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ASTRO- *Adventures*

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... Tales of Scientifiction

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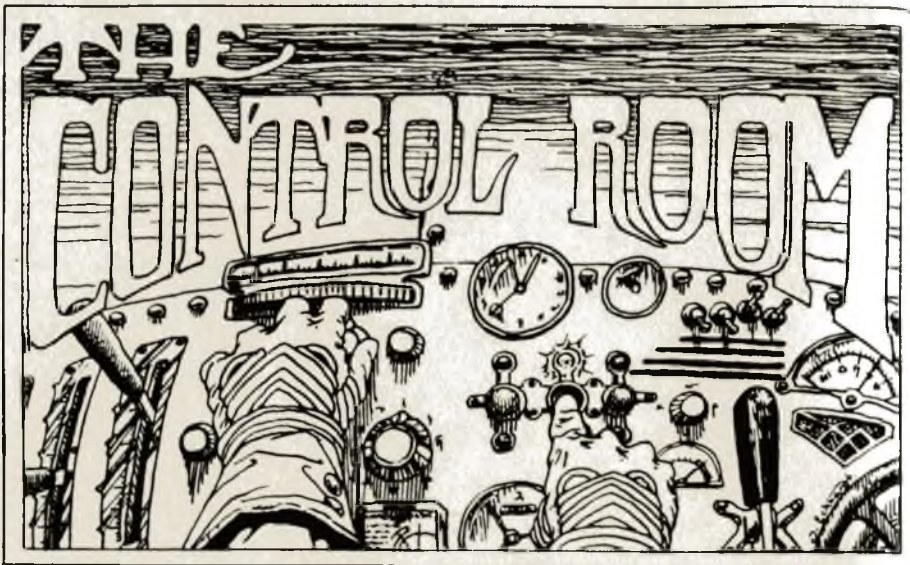
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Glad you're back from the de-contamination lab! We're more careful here since that nasty episode with the Venusian viral plague some space-happy dope brought back from a mission some years ago--you remember, the one that gave everybody a nauseated feeling whenever they touched a science fiction magazine! Wouldn't want that to happen again! Nossir! Well, now you're ready to relax with the latest issue . . . let's see, what're we up to now? Six? Yeah, that's it, number six of Astro-Adventures.

The star of our nova-studded show this time is Raymond "Galactic" Gallun, whose work you've seen in the exciting pages of Astounding Stories, Super Science Stories, Marvel Science Fiction, and of course Astro-Adventures among many others. This time Captain Astro's unveiling "Philosopher's Asteroid," a 1952 tale which has not seen starlight until now, though it was a forerunner to Gallun's novelette "Ten to the Stars," as well as the basis for his novel The Planet Strappers. It is hard to get enough Gallun, so we'll satisfy your whetted appetite with this issue's Tale

from the Time-Warp, Gallun's "Invaders of the Forbidden Moon," retrieved from its hiding place in the Summer 1941 Planet Stories by reprint editor Dan Gobbett.

Captain Astro is very sad to tell you spacehounds that Part II of "Beyond the Worlds We Know" is the very last Star Pirate adventure written by Lin Carter before his untimely death. So Star Pirate's saga will remain unfinished, even though we are printing the "next time" blurb Lin wrote at the end of the story. We will have some interesting Star Pirate and Hautley Quicksilver marginalia from Lin's old spacetrunk to share with you next time, though.

Any veteran of the spacelanes will be able to recognize that Star Pirate is a sort of literary reincarnation of both Captain Future and Northwest Smith. So it is only fitting to share with you Will Murray's article "Captain Future: Yesterday's Man of Tomorrow." A slightly different version of this article appeared five years ago in Comics Buyers Guide.

Captain Astro

PHILOSOPHER'S ASTERIOD

by Raymond Z. Gallun

The Harmon Fission Jet Motor took space travel away from the scientists and gave it to almost anybody who had the guts, a thousand dollars for this cheap, safe power-unit, and another thousand to build a small ship with government-subsidized materials.

To Gerhard (Gerry) Norensen, a loose-jointed blond Iowan, this seemed a wonderful glamor-tinted opportunity, as to thousands of other young men. Wider horizons and new sources of supply were within reach. There was dusty old Mars, steaming Venus, and the wonders of the Asteroids--those fragments of a once populous world that had been blown apart eons ago in war.

Norensen was one of eight University seniors who worked all winter during their spare time, in an old garage building, to complete their homemade ships.

Rollins, an ex-combat flier, test-flew his craft first. Maybe his automatic piloting device went wrong. What happened shouldn't have happened, and nobody ever found out the real cause. But Rollins' craft buried him and its wreckage fifty feet deep in a potato patch when it came down. Goodbye Rollins, hero and leader of the group, strong man to look up to, prop of their courage.

But Reiner, the motorcycle enthusiast, was the only one to back out. He came to the workshop with a dark, fiery little miss who covered his guilty embarrassment with her fury, saying:

"Dick is through with nonsense. We're gonna be married."

So Dick Reiner hid behind a skirt; or he balanced tender mo-

ments, a house, kids--the benefits of ancient domesticity--against an appalling bigness, and chose. He was a fool, smart, or just another tame puppy for a woman.

Norensen grinned at him gently, wished him luck, but sneered with his eyes, as did the others. But Rollins' passing had done something to him.

"I'll take to space slow," he told Dorfer, Smythe, and Frisby, who meant to go to the rich mines of the Asteroids. "Like some guys going into cold water. Maybe it's safer. I'll go just to the Moon, first--the nearest of other worlds."

His reasoning wasn't all that it promised. By just going to the Moon he picked as his companion Parkins, the Momma's Boy and studious screwball, and Mosser who had a special affinity for bad luck. Guys who felt that they had to go slow, too. The trouble was that the ill-fortune of such buddies could rub off on yourself.

Norensen would not have worked on the Moon for more than two months, except that Mosser--it would be Mosser--was caught in a blast while helping to bore a new tunnel, and lost both of his legs. He had no one to be sent home to. How could you desert him then?

He was fixed up right there in the sealed underground lunar hospital. Fine platinum wires tapped the motor-nerves in his stumps; and his new legs, thawed with steel cables that were powered by magnets drawing current from small atomic batteries, responded to his will as readily as if they were alive. But all this took another two months.

Parkins meanwhile developed the habit of muttering to himself about such things as active lunar volcanoes a billion and a half years ago. Good Glory, what did a dreamy, bookish, sheltered kid like him want living the harsh, artificial existence of the underground Mooncamps, anyhow? How had his mother ever let him leave the Earth for the airless lunar scene in the first place? Norensen had met her once--small like her son, and harder than you'd think.

As he tired of the novelty of brittle stars and jagged mountains, Norensen wished a million times that he'd gone on to the equally harsh Asteroids with Dorfer, Symthe, and Frisby. For the promise, there, was richer; there was the charm, even, of the artifacts of a smashed civilization, drifting in the void. He felt outpaced, left behind, a stick in the mud. The Asteroids were pieces of a broken planet, and one knew the structure of all worlds:

The lighter rocks on the surface, much meteoric steel underneath; then, sunk to the center, the really heavy stuff--lead, gold, uranium, in quantities once only dreamed of. Out there it was exposed for easy mining--as intriguing as the wreckage of an unhuman culture.

Norensen tried to sneak out on Mosser and Parkins. But when he cleared the Moon the blue jets of their ships were tailing him.

They didn't get anywhere near the Asteroid Belt. Mosser was still jinxed. A brace broke in his ship and punctured the hull. By luck he was wearing a spacesuit. His buddies towed his craft nineteen million miles to Cross Valleys, Mars.

They should have got off that planet as fast as possible. But Parkins said, "Let's stick around awhile."

They were all charmed by Mars, though mostly it was still a death-hole. The atmosphere was like nine

miles up on Earth, dry, and only tinged with oxygen. The crossing valleys--once ribbons of cultivated land, misnamed "canals"--brooded enigmatically under a shrunken but brilliant sun. Their flat floors, cluttered with rust-stained monoliths and clumps of paper-dry shag-trees and pulpy blue-green sprawlers, extended away to the brown hills of the desert.

Here was the hardy plant-life of Mars, storing scant moisture within itself, hoarding even the oxygen it freed from carbon-dioxide by photosynthesis, the common process of green vegetation everywhere--keeping it to sustain slow tissue-oxidation to ward off nocturnal cold.

Out of the cluster of airtight Nisson huts that was Cross Valleys, the paths radiated, trampled by spaceboots. Here, people--young men, mostly--were following some restless and wordless poem in their hearts, seeking wealth in some odd way, perhaps, or a mood of strange uninhabited spaciousness. Who knew? But the overall purpose, of course, was to build Mars into something useful to humans.

It would have been almost impossible to avoid a job. In a pressurized restaurant where beer was five bucks a glass, luck turned poisonous for Norensen and his companions, though they didn't know it then. A man who said he had been a professor of English literature, and looked the part, talked to them.

That night, while the cold bit deep and the stars blazed in the black sky, they rode two hundred miles in the sealed cabin of a tractor vehicle. Coffrin, their new employer, had even helped them find storage space for their ships, in Cross Valleys.

By dawn they were in a camp of low barracks at the foot of a bluff that had once been crested by a Martian metropolis that had perished ages ago, perhaps in less than a minute. Buildings had been

melted down to glassy slag. It was the record of a war that had left Mars empty of inhabitants.

At Coffrin's office the three men turned in their regulation space armor for more comfortable lightweight coveralls and oxygen helmets. Lacking air-rejuvenator units, the latter were fitted with lighter oxygen tanks.

Norensen and companions went to work digging under the slag with pick and shovel. But as often they cleared dust from some delicate porcelain plaque or golden ornament with a brush as fine as a portrait painter's. They rummaged through cells and passages that only Martians, unhuman in form and habit, could have used. The work was less than archeology, for this was a commercial proposition. Martian art treasures had their appeal magnified by ages of time, millions of miles of distance, and a viewpoint unconnected with man. The other end of the business was the swank art salons in great Earthly cities. A small sprawling figure in blue enamel over gold became a fortune in itself.

The food, brought from Earth as dehydrates, wasn't too bad. Quarters were as clean as the scanty water which could be flown from the south polar cap permitted. Pay was theoretically good.

But Norensen swiftly realized that the shortage of labor on Mars, combined with a chance to win untold wealth while relics retained the value of their first tremendous novelty, could push a man like Coffrin to crime.

The sullenness of his hundred-odd co-workers was enough to show Norensen that all was not well, even without the talk.

"A man can always quit," big Burt Lane, who had been here for almost a protracted Martian year, told him, his narrowed eyes bitter.

With poor Mosser and Parkins at his heels, Norensen tried it.

Coffrin's face took on the look

of an injured saint. "But young man--why do you want to leave us?" he demanded. "Don't we treat you well? Of course if you are sure . . . Yet we do not operate a transportation service. It might be difficult to walk the two hundred miles back to Cross Valleys. You'd better stay."

Icy prickles tingled Norensen's spine. The camp had a score of armed guards--lugs who must be in on the deal to keep them loyal. Norensen's mighty impulse was to smash Coffrin's face; but he knew that violence was far worse than useless. He held his voice level.

"Thanks--no," he said. "And we want our space armor back."

His request was complied with. But later, in the barracks, Burt Lane laughed sourly.

"Uhuh--see?" he said. "Some little thing, usually in the air-rejuvenator unit, is always smashed in these tin overalls when they are returned. Maybe you did it yourself--according to Coffrin. Better take this junk back to the storeroom with as few comments as possible. Blowing your top will just make you a marked man."

The form of the trap was easy to see. The lightweight coverall costumes were no good for the killing cold of Martian nights. And an oxygen tank served for only a couple of hours.

So here was where Gerry Norensen really began to be fed up with all ventures off the Earth, and all sense of romance connected with space. The Martian wastes didn't intrigue him now. They frowned and hemmed him in. He was another greenhorn fool. During the next two Earth-months of forced labor, he knew of three men who really went loopy--starting off in the wilderness, aiming for Cross Valleys, freedom and survival, and maybe revenge. Yeah--they might get ten miles. Maybe even more.

Superficially, Coffrin was enough like an old-time villain for

comedy. Maybe he had been a professor of literature on some quiet campus. But Mars and avarice had changed him. Sometimes Norensen thought he saw scare and conscience in his face. But he had gone too far to back out. Yet for this, Norensen hated him more--as one hates a dangerous weakling of a tiresomely common type.

Mosser's abject apologies didn't make him feel any better:

"You'd be out among the Asteroids, getting rich with the other guys, if it wasn't for me, Gerry. You wouldn't be on Mars at all. It's my fault. But what good is saying I'm sorry?"

"Shut up," Norensen growled. "What we did, we did together."

Mars was too rough and strange for Parkins. So his mind retreated into fantasy. Often Norensen heard him talking to himself about the far past of this planet:

"Salty blue oceans, once. Surf hissing . . . And there were eras like those of terrestrial geology. For instance, the Carboniferous--the Coal Period. Great, lush jungles . . ."

Yeah--fine, vigorous companions he had to take care of, Norensen thought.

To live and breathe during a two-hundred-mile march across the Martian wilds remained the main problem--a source of oxygen being its crux. Sure--that was a trite plot by the standards of the old imaginative stories. But smothering on an alien world was the same danger to spacemen that drowning was to sailors, and real for the same reasons.

Norensen's groping for a workable idea had a little of the trapped beast in it. So he soon had a thought. Mosser and Parkins, being green, were both enthusiastic. But Lane was much less so.

"I wonder how many gues have thought of getting oxygen from the Martian plants?" he chuckled. "Hell--I'm not saying that it won't work.

But ideas like yours have been tried. Ever hear of any success? There's just too much endurance involved."

So Norensen's wild hopes were dampened. But anything else was even more wild. Get a weapon? Steal a tractor? Fat chance!

It was trying to do the latter that caused two men to be shot down several days later. It also started a general uproar in camp and in the workings on the bluff. Something in Norensen said now or never; and before he quite knew it he was putting his scheme into execution--scrambling down the bluff and running toward the open valley which led back to the distant settlement.

He was leaving with just what he could walk away with--his coverall and his plastic helmet, to which he'd attached a fresh oxygen tank at the apparatus which extracted the precious gas from the iron oxide in the red dust of Mars, over an hour ago.

Besides, it was late afternoon--near the awful cold of night, and hence a poor time to start out. Oh, well--what did it matter?

Far out among the sprawler and shag-tree thickets, the several runaways joined up. It had been sort of planned. Muffled by helmets and the thinness of the air, Norensen heard the others' voices.

"Parkins and I saw you take off, Gerry--so so did we," Mosser said shakily.

"It's a crazy scheme, but I've been around here too long," Burt Lane laughed.

He'd brought Ed Croft, as big and hardy as himself.

Norensen was glad that these two were along, for Parkins and Mosser were poor companions for a deal such as this.

"You all know how the idea works," Norensen growled. Then he tore pieces from the great pulpy leaves of the sprawlers, and thrust them up under the shoulder-piece of his helmet, until all space there

not occupied by his head or needed for vision was filled. He clamped the collar-gasket tight, shut off the valve from the oxygen tank, and began to chew at the leaf-fragments. The little bubble-like capsules within their structure broke, freeing the compressed oxygen inside.

There were beads of moisture stored in those capsules, too, to be lapped up. In the acid-sweet oiliness of the leaf-pulp, there was perhaps a little nourishment, to be sucked from tough fibre.

Norensen found himself breathing normally. Undue elation came over him. So far, so good. The others were aping his stunt with equal success. For fifteen minutes they were all right; then they had to take deep breaths like divers, undo their helmets, clear them of used pulp, and refill them with fresh leaf-fragments.

