planets rush together, curve around each other and then rush away?"

Duncan's face abruptly stopped chewing. He gulped. "Rarefaction and compression," he snapped.

"Or suction and ejection," Raney added. "Look here, Duncan! Those planets are

moving fast, and when I say fast, I mean fast. They have to, in order to keep from falling into each other—though even if they hit each other a glancing blow, I don't think it would make any difference, because the material they're made of is so tight pressed together there's no irregularities and depressions—in other words, they've probably got low friction coefficients; so they'd just bounce away from each other, and take up new orbits. But the point I'm making is that they make a complete orbital circuit in something like one and a half minutes; and it so happens that every swing we complete—one way, that is—takes three minutes. With our highest speed taking place at the center of gravity, with our lowest at the end of each swing. All right, Duncan, that should prove that our motion is a result, indirectly, of the motion of the planets themselves. Now when the planets approach each other, what will happen to the air between them?"

Duncan began chewing again. "Compression of the air."

"And what a compression!" Raney said fervently. "So intense that it would throw any object entering it out into the lower pressures surrounding it—and at terrific speed, too. Now," he extended his glove-clad hand at Duncan again, "what happens when the planets pull away from each other?"

"Expansion of the air," said Duncan, and added eloquently, "and what an expansion! Then the greatest pressure, it looks like, would be outside the center of gravity, and the *Explorer* would be forced back—wouldn't it?" he added, as he saw Raney shaking his head.

RANEY sat down, his long legs stretched out, his eyes looking upward to Duncan's.

"I doubt if that's exactly the case. Here's what happens: it's not a wind current that causes our motion—though it may help, I don't know. For the most part, it's pneumatic pressure—air pressure of an entirely extraordinary sort. Gravitation *and* pneumatic pressure. It's gravitation that stops us when we reached a certain point. It's gravitation that pulls us back; wind currents, sucked toward the center of gravity, have the tendency to keep our path constantly on a line with the center of gravity. But it's only when gravitation pulls us to a certain point that pneumatic pressure outside forces us into the—the hole, you might say. And forces us in at terrific speed. And just at that time—exactly—the planets intersect each other's orbits again and cause the truly immense pneumatic pressure that squeezes us out again almost the way you'd flip a watermelon seed held between thumb and forefinger.

"You've felt that terrific burst of speed, even while we've been talking here—approximately every three minutes. It throws us out, but—" Raney made a hopeless gesture "—gravitation catches us before we can get to a point in space where our proton blasts can overcome it. So we fall back, and repeat the performance over again."

He lit a cigarette, drew the smoke in appreciatively, and puffed it out. "It's just like a giant lung," he said softly. "And I don't know how or if we'll ever get out of it."

He sat there thinking, the cigarette burning in his hand. Finally, his forehead wrinkled in concentration, he turned, again used pencil and pad, briefly. "We'd need," he said, as if to himself, "a little bit more of this pneumatic pressure to squeeze us out far enough so the gravitation wouldn't be so intense. The pressure is such now that it throws us a certain distance—say to four gravities—and our proton blasts aren't built to overcome four gravities. The *Explorer* is a small-planet ship, never made to navigate anything much over two gravities. Let's see. If the pressure were such that it *could* throw us out to the two gravity mark—you know,

gravitation decreases as the square of the distance from the center of the source—then we'd make it."

Duncan frowned at him. "You're crazy, boy," he said, shaking his grizzled head. "There isn't any way you could increase that pressure inside there, and you know it."

Raney jumped to his feet suddenly, grinning. He clapped Duncan's broad back. "Wrong!" he yelled. "Listen. Remember the guy in Jules Verne's story *Tour of the World in Eighty Days?* Phineas Fogg, whose ship ran out of fuel and there was no apparent way to reach Liverpool? He bought the ship, and then gave this famous order: 'Cut away the inside arrangements and fire up with the *debris.*' Get the idea?"

"No," said Duncan bluntly.

"Well, you will." Raney stood back from him, his hands on his hips. "I repeat the order—slightly varied. Burn everything on the ship that's burnable; let the fumes and smoke escape by the proton blasts, and after that scatter the ashes after it."

The grizzled first mate studied him deliberately, and then shook his head sadly. "I'm with you, son, from now on, in anything you might do. But you can't give orders like that, not to—your crew. No, you can't. There isn't any sense to it."

"I think there is." Raney whirled, again labored with the pencil. His head came up and he stared straight ahead. He nodded sharply. "That'll do it. That's the way it's going to be done. If we can increase the length of our swing by only four or five hundred feet our proton blasts will work." He turned around to Duncan again, smiled briefly. "You'll agree with me, Duncan. The idea is this: decrease the mass and the velocity will increase proportionately."

Duncan's eyes flashed, and instant comprehension swept over his face. "You've got it," he said softly. And then his shoulders fell. "The men won't like the idea at all. Because they love this old ship—and it looks like we'll have to mutilate her."

CHAPTER FOUR

Raney Takes Command

BRASSIN came charging up the companionway, raced wildly down the corridor and burst into the control room. His lips were drawn back menacingly from his teeth. He went up to Raney, and shook a massive fist under Raney's face.

"I won't have it," he panted wildly. "You hear me? Me and the crew won't have it! You givin' an order like that! Who in hell do you think you are, anyway, you fop, you! Trying to tear the poor old *Explorer* apart right under our noses!" He almost sobbed. "Me, what's been part an' parcel of this ship ever since she came white an' gleamin' out of the docks. You ain't gonna do it! I see the whole thing now, damn you! It's a scheme—" his eyes blazed as the idea grew in his head "—it's a damned onery scheme to collect insurance, on her, that's what it is!" He stood back, and placed his hands on his hip. "Now, papa's boy," he blazed, "what you gonna do about it? You gonna countermand that order?"

Raney frowned, and slowly lit a cigarette. He leaned back casually against the console board. "Look, Brassin. What other way have we? You tell me."

"I don't give a damn if there ain't no other way," Brassin panted wildly, smashing his fists together. "Why, you fool, you think for one minute *my* crew is gonna stand for something like that? I ask you!"

Raney nodded slowly. He flicked ashes from his cigarette. He said thoughtfully, "No, your crew wouldn't. Not while they've got you to fill their heads with damn fool ideas. I'll tell you what I'll do." He walked in a slow circle with his head lowered in thought. He slowly met Brassin's eyes, and as he did so, dropped his

hand below his hip. He bent his left leg a little, the way a man will do when standing at rest.

Then—Brassin knew nothing of this until he woke up some ten minutes later—his balled fist swept up from his hip with express velocity, contacted Brassin's pugnacious chin with a crack that made officers in the adjoining compartments snap around toward the sound.

Raney watched Brassin tumble, crumbling first at the knees. He hit on the floor, and then straightened out, his eyes closed, his breath gurgling, his limbs twitching. Then he was still.

Raney looked with misgivings at Brassin's relaxed fists, and wondered to himself what would have happened if Brassin had got in one of his playful blows. He shuddered, and went quickly toward the door. Two minutes later, he had descended into the oily atmosphere of the control room.

MEN were grouped together in the center of the room. Slowly, as Raney paused three steps from the bottom, they turned around and faced him, their unshaved faces hostile.

Raney's eyes slowly took them in. He waited until their muttering stopped.

"I want you men," said Raney quietly, his eyes hard steel points, "to go through the ship, and rip off everything that'll burn. Curtains. Door jambs, if they happen to be made of wood. Chairs from the salon and from all the staterooms. Beds. Sheets, all the linen you can find. Paper. Floor boards. Books, if they aren't too valuable. Extra shoes. We've got two thousand gallons of water aboard. Pour it out the air-locks. We've got excess food—canned goods—aboard. Open up the cans, pour it all into a trough, and let the excess liquid seep off. Then pour it out. If you've got any refreshments aboard—and I don't doubt you have—get rid of *that* too. You understand?"

One of the men stepped forward and said sullenly. "We ain't gonna do it—see? This is our ship. What do you care about the *Explorer,* you that had a daddy to get you the job?"

The ridge of bone along Raney's clean-shaven jaw whitened. "I slaved through four years of the Academy for the one and only object of someday captaining the *Explorer,*" he said coldly. "Anybody would have given his eye-teeth for the job. It happens that I got the highest mark on the test. My father had little to do with it." He slowly descended the few remaining steps to the metal floor, his lips thin, his eyes narrowed. He stopped a few feet from his agressor. "Brassin," he said, "is the man that gives you orders, isn't he? What would you say if I told you Brassin agreed with me—that this was the only way to save ourselves?"

"Brassin wouldn't say that! You're lyin'."

"Brassin's jaw agreed with my fist," said Raney coldly. "If you want to see him, he's lying upstairs. Out cold. Dead to the world. That's agreement, as far as I'm concerned."

The man wiped his lips with his tongue. His eyes flickered.

"*You,*" he said, staring at Raney, "knocked *Brassin* out?"

Raney nodded coolly.

"Nobody ever knocked Brassin out," the man said, and then straightened, and was aggressive again. "It don't mean nothin'," he stated.

Raney felt a burst of fury run through him, sudden, overwhelming in its intensity. These fools! Without intention, he leaped forward, snarling. The other thrust up an arm, blinking his eyes. Something landed with world-crushing effect on Raney's fist. For the second time in ten minutes, he saw a man slowly crumble up in front of him. For a second of amazement he looked at the fallen crew member, then collected himself and raised his head.

"Any other takers?" he blazed.

They were frowning at him now, and suddenly a man grinned. Without saying a word he turned, jerked a hand in a commanding gesture, and then started toward the companionway, still grinning. The others followed after him now, and within seconds, the control room was clear.

Raney looked after them dazedly, and then at his aching hands. "How did *that* happen?" he gasped. He had never before struck a man without first thinking about it.

He helped the fallen man to his feet, and they stood looking at each other for a moment.

Then the man slowly caressed his jaw, and smiled one-sidedly. "Okay, cap'n," he said. "I guess you mean it."

And he was gone after the others.

THIS job that Raney had projected took something like three days. It involved an enormous amount of work, ripping up floor boards and prying off door-jambs. But the men went at it with a will. There is the urge of destruction in every man, but seldom does one get the opportunity to obey that atavistic impulse to the limit. These men had such an opportunity, and made use of it.

They built crude furnaces, and fed them continuously; they stretched make-shift pipes from the furnaces through the airlock doors, and let the pipes project beyond the line of the body of the *Explorer*. The atmosphere of this planet system contained no oxygen, but none could force its way back through the pipes, for the very rush of the atmosphere past the pipe openings constituted the power which sucked the smoke from the furnaces.

At the end of those three days, Raney estimated that something like forty tons of interior fixtures had thus been burned. The forty tons had gone up in smoke, and the ashes, a mere, fine powder, was sent after the smoke. Not yet had the water supply been done away with, nor had the canned food been opened and drained. Personal belongings of the men still remained intact. Raney decided it was time to try to get the *Explorer* free before any more work was done in the line of destruction.

The *Explorer* was truly a gaunt, denuded ship, now, her ribs showing plainly at places, her very corridors and cabin floors merely gratings of steel. Rugs had been rolled up and burned; and chairs also. The piano in the main salon had been hacked apart, and all that remained was the strings, and the string-frame, and a host of screws and bolts. Mattresses were gone, and men spread clothing on the springs and slept that way. But it was a happy, grinning crew that had done the work, for they were burning their bridges behind them, and not an eye on board—save for Brassin—that did not cock itself at some burnable item with a gleam of anticipation, and a whole hearted attack with hammer and chisel.

Raney woke that morning with a peculiarly thumping heart. He did not have the slightest certainty that the plan was working. He dressed, as usual taking care with his wardrobe, and pulling freshly cleaned gloves on over his fingers. Then he departed hastily for the control room.

Duncan met him with a shake of the head. He pointed at the acceleration gauges, as they first crept upward, and then down to zero again, repeatedly.

"First day," he announced, "we gained about seventy feet on the swing. Second day, fifty more. Yesterday, cap'n, we worked like blazes and it went up to something like hundred and twenty. That makes two hundred and forty feet, don't it?"

Raney nodded. "I don't *think* that's enough. But we'll try it out."

He went down to the control room. He found Brassin sulking around his precious Wittenbergs.

"Got 'em tuned?" Raney asked.

Brassin nodded his head shortly, and

ran a scornful eye up and down Raney's trimly clad figure.

"Sure," he said. "What of it?"

"We're going to try to break loose. When I give the word give her all you've got."

Brassin turned, giving Raney a final contemptuous look. Raney heard him growl beneath his breath, "Sissy," but Raney only shrugged his shoulders and went back to the control room.

The Wittenbergs tried. That was all that could be said. They tore protons from lead molecules to the limit of their power. The proton blasts blazed out almost incandescently at the limit of swing. The *Explorer* creaked and shifted and groaned throughout her whole denuded length. She held her position at the end of swing for but a fractional instant. And then slowly, inexorably began the drop back.

IT WAS quite useless. Two hundred and forty feet was not enough. Raney estimated they needed, at the minimum, one hundred sixty feet more. He ordered the Wittenbergs shut off.

Solid objects could not be considered. Gases, smoke and fine ashes would disperse through the atmosphere, but solid metal fixtures would follow the same path as the *Explorer,* and thus not only hinder her, but might create holes in the hull.

"We'll drain the canned goods next," said Raney firmly, and gave those orders. Men got to work, and by a relay system got a huge stack of canned goods down into the engine room, next to the main airlock. Two men made a trough of metal slabs, set in on a platform. Others sliced at can goods with hatchets, dumped the contents into the trough. A watery, brown liquid resulted from a series of strainings. This was pumped out into the atmosphere with oil-primed pumps. The pile of sundered cans on the floor grew.

"Out with all except a few drums of water," said Raney next; and out they went, the water caught in the violence of the atmosphere, torn apart into fine particles, and dispersed through the atmosphere.

"We'll try again," said Raney.

The *Explorer* fell back, was sucked with building velocity into the suddenly forming area of pneumatic pressure. Now, that high-pressure air had a lighter mass to deal with, but the same volume. It would exert the same force against the lower mass as it did the higher, but it could give the lower mass a greater speed. Which it did. This time the kinetic energy of the ship was such, under its increased velocity, that it gained another hundred feet. The proton blasts desperately strove to hold the ship against the three gravities now occasioned by the ship's distance from the center of gravity. Almost Raney could swear they were breaking away. But his exultation died when the gauge registered zero velocity again. The ship fell.

Raney was not done yet. "Clothing, belts, shoes," he commanded. "Your personal belongings, if you don't think too much of them to sacrifice them. You there," he said, his lips breaking into a smile, "maybe if you'd get rid of your beard you'd help a lot."

THE men dispersed and soon reappeared before the furnaces with stacks of clothing, tooth brushes, shaving brushes, magazines. Raney himself rummaged around, and ended up by throwing all his own clothing in. The fire roared, and smoke streamed in a solid column behind the ship as she plunged.

Brassin edged in beside Raney and threw something into the fire. Raney looked at him, and saw that the man's hairy, giant chest was bare. He caught Brassin's eye, and the giant looked at him meaningly.

Raney frowned, and turned away. Up to the controls once more, for what must certainly be a desperate final attempt.

Duncan grinned at him as he came in. "What's wrong?" demanded Raney.

"Look at you."

Raney studied himself in the reflection a blank vision plate afforded. He grinned. His face was black with soot and smoke, as were his clothes. He shrugged, got to work. The Wittenberg howl commenced again as the ship was hurled out of the 'hole.'

Duncan and Raney watched the dials fiercely, their teeth biting into their lips.

"She's going up!" cried Duncan delightedly. "She's going up! She ain't going to stop!"

"Wait," promised Raney, sweat breaking out on his forehead. In agony, he saw the signs in the dials. Slowly, surely, the needles wavered, stopped, and then, with a rush, swung back.

Raney dropped against the back of his chair, and laughed shortly, harshly. "She'll fall now, he said through clenched teeth.

"And I could have sworn we didn't need more'n ten or fifteen more," Duncan said. He groaned.

And the *Explorer* fell, monotonously continued to swing—always falling those few feet short of the goal necessary to enable her to escape for good.

CHAPTER FIVE

Escape

RANEY paced the floor slowly, biting his lips. "The rest of the water goes," he said suddenly.

Duncan came across the room toward him. "You can't do that," he stammered. "Without water, we're really sunk."

"We're sunk with it." He went toward the door, pulled it open, then paused, as another thought struck him. He turned.

"Duncan," he said, "you'd better come down to the furnaces with me."

The grizzled man's mouth fell open.

"What d'you mean?" he gasped.

Raney grinned. "Hell, I'm not going to feed you to the fires!"

Duncan followed dubiously.

Twenty minutes later, men had rolled the few remaining drums of water into the engine room, had opened them, and pumped them dry. There was not a drop of water aboard the *Explorer.*

Then Raney stood in the middle of the floor, his clothes blackened with smoke, his face sweating away part of its dirt, his cap pushed back at an unseemly angle on his head, his black hair falling in sweat-dampened strands over his forehead.

"Brassin gave me the clue to what is really the last thing we can burn up. I trust you fellows won't mind."

And he took off his captain's cap and threw it into the fire, and with a continuation of the motion stripped off his coat, his shirt and his undershirt.

"Off with 'em now!" he barked, and suddenly they got into the spirit of the thing, and with joyous shouts began stripping. Duncan scratched his head, grinned wryly, and went to work. Forty men, all the officers and crew of the ship, began to strip.

"Here's a damn good pair of shoes," said a voice aggrievedly.

"In with 'em!" Raney looked up and saw it was Brassin. "In with 'em," he repeated. Raney stripped down to the bare skin, and stood looking over the disrobing mob. He was laughing to himself. Dignity was a thing of the past.

"All right, that does it," he finally said, as the last item of clothing was thrown into the roaring flame.

Brassin was a powerful, naked figure in the light of the flames. He expectorated into the fire, and stood looking at Raney with gruff good-humor in his eyes.

"Cap'n," he said "them things must be part o' you."

"What things?" demanded Raney innocently.

"Them gloves o' yours. Them white gloves."

Raney chuckled and held up his hands. "Right," he said, suddenly sober. He looked sharply into each face. "What do I do," he said softly, "leave them on or take them off?"

And everyone saw the inference. Brassin shifted from one foot to the other, nervously. Then he met Raney's eyes squarely. "Them are pretty sooty," he said critically. "Should be white. But I guess you better keep 'em until you can get a new pair, cap'n."

He grinned and stuck out his hand, and Raney grabbed it, and shook it wholeheartedly, grinning, too.

Then Brassin stepped back. "All right, gang," he shouted. "Let's give 'em hell!"

Raney and Duncan, stark naked, ran up the companionway, down the stripped corridor, and into the control room. Raney threw himself down before the controls.

"We're on the down swing now," he said tensely. "Half minute now."

THE *Explorer* fell, her fall synchronized with the revolutions of the planet system which had trapped her. Down she roared, still trailing smoke from her furnace pipes. Pressures suddenly stepped up her speed, hurled her at an ever increasing rate toward the 'hole' the two planets formed when they swung about each other. Into the hole she went as the atmosphere contracted to such an extent that its pressure caught hold of the *Explorer,* squeezed it, flung it outward at furious velocity, a velocity greater yet than any it had imparted. Hurled it outward and upward, perpendicular to the plane of the planet's revolutions.

And so great its kinetic energy, which squared with the increase of velocity, that friction of the atmosphere itself was a thing of no moment.

She went past her first mark, past the second, and third, and now had to set a new record—a record which would enable her to break free at last.