They kept going like this until just before sundown, when a haze of microscopic ice-crystals murred the valley, and a chill stabbed through their thin garments. For the eighty-below-zero cold ahead, there was only one possible antidote--dig furiously, bury themselves in the drifted and insulating dust.

Like a burrowing hound, Norensen scooped a big hole with his gloved hands, filled it with a huge mass of torn-up sprawler leaves, heaped dust over this, and then, head first, wormed his way down to the buried vegetation. Kicking the dust with his boots, he sealed the point of entry. He was ready now to break more oxygen capsules with his fingers and teeth, keep breathing, keep reasonably warm, and maybe catch a little sleep. An atmosphere rich in oxygen from the plant fragments was actually sealed around his body by the dust, so that for almost an hour at a time he could open the breath vent of his helmet and breathe without so much interrupting work as before. The others, having copied his methods, could

do the same.

Several times he awoke from dreams of suffocation. And when it was morning--by the luminous dial of his watch--he had a terrific headache. But as the march was resumed, he felt better.

The first day was deceptively easy. Maybe they covered twenty-five miles. The second day the grind was much rougher. The third day was no worse. "Second wind," that was, perhaps. After that the agony of thirst, aching bodies and fogging minds, and the decline of energies, were steady and rapid.

They lived like burros eating cactus. Chew up a piece of leaf, make the oxygen capsules pop, spit out the remains, reach for another piece. What a crazy way to keep alive! One good thing--the sprawlers weren't poison; but even without their fine thorns, lips and gums would have been raw and bleeding.

In more arid parts of the valley there were no sprawler clumps for long intervals. Then you had to carry great bundles of leaves lashed to your back with fibre. Once, even that was not enough; and the remaining oxygen in the tanks had to be used up.

Parkins, poor kid, muttered more and more about the past of Mars. First, Norensen was sure he'd go all to pieces at any moment. Then, that he did not, seemed like a senseless prolongation of his suffering. Then Norensen began to resent him, and to tell himself that he would last longer than Parkins ever could. Splinters of unreasoning hate began to rise in his mind. It was the beginning of the wearing out of his nervous system.

Once, far out across the valley, they saw one of Coffrin's tractors heading back toward camp with supplies. To avoid making a marked trail, these vehicles never traveled over the same ground twice.

Big Burt Lane still could grin. "If the tractor was within hailing

distance, I'd almost give up and go back," he tried to laugh. But it was a dried-out cackle.

That same day, he and the other rugged character began to show signs of slipping. Norensen heard Lane, and Ed Croft his buddy, grumbling.

"We might have known the green-horn idea was no good!" Croft growled. "Damn stupid kids! Breathing from Martian weeds! Hell! Norensen is as bad as old Mumbles . . ."

Norensen's flash of rage died in his burden of weariness and misery. Croft and Lane were cracking. Even they couldn't take it. Croft's ridicule was an indication of lack of endurance.

Near sundown, by some old ruins, they found a mummified body, clad in one of Coffrin's coverall and helmet combinations. A red-headed young man, who, by a letter from his father in his chest pouch, was named Ronald Siska, and came from an Illinois town. Coffrin had murdered him as surely as if he had used a gun.

Lane pointed to the dried fragments of sprawler leaves inside the mummy's helmet. "Your selfsame technique, Norensen," he rasped bitterly.

The next morning, as he came up out of the ground, Norensen saw Lane and Croft a quarter-mile away, trying to run. One had torn off his helmet, and now he stumbled and fell. A little whirlwind of red dust passed between Norensen and the fugitives.

Suddenly this was all a crazy dream of his fogged mind. He heard thin, cracked laughter, not knowing at once that it was his own.

Arms gripped his knees, and he was brought down. Mosser was sitting on him, and a parched travesty of Parkins' voice spoke:

"Lane and Croft were too matter-of-fact. They weren't aware of Martian history. So they had no brighter thoughts to shelter their minds from dreary harshness. I hardly believe it myself, but that

must be why I haven't cracked--yet. Don't you see--Gerry? . . ."

Parkins sounded awed. Norensen felt vaguely sheepish. Now he saw the kid's muttering not as a sign of madness but the froth of an imaginative mind--sheltering itself against desolation with bright pictures--providing hidden strength. Now Parkins was tougher than he was. Or they were equals in different ways--friends helping each other.

Norensen found himself stumbling along the trail--doing what he had to do, trying to penetrate the wilderness which was Coffrin's defense against just punishment. Hate helped brace Norensen's savage efforts. And there was another motive--to somehow get home to Earth; to correct an error of callow romanticism that had sent him into space.

Even Parkins was utterly fed up. "The whole cockeyed dream of space conquest falls around your ears," he was saying. "For those who know. We thought Reiner was yellow--backing out, getting married. But he was the only one with sense enough to hang onto the gentler things. Earth is where we belong . . ."

They kept on through that day, and part of the next. When Norensen and Parkins were all but finished, Tom Mosser, who had been the accident-prone one, said:

"We can lash you two to my back. I'll carry you . . ."

How this could be, or what the secret of Mosser's strength was, Norensen's mind was now almost too dim to remember. But here was one last chance to win--if repetition-established habits continued to function when consciousness blurred, keeping helmets full of fresh sprawler leaves.

Late the following day, the men of Cross Valleys, used to odd sights, were treated to another--two mechanical, atom-powered legs bearing three exhausted human wrecks, caked with the dust of Mars, and

just dimly aware that they were alive. Mosser's Moon-accident had become a vital link in the chain of survival. Perhaps a jinx was ended.

A hundred hours later, the three were out of the hospital. Glad once more in their grimed coveralls, but with full oxygen tanks hooked to their helmets, they went to a large, low building of welded sheet-metal, marked GENERAL WELFARE.

The name, Coffrin, came from Norensen's lips with a savage satisfaction. And the names of the dead. He even had a letter to show, taken from the mummy of Ronald Siska.

But did he detect wariness in the eyes of the official to whom he spoke? Something which suggested that, on a frontier, where law was still sketchy, a public servant had to be careful not to tread on the toes of the powerful?

"Your accusations will be investigated, sir," he said stiffly.

It was defeat after victory. "Thanks," Norensen snapped.

"We'll have to fix Coffrin ourselves," he told his companions a moment later. "Our last job before we go home."

But a little old guy butted in. "I know you fellas," he said. "Helped get you to the hospital. You were mumbling about Coffrin, then. Lots of people have more right to his hide than you. No--not mob stuff. Legal. By getting the goods on him you helped bring civilization . . ."

Now another man started talking:

"My company wants to print up your method of survival under raw Martian conditions in pamphlet form--for the safety of those exposed to danger, here. You've made an important contribution. We'll pay, of course . . ."

Norensen grinned crookedly. "Put it in writing, and see us again," he said. Then he beckoned his friends down a corridor, toward the banking and post office section

of the building.

Did he feel a disgusting swagger coming into his walk--response to hero-worship from greenhorns, not yet well enough acquainted with life off the Earth to know how barren and stupid it was? His disillusionment had a bitter superiority in it. Aside, he told himself that except for a few nurses and other characters, this crazy boomtown, full of the noise of building, was almost without women, even.

The accumulated paychecks from Coffrin turned out to be good. Of course he had to put up a respectable front where it mattered. But the teller showed surprise at seeing anyone cash such checks.

Parkins got a lot of letters from his mother. Norensen and Mosser collected a few postcards, mostly from the guys who had gone to the Asteroids. The cards had been forwarded from the Moon. Norensen read:

"Hi, Mooncalf! Ceres City, on the biggest asteroid, is some place. I'm getting to be a regular miner, and doing okay; but sometimes I feel awful homesick. Ceres City is a lot of airdomes, and you weigh almost nothing. This postcard shows the spaceport. The shiny surface is native meteoric nickel-iron, just scraped smooth. Hope to see you, Frisby."

Now Parkins interrupted his pals' reading to say in a disturbed tone:

"You know what, guys? Mom tells me that Reiner has gone shaky. Sick. Funny, huh? But he wanted to come into space pretty bad. And having people think he was yellow was no good, either. If he only knew. The darn, sensitive fool . . ."

"Yeah," Norensen growled. His jaw hardened. It was as if, in what he had just heard, space was really beginning to argue with his own common sense and experience.

They went to buy spacesuits, necessary for safety on the trip home. In the shop, Parkins found a secondhand one, right for him,

but too small for most men. He got into it there in the shop. Then he looked flabbergasted. The helmet view-window was still open.

"Come here, you two," he said. "Make like dogs. Sniff."

Norensen's awed nose registered an impression lost in memories of soft lights and music, on Earth. He felt nostalgia more than ever. Perfume. But inside a spacesuit? Angry defiance awoke in him. It was as if a caprice of chance was trying to trick him into romantic folly--again. That must not happen!

"Uhuhh," he laughed cynically. "Some tough babe, on Mars to rock a lot of love-starved boobs, got broke herself instead, and had to hock her armor to buy a liner ticket back to Podunk. An old pattern for the dumb and adventurous."

"But she had the guts to come to Mars," Parkins mused.

The shop-owner now put in his unsolicited two-cents-worth.

"I got this suit in trade for a new one," he said. "The lady was headed for Vesta--the nearest of the larger asteroids right now."

His eyes twinkled slyly, as, no doubt, he promoted sales.

Parkins scowled, as if in profound and worried indecision. "After so much trouble I should go home, see my mother," he mused.

He looked as Mosser. Mosser's eyes lighted strangely.

Norensen was ready to explode. "You two nearly died out here!" he hissed. "I should think you'd be ready for some sane, human living, on Earth, and let space go to hell! Now you want to go chasing one whiff of perfume all over the solar system! Cripes! When there are millions of girls back there! Of all the nitwits that ever were! . . ."

Parkins' jaw hardened. "That isn't what I meant at all," he said. "Probably we'll never see that babe. Most likely I'll visit Mom in a year, if I'm still alive. But she knows what's in my blood, and wants

it answered. Okay--for us things have been rough enough to make the dream of men in space look silly--for a while. But inevitably, since we got back to Cross Valleys, pride and circumstance have worked the other way . . . Do you know what the perfume smell in this armor really means? Don't you see, Gerry? That everything on Earth that's worth while is coming into space, too! Women have always had the courage to follow the first men. Even among the airless Asteroids there'll be airdome cities, parks, gardens, kids, and family life. So why be a defeatist, and retreat? On Earth you'd be as restless as poor Reiner. We've got the planets and the future grimed into us, pal . . ."

Norensen grimaced, and then chuckled. He yielded not so much to Parkins' words as to himself.

A few days later, the three of them were guiding their homemade spaceships outward. They'd all been through the mill; they had toughened and progressed. They were confident and cool.

Ahead, against the black star-curtain, a brilliant speck gleamed. It was Vesta, not the largest, but by far the brightest of the Asteroids. A century ago, the scintillant pinkish light it reflected had puzzled astronomers.

In a joshing mood, Norensen talked with his friends by radio.

"I wonder what Vesta could be made of, to shine like that?" he asked facetiously.

"As if you haven't talked with enough men who have been there, to know," Mosser said gleefully. "Quit kidding."

Norensen ignored him. "I remember the structure of planets," he stated solemnly. "Most of the heavier elements settled to their centers. Their cores are rich metals--beyond our wildest concepts, and usually out of reach. But the orig-

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INVADERS OF THE FORBIDDEN MOON

by Raymond Z. Gallun

"Calling the pilot of space ship X911!" Evan Harwich shouted into the radio transmitter of his little Interplanetary Patrol Boat. "Good God! Turn your crate back, you crazy fool! Don't you know you're headed right into the danger zone of Jupiter's Forbidden Moon? You'll get yourself burned to a crisp in another few seconds if you don't turn back . . ."

Evan Harwich's growling voice was almost shrill at the end. His police duties patrolling the vic-

nity of Io, innermost of Jupiter's satellites, rarely developed moments as tense as this. Most other pilots had brains enough to give the Forbidden Moon a wide berth. And for excellent if mysterious reasons!

Yet the craft ahead, a sleek new job with the identification number X911 painted on its conning tower, kept steadily on. Its slim hull, which betrayed an experimental look, was pointed straight at the threatening greyish disc of Io, the one world in the solar system

which no exploring ship of the void had ever reached--intact!

Almost everybody among the inhabited spheres knew about the dangers of the desolate Forbidden Moon. Ever since the colonial empire of Earth had been extended to the region of Jupiter and his numerous satellites, Io had been a grim menace; sure destruction to any rocket that approached within five thousand miles of its dreary, almost airless surface.

Nobody seemed to know just why this was true; but some scientists claimed that somehow there was an invisible layer or shell all around Io; an immense blanket of strange energy or force that fused and blasted the metal hulls of all ether craft that ran into its insidious web.

Tensely and helplessly Evan Harwich watched, as the ship ahead continued on its way toward what seemed sure catastrophe. No danger in front of the recklessly piloted craft could be seen, of course. Five thousand miles of clear, cold vacuum was all that was visible between it and Io. But since this region held concealed in it all the potential violence of a hair-triggered trap, ready to unleash a flaming death that involved unknown physical laws and principles, maybe it wasn't just plain vacuum after all!

With dogged persistence Harwich kept yelling futile warnings into his radio. His shouts and curses were unheeded, and no answer was given. He knew what was going to happen in another second. There would be a burst of dazzling white fire all around the rocket of this foolhardy pilot he had tried to save from suicide. Metal would drip and sparkle in the absolute zero of space. In just another instant . . .

Harwich swung his patrol boat aside, not caring to end his own life. But he kept watching the X911 from the side-ports of his cabin.

And now, something quite different from what he had expected was taking place. Suddenly the apparently doomed ship was enveloped in a bluish halo which seemed to emanate from a great helix or spiral of metal that wrapped its hull!

Immediately afterward, as the X911 entered definitely into the zone of destruction around Io, great white sparks lanced dazzlingly through the blue halo. It was as though the latter was fighting back those gigantic, unknown forces that had seemed to make the Forbidden Moon forever inviolable. It was as though the halo was keeping the X911, and whoever was flying it, safe!

Evan Harwich's slitted eyes widened a little in astonishment and hope. "Dammit!" he grumbled happily. "That idiot's got some kind of new invention that's protecting him! Maybe the Forbidden Moon is going to be reached and explored after all!"

A second more that weird conflict of hidden forces continued. Watching it was like watching a race, on which you have staked everything you own. Visibly, that daredevil space ship seemed to slow, as if resisted by a tangible medium. For an agonizing instant of suspense, Harwich saw those wicked sparks brighten in the X911's bluish aura. Then the latter dimmed, flickered, went out!

As if angry demons were waiting to pounce, destruction struck--quicker than a lightning bolt.

If there had been any humor in the situation before, it was gone now utterly! The patrol man's lips dropped apart in sheer awe. The muscles of his massive, freckle-smearred forearms tightened futilely as he longed to help the X911's doomed pilot. In the pit of his stomach there was a sickish feeling.

Where that rocket that had dared the inscrutable enigma of the Forbidden Moon had been, there was a sudden, terrific blaze of light. The intolerable incandescence of

it seemed to reach out to infinity itself, illuminating even the blackness between the distant stars of space. But it was all as silent as the bouncing of a bubble on velvet. No explosion, however huge, can transmit sound in the emptiness of the void.

The magnificent, horrible blast broke into a million gobs and sparks of molten metal--from what had once been a space ship's hull. Superheated gas from ignited rocket fuel shot out. Scattered far and wide, the white-hot fragments of the wreck continued on their way, following the original direction of the once bold X911 toward Io. Their speed increased gradually, as the gravity of the Forbidden Moon pulled them. The larger chunks, falling at meteoric speed, would bury themselves deep in the cold Ionian deserts.