The Wittenbergs were screaming full blast now, and the old *Explorer* trembled and groaned in every beam, and her metal girders sang audibly.

Raney's fist was clenched, his face white. "Up, now, damn you!" he whispered. "Up."

The *Explorer* was trying, valiantly. She had already exceeded her first swing by four hundred feet.

"She's still fighting against two and a half gravities," Duncan grated. "If she can get to two, she's all right."

"She's still going," Raney whispered, and twisted his body as if to lend his own strength to that battle. Then he leaped to his feet, his naked body gleaming with perspiration. "And she's going to make it," he snapped in awe. She's going to make it. Look at those gauges!"

The kilometer dial needle was beginning to move over and suddenly it swung. Abruptly, in the vision plate the stars lost their distorted appearance, and became specks of cold-white brilliance unaffected by the light-twisting abilities of a churning atmosphere.

"We're out of the atmosphere," Duncan breathed. "And what's more, we're under two gravities. We're free, safe!"

His grizzled old face broke into a beatific smile, and a laugh of pure relief escaped from Raney's lips.

He grabbed the engine room tube. "Brassin!" he snapped. "Keep her blasting away. We're setting our course for Pluto. We're picking up water, food, and some clothes. I never did feel natural without 'em."

"That's what you think, cap'n," Brassin spoke back, and grinned as he stuffed a wad of rough-cut into his capacious mouth.

THE END

EMERGENCY REFUELING

By JAMES BLISH

A Super-Science Brief

"THAT'S the last," growled pilot Stan Dorry, exhibiting the almost empty lead box. His red-haired navigator peered in at the gray handful of powdery metal huddled dispiritedly in the bottom.

"Well, put it in. We could coast and save this for landing, but we'd hit Jupiter sometime early next century at our present speed." (The red-haired Whipple had the gift of gab.) "We'll take

the chance on getting enough fuel on Pluto to take us in."

Dorry shoveled the metal into the tube and closed the breech-block, and together they walked back to the control room. Their thoughts revolved in the same groove. Refueling on Pluto. It was beset with entirely unknown dangers, and illegal as well.

They had been driving in from an interesting-looking asteroid calculated to be twenty million miles beyond the orbit of Pluto. When it turned out to be twenty-five there was nothing they could do about it, and to cap the climax the forty-mile chunk of rock was just that, containing just enough scattered bits of nickel to attract the detectors. Now they had just enough fuel to land them on Pluto—and the nearest fueling station was on Ganymede.

There was plenty of fuel on Pluto—that was an established fact. The whole planet seemed radioactive. First of the planets to be thrown from the sun, it was also one of the densest, and the rocks were full of pitchblende. Their little prospector ran on proactinium, but most good motors would burn ore for a limited length of time. Yes, Pluto was an ideal coaling station—

If it weren't for the fact that the IPF had put an iron-bound taboo on the planet. It had never been satisfactorily explored, since prolonged exposure to the lethal radiations, even in heavy armor, was fatal. Perfunctory charting had been undertaken from the air, hampered by the fact that photography was impossible because of the blurring effects of the radiation on film, and, while it was unthinkable that life could exist under such conditions, the IPF didn't like to take chances. Too many space tramps had landed and never taken off.

Consequently there were ten ships circling the planet constantly, detectors overlapping, and one hundred and twenty superbly bored IP-men longing for some ship to try and break through.

Dorry charged the batteries for five minutes, muttering at the fuel consumption involved, and sent out a call. The response was immediate.

"Okay, *Pallas,*" snapped the speaker briskly. "We heard your engines half an hour ago. What's wrong with your screen?"

"Nothing," returned Dorry. "We haven't enough fuel to spare. That's what we called about—"

"Turn it on," barked the voice suspiciously.

"We haven't the fuel, I tell you—"

"Turn it ON!"

Dorry resignedly clicked the switch, and a young and irritated face appeared, wearing a cap a little large for it.

"Satisfied?"

"All right, you can turn it off now. What's the trouble with your fuel?"

"Not enough," Dorry repeated. "We want permission to land on Pluto."

"You can't have it, as you ought to know."

"We'll be a floating coffin in no time at all if we don't."

"Can't you reach Ganymede?"

Whipple made a wry face as Dorry answered, "Why the hell do you think we were scraping the power for the screen?"

"Eh. There are ten patrol ships here—you might get a little from each—"

"The amount we'd get that way would just about equal the expenditure in stopping at each one. Use your head."

There was a brief silence, then a series of high keening notes as if consultation was being made with the other ships.

"We can give you fifteen minutes and no more, and in a region designated by us."

"Good," said Whipple heartily. "Where?"

"In Quadrant—eh—Quadrant Three, section ten. There's a rocky plain there

that ought to make a fair landing field, and nearby a set of caves where the deposits are better than usual." The captain seemed to be reading from Sir Christopher Barclay's *Space Manual.* "Get your material from near the mouth of the northmost cave, and do not under any conditions go any farther. There've been twenty tramps like you lost in there, and twice that many IP's looking for them, too."

"Right." The radio went off. "Three minutes. Two minutes extra fuel wasted. Oh, well, no need to worry."

THEY burned all their fuel in landing, but they felt almost carefree about it now. The field was indeed rocky. In general, however, it was no worse than most of the planetoids at which the *Pallas* had stopped, and they found a prime spot not thirty yards from the cave selected.

"Lead suits?"

"We'll have to make these do. If we're lucky the exposure should be only a few minutes, and any burns we get over that time we can treat easily. Besides, there's the cosmic ray insulation."

They struggled into their spacesuits, charging the batteries from the dregs in the radio. The ground beneath their feet looked like any other ground, although the pair realized that it was at a constant temperature above body heat. The mouth of the cave seemed to be faintly lit with a glow from farther down.

"Like the doorway to hell," crackled Dorry's radio. "Let's go, Jack. Got the pick?"

"Sure 'nuff." They crunched across the rocks and paused at the opening. "Wonder what's here that swallowed sixty men?"

"God knows. It couldn't be anything alive, that's a cinch. Cave-ins, maybe." They entered cautiously, both nervous, and both determined not to show it to the other.

"Saaay," whistled Dorry. "This is good. Look—there's no ore like that on Earth."

"No. It gets better as you go along." Whipple stepped ahead and disappeared around the bend. Dorry heard his gasp. "Cripes, come here."

"What is it, Jack . . . well, I'll be. . . ." They stood like barbaric statues hacked crudely from metal and gazed down the long slanting passage, which was glowing, at first faintly, then as it progressed more and more brightly.

"You know, I'll bet if we got down there, where the bend is, we'd have practically the pure stuff. Well, not quite, but damn good, anyhow, if the vein holds true."

Dorry shook his head. "The IP-men'd say naughty, naughty. Besides, if we stayed long in that stuff it'd be no minor burns we'd have."

"Yeh . . . Lord, though, what a range it would give us. Even with what we hack out here, we'll have to be careful if we're to make Ganymede. Down there we could get more than enough."

Dorry considered that. "You're right, I suppose. If we make it quick, the IP's won't know the difference."

As if he were afraid of a change of heart, Whipple bounded ahead. "Take it easy, Jack," remonstrated the pilot.

"I'm all right. Come along. The light is almost bright down here—and will you look at it pour around the bend! It isn't coming from here, though. . . ."

The light was streaming from a small opening which apparently lead to a larger cave. It did not flicker as this in the passage did, but burst in a steady, blue-white stream upon them.

"That's the place," said Whipple with conviction. "A few seconds is all we'll need—anyhow the cosmic ray insulation in the suits should hold us for some time." He could not know that it had burned out long ago, for he could not see the bright sympathetic brilliance of his watch-face.

He strode into the opening, the pilot on his heels.

The light blinded them temporarily. It came from everywhere, the walls, the floor, the ceiling. Apparently they were in the very heart of a vein, a rich layer of some strange radium isotope.

The glare was blue-white, almost solid in its intensity. Gradually they got used to it.

"What's that?"

"I don't know," said Whipple, blinking. "I'm still half-blind. All I can see is a splotch. There—hey—!"

"Jack . . . I think it's . . . alive." They stared in unison at the fungus-like object. Even as they watched it bloated to a size of eight inches, collapsed, emitting a small cloud of spores.

Tiny blue splotches appeared on the walls and floor, swelling. . . .

"Life-cycle a million times accelerated by the radiation," whispered Dorry with a dry throat. "I wouldn't have believed it."

As their eyes became used to the light they saw others of the rubbery things, which moved slowly about as they went through their instantaneous life-time. The cave seemed enormous, stretching downward in a blue effulgency beyond the limit of their watering eyes. Their radios began to crackle a little.

"No time for gaping," the navigator jerked abruptly. "Come on, Stan. There's a big outcropping we can hack off whole, down just a little to the right."

"I can't hear you very well," complained Dorry. "There's a whale of a lot of static here."

"Yeh—that's funny, we should have heard it up above—I say IT WASN'T HERE BEFORE!" he shouted as Dorry shook his head. The crackling uproar grew startlingly to a deafening pitch, seemed about to die away, then sprang up again. They plodded wordlessly down toward the outcropping, and as they went the static became so violent they were forced to turn the radios off. The immediate silence was worse on Whipple's nerves, and he turned the switch again to low power. A voice rang in his ears.

"Stan, Stan," he screeched. "It isn't static, it's a carrier-wave—telepathic—" Dorry moved deafly on toward the glowing, jutting stone. The voice echoed in Whipple's brain.

"Dead metal," it called. "I sense dead metal."

A subtle change became apparent—another voice? Whipple could not tell. "Another vibration," it said. "A speech radiation and a life force very weak. Do you not feel it?" The voices seemed to become louder. Whipple grabbed his companion and gestured frantically at the radio switch.

The other clicked it over to full, then off again with a despairing wave, made so clumsy by the suit that it looked almost threatening. Whipple seized the switch himself and turned it to low power.

"Very close, yes," said the mental voice. "Near the entrance."

"Let's get out of here," Dorry howled futilely, and jumped for the outcropping, pick raised high. There was a burst of light brighter than all the rest, and Whipple's radio speaker tore resoundingly across. He was deafened achingly. Ahead, the pilot stood in the center of a seven-foot, blue-white flame, and his suit turned very slowly red, then yellow. . . . Other flames shot silently through the glaring, low-roofed space below—

Whipple ran madly, crashing with insensate violence against the walls.

Outside he paused at the airlock. Dorry—dead, roasted. But fuel—

No more of the caves. He seized an armful of the nearest rubble and tumbled into the *Pallas*. Behind, the glow in the mouth of the abyss wavered and sank a little.

THE END

THE SCIENCE FICTIONEER

Official organ of The Science Fictioneers

WHEREVER you live, you are not alone. In New York City or London, the greatest metropolises on the Earth, in a small town in the United States, in Africa or Australia, wherever—you are not alone.

Not if you read science fiction, not if you are a fan. For science fiction readers live in every corner of the globe. And where a fan lives, very soon two fans live —for science fiction is more contagious than any disease. And where there are two fans . . . The Greeks had a saying for it. "When fan meets fan—they start a club."

The fraternity among fans is the force that makes science fiction the fastest-growing form of pulp literature today. It is this fraternity that makes it possible for science fiction fans to hold conventions, attracting persons from all over the country, some of whom journey thousands of miles for the sole purpose of meeting other fans and with them discussing the new vistas revealed through reading imaginative stories.

There are many science fiction organizations, something like a hundred, ranging from tiny local clubs in small cities to district, state, and even international organizations. These clubs attempt much which is praiseworthy, and accomplish much of what they attempt. But their efforts are limited and hampered by one great fault. There is today no real unifying organization to which every fan can belong, no club which can serve as a bond between the far-flung local groups.

To fill that gap, which prevents the fulfillment of many ambitious projects of science fiction readers, we offer *The Science Fictioneers.*

A WORD about the Advisory Board of *The Science Fictioneers.* This group, which is responsible for directing the activities of the organization, has been carefully hand-picked to include the most active and most popular supporters of science fiction. It is to the Advisory Board that suggestions for the club should be made.

ADVISORY BOARD

Forrest J Ackerman
Frederic Arnold Kummer, Jr.
Robert W. Lowndes
Robert A. Madle
Milton A. Rothman
Bob Tucker
Harry Warner, Jr.
Olon F. Wiggins
Donald A. Wollheim

The individual members need little introduction. Forrest J. Ackerman, for instance, is undoubtedly the best-known science fiction fan in the world. Frederic Arnold Kummer, Jr., is well-known to readers of science fiction and in fact to readers of almost anything as a popular and prolific author, who is now rapidly becoming a leading fan, having organized and heading the Baltimore science fiction club.

Robert W. ("Doc") Lowndes is an expert on all phases of science fiction, and has twice been voted foremost fan writer. Bob Tucker is another old-timer who now is leading the Mid-Western fan world in their preparations for the coming Science Fiction Convention of next Fall. Robert A. Madle, the present Director of the Philadelphia Science Fiction Society, is widely known for that and for his many fan publications. Milton A. Rothman, whose stories you have read under the name "Lee Gregor," is also well-known.

Harry Warner, Jr., while a comparative new-comer to science fiction, is nevertheless widely recognized as one of the top fan editors. Olon F. Wiggins of Colorado has been a faithful science fiction supporter for many years, and holds the record for consecutive publication of any current fan magazine. And Donald A. Wollheim, who ends the list, is by no means least in activity. For Donald has been active in science fiction, both as fan and author, almost since it began, having been voted two years in succession as the world's most active science fiction fan.

TO JOIN *The Science Fictioneers,* you need but fill out the coupon on this page, send it, with a stamped, self-addressed envelope, to *The Science Fictioneers,* 210 East 43rd Street, New York City. Your attractively printed membership card will be forwarded to you without delay.

Arrangements are now being completed to have pins made for the members. An appropriate design is being selected, and the pins will be ready for distribution March 1st. Only a limited number of these pins will be made, so if you want one please reserve it now by checking the appropriate space in the application coupon.

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In the next issue of *The Science Fictioneer,* which will be published as a special supplement to *Super Science Stories,* there will be printed a complete list to date of members of *The Science Fictioneers* and local branches of the organization. If you belong to a local science fiction club, ask your Secretary to communicate with the Advisory Board to learn how your club can affiliate. If there is no club in your neighborhood, and if you would like to start a branch of *The Science Fictioneers,* please send us your name and address and we will forward you a list of other members in your vicinity. At the end of these pages you will find a list of local science fiction groups the world over. You will very likely find that one already exists near where you live.

As mentioned above, *The Science Fictioneer* will in the next issue of *Super Science Stories* and in all future issues appear as a magazine within a magazine. In it we hope to present not only news of the club itself but articles reprinted from fan magazines or written especially for *The Science Fictioneer.*

Watch for it!

Science Fiction Organizations

The following is a necessarily incomplete list of some of the many science fiction organizations existing today. We have indicated those that are local and those that are state-wide. If we have slighted any we apologize, pleading the difficulty of keeping up with their rapid growth, and ask that they send us details for our next issue.

Maine Scientifiction Association. This organization is confined to the State of Maine. The Secretary of this club is

James S. Avery, 55 Middle Street, Skowhegan, Maine.

Futurian Society of New York. Greater New York and vicinity; Secretary Jack Robins, 51 Humboldt Street, Brooklyn, New York.

Philadelphia Science Fiction Society. Philadelphia, Pennsylvania, and Camden, New Jersey. Secretary, John V. Baltadonis, 1700 Frankford Avenue, Philadelphia, Pennsylvania.

Baltimore Science Fiction League. Baltimore, Maryland. Directory, Frederic Arnold Kummer, Jr., 224 West Lafayette Avenue, Baltimore, Maryland.

Los Angeles Science Fiction Association. Los Angeles, Hollywood, and vicinity. T. Bruce Yerke, Secretary, 1223 Gordon Street, Hollywood, California.

Illini Fantasy Fictioneers. State of Illinois for active members, associate members may live anywhere. Richard I. Meyer, Secretary, 3156 Cambridge Avenue, Chicago, Illinois.

Chicago Fantasy Fictioneers. Chicago chapter of the I. F. F. W. Lawrence Hamling, Director, 2609 Argyle, Chicago, Illinois.

Tri-Cities Science Fiction League. Houston, Texas, and vicinity. Director, Dale Hart, Box 1361, Highlands, Texas.

Queens New Fandom. New York and vicinity. Director, James V. Taurasi, 137-07 32nd Avenue, Flushing, New York.

Denver Science Fictioneers. Denver, Colorado. Olon F. Wiggins, 918 29th Street, Denver, Colorado.

Liverpool Science Fiction Association. Liverpool, England. Secretary, John F. Burke, 57 Beauclair Drive, Liverpool 15, England.

Futurian Society of Sydney. Sydney, New South Wales. William Veney, Secretary, 11a Lawson Street, Paddington, Sydney, N. S. W., Australia.

A thrilling short story of the folds in time.

IT BEGAN with the turtles. They were gnarled and sluggish with age, and when they started to regress Time itself seemed to shed the moss of centuries. But though it began at the zoo in a strict sense, it was Carruthers' phone call which changed the world for me.

Carruthers got me on the phone at 5 a. m., and asked me to come straight up to the zoological park—never mind the cold—and to bring my medical kit with me. I had a hangover from a New Year's eve party the night before and the room pinwheeled when I sat up. But I crawled out of bed in the chilly damp, dressed, gulped down some coffee and stamped out of the house in a huff.

Being a medicine man to the entire zoo-

A STITCH IN TIME

The bushmaster should have been dead, but was live and well. The turtle should have been inches bigger than it was. Who were the dimly visible Weavers that healed the snake, shrank the turtle, and made a puny babe of the eminent Dr. Carruthers?

By FRANK BELKNAP LONG, Jr.

logical park has its drawbacks. Whenever a tiger, snake or scorpion runs a fever I'm supposed to drop whatever I'm doing, and reach for my vet kit. I was fuming like a teakettle when I dove into the subway a block from my home.

"Someday I'll chuck all this," I thought. "I'll get a teaching job or something."

The Fall Brook Zoological Park is seven miles from my home as the crow flies. It is a big, sprawling zoo on the outskirts of the city, with antelope runs and forested parklands and meadows where butterflies hover. I was still fuming when I arrived at the east gate and plowed through heavy snowdrifts to the reptile house.

I expected to find the reptile house in darkness, the curator upstairs in his office surrounded by books. But stepping into the humid vestibule I got the surprise of my life. Every light was on, and Carruthers was standing in the turtle run with a tape measure in his hand, his gaunt shoulders enveloped in ferns.

Carruthers looked worn, bedraggled. There were black half-moons under his eyes, and his almost skeletal frame seemed taller, bonier than usual.

As soon as he saw me he started to scold me, his craggy features crinkling up wrathfully.

"You took your time getting here, David. Why don't you rent an apartment nearer the park?"

I could see that his nerves were badly frayed. He had been working in his office steadily for days, correcting proofs for his new book on the snakes of Malaya and nursemaiding a sick bushmaster.

Rentals near the park were outrageously high, but I checked an impulse to argue with him about my salary. It was a touchy subject for both of us. He was really to be pitied, because the proofs ran to ninety thousand words and the bushmaster wouldn't live.

"I'm sorry about the snake," I said. "But intestinal parasites gain headway fast. It's too bad bushmasters are such delicate snakes. Cobras can take it; so can—"

He made an impatient gesture. "Never mind that now. I want you to examine these tortoises. They seem to be dying."

I was annoyed no end. Pound for pound, and despite their rarity, Galapagos tortoises are about as valuable as garter snakes. But Carruthers was my boss, and the fact that I intended to marry his granddaughter cut no ice with him at all. I sighed, stooped and opened my medical case.