The secret of Io had claimed another victim, one who might have been victorious. But Io's mystery was still unviolated. Evan Harwich had seen other ships, disabled and unmaneuverable for some reason beforehand, go to their ends like this; but he was still not used to the spectacle, and to the unholy wonder it provoked in him.

Dazzled and almost blinded, he guided his patrol boat shakily away from the Forbidden Moon. There was cold sweat in his thick, black hair, under his leather helmet; and cold sweat too on his narrow, bristly cheeks. His movements of the controls were a trifle vague and fumbling with emotion, making his patrol boat waver a little in its course.

For perhaps the millionth time Harwich wondered: "What makes Io so dangerous? Dammit all, those scientists who claim that there is a deadly shell of unseen energy completely enveloping the Forbidden Moon must be right! There isn't anything else that could explain the continual destruction of all rocket craft that come within that five-thousand mile limit!"

Evan Harwich was ready to accept this much as fact. But beyond this, there was still a vast, unguessable question mark.

Was this shell of energy a natural phenomenon; or was it something planned, made, intended for a purpose? If the latter guess was right, who could have created such a gigantic screen of force? What kind of beings? What kind of science?

Io was an almost dead world, Harwich knew. Very cold. Very little water and air. Astronomers had taken photographs of its terrain through powerful telescopes, from the other moons of Jupiter. Very little could be seen on those photographs but deserts and grey hills, and curious formations which might be the magnificent ruins left by an extinct race.

Evan Harwich was far from a weakling; but cold chills were playing over his big body as he groped to understand the unknown.

His vision was clearing somewhat, after having been so dazzled by the incandescent blast that had accompanied the destruction of the X911 a moment ago.

In the feeble sunlight, so far out here in the void, Harwich saw a second rocket, leaving the scene of the disaster along with himself. Evidently someone else had witnessed that weird demonstration of Io's destructive might, too!

Squinting through a pair of binoculars, Harwich read the obviously ancient craft's number. Then he snapped on his radio again.

"Calling space ship RQ257!" he grated into the transmitter. "Interplanetary Patrol just behind you. Pilot, please identify yourself! Do you know who was aboard the experimental rocket X911, that was just destroyed?"

A few seconds later he heard a dazed, grief-anguished voice speaking in response: "Yes . . . I ought to know. I came out to watch our test of the Energy Barrage

Penetrator, which we thought would be successful. I am Paul Arnold. The man who was just killed was John Arnold, my father."

John Arnold! Yes, Harwich had often seen photographs of this daring, hawk-faced old student of the Forbidden Moon, in the scientific journals. He had been the greatest of them all! But there wasn't much to do for him now but shrug ironically, and report the nature of his death by radio to the Interplanetary Patrol Base on Ganymede, largest of Jupiter's satellites.

"I'm sorry, Paul Arnold," the patrol man told his informant in sincere sympathy.

"Thank you," the quavering voice of Paul Arnold returned. "And now, if you don't mind, I've got to get back to Ganymede City. Dad's gone, but I've got to carry on his work."

Harwich didn't meet Paul Arnold, the son of the dead scientist, face to face for more than a month, Earthtime. But on patrol duty out there in the lonely reaches of the void, with the stars and the roar of his rocket motors for company, he saw a good deal of the leering, greyish sphere of Io. It seemed to taunt him with its masked secrets, hanging so near to the tremendously greater bulk of Jupiter. But the Forbidden Moon told him nothing new at all. Through his binoculars he saw the deserts and hills and those supposed ruins. Near the equator was something that looked like a vast, pointed tower. But Harwich had seen this before, often. Something moved near the tower now and then, as on other occasions. But maybe this distant movement was only the shifting of clouds of dust, blown by a thin, frigid wind, in a tenuous atmosphere.

Then, back in Ganymede City, came that meeting with Paul Arnold. It happened at the Spacemen's Haven. Evan Harwich, on furlough now, was sipping Martian kasarki at the bar.

Presently a hand was laid on his arm. He turned to face a slight-built youngster, who could not have been more than eighteen. But his peculiar gold-flecked eyes were as distant and scared and bright as if they had seen Hell itself.

"You're Harwich," said the boy. "I'm Arnold. They pointed you out to me as the patrol pilot who reported my father's death. I wanted to talk to you. I don't know just why, except that you were there too, when Dad was killed. You saw what happened. And people have told me that you were a square shooter, Harwich."

Somewhat startled, but glad to know the youth, and more than willing to talk with him on the subject mentioned, Evan Harwich tried to smile encouragingly. It wasn't too easy, considering his weathered, space-darkened features and threatening size; but he did his best.

"Pleased to meet you, Arnold," he said rather clumsily, offering a big hamlike hand. "I wanted to talk to you too. How about a drink and a quiet corner, where the crowd here won't be stepping all over us?"

They retired to a table in a screened nook. "Now," said young Arnold, "you've seen as much of the Forbidden Moon as anybody alive, Harwich. You must know that the energy aura around her is real and not a fable. You must know, too, that it couldn't be a natural phenomenon, since nothing in nature acts like it does. There's only one alternative possibility as to what could cause it! Even though Io seems so deserted, somehow there are machines there, functioning to maintain that shell of force! Right?"

Harwich nodded. Little glints of intense interest seemed to show in his eyes. "I've believed that for a long time," he admitted. "But those machines must be plenty wonderful to build up a barrage of

invisible energy, thousands of miles in extent! Our scientists couldn't even begin to dream of doing anything like it! Even the principles employed must be a million years ahead of our time!"

"Right again!" the boy responded. For a second he cast a guarded, suspicious glance around the room, where Earthmen and leathery Martians were talking and laughing and drinking.

"The evidence can't be disputed," Paul Arnold whispered at last. "It might be that the people who invented those machines have been extinct for ages. But the mechanisms they created are still operating. There's superscience there on Io, Harwich! How much could we benefit civilization, if we could somehow find out what the principles of those machines are? How much damage might be done if those principles happened to fall into the wrong hands, among men? War and conquest--a whole solar system thrown into chaos--might result!"

Evan Harwich wanted to laugh scornfully, wanted to call the kid a dreamer of wild dreams; but the realization that young Arnold probably told the truth made his hide tingle and pucker instead.

"Maybe you're right, fella," he growled.

"Of course I am!" Arnold almost snapped. "My father believed it for years, and his work must go on, even though the Forbidden Moon scares me plenty. You saw yourself, Harwich, that his Energy Barrage Penetrator was almost successful. I've been trying to build another, with enough power to get through."

Harwich's lips curved, a nameless, wild thrill stirring in his blood. But after all, even before he'd left a great consolidated farm in southern Illinois nine years ago, to become a spaceman, he'd been an adventurer at heart.

"Do you suppose you'll need any help?" he asked simply, realizing

that even as he spoke death on a tomb-world might well be lurking in the background.

The question sounded like impulse, but it wasn't. Harwich had lived too long in the shadow of the Forbidden Moon's taunting enigma, not to want to take a personal part in any effort to penetrate its grim secrets. Besides, he had a month's furlough from patrol duty now. The thought of possible adventures to come made his nerves tingle.

Paul Arnold's eyes widened. "I almost hoped you would want to join me, Harwich," he stammered happily, seeming only to need the moral support of an experienced spaceman to bring him out of the black mood he was in. "Shall we go to my laboratory?"

The Arnold lab and dwelling proved to be one of the oldest that Evan Harwich had ever seen. It was just outside the great steel-ribbed airdrome that confined a warm, breathable atmosphere over Ganymede City, the small mining metropolis of a dying world.

The Arnold lab was a group of subterranean rooms, beneath the desert. They were reached by a private tunnel from the City, and were hermetically sealed against leakage of air to the cold semi-vacuum of the Ganymede atmosphere above.

Cellar rooms, vaults, not exactly modern but restored from some ancient ruin; for Ganymede had had its extinct clans of quasihuman people too, ages ago. A weird place this was, a place of poverty, perhaps, since all the Arnold resources must have gone into experimentation; but a homey sort of place, too, with its scatterings of books and quaint art objects and pictures.

"This is the Energy Barrage Penetrator, Harwich," Paul Arnold was saying in husky tones, as the two men bent over a great copper helix or spiral, attached to a maze of wires, tubes, and power-packs. "I

rebuilt it here on this test-block from Dad's plans; with certain rearrangements, of course. But we need a new Gyon condenser, if we want to raise the Penetrator's strength enough to make our venture successful."

Evan Harwich nodded beneath the single illuminator bulb that glowed here, its rays glinting from the battered, patched hull of the space ship, KQ257, that stood in the center of the great room, under the airtight exit doors provided for it in the ceiling.

"So I see," Harwich commented with subdued eagerness. "Well, that's not so bad. I can buy a new Gyon condenser from one of the supply shops in town. I'm no scientist, fella, but they give us a pretty complete scientific training in the patrol service. Enough so that I can see that the Penetrator is going to do the trick, this time, with your improvements. And I don't think it will take very long to get things ready for a real trip to the Forbidden Moon."

The patrol man had hardly finished speaking, when a door, somewhere, groaned on its hinges. In the dusty silence there were footsteps, coming nearer through the series of rooms.

"Well, have we got company?" a voice boomed heavily after a moment.

Evan Harwich turned about slowly. Standing in the arched entrance of the laboratory chamber, beneath the ancient, grinning gargoyle of carved granite that formed the keystone of the arch, were two people. They must have just come in from town.

One was a man, as tall as Harwich himself, but much broader. He looked jovial, overfed, and just faintly sly. Harwich knew him a little. He kept a small printer's establishment in Ganymede City, repaired delicate instruments, and made loans on the side.

"Hello, Harwich!" the big man

greeted loudly. "You look surprised to see me here! Well, I'm just as up in the air as you are, to find you around. How come? You see I've been financing Paul Arnold's researches since old John was killed. Has Paulie talked you into some part in the great miracle hunt on Io, too?"

"Hello yourself, Bayley," the patrol man returned in not too friendly a tone. "Yes, I've joined up."

Harwich was a little more than surprised to see the fat printer here. He didn't like the setup at all. Not that he had anything definite against George Bayley. The latter had always seemed good-natured and honest, except for some elusive trace of insincerity in his manner, his voice, and his little squinted eyes.

Was this the kind of man for Paul Arnold to choose as a patron, particularly when he was in pursuit of the incredibly advanced science which must exist on Io? A science that might benefit the human race immeasurably, or might result in wholesale destruction and confusion, if it was wrongly and selfishly used?

Evan Harwich couldn't have answered yes or no to this question.

There was a painful pause in the conversation. Harwich found himself looking at the girl, who had entered with the big printer, and to whose arms the latter clung with a kind of bearish possessiveness. She was small and dainty. Her blonde hair, combed back tightly, fitted her head like a cap. She was wearing a plain but tasteful black dress with a white collar.

"Oh, I'm sorry!" Paul Arnold exclaimed after a moment. "Clara, this is Evan Harwich of the patrol. Evan, this is my sister. I didn't tell you that I had a sister, did I?"

The girl nodded slightly, and smiled a warm, friendly little smile. But why did the big patrol

pilot find her more attractive than any other girl he had ever seen? Perhaps mostly it was those wistful eyes of hers, not gold-flecked like her brother's, but clouded amber. They were mild and troubled and knowing. Maybe Clara Arnold's life, as the daughter of a martyred scientist, had made them like that. Harwich knew that he might conquer not only the Forbidden Moon, but the stars themselves, and still remember those eyes.

"Now we all know each other," Bayley boomed. "We're one big happy family--or are we?" He looked at Harwich significantly, a definite scowl now crinkling his heavy brows. "Harwich," he added, "we appreciate your company a lot. Only we are engaged in some pretty serious business here, and it doesn't allow us to take in outsiders."

For reasons of his own, Bayley was trying to get rid of the big patrol pilot. But Harwich was inclined to be very stubborn, naturally, and faint, pleading looks from both Clara and Paul Arnold made him doubly so, just at present.

Harwich had the aspect of a very dangerous adversary in a physical encounter; his weathered features were far from beautiful, and at certain times he had a way of grinning that made him look like a good-natured devil with a hot pitchfork hid behind his back. He turned on that grin, now.

"What's in that package sticking out of your coat-pocket, George?" he asked the fat printer breezily. "It's about the right size and shape to be the new Gyon condenser we need. I was going to buy one myself; but seeing that you've already done so, we might as well go to work installing it in the Penetrator apparatus."

"Well, all right, Harwich," Bayley growled with some slight show of timidity. "As long as you're Paul's friend, I suppose you can stick around."

"Thanks a lot, George," Harwich

chuckled, as the printer set the package containing the precious Gyon condenser on a work table.

The patrol pilot was almost sure he heard faint sighs of relief from the two Arnolds, as Bayley backed down. Had they come to mistrust him too, since he had been financing them? Did they feel more at ease because he, Evan Harwich, whom Bayley could never bulldoze, was their partner now too?

The spaceman wondered, and he couldn't help wondering something else. On Clara Arnold's left hand, there was a diamond gleaming. An engagement ring. Bayley's? The way the latter had clung to the girl's arm, it couldn't very well be anybody else's. Could Clara, quiet and beautiful, ever love the boisterous, paunchy printer?

The Arnolds were a strange family, anyway. The son was ready to sacrifice his life in an effort to reach the Forbidden Moon, where his father's ashes lay entombed. The daughter? Might she not be of the same fanatical breed? Might she not be willing to marry Bayley, so that he would supply funds for their experiments?

For a moment, Evan Harwich felt a sharp, hurt ache, deep in his heart. But he fought it down. All this was none of his business. And from a heavy-glazed window slit in the ceiling of the laboratory room, a shaft of soft light from ugly Io, the Forbidden Moon, was stabbing down, appealing to his own adventurous nature.

Paul had slipped on a pair of lab coveralls. He tossed another pair to the patrol pilot. "Come on! Let's get started, Evan," he urged pleasantly. "We've got a big job in front of us, and remember you said we'd get through with it before long!"

True to Harwich's predictions, the rearrangement of the Energy Barrage Penetrator for far greater power than the original had possessed did not take really a lot

of time.

Within forty hours after the patrol pilot's arrival at the lab, the task of installing the Arnold apparatus in the old space ship, RQ257, was complete. The tests of the Penetrator had been made, and judged as successful as anyone could have hoped for.

The space ship stood ready there in the laboratory room, a slender, copper helix wrapped around its hull.

"All set, eh?" George Bayley boomed jovially. "Got your emergency supply-packs loaded aboard, too, eh? But you won't need them, boys," he added seriously. "You've got everything in your favor. And in five hours you'll be back here with Clara and me, at the lab with a dandy story to tell."

Bayley seemed honest and sincere, now. Evan Harwich almost felt sheepish about the matter. Maybe he'd misjudged the big, bearish printer. Anyway, he watched his every move, during the assembly and installation of the Penetrator.

Paul Arnold was whistling a little tune of confidence and exultation. Harwich's pulses beat happily, his thoughts on the enigma of the Forbidden Moon, that now must yield to the new Energy Barrage Penetrator. Superscience there on Io! Unutterable wonders! Who could guess beforehand what the Forbidden Moon's vast screen of force was meant to bar from intrusion? But maybe they would soon know!

Only Clara Arnold showed worry. There was a slight shadow in her amber eyes, when she took Harwich's hand.

"I suppose this is only a preliminary test flight to Io and back," she said. "Not much dangerous exploration. But please be careful," she pleaded. "Please be careful, Evan."