There were three huge tortoises in the turtle run, but I concentrated on a moss-backed male with a long neck which dropped like a wilted geranium from the carapace of its age-eroded shell. It squinted up at me malignly, its little reddish eyes two-thirds shut, vomitus drooling from its mouth. Its expression said as plain as words: "I've no confidence in you, brother."

It took me five minutes to examine all three turtles. My task completed, I slapped the big fellow's plastron, and stood up.

Carruthers was watching me strangely. "Well," he said.

"They'll be okay," I said. "But I can't understand why they should be seasick?"

"Seasick?"

I nodded. "They're land tortoises, you know. They must have been as sick as all Harry coming up on the ship. But you've had them four years."

"Five," he corrected. "And they've been growing all the time, you understand?"

I frowned. "No, I don't. I thought they were adult turtles—a hundred years old."

"I don't know how old they are. But turtles grow until they die. So do we. Franz Boas says—"

He checked himself. "We needn't discuss that. All animals grow a little through the years. I measured those turtles when they arrived, and every year since then. Each year they grew a little. That big male's carapace expanded three full inches."

"Interesting," I said. "But I don't see—"

"You will, David. I may be eighty-two, but my mind is clear as a bell. I measured them again tonight. I thought at first it was simply undernourishment, an arrest of serum transudation into the epidermal shields. But it couldn't be that. They've shrunk several inches since I measured them a moment ago."

My immediate reaction was one of stunned incredulity. Was the dean of American herpetologists cracking at last?

"Five years' growth wiped out," he

said. "Do you realize what that means? Those tortoises are growing smaller by the minute."

I tried to appear unconcerned. I didn't want him to suspect that I was worried about his arteries. "Frogs shrink," I said. "As you know, there's a West Indian frog which shrinks nine inches from tadpole to froglet."

Carruthers snorted. "A developmental peculiarity like that would be inconceivable in the reptilia. The shell of a tortoise is as stable as coral. Lime can dissolve it, but it is never re-absorbed by the living animal in the process of growth."

"Why don't you call it a night?" I said. "Stop driving yourself; get some sleep. There's some great stuff in that Malaya book, but a younger man will finish it if you don't watch out."

He lost his temper at that. He grabbed my arm and escorted me unceremoniously to the door. "When I want your advice about my hours I'll ask for it," he growled. "Good night and good riddance."

He shooed me out into the snow. I pulled on wool mittens, swore immoderately, and started off for the east gate. "Getting me up in blizzard for *that*," I gritted.

I WAS half way to the gate when I bumped into young George Fitch. George was plowing with lowered head past the small antelope house, his overcoat flapping up about his ears. He was weighted down with meteorological instruments, and I surmised that he had descended from his eyrie near the north gate —a sort of Norman tower set atop the administration building. George was an assistant curator of mammals but he rode a meteorological hobby when he wasn't dodging porcupine quills.

"This must be visitors' night at the zoo," I said, gripping his arm to keep from skidding on the ice.

He skidded a little himself, waltzing about like a puppet on a string. Glancing swiftly at him I had the queerest impression—that he was a snow-man getting ready to melt. His face was as white as his clothes, and he seemed scared out of his wits.

I stared at him in alarm. "What's wrong, George?" I asked.

He looked at me askance, his lips pulled tight. Suddenly he said: "David, if you saw a ship in the sky, or a talking monkey would you consult a psychiatrist?"

I thought he was joking until I noticed the feverish brightness of his eyes. They were boring into mine with an earnestness which was somehow frightening.

"Perhaps," I said. "I'd make sure, first, that I wasn't the victim of a hoax."

I became angry suddenly. "See here, George, what is this? Are you pulling my leg?"

He shook his head. "I didn't see a talking ape. I saw something more incredible. I saw the sun at midnight. It hasn't risen yet, but I saw it shining over the reptile house six hours ago. I was sitting in the tower staring across the park when it flamed into view—a dull, red orb with a visible corona."

I stared at him, aghast. You can see the sun, of course, when its entire disk is below the horizon. The human eye can't distinguish between straight and curved rays of light and at nightfall it sees a sun that has really gone to roost. The great density of air close to earth deflects the solar rays in a wide arc toward the observer, producing a swollen refraction-image which sinks slowly from view. But that doesn't mean you can see the sun at midnight, when it's rickshawing over China.

Fitch said: "I've been toting these instruments between the tower and the reptile house all night, checking up on it."

"What do you expect to find?" I exclaimed.

"I don't know, exactly. The phenomenon lasted scarcely twenty seconds. I'm check-

ing the physical properties of the atmosphere in the vicinity of the reptile house. Perhaps it was a sort of sky mirage—a reflection of the sun projected from space."

A morose, baffled look came into his face. "There are supposed to be a few faint cloud-wisps high in the stratosphere—fifty or sixty miles up. Glints of sunlight have been observed in the night sky, you know. Perhaps one of those little 'ghost clouds' acted as a refracting medium, casting an image of the sun on some mirror-like surface close to Earth."

IT WAS too incredible for sane belief. I left him whitening to a snowbank outside the kangaroo runs, my mind reeling as I beat my way through the pelting storm to the east gate.

I returned through the long city in the subway, greedily absorbing warmth after my grim battle with the blizzard. I was grateful for the sane faces opposite me, and the semi-colon which the traveling train put after my nightmare experience in the park. I knew that Carruthers would be phoning me again, so it wasn't a period.

When I arrived at my home Carruthers' granddaughter uncoiled from a sofa in the living room, and gravitated into my arms. Virginia Carruthers was my whole emotional life. Before I met her I was a young man of the future—cool, scientific, detached. An H. G. Wellsian Things-to-Come young man.

But Virginia changed all that. When she came into my life Science took a back seat. I wanted to lavish luxuries on her, and I regretted that I was just an animal medico with the trivial salary that went with being tops in my profession.

She had red-gold hair and a peach blossom complexion and was in all other respects a golden girl. Now she was clinging to me and I was kissing her and making her shiver, because my skin was as cold as sliced cucumbers on ice.

She said: "David, you're half-frozen. Where have you been? You walked out, and left the front door unlatched."

"Great Scott," I muttered. "I must be in my dotage. So that's how you got in?"

She nodded, slipped from my embrace and coiled up on the sofa again.

"I'm worried about grandfather," she said. "He's been up at the zoo for three days. I phoned him an hour ago, pleaded with him to come home. But all he did was growl at me. Oh, David, David, I'm so worried. Can't you get him to stop killing himself? His mind will crack, if his body doesn't."

I tried to calm and reassure her. We had breakfast together, and I promised her that I would return to the park immediately, and bring Carruthers home—by force, if necessary.

An hour later I was at the park again. Carruthers was in his office. He wasn't alone this time. Two guards were with him and he was courting death on swift wings.

The guards were helping him X-ray six feet of reptilian malignancy. They were holding the bushmaster by its head and tail, and its long, spotted body was writhing beneath a clinical emanation of Roentgen rays.

Carruthers seemed frightfully agitated. As soon as he saw me he gripped my wrist, and drew me toward the X-ray machine. "The parasites are gone, David," he said. "Look—see for yourself."

I would have staked my reputation on that big serpent's ill-health. But when I gazed at its vitals on the fluorescent screen reality mocked me. The world spun dizzily for an instant. I couldn't doubt the evidence of my eyes, and yet—twenty-four hours previously the bushmaster's viscera had been a maggoty, cheesy horror.

"Well?" said Carruthers. He was smiling triumphantly despite his agitation. There was something primitive in him which derived pleasure from my discomfiture.

"It's unbelievable," I said. "That snake was dying. Even if it recovered, there would be cicatrical changes in the viscera."

"Do you see any changes?" Carruthers mocked.

"No," I admitted hopelessly. "I'm afraid I botched my diagnosis."

Suddenly my thoughts congealed. Looking at Carruthers, I could sense a change in him. His tall, angular frame seemed less stooped, his face less heavily lined. He seemed—yes, ten years younger.

I couldn't pin the change down to any one feature. It wasn't conspicuous; it didn't leap out at me. I hadn't noticed it at all at first. But there it was, subtly visible in the lineaments of his face, his carriage. Even his eyes held a brighter gleam.

When I left the reptile house the second time it had stopped snowing. I plowed through heavy snowdrifts to the east gate, my mind wrestling with a suffocating sense of horror. Returning home in the subway I tried to reason my way back to sanity. But with every jolting of the train my alarm increased. I had concealed my emotions from Carruthers, had left him brooding over the recovered snake, mumbling to the guards, and staring intently into the X-ray machine.

Somehow the thought of dragging him home had become repellent to me. The strangeness of what I had seen was so shattering that I wanted to increase the distance between us as swiftly as possible.

But in the modern world you can't escape for long from startling, outrageous, hideous or mystifying occurrences. Wires and bells and clatter, the brazen effrontery of short waves and long waves, and minute particles of matter invade all privacies, penetrate all retreats.

The telephone is not the least of modern evils. My immediate impulse when I arrived home was to ignore the jangling which drifted down from my bedroom upstairs. But habit is a stern taskmaster. It drove me upstairs on the run, my hesitation squelched by subconscious urges stronger than reason. If you don't answer a telephone promptly it stops ringing. If it stops ringing it's like—well, watching a man's head get as large as his body, or losing a finger in a meat-chopper. The psychic shock is overwhelming.

As soon as I uncradled the receiver George Fitch's voice came excitedly over the wire. "David? David, listen to me. There has been an—an accident at the park. I thought of you immediately because of Virginia. It concerns Carruthers."

A chill of apprehension passed over me. "Carruthers," I breathed. "You mean, he's been hurt?"

"Carruthers is gone," said Fitch.

Sweat broke out all over my body. "But I just left him," I gasped. "He was X-raying a bushmaster and—"

X-raying a bushmaster. My own voice became a knell suddenly. A sob of horror arose in my throat.

"You mean the snake bit him? Oh, God, George—"

"No, no, David," Fitch's voice rose in protest. "There was an explosion. Can you hear me, David? An explosion at the park. The entire reptile house was blown to fragments."

Stunned, sick with horror, I sat listening while he described the catastrophe.

"Do you know what an eclipse cyclone is, David?"

"No," I said, hoarsely.

"It's a peculiar phenomenon," he said. "When the sun is eclipsed the air temperature falls and contracts the atmosphere. The air from outside the region of contraction flows in spirally, but before it reaches the point of greatest contraction the turning of the earth throws it off-center. It misses the center and forms what is known as an eclipse cyclone."

"But the sun wasn't eclipsed," I said.

"I know, David. It's utterly inexplicable. My instruments record a true eclipse

cyclone, limited to a small area surrounding the reptile house.

"But what caused the explosion?"

"I don't know," he said. "The ground has caved in, and the reptile house is a blackened pile. It's just as though something sucked the reptile house right out of space, producing a cyclone and an explosion."

Left to myself, I should have sat there entranced, my hand on the phone, speechless with horror. But the jangling of the doorbell roused me from my lethargy. I said: "I'll break it to Virginia, George," and hung up.

I DESCENDED the stairs slowly, my steps dragging. My limbs seemed weighted, my spine sclerosed. But when I opened the door vitality flowed in vibrant currents through my body again.

Carruthers was standing there with an umbrella clutched tightly in his bony hand, his clothes white with snow. I was so relieved to see him that I scarcely noticed how youthful he had become.

He stepped into the hallway, and shut the door firmly behind him.

"Good morning, David," he said.

He didn't look a day over thirty-five. His hair was jet black, his face unseamed.

"Henry!" I exclaimed. "I thought you were dead! Fitch just phoned me about the explosion—"

He stared at me in amazement. I was staggered, really staggered now, by the change in him. He loomed big and massive in the hallway, his cheeks ruddy, his voice resonant.

"I left right after you did, David," he said. "I'm going to resign!"

"But the explosion!" I insisted. "Surely you—"

"I heard an explosion just as I was leaving the park," he said. "Like a clap of thunder. But I didn't stop to investigate. David, I am weary of snakes. I am a young man, David—not an old fossil curator of reptiles."

"Good God," I muttered.

"David, it is all very vague, all very jumbled up in my mind. I can't even remember what happened yesterday. I do recall talking to you less than an hour ago, in the reptile house. We were discussing, discussing—"

His brow furrowed. "Damn it all, I can't remember. Something about parasites, intestinal—oh, damn!"

Suddenly he squared his shoulders. "You left in a huff, didn't you? I seem to remember that. You were upset by something I said. You must forgive me, David. I was stuck up there like an old fossil, I wasn't myself. David, I have been dreaming of the headwaters of the Amazon, the jungles of Borneo."

His eyes were flashing now. "David, only youth is sane and glorious. Age corrupts. No man is at his best after forty. Even Machiavelli was an idealist at twenty-five. Darwin was never closer to greatness than when he encircled the world in the Beagle, a kid of twenty-two. He had zest then; he was keen. He never wrote better prose."

I couldn't deny the evidence of my eyes. Standing before me, raving feverishly, was a young Carruthers. A man who had actually sloughed off the physical inroads of fifty yards. I felt weirdly giddy. I groaned: "Listen to me, Henry. You're not well. I'm going to take you home to Virginia."

It was an unfortunate remark. The hair-trigger irritability which I had always deplored in him flared violently.

"I'll go home under my own steam," he bristled. "You young fool!"

He glared at me, strode across the room and went out, slamming the door.

I waited a full hour before I phoned Virginia. I knew that it would take Carruthers that long to reach his home in the suburbs.

My darling's voice was horribly agitated when she responded to my terse: "Hello." She said: "David? Oh, I'm so glad you phoned. Grandfather left five minutes ago. I went out to get him some sleeping tablets, and when I returned he was gone. I didn't see him when he came in. Craig says he rushed upstairs and locked himself in his room. Right after that, he phoned the White Band steamship line. Craig heard the extension buzz in the hall and listened in.

"David, he's going on a tramp cruise around the world. He's booked passage on the Morning Star, dock 5, West River. Yes, I know, Craig should have prevented him from leaving the house. But you can't expect a butler to assume—"

I cut her short.

"Virginia, listen to me. We've got to get him off that ship before it sails. When does it sail?"

Her voice was almost a sob. "It sails at midnight David."

"All right," I said. "Don't leave the house until you hear from me. I'll bring him home."

DOCK 5, WEST RIVER, was enveloped in a tenuous fog. I stood against a massive pierhead, and stared up at the swaying dark outlines of the freighter. The huge ship was rising and falling on the uneasy tide which swirled and eddied about the base of the wharf. A great, black behemoth of the seaways, its glowing portholes casting thin banners of radiance athwart the night, it filled me with uneasy longings as I stared up at it.

A nostalgia difficult to define swept over me, making me dream of far ports and the faces of exotic women. I thought, oh, damn, why can't I chuck it too? Why can't I say to the kid who was Carruthers: "I'll join you, lad. We'll push off together and if you get into scrapes and need the advice of an older man—"

I shook myself. I was thinking insanely. Carruthers wasn't that young. Or was he? I hadn't seen him for several hours. Would I have to reason with a twenty year old kid hell bent for adventure?

I shook myself vigorously, crossed the wharf, ascended the gangplank, and ran smack into Brass Buttons.

Brass Buttons was the oldest first mate I had ever seen on a ship. But it wasn't his age that startled me so much as his pallor. His incredibly seamed face was as white as a sheet. He stared at me, his eyes jiggling. "Well, what is it? What do you want?"

"Have you a passenger named Carruthers aboard?" I asked.

If I had smacked him one on the jaw I might have jolted him more, but I doubt it. He recoiled from me in quivering terror, his short, desiccated body seeming to shrivel as it receded across the deck.

He began to blabber. "A friend of his? Then you must be a ghost too!"

I gripped his arm, spun him about. "What do you mean, ghost?"

"Don't touch me," he wailed. "I can't stand it. I'm eighty years old. My heart is bad, bad. I lied to the license board about my age. I told them I was fifty-six. But you're getting the truth, ghost. I am close to the shadows myself. Would you torment an old man on the brink of the grave?"

I said: "Come, grandpop. I'm not a ghost. You can touch me, can't you?"

"I can touch him too," he wailed. "But he's a ghost all the same."

"Who, grandpop?"

"Henry Carruthers. The man I sailed with sixty years ago. I thought it was his son at first. But his son couldn't have known about little Lotus Flower in China in the eighties. Or how we whipped all the scum of Rio on the black wharfs under the Sugar Loaf."

For an instant his eyes shone and the terror was absent from his gaze. Then

the glowing memories of his far-off youth seemed to wither away. Stark fright flared in his eyes again.

"He could have told his son, maybe. But not all the little details, not the way it really happened. It's like we had two parts of one coin, and when we put 'em together they fitted. A second hand coin might nearly fit, but it wouldn't exactly."

He wrenched his sleeve free and started backing away from me again, his pupils dilating. "Go away, ghost. Don't torment an old man."

I changed my tactics. "All right, grandpop. Carruthers *is* a ghost. We're both ghosts. I've come for him, understand?"

"He's the boy I sailed with," wailed Brass Buttons. "The same tall, reckless young lad."

"Take me to him," I warned. "If you don't, I'll haunt you until you die."

He stopped retreating and stared at me, aghast.

"We're leaving the ship together," I said. "Where is he, grandpop?"

"He's down in the stoke-hole, ghost. You got to promise you'll take him right off the ship. You got to promise not to haunt me."

Carruthers was lying sprawled out on coal, quart bottles in both his hands. One bottle was as black as the coal, the other filled with a watery pale fluid which glimmered ruddily in the glare of a furnace.

Carruthers was drinking from both bottles, and singing lustily. His eyes were bloodshot, his face and hands smudged with soot. The eyes of a reckless boy stared up at Brass Buttons out of his black face.

"Well, if it ain't Jackie Whistle," he roared. "If it ain't my good old buddy decked out like the Queen's Navy."

In desperation I bent and gripped his shoulder. "Henry, look at me. Don't you recognize me. It's David."

Slowly, incredulously, his eyes focused on my face. "David?"

"Yes, Henry. Your friend. The zoo, Henry. Your granddaughter, Virginia. Don't you remember?"

He set down one of the bottles, passed a tremulous hand across his brow. "I seem to remember now. There *were* years between. Yes, I know you, David. You came into my life before I grew young."

Brass Buttons was wringing his hands. "Please go, both of you. I am an old man, on the brink of the grave."

I said: "We're going, grandpop." I took firm hold of Carruthers' shoulders. His eyes were unfocusing again, but I managed to hoist him to his feet.

"Steady now," I warned. Getting him off that ship wasn't easy, but I accomplished it without assistance. I used flattery, cajolery, sternness, persuasiveness and all the muscular power I could summon. He began to sing again as soon as we reached the deck.

Down the gangplank he swayed in the darkness, one of the bottles still gripped in his hand.

I GUIDED him along the wharf and down a dim, waterfront street. He was shouting at the top of his lungs when I poured him into a cruising taxi three blocks from the ship.

Virginia was so relieved when she saw his tall form outlined in the vestibule of his home that she became hysterical. I was rather glad of that because she didn't notice the change in him.

When I opened the door with Carruthers' key she ran into the sunparlor just off the main hallway, threw herself down on a sofa and burst into tears.

I helped Carruthers upstairs to his room and eased him down on his bed. He sagged inert, his eyes closing. I lifted his long legs, threw a blanket over him. I opened the windows a little, because the radiator was going full blast.

He was sleeping soundly when I tiptoed to the door, unlocked it and descended

the central stairway. Virginia was still in the sunparlor, her body racked by sobs.