The spaceman muttered a word of thanks. Evan. His first name. To have Clara Arnold use it like

that might have given a new meaning to life. His heart was suddenly pounding very hard, before he remembered that diamond on her left hand. She was promised to George Bayley.

The girl and the printer retreated from the laboratory chamber, waving a farewell. The space ship was sealed. The great exit doors in the ceiling of the lab opened wide, and the air rushed out.

In another moment the RQ257 was shooting skyward. In the night, among the welter of stars, huge Jupiter and his many satellites shone down on the Ganymedeans deserts. The nose of the ship swung unerringly toward Io.

The RQ257, wrapped in its protecting halo of blue fire from the Penetrator, struck the Forbidden Moon's tremendous, invisible envelope of energy, squarely. There was a snarling sound in the ship's interior. White sparks lanced through cold space beyond the windows of the cabin, as two opposed forces fought each other. But the RQ257 bored on steadily.

"We're going to make it, Paul!" Harwich shouted through the reeking, dinning cabin.

"Of course we are!" young Arnold yelled back at him. "How could we fail!"

The two men were on the brink of success.

Then there was an abrupt, strident, angry snap from the vitals of the Penetrator apparatus. Everything seemed to happen at once. The protecting blue aura outside the ship waxed and waned perilously. And whenever it waned, there was a grinding, crumpling sound, as of steel plating being crushed like so much paper in a giant's grip. Heat, and the cindery pungence of scorched metal, filled the cabin.

Paul Arnold and Evan Harwich were frozen rigid with stunning, agonized paralysis, as strange energy snapped into their bodies. In the jolting, erratic motion of the

wounded space ship, the two men were hurled from their feet like a pair of stiff wooden dolls.

Rolling and tumbling, his vision half blinded, Harwich saw the metal walls of the cabin buckle and redden with heat, as the craft floundered in that region of mysterious force and energy that heretofore had destroyed every ship that had attempted to reach Io.

There was another growl from the protecting apparatus. In a flash of electricity, the side of the bakelite case that housed the Gyon condenser exploded outward. At once the staggering Penetrator quit completely. Its last shred of protecting force was gone.

But that momentary hell had ended, too, with almost dizzying suddenness. The grinding, snapping sounds had ceased. And there was only the heat and the stench of burnt metal, and the weightless sensation of free fall. That and the mocking stars.

Paul Arnold, panting, his face darkened and beaded with perspiration, clutched a bakelite handrail in one corner.

"We got through Io's energy barrage!" he shouted wildly. "We did that much, at least; and for a moment, when our Penetrator went wrong, I didn't think our luck would be even that good."

Evan Harwich leered back at the youth, from near the now useless apparatus that John Arnold had invented. "Yes, we got through," he grunted hoarsely. "The energy shell must be only a couple of thousand miles thick, with free space underneath, between it and Io itself. The Gyon condenser kept working raggedly just long enough to get us out of the danger zone, without being completely blown apart!"

Harwich didn't have to test the controls of the ship to know that they were useless, now. The rockets were silent too. The RQ257 was falling free toward the Forbidden Moon, still a couple of thousand

miles beneath.

"But dammit, Evan" young Arnold growled. "The Gyon condenser shouldn't have quit on us at all! Those things are tested for heavy loads of power!"

The patrol pilot was well aware of that. Clinging to the base of the Penetrator, he was close enough to see detail. The lights in the cabin had gone out, but the ugly effulgence of Io was streaming through the windows.

Projecting from the shattered bakelite box of the Gyon condenser, were two slender, bent wires that should have been joined together. It had been one wire once, but it had snapped in the middle.

The ends were faintly scorched and blued; but there was something else, too. They were bevelled off curiously, as if they had been notched.

"Cut with a file!" Harwich fairly snarled. "The wire was cut with a file. Then the insulation was rewrapped carefully so that all the evidence was hidden!"

The cause of the accident was plain. The wire had been able to carry the load of power easily enough during the tests; but under the additional load of fighting the Ionian hell-zone, it had burned through and snapped!

"Bayley!" Paul Arnold whispered in the ominous stillness that now pervaded the plummeting derelict of the RQ257. "He brought the condenser, you remember! Evan, I know you were careful to watch everything he did during the assembly and tests in the lab itself. He must have had the Gyon condenser at his apartment before he brought it to us. He must have doctored it there! He was planning even then to get rid of me! And when he found you around, he decided that he wouldn't weep if he got rid of you too!"

"But why?" Harwich growled in momentary confusion. "Why should Bayley want to get rid of you?"

It was almost a silly question, as Harwich realized at once; but now Paul was answering it.

"It's simple," said the youth. "Bayley financed me after Dad was killed--yes. He watched my experiments and tests and studied my apparatus. He has a pretty keen mind. With me out of the way, no one but himself will know just how the Penetrator works! He can fix up another ship and come to Io himself without any competition! Anything he learns or discovers on the Forbidden Moon will be his alone! Or so he thinks, anyway."

It was too clear now! Evan Harwich knew that he and the boy were tumbling helplessly into the maw of hell now. In a useless, derelict ship they were falling toward the Forbidden Moon! They were already within the gates of unholy mystery! Death seemed very close. Yet the cold anger that hissed in the patrol pilot's brain made him determined to live, somehow, for revenge!

"We'll be smashed if we stay in the ship, Paul," he said fiercely. "So we've got to jump for it with our safety equipment."

Quickly and more smoothly than did the youth, for he was well trained, Harwich got into his space armor. Next he donned two massive packs, one on his chest and one on his back.

The exit door of the cabin was jammed, but with his pistol the patrol pilot fired an explosive bullet into its hinges.

A second afterward, Arnold and Harwich crept through the rent, while escaping air puffed out around them. They leaped into the emptiness almost together. With the heat-warped wreck of the gallant old RQ257 falling beside them, they continued their plummeting descent. There were still almost a thousand miles to go, for the distance between Io itself, and the gigantic energy envelope that surrounded it, was perhaps three thousand miles.

Down and down, with only regulation spacemen's emergency equipment to rely on to avert being crushed on those greyish hills and deserts, rushing nearer and nearer. Even a thousand miles did not take many moments at that terrific speed.

The Forbidden Moon was like a sullen, silent nether world, with an atmosphere so rare that an unprotected human being would gasp and die in it in a few minutes! Even a man in a space suit could not hope to survive that desolation for long. Io seemed like a Pit now to Evan Harwich, an Abyss of Hell from which there was no escape! A place where no Earth being was meant to venture!

This moment was too grim to think of thrills. Helplessness removed that intriguing glamor utterly. And there was only savage determination left. That and smoldering hate of the man who had caused misfortune!

Presently, through the thin metal of his oxygen helmet, Harwich heard a soft, hissing, whistling sound. Gradually it grew stronger. The patrol pilot knew what it was, of course. He had entered the intensely thin upper atmosphere of Io, and the hissing was made by his own space-armored body passing through those tenuous gases at fearful velocity.

The sound served as a signal for action. Again, though the situation was new to him, Harwich's training made his responses accurate. With a gauntleted hand, he groped for the metal ring on the pack that bulged from his chest. It was ancient history when he jerked that ring, but sometimes, in emergency landings like this, on worlds that had a blanket of air, however slight, it was still useful. In another second the patrol pilot was dangling beneath a gigantic mushroom of metal fabric. He felt the firm tug of the shrouds. Deceleration.

He wondered vaguely why the

fragile parachute did not tear apart in the terrific speed of his fall. But it was the utter thinness of the air, of course, here in the upper layer. Its resistance was so very slight. So there was time for velocity to be checked gradually, as the air grew denser, and its retarding effect greater with lowered altitude.

Paul Arnold had opened his chute, too. Its vast top, a hundred feet in diameter, gleamed dully in the faint sunshine.

In a great plume of dust far below, the derelict space ship crashed. Fire flew as the force of the impact generated heat. But the wreckage was out of sight, and there was only a pit smoldering on a bleak, dusty hillside. The RQ257 was buried deep.

Harwich and Paul Arnold landed several miles away from the grave of the ruined ship; for they had drifted with the thin, dry, frigid wind.

Their booted feet spanged painfully against the sand and broken rock, and they crumpled to their knees; for even in the feeble gravity of Io the impact had been heavy.

Harwich snapped on his helmet radiophone. Young Arnold's voice was already audible in it, faint and thready and sarcastic.

"Well, here we are, Evan," he was saying. "The first Earthmen to set foot alive on the Enchanted World! I guess I got part of what I wanted anyway, didn't I? But with what equipment we've got to keep alive with, we might just as well be buried with the RQ257! Funny I'm not scared. I guess I don't realize . . ."

His bitterly humorous tone faded away in vague awe.

Still lying prone the two men looked around them, at the hellish, utterly desolate scene. The hills brooded there under the blue-black sky and tenuous, heatless sunshine. A rock loomed up from a heap of sand. It was a weathered monolith

with weird carvings on it, resembling closely those left by the extinct peoples of Ganymede, that other, now colonized moon of Jupiter. A curious pulpy shrub, ugly and weird, grew beside the monolith. A scanty breath of breeze stirred up a little ripple of dust.

That and the stillness. The stillness of a tomb. Harwich could hear the muted rustle of the pulses in his head. Everything here seemed to emphasize the plain facts. The Forbidden Moon was a trap to them now. A pit from which they could expect no rescue. An abyss that was worse than the worst dungeon--worse than being literally buried alive!

It was like the end of things. Was this the kind of slow, creeping, maddening death that George Bayley, the treacherous printer, had planned for them?

Again fury steadied Evan Harwich's determination. Grimly he struggled to steady his nerves.

"Listen, Paul," he said quietly into his phones. "We mustn't ever let ourselves think we're licked! That's sure poison! The stuff we've got in our emergency packs will enable us to keep living for a while anyhow. We know Bayley'll come to Io sometime, with a ship fitted out with a new Penetrator. We know he'll be looking for the secret of the force aura of the Forbidden Moon, and whatever else there is to find. Maybe we can get ahead of him yet, if we keep on the move. Which way do you suppose would be best to go?"

Harwich asked this question because Paul Arnold, in his more academic study of Io, should know more about its terrain than he.

"You know the Tower?" Paul Arnold questioned. "The queer pinnacle, or ruin, or building, near the equator, on what is known as the Western Hemisphere? You must have seen it often when you were on patrol."

Harwich nodded. He remembered very well. Only a hundred hours ago,

still on duty as a patrol pilot, he'd seen that pointed mystery from the void, vague dusty movement around its base.

"It was my Dad's guess that whatever miracles are to be discovered on Io, they will probably be located around the Tower," Paul Arnold answered. "But I was careful to notice our position when we landed. We're far north of the Tower now--a good fifteen hundred miles. A nice, long walk--especially when the normal air of the Forbidden Moon is too thin to be breathable."

"Stop that pessimist stuff, and let's get started!" Harwich snapped. "We'll have to live very primitively, of course, but who knows what will turn up?"

They discarded their parachutes and started out, plodding southward, carrying their heavy packs. As if to save their energy, they did not speak much.

The hills rolled past, under their plodding feet. More fragmentary ruins appeared, and were left behind. Their boots sank into soft dust, as they marched on and on. At first their muscles were fresh, but tiredness came at last. And the miles which lay ahead were all but undiminished.

The tiny sun sank into the west and the cold increased. Night was coming.

"We'd better camp," young Arnold suggested wearily.

So they opened their packs, and took out the carefully folded sections of airtight fabric that composed their tent. It was part of the usual equipment kept for emergency purposes by those in danger of being stranded on dead or almost dead worlds. The tent could be hermetically sealed. Harwich and Arnold set it up carefully and crept inside. Air was freed from their oxygen flask, and the queer shelter ballooned out like a bubble.

They could remove their space suits now, and breathe, here in the tent. They ate sparingly from

their concentrated rations. Meanwhile a little pump and separator unit, driven by a tiny atomic motor, was busy compressing the thin Ionian air, separating out the excess of carbon-dioxide and nitrogen it contained, and forcing the oxygen into the depleted air flasks.

Once in the darkness Paul and Evan were awakened by a strange sound, eerie in that dead quiet, and very faint because the scant Ionian atmosphere could not conduct it well. But when they crept to the flexoglass window of the tent, they saw nothing unusual.

"I guess we're getting jumpy," Paul whispered nervously, his breath steaming in the cold, frosty air that filled the shelter.

"It looks that way," Evan Harwich returned reassuringly.

But after the boy was asleep again, he crept back to the frosted window to watch. He knew that there had to be something mighty on Io. The shell of force that surrounded the evil moon couldn't exist all alone. There had to be more. Something that lay back of it, went with it. Something that could easily be very dangerous.

Jupiter, so near to Io, was a gigantic threatening mass in the heavens. But its light was deceptive. There were so many dense shadows.

Did he see some of the stars near the horizon wink out suddenly, and then appear again, as though something big and nameless and sinister had momentarily blocked their light and then passed on? He could not be sure, and nothing further happened. To save his companion unnecessary concern, when nothing could be done about the threatening danger anyway, he decided to keep the incident to himself.

Long before the dawn they were once more on the march. How many hours was the Ionian day? Something over forty. It didn't matter much.

When the daylight finally came,

they had slept again, this time in their space suits, without bothering to set up the tent. Rising to his feet, Paul Arnold pointed suddenly.

"Look! An ancient road!" he shouted.

It was true. The highway ran there between the hills. A stone ribbon, covered here and there with drifted sand, which showed that there was no traffic of any sort now. The ruins along it looked a little less battered than those which the two men had previously seen, and there were vast lumps of corroded metal, too. Machinery in a former age.

"The road goes our way," Harwich commented. "We'll follow it."

Hours later, Paul Arnold offered an opinion. "Part of the mystery of Io is clearing up, Evan," he said. "The ruins around here. They're almost identical in architecture to the ruins of Ganymede and the other Jovian satellites. The evidence looks plain. There must have been a single great civilization once, extending over all the moons of Jupiter."

Harwich, thinking of, and hating George Bayley for his diabolical treachery, was only half listening.

"Yes?" he questioned.

"Yes," the boy answered. "And look at those dry ditches, and the big, rusty pumps! The valley here must have been rich, irrigated farmland, once!"

They were going across a huge bridge, now, made of porcelain blocks. It was a magnificent structure, magnificently designed according to intricate principles of engineering.

"What I can't understand is why all this country became deserted," Paul offered. "You'd think that people who could build things like this would never die out! They could conquer any difficulty that might come up, it would almost seem. Even if their world got old and worn out. After all, even Earthmen

can make almost dead worlds artificially habitable again with aerodromes, and with imported atmosphere and water."

This was another mystery. But it touched Evan Harwich's thoughts only faintly. Nor did he care very much when later Paul pointed out to him rich deposits of ore--outcroppings along the road. He'd seen them himself, and the tunnel mouths, too, of ancient mine workings. There were many fortunes to be won here, in costly metals, just as on the other Jovian satellites. But how could this be important, now, with death dogging their tracks, and so many other things more important, to be concerned with?

Evan Harwich reserved his determination for what he knew was coming. The slow wearing down of stamina. Water he and Paul had a little of. And more could be reclaimed from the thin, dry atmosphere. It collected in the bottoms of oxygen bottles, when they were pumped full, condensed by compression. A few precious drops. You could drink it out after each bottle was emptied of air. Just about enough water to sustain life.

In the matter of food, you had to ration yourself so stringently that you caught yourself looking with longing eyes at the few, weird, bulbous shrubs and the scattered lichens, which were the only vegetation on this dying world. Only you knew that these arid growths would never be good to eat.

Those long Ionian days passed. One after another. Five, ten, fifteen. Harwich knew he was losing strength slowly. The inevitable was catching up with him. But those hard years in the Interplanetary Patrol Service, and the rigid physical discipline, had made him as tough as steel wire.