I had to tell her. There was no way of avoiding it. She would have to take care of the young man in her grandfather's room.

I sat down beside her. I took her hand. "Virginia," I said. "I must tell you. Virginia, dear—"

Grim, appalling things tap reserves of strength in women. The truth did not shatter her as I had feared. She remained sitting quietly beside me, her face a tragic mask, her fingers tightening in my clasp.

Suddenly she said: "How long do you suppose it will go on?"

"I don't know," I said. "He's a boy of twenty now."

"Do you think he will become a child?"

Someone groaned a few feet from where we were sitting. I raisd my eyes in alarm. Standing in the doorway was Carruthers' manservant Thomas Craig, his long, lugubrious face a leprous gray.

"I overheard what you were saying, sir," he apologized. "I—I did not intend to eavesdrop. But when I saw the master climb from his window—"

I jumped up in horror. "Carruthers has left his room?"

Craig nodded, his eyes bright with panic. "He's out on a limb, sir. The change you dreaded has occurred. He's a boy now."

Getting Carruthers safely down from the huge apple tree on the east side of the house was a nerve-racking task. I had to plead with him. He was moving about up near the top of the tree, whistling and shaking down apples. I stared up at him in the moonlight.

"Henry," I said. "Come down at once."

He laughed impishly. "I'm not a child, David. I'm fourteen years old. I'm staying up here until I find the nest."

"What nest?"

"The robin's nest, silly. There's a big nest up here with six eggs in it."

"All right," I said. "To-morrow you can be a naturalist. Now it's past your bedtime. You'll get pneumonia up there."

He whistled exuberantly. "I've found the nest, David. Gee, waitilya see these eggs."

He descended swiftly to the ground and stood triumphantly regarding me in the moonlight, a small boy in a man's pajamas, his trouser legs uprolled, the slack of his shirt gathered into bulgy knots.

His rosy-cheeked face was incipiently Carruthers' face. It was smooth and childish, but the chin had the petulant tilt I knew so well.

Out of the house came Thomas Craig. For an instant he stood staring at the boy Carruthers, relief and horror in his gaze. Then he turned to me.

"A phone call for you, sir," he said. "I think it's from the zoological park."

"All right" I said hoarsely. "Take this lad upstairs and put him to bed."

I returned swiftly into the house. Virginia was standing by the telephone in the lower hall, her body rigid. "Did you get him down?" she murmured.

I nodded grimly, snatched the receiver from her trembling fingers.

IT WAS George. Fitch again, his voice tense with excitement "David? I've been trying to get you at your home. I have reason to believe that Carruthers isn't lost. *The reptile house is coming back.* I know it sounds incredible, but there seems to be a sort of rift in space itself—David, it's hard to describe it on the phone.

"Standing here in the park with me, you would sense it—an incredible shifting, a distortion of perspective in the vicinity of the reptile house. Directly overhead the sky is filled with stars that aren't grouped right. The Big Dipper is twisted out of shape, and the Lynx is attacking Camelopardus. A million years ago the constellations might have looked like that—when

the earth was differently oriented in space. But the most startling thing is the reptile house itself. It's wavering back, David—in faint, miragelike flashes."

He paused an instant, then resumed. "I don't think the sun I saw was the present sun at all. I think it was an old sun shining out of *the past*. I've a strange feeling that something is happening to time as we know it—something cyclonic. It's more than a feeling. I've evidence, of a sort—but I won't go into that."

"Damned if I understand you," I exclaimed. But mad abstractions were hammering at my brain in an anvil chorus of confusion and doubt.

"You say something happened to time in the vicinity of the reptile house?" I inquired, dubiously.

"In terms of modern physics, it seems to have begun with a sort of crinkling of the space-time continuum which became absolute when the reptile house vanished. I saw the old sun in a crinkle. Then the space-warp widened, and the temperature fell, producing a violent eclipse cyclone. The reptile house seemed to explode as it passed out of our space. Now the continuum is crinkling again."

"But where did the reptile house go?"

"Into a non-Euclidean dimension, apparently. Into *Outside.*"

"Outside!"

"David, listen carefully. We're all sure nowadays that time is a dimension, but most people still *feel* that there is a qualitative difference between time and space. There isn't at all. Space simply seems realer to us than time because our consciousness moves on a three-dimensional plane.

"We think of time as a *flowing.* But an observer outside of our three-dimensional world would not be aware of the passage of time. The past, present and future would exist for him simultaneously. Time would be stable, concrete—a physical constant. All this is accepted stuff; you've

had it drilled into you a million times since the advent of the new physics.

"But here's something you haven't considered. An observer outside could *control* time as we control space. I mean, he could move it about as children move building blocks in our three-dimensional world. Or if you wish to think of time as a fabric that would be okay too. Think of time as a fabric and the observer as a weaver on a loom. Say he dropped a stitch. A stitch in time."

"A stitch—in time!"

"David, I think we're hostages, puppets, toys. Playthings of Titans from outside. Giants in the sky. Call them Outsiders. They loom outside the universe of stars, and they amuse themselves by keeping time moving in a straight line for us—from the past into the future. Watching our antics while we're imprisoned in time. Suppose one of the time blocks slipped out of their hands? An accident, understand? Suppose they became jittery, and lost control. Everything in a limited section of our world would waver, or vanish into the past."

"Good Lord," I said. I was thinking, the turtles grew younger; went back. They were on the ship again, sailing north from the Galapagos. They became sea-sick. And Carruthers went back to his youth. But why didn't I see the ship? And why did Carruthers continue to go back?"

I said: "Could that wavering be fragmentary, incomplete? Could a man or woman go back without—really vanishing into the past. I mean, could they remain in the present, and yet regress to childhood, to infancy?"

He said: "It's possible, David. A person caught up in non-Euclidean currents and whirled arbitrarily about might be only partially *outside*. He might be living in two worlds at once."

"George, Carruthers walked out before the explosion," I said. "He's here with us. He walked out carrying a fragment

of that spatial instability about with him. It's evidently something tangible that clings. He's been going back steadily in time. Are you listening, George? He's a little boy now, living in the present but looking and behaving exactly like the Carruthers of seventy years ago. Mentally he's confused. He sees things in the past, I'm quite sure, but he isn't spatially in the world of his childhood. He's like a visitor from another planet—caught in our world, but emotionally out of tune with it, and seeking out aspects of the life about him closely paralleling the world he knew."

I could hear Fitch's agitated breathing at the other end of the wire. He broke in on my explanations: "If that is true, David, you must bring Carruthers up here as quickly as possible. The reptile house is wavering back fast. I think the Outsiders are toying with the fallen time block—picking it up, and trying to put it back. You'll have to restore Carruthers to the time-flow at the site of the accident if you want to give him a fighting chance.

"The reptile house is the focus in our space where the Outsiders are making their greatest effort. Away from that focus Carruthers would be lost."

I said: "How do you know there *are* Outsiders. You talk as though you'd seen them."

He said: "I *have* seen them, David. I'll tell you more about them when you bring Carruthers up here."

A moment later I was opening the door of Carruthers' room. I could feel sweat trickling down my skin under my clothes. I pushed in without knocking.

THE room was brightly illumined. For an instant I stood blinking in the doorway, my startled gaze forming circles of diffusion about the lamp by Carruthers' bed. Then white sheets coalesced into a pattern and I saw the little naked form that was mewing and plucking with fat, pinkish fingers at Craig's thumb.

A STITCH IN TIME

Carruthers was lying in the center of a big, double bed, his eyes crinkling with the petulant resentment of a newcomer in a hostile world. My veins congealed. With a stab of horror I recognized the stubborn chin, the clear blue eyes—the little mewing form was incipiently Carruthers still.

Craig looked up quickly, stared at me in agonized concern. "It's 'orrible, sir," he muttered, trying as he spoke to free his thumb from the infant's clasp. "It's weird and 'orrible. He turned into a little baby while you were phoning. I had to take his pajamas off to keep him from smothering."

I said: "We've got to move him, Craig. I'll need your help."

With Craig's help I wrapped Virginia's grandfather in a towel, turning him about on the bed. It was an awkward task and I accomplished it awkwardly. Craig subdued infantile writhings while I pinned the towel securely into place. I doubled nine inches of slack into diaperlike folds, and drew Carruthers' tiny arms into openings higher up.

Then—down the wide stairs to where Virginia waited, grim and still in the lower hallway. When she saw my ten pound burden her lips became as white as the towel which enveloped it. But she neither swayed, nor cried out. She said, simply: "I'm going up to the park with you, dear."

I had never seen courage flare so brightly in a woman. She held her grandfather in her arms until we reached the park. We drove north in a taxi, and Virginia sat between us, smiling gently down into Carruthers' convulsed features. I am still amazed at her strength.

Carruthers was an ugly infant. The insensate rage which convulsed his features seemed somehow alien to childhood. Was Carruthers more primitive than the average, a more unruly brat? The reflection was an uncharitable one and I drove it

with vigor from my mind. Carruthers was a man of intellect, a man of strength. He was simply rebelling against the tyranny of birth; resenting the betrayal of his little strong self by the world. He had been born into a trap and he knew it.

He was furious because he could not escape from the great trap of life. He could not foresee his escape at the other end—at the age of ninety perhaps. Could we save him for that other escape? Would he be permitted to walk, a mature, dignified man, out of the cage of life into the vast unknown? Or must he dwindle ignominiously to—

The thought was unthinkable. A line from Poe wavered appallingly through my mind. "Dreaming dreams no mortal ever dared to dream before." I shivered, tried to keep the grim thought from forming. I tried not to think of Carruthers with gill-slits, dreaming the dark, unformed dreams of the unborn. Fishlike dreams. Did not embryologists claim—oh, horrible, horrible.

Carruthers was bursting his lungs with lusty, embittered wails when we arrived at the park. George met us at the east gate, his boyish features as grim as death in the moonlight. Behind him tall trees towered in sentinel formation, blocking out the stars.

I asked him a single question: "Is it too late?" He replied in the negative, with a shake of his head. Then he added: "But we must hurry. It is coming back swiftly now."

Hurry, hurry. So many racing feet moving across the park, and how grotesque we must have looked to the moon. The corpulent form of Craig, his bald head gleaming with perspiration, his coattails blowing in the wind. Virginia, slim and breathless, bearing her grandfather in her arms. Carruthers wailing like a lost soul in improvised swaddlings, his little red face convulsed. George, lean and solicitous, hurrying along beside Virginia and be-

having as though he were responsible for it all.

Between the trees we moved swiftly and in utter silence, a ghostly fivesome beneath far, pale stars. Suddenly the trees thinned and we saw the reptile house wavering back, a luminous film in the darkness between titan oaks and cedars. We saw two skeletal walls and the columns of a familiar doorway etched against the night in weaving filaments of flame. Between the walls was a void, ink-black, impenetrable. The night seemed bright in comparison with that void.

Only the building's outlines were clear and shining. Evanescently shining. As we drew closer they wavered and ran together and drained away like quicksilver.

George whispered: "It will return again in a moment. Each time it wavers back more brightly than before."

I knew that we were facing a momentous challenge. Someone had to carry Carruthers into that region of menacing instability and abandon him there. Like a little Moses in cosmic bullrushes, he would have to rest alone, at the mercy of the unknown.

I didn't want Virginia to risk it. When the block was fitted back into place, or when the stitch was picked up, a normal person, properly oriented in time, might get caught dangerously. Wedged into a crevice somewhere, or enmeshed unnaturally in the loom.

Swiftly I snatched Carruthers from her arms. I was brusque because I loved her as seldom a man has loved a woman in this world. Carruthers squirmed in my clasp, beat with his tiny hands on my chest.

"Fool," I rasped at him. "Little, blind fool."

I POUNDED along a gravel walk and stopped at the summit of the blackened pit where the reptile house had

stood. The abyss below me was utterly lightless. A black cycloid in Earth that seemed to have no bottom. About its ragged circumference blackened rocks lay tumbled and beside the path where I stood and wherever the moonlight rested the earth was pitted with miniature craters or piled into ebon mounds.

Sweat was trickling down my face. Swiftly I deposited Carruthers at the edge of the abyss, and raced back to where Virginia was standing. When I reached her side lights were flashing in the sky again. I took her in my arms, held her tightly. Our hearts began to pound in unison. In choked tones George said: "God, look at that!"

A horrible thing was happening. The sky seemed to be peeling away in layers. Like aging wallpaper it coiled back from naked flame, leaving the moon suspended in a glowing furnace.

Craig began to babble in terror. There were streamers, dangling streamers of sky-stuff visible against flame. It was as though the simple heaven of childhood really existed and was being consumed.

I wasn't sure it was a hand we saw. The long digits outstretched were almost clawlike. They hovered for an instant above the wavering outlines of the reptile house and then descended.

There was a blinding burst of flame directly in front of us. The ground rose like a tilting sea, spinning Virginia from my arms, and throwing me forward. My ankles gyrated, and I crashed to earth.

For several seconds I lay stunned and groaning, my body flattened against the ground. My brain was throwing off blazing chunks of light, but I could hear Virginia screaming.

I groaned, rolled over, and got unsteadily to my feet. I was very dizzy. I would have tottered from the walk if George had not caught me.

"Look there, David. The reptile house has come back."

"The fire," I gasped. "Everything seemed—"

"I know. To be going up in flames. There were flames in my dream too. Last night I dreamed about them because I'm psychic, evidently, and they were very near. I was sure they were trying to—to straighten things out here. I think we perceive ultimate reality, the fourth dimension or whatever you choose to call it, as *an illusion of flame*. That's why fire is worshipped by most primitive races, why the Greeks built—"

A scream from Virginia cut him short. "Grandfather!

Carruthers was advancing down the walk toward us. He looked worn, bedraggled. There were deep, dark circles under his eyes, and his almost skeletal frame seemed bonier than usual. He growled irritably when Virginia threw her arms about him.

"What is this? Where's David? Where's that young fool? The bushmaster's dying. I've got to see David right away."

I brushed tears from my eyes. Tears are unmanly, maybe, but just seeing Carruthers—old, grouchy, stubborn Carruthers—standing there restored, just hearing him cussing me out warmed the cockles of my heart. I felt like turning somersaults and singing and shouting.

But all I did was stare into the sky. "Thanks, Mr. Mason, Weaver, whoever you are," I said. "You're a grand guy."

THE END

(Continued from page 4)

for the comparatively young Weinbaum to handle.

The book concerns the struggle of a solitary superman, Edmond Hall, to adjust himself to the normal world. He is the first of a new species, a mutant, destinued to found that race higher in evolution above *homo sapiens* than we are above the Neanderthaler.

It is obvious that the terrific mental and social conflict of such a being with our, to him, primeval and almost animal world is a subject that can only be handled by a writer with special gifts. It is frequently claimed that you have to *be* a superman to write a superman story. This is false, as a study of the more successful works of this kind can easily show.

But certain things are required of such an author that other writers need not have. The most important of these is the very unusual ability to lift oneself somewhat above the level of the day. Weinbaum obviously attempted to do this. He was miserably unsuccessful. Edmond Hall turns out to be incredibly limited in his vision, unaware of the infinite possibilities inherent in himself, hopelessly incapable of arising above a despondent futility that even we "primitives" have outgrown. His whole outlook is summed up in the Greek philosophy called Platonism, a philosophy that modern thinkers investigated fully and put aside as being without truth.

But the most obviously inane action of this character is Edmond Hall's final gesture. Think of it—here is Edmond Hall, with the genius of a thousand Einsteins, the capacities of all the world's thinkers put together. What is loosely called "character"—moral strength, courage, "Backbone"—is a by-product of mental development. And Edmond Hall must be possessed of backbone enough for an army.

And this vast mind, this superman, seeing nothing but futility, concludes in the

action which invariably betrays spineless and wavering minds of our day. He commits suicide.

No, Stanley Weinbaum has not written the superman story. No one has written it yet, not perfectly, but there have been a dozen close approximations of it. If you would know what a superman story can be, run, do not walk, to the nearest bookshop and buy yourself a copy of Professor Olaf Stapleson's "Odd John." Next to the incomparable "Odd John," or even to J. D. Beresford's "Hampdenshire Wonder," "The New Adam" fades into insignificance.

THE LAST FLOWER by James Thurber. Harper & Brothers, New York. $2.00.

It seems that after World War XII had just about destroyed everything, the few people left amidst the ruins were so humbled that the very rabbits attacked them. However, the discovery of a lone last flower brought a man and a woman together, started things anew, and before you could say it, the world was back on its feet again.

And then jealousies arose; armies were reborn; World War XIII began—and everything was again reduced to complete shambles, with nothing left but a last, solitary flower.

That's the theme of James Thurber's book. It's a big book, but with surprisingly little to read in it. However, it wasn't—as anyone who knows the name of Thurber will recognize—meant to be read. The pictures are the thing.

Thurber's inimitable style carries his message and story in a rapid manner that will surely tickle the taste of every reader. As a parable in pictures against war it may be lost, but it most certainly makes entertaining reading,—or, rather, entertaining looking.

—D. A. WOLLHEIM

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THE PREVIEW

DAISY KATZ says I am no death-defying hero, and I am that way about Daisy.

So I figure out a stunt, which will show her just how death-defying I am.

I go to Mrs Schroeder's house, which is where Gasket Lengrin, who is my boss and no dope, and I live. Out of the clothes closet in my room I take my deer rifle, which is a monstrous old Krag.

So then I drive to the car-lot, which is where I work. I find Gasket still in the office.

"Shoot me, Gasket," I orders real calm. Anybody can tell I am not fooling a bit.

Gasket just stares.

So I make believe I am disgusted with his brand of friendship, which balks at doing a little favor. Before Gasket can stop me I set the stock of the Krag on the floor. I bend over so that the muzzle is just maybe five inches from the center of my chest. I lean over and press the trigger with my thumb. . . .

And what happened then is told in Raymond Z. Gallun's, "Guardian Angel," in the May *Super Science Stories.*

Also in the issue are "Juice," by L. Sprague de Camp, "Living Isotopes" by P. Schuyler Miller, "Arton's Metal," by Ray Cummings, and others.

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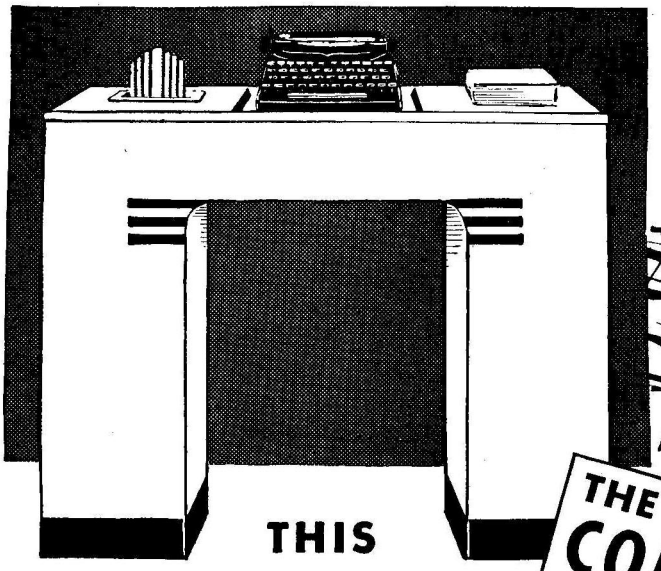

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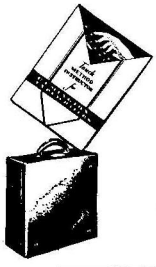

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