With the boy, Paul Arnold, it was not the same. He was very young, and not too robust. And he was slipping fast.

"What's the matter with me, Evan?" he would grumble. "All this desert isn't real, is it? We're not on the Forbidden Moon, are we? I'm dreaming."

"You're just tired out, that's all, fella," Harwich would answer in a tone that he would try to make reassuring. He would put an arm around the kid's shoulders, to support his faltering steps.

Big brother stuff. . . . Paul had plenty of pluck, all right, but there wasn't much else left in him. He was wearing out, mile by mile, staggering under his heavy pack.

Every resource was reaching its limit, now. Food supplies had dwindled away to nothing, at last. The little atomic motor that worked the air compressor and separator unit was breaking down. It could hardly pump enough oxygen into the air flasks any more.

But there was nothing to do but keep on the march, anyway, in spite of handicaps. Evan Harwich felt as though he was going slowly mad. Brooding thoughts came into his mind constantly.

Clara Arnold. Where was she now? What had happened back there on Ganymede? What had George Bayley done? When would he come to Io, with the ship he would surely fit out with a new Penetrator?

What was Clara thinking? What if she knew her brother was alive on the Forbidden Moon, but slowly dying? What if Bayley told her that maybe Paul was still alive, adding that he himself was the only person that might be able to effect a rescue? What if he had finally used this means, this possibility, to make Clara marry him? She didn't love Bayley, the fat printer! She couldn't! And he wouldn't even have to promise to attempt a rescue --only suggest that he might try. Clara must be half crazy herself, thinking of her brother. After all she'd lost her father to the Forbidden Moon too.

The thought of demure Clara Arnold in the arms of that bulky, squint-eyed printer, who had shown his true colors at last, and proved his diabolical cleverness, fairly strangled Harwich. Maybe he had no right to harbor such an attitude. After all he hardly knew Clara. He only knew her haunting beauty and friendly amber eyes, with quiet wisdom and a little of the martyr in them--like her father, perhaps. But Harwich couldn't help thinking. It was only by exercising superhuman self-control that he kept himself from turning into a raving maniac.

Supporting Paul Arnold's feeble, struggling steps, Harwich watched the sky like a starved, wounded wolf. Sometimes, in sheer, wild determination, he longed to claw at that cold, forbidding firmament, and climb out of that hell-pit of a world into which he had fallen. He yearned with a savagery beyond words to claw his way up there into space, to wherever George Bayley might be, and feel the fat throat of the man who had tampered with the Gyon condenser aboard the RQ257, squeezed between his hooked fingers.

But the frigid sky and the bleak, dying hills, and the weary miles, mocked all his hate-born desires. His numbed, aching feet could only plod on and on in this grave-like desert. Ruins, rusted machinery, silence, and cold that crept even through the heavy insulation of his space armor.

Still, he could remember another thing. In the far distance to the south was something wonderful and strange. Something that made the deadly and insidious energy barrier of the Forbidden Moon possible. Where the Tower loomed on the astronomical photographs of Io.

That night came at last when a streak of silver fire traced its way across the sky. It couldn't be anything but the flames ejected from the rockets of an approaching space ship.

Paul Arnold saw it too, turning

his haggard face upward. "There he is, Evan," he croaked into his helmet phones. "Bayley's coming at last."

"I see," Harwich returned softly; his teeth gritted and his lips curling furiously, behind the transparent front of his space headgear.

They dropped down beside the wall of a ruin, to watch. The ship was coming straight in, toward Io. At its tremendous altitude, nothing but its rocket blasts could be seen at first. But then there was a sudden flare of bluish light. It had struck Io's force barrier, and that blue glow was the evidence of a Penetrator functioning. The craft seemed to slow a little, as its pale, protecting shell of counter-energy fought back that invisible, guardian screen of the devil moon.

"He got through the force shield," Harwich growled after a moment. "We knew he would, of course, with his Penetrator operating right. Damn him!"

There was no more blue fire visible now; but the little silver-tailed path of rocket flame showed that the ship was coming in safe and sound, its propelling jets working steadily.

Among the stars it turned southward toward that deepest enigma of Io. Toward the unknown scientific wisdom, which lay hidden somewhere near the Ionian equator.

"He'll get there in a few minutes' time," Paul whispered. "And I guess we won't get there at all. I'm sorry, Evan, that I got you mixed up with the Forbidden Moon. Me--I'm just about finished--now."

Paul Arnold's voice trailed away. Harwich turned the boy's glass-covered face up. In the light of monster Jupiter, he could see that it was blank and relaxed. The eyes were closed. In the quiet rays of the giant of planets, the youth looked as though death had already touched him. But there was a little frosty blur on the inside of the

crystalline faceplate of his helmet. It showed that he still breathed.

Tottering a little himself, Harwich picked the boy up, pack and all. He struggled to put one foot ahead of the other, marching again toward the south, where the space ship was rapidly receding. Had his strength been at normal level, his load, bulky though it was, would have been light in this weak gravity. But Harwich was near the end of his rope, too. And so he moved on through that beautiful shadow-haunted, frigid night, where no man was meant to live.

Many times he had to stop and rest. After a short while, the atomic motor of the air compressor separator unit refused to work any more. Harwich tried turning the mechanism by hand. But this was slow, exhausting work.

He watched the luminous dial of the cold-proof wrist-watch, strapped on the outside of one of his heavy space gauntlets. His mind was getting dimmer. Cold was biting home, savagely. Harwich wanted to see just how much longer he could keep going. It was eight hours now, since Bayley's ship had appeared. Slowly more time crept by. His boots trudged in the desert dust, mechanically. The hands of his watch moved on. One hour more. Another.

Why didn't he desert the dead weight of Paul Arnold? But you never deserted somebody who was like a kid brother, did you?

The patrol pilot's breath was coming fast and short, now. The last of his air was being used up. It was useless to try to replenish the oxygen flasks with hand power, even though he was suffocating.

Harwich tripped in the dust, and fell sprawling. Jupiter, shining down upon him, somehow looked like a fat face, tremendously bloated in size--the face of George Bayley. Harwich cursed, and tried to crawl toward the south.

Did he hear a sound through his

oxygen helmet--a sound loud enough for the tenuous Ionian atmosphere to transmit? Or was it only the roaring of the unsteady pulses in his ears? He tried to look ahead, but his vision was very dim, now, and the light of Jupiter and his moons was so confusing. The shadows of the rocks and the ruined buildings were so very black.

But suddenly Harwich squinted. Something was moving toward him, skimming low over the ground, but not touching it. Something that glinted wickedly, and showed long, shadowy arms. It was no hallucination. Evan Harwich was sure of that! Fear came out of that numb fog into which his brain was settling. It gave him a last, feeble spurt of strength. He knew that here he must be facing a tiny part of Io's colossal riddle.

He tried to crawl away from nameless danger, dragging Paul Arnold with him. He got behind a mass of million-year-old masonry, tufted with prickly plants.

But the thing that pursued him easily overcame his weak, instinctive effort to find concealment. Cold metal claws closed on him. He felt himself lifted upward, into the night. His mind toppled away into black nothingness.

Somehow, it wasn't the end of life. Harwich began to regain his senses, slowly. First he heard a distant, muffled clanging. For a long time before he paid any real attention to the fact, he was aware that strange warm rays were pouring down upon his body. They seemed to heal and soothe his aching muscles.

He opened his eyes at last. Startled, he sat up. Around him was the warm glitter of glass and metal. His space suit was gone. He was in a crystalline cage, filled with warm, humid air. Odd gadgets, like ray lamps used in therapy, were fitted to the ceiling. Strange, tropical vegetation grew in the

cage, and water tinkled somewhere.

There was a kind of soothing quiet over the place, except for that distant clanging. There was a smoothness to everything; a mood of mechanical refinement and perfection. It was almost hypnotic, somehow. It dazed and quieted the senses.

Paul Arnold, clad in the slacks and shirt he'd worn under his space armor, was lying on the floor beside Harwich. He was still unconscious, but he was breathing evenly. His color was much better than before. The rays from the roof above were slowly healing his weakened body.

Evan Harwich shook the boy gently. "Wake up, Paul!" he urged. "This must be it! The center of Power! The place we wanted to find! Some kind of machine brought us!"

Paul Arnold rubbed his eyes and sat up. Together, Harwich and the boy looked around through the crystal walls of the cage in which they were confined.

"There--there's the Tower!" young Arnold stammered at last, pointing.

It glittered in the faint morning sunshine. It was undoubtedly the same huge pinnacle that astronomers had photographed from the other moons of Jupiter. Only it was close, now, its details sharp and clear and real. Around its slender, tapered spire, thousands of feet aloft, the faintest of frosty aureoles clung; a ghostly light, like the sundogs of Earthly winter days.

"The Tower must be the source of the Ionian force envelope, Evan!" Paul Arnold offered after a moment. "That light up there at its top almost proves it."

Both men were talking vaguely, thinking vaguely, looking around vaguely. In part this must have been because of sheer wonder. Places like the Spacemen's Haven on Gany-mede seemed as far away as a dream now.

An incomprehensible sense of depression was creeping over Evan

Harwich, as he studied his surroundings further. There were many other cages in view, arranged in blocks, with paved alleyways between. Vegetation was thick in the evidently air-conditioned habitations. Little pools of water glistened in them daintily, strange paradox on dying lo.

And there were creatures, too. Scores of them in each cage. Strange, fragile, sluglike animals crept about aimlessly. They looked just faintly human, with their pinkish skins and manlike heads. But there was no slight shadow of intelligence in those great, sad, stupid eyes.

Harwich wasn't squeamish, but he looked at these futile animals with a certain pitying revulsion. "What kind of a nursery place have we got ourselves into, Paul?" he grumbled quizzically.

Arnold shrugged. "They're something like men, these things, aren't they?" he offered in puzzlement. "Maybe that's another unknown quantity to figure out. But this place is plenty wonderful, though. Look!"

The youth was pointing upward. Against the cold Ionian sky a flattened object was circling at low altitude. A flying machine without wings, it seemed to be. From it dangled strange webby metal arms, as it moved in a circular path, above the surrounding desert hills. It seemed to keep watch over those thousands of crystal cages in the valley. It must be a guardian of some sort.

"I'm not at all sure I like it here," Harwich growled. "We were fixed up, revived, made new men again, so to speak; but still I don't like it here."

"Somehow I've got the same idea," Paul Arnold agreed with a quizzical smile.

A little clinking noise behind the two men made them turn about. After that, awe kept them spell-bound. They didn't speak. What was there to say? They didn't try

to retreat, either. What was the use? If what they saw was danger, they could do nothing to avert it. Hypnotized with wonder, they only stared, feeling as helpless as the larvae in an ant-hill, tended and cared for by the workers.

A section of the cage-bottom had raised, like a trapdoor. A bulk was creeping through the opening. It was a machine, so marvelous, so refined in its functioning, that it seemed far more than alive. It was flat, like a small tractor; but there were no treads for it to move on. It seemed, rather, to glide on a cushioning, grayish mist. The thing purred softly, like a great cat, and tiny lights twinkled in crystalline parts of it--batteries to deliver fearful atomic or cosmic power, perhaps. The mechanism had many flexible tentacular arms of metal that glinted with a lavender luster.

But even the substance of those arms, the metal itself, looked indefinite and eye-hurting at the edges, as though it was partly fourth-dimensional, or something.

Both men grasped the truth. Here was that million-year advancement of science that they'd talked about with such thrilled fascination, in the stuffy bar of the Spacemen's Haven, back in Ganymede City. But Ganymede City, with all its human crudeness and inefficiency, seemed like a lost, happy legend, now, to Arnold and Harwich. Far, far away, and dim. For here was dread wonder to eclipse it. Futurian fact! Physical principles of such a miraculous order that mankind had scarcely dreamed of their outer fringes yet, were functioning here.

The flat machine advanced. But it was only instinct working, when the two men crouched away from it a little. It was useless to fight; it was useless to run.

"Get away, you!" Paul Arnold grumbled dully to the mechanism. "Beat it! Scram."

And Harwich was reacting in a

similar manner. "What the hell!" he stammered. "What are you trying to do with us?"

It was almost funny--the ineffectual, confused protest of those two men. They were like children too lost in their new environment to know what was dangerous and what was not.

Misty, lavender tentacles reached out and grasped them carefully. They were lifted from the floor of the cage like babes. Once Harwich's great freckled arms tautened, as though he was going to battle the monstrous miracle that held him. But futility checked the urge. Where was there anything to win by struggling, now? And how could a mere man win anyway, against soft-moving mechanical power, that should belong to the far future? Oddly the tentacles were warm and tingling, not cold like you'd think metal should be.

And so Arnold and Harwich submitted to a paternal, mechanical dominance, regretfully, because there was nothing else to do. It hurt their sense of freedom, but where was there any alternative?

Still floating a little off the tile pavement of the cage, the machine carried the two men easily to the opening in the floor, and glided down into a crystal-roofed tunnel. There it began to accelerate swiftly, flying with bullet-like speed, a foot or so above the glass bottom of the passage.

The tunnel's roof was transparent as air. Through it, Harwich and Arnold could see that they were nearing the Tower rapidly. After only a moment of whizzing, breath-taking flight, they had arrived within that great, enigmatic edifice, for the passage entered its base.

There, in an eerie half-twilight, the flat little machine released the two humans whom it had brought here, to the Tower.

Mute with an even greater wonder than before, Harwich and Arnold

stared around them. The room was gigantic, soaring up in a huge, metal-ribbed dome. Scores of crystal-walled passages led into this colossal chamber of secrets. The whole immense Tower building was transparent, except that some darkening pigment had been added to the material that composed it, till it was like bluish glass. Through it the desolate surrounding hills of Io could be seen, and the cages, filled with those aimless, pathetic, sluglike creatures.

But the attention of the two men was drawn inevitably to the center of the room. Rearing up there, under the rotunda of the dome, was a massive, lavender-sheened pyramid. It gave a steady, throbbing sound, as of countless tiny wheels and shafts whirling inside it, working cams and rods, and who knew what else?

"Dammit!" Evan Harwich kept muttering under his breath in dim confusion. "Dammit."

He was used to machinery, yes. He was used to the roar of rockets, and to the delicate instruments used in space flight. But this was machinery of a far higher order. That busy, vibrating pyramid, squatting there like some huge idol, somehow seemed to possess a definite personality of its own!

Suddenly Paul Arnold clutched the patrol pilot's arm. "I wonder if I believe what I see!" he whispered tensely. "Look!"

Harwich's gaze followed the lines of the boy's pointing finger to something quite near--so near, and seemingly so insignificant in this vast, somber, throbbing interior, that he had not noticed before.

Just at the base of the pyramid there was an artistic little structure, consisting of four slender pillars and a roof. It looked like a small, ornamental kiosk or arbor, so artfully were the scientific details of it--the coils in its top, and the delicate filaments that pronged from them--concealed

in the decorative metal scrollwork.

Within the pillared structure, somehow, there stood a man--an Earthman. His heavy body was clad now in a rocketeer's leather cover-all. At his waist dangled a heat pistol, and on his fat face there was a strange, wild sort of smirk.

"Howdy, boys!" he greeted. "Yes, it's me--George Bayley, the guy who used to keep a print shop in Ganymede City! I've been here longer than you have, and I've been able to find out more. Pretty nice, huh? The people of Io had science perfected before they became extinct. Everything was done by machines, even investing. Not a bit of work to do any more. And if they wanted anything special, they just came into this little coop, and wished."

Bayley paused, still smirking. His loud voice had seemed distant in that great room, and vibrant with awe. Harwich and Arnold stared at him for a moment, neither knowing quite what to say, or what to believe.

And what was that which had just spilled from his lips, as though he had been a little afraid of the statement himself? About perfected science, and wishing?

"You're crazy!" Evan Harwich stormed fiercely. "You're a liar!"

But his furious tone was tremulous with doubt, even as he spoke. He knew at once that he'd just grabbed onto these words, and uttered them, maybe because, somehow, he hated Bayley, and wanted to contradict his seemingly impossible claims. But in this temple of un-Earthly marvels, one's whole standard of judgment was upset. Possible and impossible became meaningless terms here, and at the foot of this great, whirling pyramid, which seemed a symbol of omnipotence.

"Crazy?" Bayley questioned. "No, Harwich, you can't say that, when you're all tangled up and fuddled yourself! What I said about wishing

is true. Telepathic control of machines, it must be. This place is so damned wonderful that it would turn Aladdin of the Wonderful Lamp green with envy! And it would drive the Genie of the Lamp down into his shoes in shame!"

Harwich's doubts, if they had been doubts, and not just confusions, began to dim a trifle. After all, one of the big objectives of the science of Earthmen was to make life easier; to transfer as much of the burden of work as possible to machines. Why couldn't the same objective have been conceived here on the Forbidden Moon? Not only conceived, but accomplished? Io was an old world; life had begun here sooner than on Earth, and science, too! So there had been more time for advancement.

"All right, Bayley," Harwich growled grudgingly. "Tell us what you've discovered."

"Yes, for Pete's sake, tell us!" Paul Arnold joined in.

It was odd, the way they were asking the fat printer for information, now, when they should be hating him for the wrongs he had done them. But, perhaps, the human mind can hold only so much at one time. For the moment there was room only for dazed awe and questioning in their thoughts, and hatred was temporarily pushed into the background. The equal of Aladdin's miracles did not seem so far from possibility, here!

"Okay!" George Bayley rumbled. "Glad to spill the beans; what I know of them. I arrived here in my space ship about fourteen hours ago, when it was still dark. The Tower building here looked by far the most important, so I came straight to it. There were machines flying about, but they paid no attention to me at all, so I wasn't worried much about what they might do to me.

"Leaving my ship on the other side of the Tower, I got into this room through a tunnel. I was wear-

ing a space armor, of course. I passed through a kind of airlock. This chamber was just like you see it now, except that lights were burning, because it was night."

"And then?" Paul Arnold questioned eagerly.

"Exploring, I climbed into this little metal coop, here at the foot of the pyramid," Bayley went on. "By then I was pretty flabbergasted with all I'd seen. I began to think I needed a drink of something strong. Yep, it must have been telepathy! Because presto--one of those flat flying machines with the tentacles whizzed up to me from a tunnel exit. It was carrying a kind of crystal carafe.

"Boy, I didn't know what to think! I didn't know whether I ought to taste the stuff in that carafe, at first. But finally I did. It was damned good. Not alcoholic, but something a whole lot better."

Harwich and Arnold looked at each other, as Bayley paused, as if to get his breath. They looked up at the pyramid, throbbing above them, like some great, cryptic, servant personality. The feeling that Bayley was telling the truth was growing on them.

"Naturally you tried other things, after the carafe was brought to you, Bayley," Paul Arnold prompted. "You wanted to see how much further this expression of desires by telepathy might be carried. You wanted to see how much more you could use the ancient Ionian science."

Bayley, still standing in that little metal-pillared structure, nodded slowly. "You catch on quick, Arnold," he said. "First I wished for gold, since it was the first thing I thought of. The sounds inside the pyramid changed a little, as though an order was going out somehow, maybe by radio. Five minutes later a whole bunch of those flying machines came into the Tower here, carrying bars of gold in their

tentacles. There it is."

The printer was pointing toward a dully gleaming heap of yellow ingots near the farther wall of the chamber.

"But this, I soon found out, was just kid stuff!" Bayley continued. "I suppose if I'd thought of radium here in this wishing coop, I would have got a couple of tons of that, too! But I wished for a space ship--something special, beyond anything an Earthman ever saw before! Well, the pyramid buzzed a little longer and stranger this time, as though it was sort of thinking and planning, and as though the wheels inside it were maybe inventing, too. Then, somewhere far off, there was a lot of pounding for about an hour. I guess you know the answer, boys. There she is--the sweetest little super-futuristic space flier you ever saw!"

Harwich and Arnold stared at the torpedo-like ship that rested in a cradle-like support nearby. It was completely without rocket-tubes, or other visible means of propulsion. But its rakish lines and wicked lavender glitter made it look as though it might well reach the distant stars themselves.

Evan Harwich bit his lip tensely. Suddenly a thought struck him. "Did you see any Ionians since you've been here, Bayley?" he asked. "Any living, intelligent beings who might question your right to be prowling around?"

Bayley laughed. "Not one!" he returned. "They're extinct, I'm sure of it! And that's lucky for me."

The patrol pilot was beginning to put the pieces of the Forbidden Moon's riddle together at last. And Paul Arnold must have been doing the same. The evidence, as far as it went, was clear.

Perfected science! The fat printer had told them that all you had to do was think your wishes in that queer little pillared structure.

And the machines translated your wishes into fact. Unless Bayley had lied, and there was small reason to suppose that he had, the rest was maybe not so difficult to understand.

First, the great envelope of force around Io. That was to keep possibly dangerous intruders away, of course. Thus, the ancient Ionians had lived in carefree idleness and luxury, tended by their perfected machines. The thing in the pyramid must be the master servant mechanism, reachable in that pillared kiosk, by telepathy. It must be the coordinator, in contact with the other mechanisms by radio, or something. Adding and calculating machines, way back in the Twentieth Century, had thought and reasoned, after a fashion. More recently, on Earth, apparatus of a similar nature had done far more, working out intricate mathematical problems, far more swiftly and accurately than any human being could.

And the apparatus within the pyramid must be much the same thing, but developed to the nth degree! A vast planning, calculating device that could reason and invent with a swiftness and perfection far beyond any living mind. But it was still just mechanical; a servant apparatus that thought by the turning of the wheels and the movement of levers inside it with no more consciousness than an adding machine of the Twentieth Century!

This was the way Harwich figured it all out. And he saw something else, too.

"Uh-uh, Bayley," he remarked suddenly. "Soon after that new space flier was brought her at your command, you decided that you were complete boss around here, didn't you? There were no ancient Ionians in your way. All you had to do was wish, inside that telepathy kiosk, and it was just like Aladdin wishing with his lamp, eh?"

For the first time, cold, comprehending anger had come into the

patrol pilot's tone.

"Why sure---sure!" Bayley growled back at him. "And why not? Just about anything I can think of is possible! And, let me tell you something else, you poor dope! You and Arnold wouldn't be alive now, if I hadn't wished it! I thought you might have gotten through the Ionian force shield somehow, when the RQ257 cracked up. I thought you might be somewhere out there on the desert still living. So I just wished that the machines go and get you, and revive you if you needed it. I thought maybe it might be fun."

It was enough. Cold anger reborn in Evan Harwich's breast was suddenly rekindled into blazing fury by the memory of the RQ257, and a wire filed almost through in a Gyon condenser. Evan Harwich's muscles tightened. Wordlessly he was about to leap at George Bayley.

But a warm metal tentacle whipped suddenly about his waist. The flat mechanism that had brought him and Arnold to the Tower had seized him. Again, he was helpless.

"You see?" Bayley drawled. "I really am boss, here, just as you said. I just wished that you be restrained, and you are! But I've been doing too much talking and explaining. How about a little showing for a change, huh?"

"Damn you, Bayley!" Harwich growled, but the fat printer ignored the curse.

He only grimaced crookedly. "Let's make a couple more wishes," he taunted. "A couple of really good ones! How about a whole fleet of space ships, for instance? The biggest, most powerful fleet in the solar system! All automatic craft, capable of flying and maneuvering unmanned! Then, let's see, the other wish? It's not so difficult either. Both you and Arnold are my deadly enemies, Harwich. I think it would be fun to make my enemies squirm a little. I'd like to see you crack up,

Harwich! You've always been so tough! So how about some kind of a discomfort service? Something really special? In short, a torture instrument! Come on, pretty machines! Do your stuff!"

Paul Arnold's face turned pale, but he bit his lip courageously. Evan Harwich studied the strange, wild light in the fat printer's squinted eyes, and waited for whatever would happen.

There was a crescendoing whirl within that huge pyramidal coordinator. The man who had usurped the rule of the ancient Ionians over their mechanical servitors had given his telepathic orders. Already there were signs of obedience. Thinking and planning was going on in that pyramid; thinking and planning more intricate than that of the greatest human wizard that had ever lived, more soulless and swift than that of an adding machine.

Presently, from far away, came a thin, shrill sound. Looking back through the darkened glass walls of the Tower room, Harwich and Arnold, both of them clutched, now, by the tentacles of the flat robot, saw a horde of black specks collecting against the sky in the pale sunlight outside. A flock of those flat, tentacled flying things.

They seemed to emerge from an opening in the ground; from a vault where perhaps they'd been stored for ages. In a gigantic swarm they hovered over the glass cages and their pathetic animal inhabitants. Then, drifting like gulls away from this weird city of the Forbidden Moon, they moved off toward the surrounding hills.

There, like swarming bees, they settled in their tremendous numbers, on the open, arid valley. Flame tools in their tendrils were brought into play. Dust, reddened with heat, began to rise.

"They're leveling the ground!" Paul Arnold whispered hoarsely. "They must be preparing a shipyard!"

"Sure, kid," George Bayley laughed, trying to conceal the half-scared wonder in his own voice. "Maybe it'll take weeks for them to build the fleet I asked for! But they'll do it! You'll see, if I happen to let you live that long!"

The unholy wizardry of the Forbidden Moon was proven beyond all doubt. And in this weird Tower room, air-conditioned against the cold thinness of the atmosphere beyond its wall, the pyramid still throbbed a shrill portent of more to come.

A second robot mechanism soared into the chamber from a tunnel mouth. It bore a curious tripod-like instrument. The flying automaton spiralled down like a bubble, and came to rest beside Harwich and the youth. Pinioned by the tendrils of the other automaton, they were helpless to do anything but watch and submit. They were pushed flat on their backs, and held firmly. The tripod instrument was set up between them.

"The discomfort device, this must be!" Bayley gloated, shifting his weight from one foot to the other. "In just a few seconds there's going to be some fun, I'll bet! Now, Harwich and Arnold, I'm wishing you bad luck. Just a little foretaste of what I might wish later! Okay, pretty machines! Give my beloved enemies the works, just for a second."

Two rods of metal, projecting down from the tripod, were set in position by one of the automatons. One rod touched Harwich's skull, the other Paul Arnold's. A switch was moved.

There was no sound; but all of the patrol pilot's body seemed suddenly and maddeningly afire. To the very center of his mind, agony stabbed, viciously. No searing pain of any injury he had ever received could have equaled this. He writhed, longing to scream his lungs out, as that moment of sheer

hell seemed to last an age.

"God!" Paul gasped when it was over.

Both men were sweating and limp, and yet no visible harm had been done to their bodies. Artificial sensation, the torture must have been. Nerve impulses transmitted directly to the brain. A devilish, perverted achievement of super-science! Such agony might conceivably go on, in Satanic refinement, for months, without bringing death.

"You see, boys, I'm boss here as long as I stay in this little telepathy coop, where the old Ionians used to give their orders!" George Bayley hissed triumphantly. "All the wonders of the Forbidden Moon are mine to use, just as I see fit! There were just a bunch of machines here, waiting for somebody to control them. A pistol doesn't ask who pulls its trigger! And I got here first!"

"I was afraid of something like this when we were still on Ganyমেদে, before any of us knew," Paul Arnold muttered raggedly.

And Evan Harwich understood very well what the youth meant. George Bayley was feeling that touch of power here. A sense of omnipotence was flattering his shallow ego, raising him in his own estimation to the level of some ruthless god. He, who had been a petty business man, a printer, a repairer of instruments, a loan shark! Just a crumby, fat little human being, ridiculous, small and conceited. Pathetic, too, stubborn, and lacking in judgment. There were many like him on Earth, and among the scattered spheres of Earth's interplanetary empire.

Maybe, after all, the wisdom of the Forbidden Moon was too big for the human race. Maybe they would have to grow themselves first, advance in evolution, before they would know how to handle and how to win real benefits from such wisdom.

"All right, Nero," Harwich growled contemptuously to Bayley. "I'll grant that you're in the driver's seat, ready to stop nowhere. Building a space fleet and all. But where is Clara Arnold?"

The patrol pilot asked the question with fear and doubt in his heart.

"Clara Arnold?" said Bayley almost casually. "Too damned clever for a girl! Said she thought I might have had something to do with the crackup of the RQ257. Said she was worried about Paul and you, too, Harwich, being maybe stranded still alive here on Io. But she said that she'd finally decided my promises weren't good for anything, anyway. That I'd have to rescue you two men first before she'd believe in me. Until then, our engagement was off."

Harwich felt a brief wave of elation, as he heard these words. Clara had seemed so quiet and timid; but she'd evidently proved herself plenty courageous and plenty smart.

"But where is she?" Harwich growled angrily. "Now, I mean!"

"Don't get excited," Bayley sneered. "She came to the Forbidden Moon with me, hoping to see you and the kid again. I left her locked in my rocket. But she can't mean much to me any more now! Not when they begin to hear about me all over the solar system! Just a passing fancy! I suppose I might just as well have the machines bring her here now, to see just how completely helpless you two dopes are!"

Harwich and Paul Arnold were still pinioned to the floor by the automats; but in the patrol pilot's slitted eyes glowed the subdued light of murder, futilely smoldering. The fat printer was absolutely master now of Clara, the boy, and himself. In his stupid, cruel, shallow vanity, cosmic power the deeper secrets of which he could never have understood had driven Bayley to madness; to megalomania.

That clanging and that red glow from near the distant hills showed the extent of his ambitions beyond question. The slave machines were not building that colossal fleet of space warships for nothing! Armed with weapons beyond human knowledge, such a fleet would sweep in aggressive fury to even the remotest world within the field of the sun's gravity!

But Harwich's feelings changed briefly to relief, when Clara Arnold was brought into the Tower room by another of those metal slaves. The automaton removed from her a flexible, transparent covering, of evidently airtight material, a protection against the rarity of the Ionian atmosphere, probably, for in being taken from the airlock of Bayley's rocket to the air-conditioned Tower here, she would otherwise have been exposed to suffocation.

The machine set the girl down gently. She looked scared, her blonde hair was awry, as though, maybe, she'd struggled with the robot; but otherwise she was still all right.

She looked about in wondering terror; for what she saw was still a complete mystery to her, just as it had been to her brother and Evan Harwich a little while ago. No one had told her anything yet.

"Paul--Evan!" she stammered. "What is all this here? This pyramid, and Bayley? What happened? Tell me, somebody!"

"Take it easy, Clara," Harwich responded, trying to sound reassuring. "Everything will be all right!" he ended a little unconvincedly, trying to shield the girl from grim truth.

"Everything's all right already, Clara," Bayley assured her mockingly. "I've got these two men of yours just where they can do the least harm! How would you like to see 'em squirm a little? I've got a special device for that purpose, something very refined and

painful! And I've got just about everything else! In a month's time I could give you the planet Earth, to wear in a ring around your finger, if I happened to want to."

"What's he talking about, Evan?" the girl pleaded again, the shadow of fear in her face deepening. "It sounds sort of awful! Please tell me. Why are those flat monsters holding you and Paul to the floor?"

"I told you to take it easy, Clara," Harwich returned with a trace of sternness. "This maniac, Bayley, has got the upper hand now, but I said everything would be all right, didn't I?"

The patrol pilot was trying again to reassure the girl, with a show of truculent bravado this time. He hoped that truculence would make his words sound true, as though he had a trump card up his sleeve, or something.

"All right in the end, Harwich?" the fat printer chuckled wickedly. "Well, the end's pretty close. In another minute you'll be too tortured to do anything but scream. Right now I'm thinking and wishing. Look, the automatons are getting that agony tripod ready again!"

It was true. Metal tentacles were whipping about, adjusting the torture rods to touch Harwich's and Paul Arnold's skulls again.

Everything will be all right! That statement was a mocking memory to the patrol pilot now. An empty, rash challenge to the man whose petty ego yearned to control even the solar system.

Harwich had never felt so completely helpless in his life before, not even when he had been suffocating out there on the deserts of the Forbidden Moon. If he could only somehow knock Bayley out of that little, pillared structure that served as a receiver for telepathic orders to the machines; if only he could replace him there for a second, then everything might be very, very different! But Harwich was held helpless to the pave-

ment of the Tower room. His massive muscles were useless against machine might!

Direct argument--an attempt to make Bayley see the narrowness and lack of originality in his colossal ambitions--he knew was equally futile. Bayley was stubborn and shallow and greedy. Besides, he would never admit that he was wrong, even if he felt the truth of it!

So Harwich felt utterly checkmated on every side. The clanging out there, the building of the space fleet, mocked him. The rustle of wheels in that huge pyramid coordinator mocked him. All the Aladdin-like miracles of the Forbidden Moon mocked him, pointing out his impotence to do anything, now.

He even wondered savagely why that great coordinator mechanism, with all its terrific powers, didn't revolt against the dominance of the puny human being that mastered it. But, of course, it would have no desire to revolt. It had no desires of any kind, no capacity for happiness or misery, no consciousness even. It was no more alive, no more sentient, than an adding machine. Only infinitely more complex. It invented things and it directed lesser mechanisms only by the rolling of the wheels and the surge of energy inside it. And it responded to telepathic control of whomever was there to give it, just as a space ship might respond to whomever was at its throttle.

Still, there had to be some way out of this mess! Harwich knew it wasn't just Clara and Paul and himself that were in danger. It was everything he knew and respected. Freedom. Liberty. Unless he and his companions were able to do something, a Dark Age would come, surely. An age of machines, ruled by a madman.

The rod of the torture instrument was touching his skull. In just another moment the agony would begin. But what was Paul Arnold mut-

tering beside him?

"Evan, those animals in the cages! We thought they looked like men, didn't we? Here's something else: Maybe they are men, in a way! Men who went backward in evolution; lost their intelligence."

No one but Harwich would have heard the boy, for he spoke in a very low tone. But at once the patrol pilot understood; grasped a part of the Ionian riddle that he had missed before. Machines. No thinking or work to do. Indolence. And then?

At once Harwich saw a way, a slim possibility to avert cosmic catastrophe. He couldn't appeal to Bayley's reason, but maybe he could appeal to his fears. He had to try it, anyway.

Suddenly the patrol pilot's lips curled in derision and contempt. "Bayley," he said, "you're an utter damned fool! You think you'll extend your power all over the solar system. Well, maybe you will do that; but in the end you'll be destroyed! You give the orders--sure! But do you understand the thing in that pyramid? It was made to serve, as all machines are. The ancient Ionians had it pretty nice for themselves, yes. But did you ever wonder what happened to them? Where are they now? Do you know, Bayley?"

Harwich's final question was a dry whisper, like the voice of some ghost of ages past.

"Where are those ancient Ionians now, Bayley?"

No man could have escaped awe there in that tremendous Tower room, where all the mysteries of the eons seemed to be congregated, many of them hidden and unknown and perhaps dangerous. George Bayley's eyes were suddenly very big. Quite evidently there were many things that he had not thought about. His gaze lingered momentarily on the great throbbing pyramid, inscrutable there in this huge dusky chamber.

"Stop trying to bluff me, you

crazy idiot!" the fat printer stormed at last. "The Ionians are extinct, of course!"

Harwich managed to grin wolfishly. "If you believe that, Bayley, do you want to follow them into extinction?" he questioned. "Yes, they mastered science. They conquered even the problem of the thinning atmosphere and the loss of moisture and heat on their dying world. But after they turned their science over to the machines, something happened to them. Their numbers began to grow less, yes. They lost control of their empire, which must have included all the moons of--Jupiter. But they didn't completely die out, Bayley! Something happened to those Ionians that was far worse! Do you know what it was, Bayley? Do you want the same thing to happen to you?"

"I don't know what you're talking about!" the printer stammered furiously, fear of the unknown spreading over his plump face.

"No, those ancient people of the Forbidden Moon didn't become completely extinct," Harwich continued. "I believe you can see quite a few of them from the Tower room here. The walls are semi-transparent, and those cages outside aren't far away. They're full of Ionians. Sluglike, brainless monstrosities without even intelligence enough or will enough to wish any more!"

Harwich paused to let the facts sink into George Bayley's mind.

"That's them!" the patrol pilot continued. "It's an old theory that any race has to keep struggling, thinking, working; otherwise it goes backwards. By using their brains and muscles, Earthmen developed from apish ancestors, you know. But here the Ionians had everything done for them. So evolution was reversed. They lost their intelligence. And now, what are they? Stupid beasts, tended by machines that follow the original orders of long ago to take

care of them. Worse than animals in a zoo."

Bayley's eyes were fairly popping, as he stared through the semi-transparent walls of the Tower room. Doubtless he could see those creatures in their air-conditioned habitations. Just helpless, squirming, incubator freaks!

"I wondered what they were--why they were here," Bayley stammered.

Harwich almost believed at first that he had won a point with the obese loan shark--scared him out of most of his wild ambitions. But then, gradually, he saw Bayley's expression grow a trifle less tense. It was just as Harwich had feared. The printer was beginning to realize that it must have taken countless generations for them to degenerate to their present sorry state. The same condition could not affect him personally. When Bayley saw this truth, he would be the same megalomaniac as before.

There was only that one slim chance left for Harwich. Bayley's attention was strongly diverted now. But in a few seconds more, he would be himself again.

Was the grip of the metal tentacles that held Harwich a little looser than before, now, because Bayley, the master of machines, had his mind so intensely on other things, and away from the thought of giving telepathic commands?

In a sudden, savage lunge, Harwich jerked free from the automaton that held him to the floor. His clothing was torn and his flesh scraped, but what did this matter? Everything depended on instant action. The patrol pilot leaped past Paul Arnold, and his sister, Clara, who had only watched and listened while he had talked with such grim truth to Bayley.

Already the flat, glittering robot was after Harwich, but he continued his surprise rush toward the roofed, pillared kiosk that was the receiver for telepathic orders.

His attack ended in a flying tackle. Bayley was drawing his heat pistol, but before he could fire it, Harwich's weight struck him. There, together, in the kiosk, they wrestled and fought. At last there was a chance for the patrol pilot to bring his massive muscles into play. He swung his heavy fists, and all the fury of weeks of hardship and misfortune were back of his blows. Bayley tottered away from under the kiosk, and for a second Harwich stood there free.

He was in the position of control at last; but Bayley had his pistol out and aimed, now. Clara was screaming as the fat man pressed the trigger.

It was too late for Harwich to marshal his thoughts properly. He was only able to will that the automaton behind him should cease attacking him. He could not call to his aid any of the great science of lo, in time.

With the speed of light, a slender pencil of intense heat waves from Bayley's pistol struck his side and burned straight through his body. No bullet could have drilled a neater hole. Harwich's legs collapsed under him, and he lay writhing there within the kiosk.

A split second later the heat pistol in Bayley's hand spat again. Turning weakly, Harwich saw Clara crumple and go down. In another instant, Paul became the third victim.

"You're done, Harwich!" the fat printer was yelling triumphantly. "You're finished, all of you!"

But by now the patrol man's seething flood of hate had registered. He was within the telepathy kiosk; and if he had ever willed instant destruction for anyone, he willed it now, for Bayley. Under other circumstances he might not have felt so vengeful, but his ebbing pulses blazed with fury.

There was a click within that vast, slumberous pyramid, that loomed like a grim god in this shadowy

place of enigmas. The automaton that had recently held Harwich captive seemed to move like a maddened animal, created out of pure lightning. Its tentacles whipped around Bayley long before he could fire again. Harder than steel cable, the tendrils tightened, like the coils of a python.

There was a choked cry of terror and anguish, and then a sickening, crunching, squashing sound, as flesh and bone and blood oozed between those constricting metal loops.

It was almost the last thing that Evan Harwich saw. He was mortally wounded, a slender hole bored through his side.

Harwich's last delirium was a dream. A silly dream, maybe. Clara and he together. A little house. Fancifully he pictured its details. Maybe a mining concession somewhere here among the moons of Jupiter, too. An orderly life. Not all this hectic battling with unknown dangers any more. He was a little tired of adventure, a little tired of being space patrol pilot, too. He could resign.

Somewhere, Evan Harwich's fanciful thinking came to an end.

He awoke suddenly. Paul Arnold was shaking him.

"On your feet, you big lug!" the boy was yelling happily. "There's not a thing wrong with you, now!" Clara and I have been awake for half an hour."

Harwich staggered erect, grumbling confusedly, his stiff, black hair awry. He'd been lying on a divan. The room around him was almost familiarly furnished, except for slightly fantastic details of decoration. The windows were wide, and beyond them there was a sort of yard, with freshly planted trees. Over the whole set-up there was a fine crystal airdrome.

"What the heck! Where in the name of sense are we?" Harwich burst out in startled pleasure.

He looked first at Paul Arnold,

and then at Clara, whose amber eyes were twinkling with secretive mischief. It was as though the two had some sort of joke up their sleeves.

Harwich glanced again out of the window. Beyond the airdrome, glinting and new, was what looked like improved mining equipment. Cropping out of the ground was the grayish, shiny stuff of a rich ore lode. And there was a space ship, too; bright and slender and strange, but it looked plenty serviceable!

"Where are we, anyway?" Harwich demanded again, still completely in the dark. "Does either of you two know?"

"Still on Io, evidently!" Paul Arnold breezed with a taunting grin. "Same kind of hills and general character of country! When Bayley shot me, I passed out. I didn't know anything more until I woke up here a little while ago!"

"But this layout, Paul!" Harwich growled. "This house and this mining stuff! How come? You've got some kind of an answer in mind, I'm sure, by the way you look! I give up. Spill the bag!"

"Okay, Evan," said the boy. "I really do think I've got that part figured out! After Bayley shot you with the heat-pistol, you were lying in that telepathy kiosk in the Tower room. Consciously or unconsciously, you must have done some wishing there, before your brain blacked out."

Harwich gasped. So that was it! He'd wanted to be alive, though he had been mortally wounded. And so he was! His shirt was open. There was a neat round scar on his chest, left by the heat-ray burn, and evidence of careful supersurgery! The automatons of the Forbidden Moon had saved his life. Probably Clara's and Paul's lives, too. All while they were unconscious! The house, the garden, the mine!

"Our miracle hunt on the Forbidden Moon hasn't turned out so bad-

ly," Paul Arnold remarked. "But so far it's been a lot different from what Dad or you or I could have anticipated. This place looks like a nice family set-up, Evan. Did your wish include anybody besides yourself?"

Harwich flushed, and looked sheepish. Clara, there, was definitely blushing, but she was smiling, too.

The ex-patrol pilot managed a nervous grin. "I guess you got me there, Paul," he said. "Now, if it's all right with you, Clara, I don't know whether I have to say it or not, since it's a dead give-away. But will you marry me?"

He got it out, feeling that it had been an awful job. But Clara smiled happily.

"Try and stop me, Evan," she laughed. "There has to be someone around to keep you from getting conceited. Just because you won out for us here on Io, doesn't mean that you won't need bossing yourself, once in a while!"

Paul Arnold winked, and left discreetly for other parts of the house.

Arm in arm Clara and Evan looked through a window that faced west. Something was flying there, high up in the sky. It glinted in the late afternoon sunlight. A lonely speck against the cold firmament, it seemed to hurry, bent on a last mission.

A few minutes later, from the east, there came a terrific concussion. The whole dark purple sky, above those sullen hills, was illuminated with a bluish-white glare for a second. Flying fragments soared far into space.

Clara clung tightly to Evan. "What was that?" she questioned fearfully.

Harwich grinned, but still there was a haunting shadow of sadness in his face. "I'm sure I know," he said. "That was the end of the science of the Forbidden Moon. The

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BEYOND THE WORLDS WE KNOW

(PART II)

by Lin Carter

Star Pirate discovers the astounding
secret of the mystery planet!

Our Story Thus Far--

Dr. Zoar, a distinguished Martian scientist, has mathematical proof of the existence of a long-suspected but unknown Tenth Planet beyond the edge of the solar system.

He persuades that team of space-adventurers, Star Pirate and his Venusian sidekick Phath, into a journey of exploration and discovery. Installing his new super-drive aboard Star's scoutcraft, the Jolly Roger, Zoar predicts they will achieve speeds narrowly close to that of light itself.

The renovated speedster is launched from Star's secret hide-out, the asteroid Haven, drops below the ecliptic, and accelerates on its new propulsion system--only to run into an uncharted meteor-storm which hulls the Roger and cripples the rocket drive. As Star and Phath toil to repair the damage, the powerless ship drifts deeper and deeper into the sinister "Vortex," a whirlpool of gravitational forces at whose heart lies an eerie graveyard of lost ships. At the

last minute, the repairs are completed and the impetus of the super-drive enables the Jolly Roger to break free of the gravity-vortex.

Later, the little ship crosses the orbit of Pluto and heads into unknown, uncharted space--where no man of the Inner Worlds has ever trespassed before. What mysteries will they be faced with, what inexplicable perils, on the surface of the "brave new world" Zoar has named Persephone?

8. Over the Edge

"Why, you mud-eating swamp-lizard, if you dare touch one string of that devil's instrument, or utter a single caterwauling yowl of so-called song, I'll throttle you with my bare hands!"

This savage challenge was uttered by a squat green dwarf, a malignant scowl disfiguring his froglike face, under a tall, bald, wrinkled brow. He wore a dusty red smock and leathern sandals, for all that he was one of the System's most distin-

guished scientific celebrities, Zoar of Mars.

"Izzat so, you dust-chewing old horned toad?" snarled a soft, sibilant voice from the other side of the cramped little cabin, where a lithe figure with dead-white skin and slitted pink albino eyes lounged, cradling his nine-stringed Venusian guitar protectively in his arms. This was Phath, a Venusian space-adventurer who was pilot and first mate of the trim little speedster, the Jolly Roger.

"Yes, that's so," growled the diminutive Martian scientist with a fierce glare from his ink-black eyes. "I'll break that cursed noise-maker over your empty skull if you dare interrupt my concentration with your tuneless gargling!"

Phath swore by six or seven space gods, and his pink eyes narrowed dangerously while one hand hovered over his leather holster, fingertips just tentatively brushing the worn butt of his proton needle. He spluttered wordlessly, but the fact of the matter was that while the Venusian adventurer was a good man to have at your back in a tavern brawl, or by your side in a street-fight, and while he was a dead shot with his needler and an ace rocket pilot, the one talent in which he was seriously lacking was the gift of song. His attempts at melodic self-expression did, to a certain extent, resemble the cry of a cat whose tail has been caught in the proverbial wringer.

He knew it, although he would rather die than admit it, and he hated the fact; since there was nothing he could possibly do about it, he was touchy on the subject and easily flew off the handle when someone made a remark about his singing voice.

"Go on," sneered Dr. Zoar, laying down the calculator upon which he had been working out a set of abstruse equations in celestial mechanics. "Put a beam through me--I dare you! If you can't shoot any

better than you can carry a tune, I've nothing to worry about."

"By Yakdar's beryllium belly-button, but I've a mind to do just that!" Phath exploded, uncoiling from his chair and coming to his feet.

"Children . . . children," sighed a third voice, wearily. The interruption came from Star Pirate himself, as the lean, lanky, broad-shouldered young Earthling with the curly red hair and mischievous green eyes was known to the citizens of the Nine Worlds. He had been stretched out on his bunk, taking a bit of a nap after one of Phath's sumptuous luncheons, before the argument from the control cabin had roused him from his rest.

The Martian and the Venusian began trying to explain how each of them was in the right, and innocent of provocation, while the other was a double-dyed villain, constantly interrupting each other and each trying to talk the loudest. Star pretended tolerantly to be paying attention, but actually his mind was elsewhere, ruefully remembering the interesting dream from which he had been so noisily, not to say rudely, awakened by their quarrel.

It was not the first time this had happened, and it would surely not be the last, he told himself. For days now, since the Jolly Roger had flown over the edge of known space and crossed the orbit of Pluto, the trim little speedster had penetrated deeper and deeper into unknown, uncharted space, where no other man had ever flown.

The little craft, never designed for three, was cramped and crowded, and the forced proximity, the lack of privacy, the prolonged confinement in such close quarters, caused the space-travelers to tend to rub each other the wrong way. This was to be expected, since they were only human, but in the present case the matter was somewhat aggravated by the fact that for years now, the Venusian adventurer and the

diminutive Martian savant had cultivated a long-lived feud that had been smouldering for years. That it occasionally exploded into vocal argument was to be regretted, but even Star Pirate was not always able to keep peace between his irascible old Martian mentor and his touchy Venusian sidekick.

"Calm down, boys," he advised at last. "Save the temper tantrums for tomorrow; you know, we expect to be within visual range of Persephone by then . . . and who knows what we'll encounter when we land? Savage beasts and hostile natives, perhaps: so save your energy until then, we may have need of it, if push comes to shove and we find we've got a fight on our hands."

These sensible words of advice proved to have a calming effect on the two belligerents; they had momentarily forgotten that in mere hours they expected to take their first look at the "brave new world" they had come so very far to be the first to discover and to explore.

And, as Star Pirate said, who knew what might lie ahead on them when they landed on the surface of the mystery world?

Hour after hour, the trim little speedster probed on, ever deeper into the limitless depths of the void. Ahead, still invisible to the unaided eye, the unknown tenth planet of the Solar System swung in her huge orbit, circling the tiny spark-like flare that was the distant Sun--only the brightest of the stars, from this colossal distance.

Zoar expected to find little that was new or even particularly interesting on the surface of Persephone--just another frozen sphere of liquid hydrogen oceans and continents of frozen methane, like Pluto, was his estimate. Still and all, having been the first to prove with unshakable equations that the long-suspected Persephone

did in fact actually exist, Dr. Zoar was not about to let the honor of being the first to stand upon her surface go to another.

If it had not been for his newly perfected rocket propulsion system, the super-drive, the trip to Persephone could not have been made in a ship as small as Star Pirate's Jolly Roger. On conventional rocket drive, the journey beyond known space would have taken many months, perhaps years, and the trim little speedster could not possibly have carried sufficient stores of food, air and water for her three passengers over such a long haul.

Fortunately, however, the drive was a success, and the craft hurtled through the blackness of infinite space faster than any ship had ever hurtled before--

--And ahead lay the unexplored mysteries of an unknown world!

9. The Black Planet

Early in the morning of the very next day, Phath lolled lazily in the huge pilot's chair before the curve of the control board, with its maze of flashing red and green lights and glittering dials and meters. The Venusian was strumming an old space chanty on his nine-stringed native instrument, having seized the opportunity when both of his shipmates were busy elsewhere in the ship.

Oh, I'm just a wand'ring spaceman
Who wants a little love--
If I can't find it down on Earth,
I'll look for it above--

he warbled tunelessly, his nimble fingers rousing a shivering echo of melody from the taut silver strings of the Venusian guitar. The old space chanty he was singing was his favorite, and it had more verses than any spaceman could remember. Phath threw his head back and sang on--

But I'd rather have an Earth gal,
 Cuddly, sweet and warm--
 With yellow hair and big blue eyes,
 And loads of girlish charm--

when suddenly he broke off his song with a startled squawk as an alarm clang sounded directly above him, and, as the saying goes, loud enough to wake the dead.

"Yakdar's beryllium belly-button!" swore the Venusian, leaping to his feet and tossing the musical instrument on the bunk across the room. He snapped on the intercom and said into it, excitedly:

"Chief! Zoar! The alarm just went off--the proximity alarm. That means we've arrived--!"

He broke off as the green dwarf-like Martian savant came waddling into the control cabin, leather sandals slapping the steeloid deck-plates.

"I heard it for myself, you sim-pleton," snapped the scientist, pulling up a stool before the huge 'scope and adjusting its dials with knowing hands. The glass blurred hazily, then sharpened into focus, showing the black backdrop of space bestrewn with a thousand flashing points of light that were the ever-distant stars. The magnificent spectacle always reminded the Venusian adventurer of blue-white diamonds poured out on black velvet.

Star Pirate joined them at the 'scope. He had been back in the engine room, checking out the cyclotrons that fed atomic fire into the big cluster of rocket tubes that drove the little craft through space, making doubly certain that all was well before they dared the unknown dangers of a strange new world. Now he bent over the luminous 'scope, keen gaze probing curiously, as he wiped grease from his fingers with a bit of engine room waste.

Against the blazing backdrop of ten thousand stars, a black planet loomed!

It was completely featureless,

and would have been invisible to the unaided eye, had not its rounded bulk occulted so many stars. Obviously, the mysterious tenth planet of the System had the lowest albedo, or factor of reflected light, of any other world.

"No wonder the astronomers could never find it visually," muttered Dr. Zoar thoughtfully, half to himself. Fingering his jaw, he studied the circle of darkness with a measuring, calculating gaze.

"Phath, put us in parking orbit around the planet," ordered Star Pirate crisply, taking a seat before the 'scope, while the little Martian scientist seated himself at his own station, before the banks of detectors that received, measured and recorded all electromagnetic energy and radioactivity in the immediate vicinity of the spacecraft.

There were also banks of sensors which could probe the surface of a planet, moon or asteroid with long-range, delicately attuned vibrations, reporting back to the telemetry of Zoar's control board. With a curt nod, the diminutive green dwarf thumbed his sensors to full power and began examining the dials and meters to learn everything that he could about the mystery world about which they would soon be circling.

"Right, chief!" grinned the Venusian, and took the big chair behind the central control panel. His voice was vibrant with excitement--almost breathless, in fact. A little action at last! Poor Phath had already had about all he could stomach of being cooped up in the little two-by-four cabin with the likes of that hot-tempered horn-toad of a Martian! He hoped the chief would order them down--who knew what excitement might lie ahead? Anything, any danger or peril, was better than boredom, to Phath's straight-forward way of thinking.

"The surface is hidden behind a thick layer of opaque clouds,

lad," muttered Dr. Zoar, studying the dials--readings of his sensor beams. "Whatever may lie beneath the cloud-layer, my instruments can't say; the vapor is too opaque."

"I thought the black sphere looked too smooth and featureless to be the real surface," said Star Pirate, turning up the magnification on the 'scope to full volume.

"Only way to find out what's under the clouds is to go down and see, chief," suggested the Venusian hopefully. Star Pirate grinned, but said nothing. He knew exactly how his white-skinned sidekick had chafed raw from the exasperating tedium of their long journey, and how the possibility of some danger and a little action was tempting to Phath. Indeed, he felt the same temptation himself . . .

Zoar gave him a glance from cold black eyes.

"Might as well have a look, lad," he murmured. "What harm can it do?"

"Finish taking your readings," said the redheaded adventurer. "Any radio signals from the planet? Any artificial radiation, to suggest the natives--if there are any natives, that is--might have achieved atom power? Any sign of spacecraft, space buoys, or artificial satellites?"

Zoar bent his cold unwinking gaze on the dials and meters which studded the tilted board before him. Finally he had to admit there was not the slightest sign of any of these indications of a high, technological civilization.

"If there are any natives, they would be simple savages," he mused. "Or at least planet-bound, pre-atomic cultures . . ."

"You said you figured probably Persephone was nothin' more than a chunk of frigid hydrogen ocean with a few continents of methane ice floating around on top . . . no life could live in that frozen gunk," remarked the Venusian.

"You're probably right," mused Zoar, too caught up in the tantalizing mystery of the black planet to bother responding with his usual sharp tongue, or to provoke yet another round in their endless argument.

"Keep checking," advised Star Pirate.

But the black planet proved to have no satellites, either natural or artificial, and no sign of a high technology could be discovered by their sensitive instruments. The planet was either a lifeless frozen hell, or, if not, then the home of a pre-space people.

There was really only one thing to do--

"All right, take her down, Phath," said Star.

"Yakdar's beryllium belly-button, but now yer talkin', chief!" yipped the excitable Venusian.

10. Frozen World

White fire gushed from the rocket tubes of the Jolly Roger, deftly nudging the trim little craft out of her parking orbit about the equator of Persephone. She sank towards the thick blanket of impenetrable black clouds which surrounded the dark world; ere long, she plunged into them.

Darkness closed about the cabin of the little craft. The 'scope was useless now, for nothing could be seen except for scudding ebon mist. Not visually, that is--but still Dr. Zoar clung to his sensors, probing with delicate vibrations the unknown surface far beneath their keel, and still hidden by the seething swirls of black vapor.

"Coming out of the cloud-layer now, chief!" said Phath cheerfully. And no sooner had those words left his lips, than an eerie yellow light broke about them. The Earthling, the Martian and the Venusian blinked incredulously, and found their craft floating down from a strange sky

of sourceless yellow glare.

"Where does all the cursed light come from?" demanded Phath in baffled tones. Zoar studied his meters closely.

"Electromagnetic forces causing excitation in the bottom layer of the clouds," announced the Martian savant. "That layer seems to be one of the heavy metallic vapors, like argon or--"

"--Neon?" hazarded Star Pirate.

The Martian savant permitted himself a slight, approving smile. "Precisely," he rasped in his hoarse, bullfrog voice.

"Well, it gives plenty of light, sure enough," grunted Phath, sounding rather disgusted. "Too bad there's nothing to see with all that light--"

And so it was: the surface was nothing but one enormous, endless snowfield, broken only here and there by the raw, sharp outcroppings of black mineral deposits, and swept by howling gales. There did not even seem to be mountains on this weird, shrouded world of yellow glare, endless ice, and remorseless wind.

Phath announced the temperature readings from the other side of their hull. It was nowhere near as cold as it would be on Pluto's surface--perhaps the electrical excitation of the neon layer had some sort of a mild warming effect on the planet's surface temperature --but it was cold enough.

"Take an orbit around the equator, Phath," Star Pirate said, "and turn on the cameras. We'll make a photomap, since we're here. Give us something, at least, to take back home."

"Righto!" chirped the Venusian. And the Jolly Roger began to trace a circle around the frozen world, skimming along above the endless snowfields, hurtling along under the uncanny glare of that luminous golden sky.

The trim little speedster soared

through the luminous skies of Persephone, and from time to time she shuddered from stem to stern as her flight was interrupted by the tremendous winds that seized her at random, shook her as a terrier shakes a rat by the throat, then flung her away.

Clutching a stanchion for support, during one of these furious gusts, Star grated: "Why all this wind, Doc? I would have thought it would be relatively peaceful here beneath the cloud-layers . . ."

Dr. Zoar peered at one of his meters that recorded temperature. "We have a severe temperature inversion," he rasped in his deep bullfrog voice. "I suspect Persephone has a molten core, and that erratic blasts of super-heated gas or lava escape to the surface from time to time through volcanic vents or geysers. The reaction between the heat of the core material and the permafrost of the surface evidently causes these gale-force winds--"

He broke off, for suddenly Star Pirate stiffened in his chair before the big 'scope, and uttered a stifled gasp. There, directly ahead of the Jolly Roger, across the seemingly endless snowfields that lay dead and frozen beneath that glaring golden sky, melted into view something like a vast, bowl-shaped depression. A valley, it seemed, and from rim to rim it must have measured hundreds of square miles, perhaps even thousands. And it was green and fertile.

"By all the gods of space--Doc! Phath! Look at this!" he yelled, rousing the two from their study of the controls. They clustered about the big circular 'scope, staring with disbelief.

In all these supra-Arctic wastes, how could such a thing be? They saw farms and fields and forests, glades and gardens and groves, running rivers and lakes like looking-glasses, mirroring the bright yellow skies . . .

"Sure looks like you hit it right

on the nose, Doc, with your volcanic core and geysers of live steam," muttered the Pirate.

Something like a dim dome of pale radiance encompassed the Vale from lip to lip, barely discernible against the unchanging glare of the ever-luminous skies. Approaching the curious dome of force, Star probed it with the ship's sensors, found nothing dangerous, and entered its perimeter. A faint, tingling shock ran through him and his companions, but was over in an instant. Whatever the force dome was, it was no barrier to solid objects, surely: probably it served to retain heat and moisture and atmosphere.

Zoar studied the meters. He wet his thin lips with a pointed tongue. "There's air outside, lad! Eminently breathable, too; warm and moist, if these instruments haven't gone haywire . . ."

Star told Phath to cut their speed. Beneath the floating craft passed vistas of green enchantment. White roads meandered between fields and farms; tiny villages and hamlets appeared; miniature figures could be seen toiling in the fields below. Beyond all this loomed the ramparts and walls of a distant city, towards which the Jolly Roger veered her flight. All of dark gray stone was this city, and ringed by a massive wall breached by four gates at the cardinal points of the compass.

From a central plaza, where rose magnificent edifices that could be palaces or temples, broad, tree-lined avenues radiated like the spokes from the hub of a wheel.

Down towards the dark city swooped the little speedster. Tall towers whipped by, red-roofed, with walled gardens and broad boulevards, arcades, bazaars, mansions. How many thousand inhabitants the dark city housed was beyond guessing, but it was a metropolis of impressive dimensions.

"Who could have dreamed this dead ice-ball of a planet could

have people on it!" muttered Dr. Zoar dazedly.

"How d'you know they're people?" Phath demanded. "They could be any kind of monstrosity, you know--"

"Well, we'll soon know," grunted Star Pirate. "Let's take her down. You're spoiling for some excitement, anyway."

"Sure; but do you really think this is smart, chief?" asked the Venusian. Star shrugged and grinned his mischievous grin, green eyes sparkling with excitement.

"It's been a dull voyage so far," he chuckled. "Let's see what we can do to liven it up! Besides, from the looks of the town I'd say the people are on the level of our own medieval times. Take a look down there and see for yourselves! No sign of mechanized vehicles or aircraft, and from the looks of those paven roads they were built for horse-drawn carts, or whatever . . . actually, they seem to domesticate big lizard-like beasts for that purpose--see the paddock?"

"I'd say you are quite correct, lad," growled Zoar. "My sensors still show no sign of activity on electrical or radio wavelengths, and none of the neutrino-leakage we would expect to find from atom power."

"Right! Doubt if they've got the internal combustion engine yet, much less electricity or atomics. Which means we can fly and fight--if it should come to that--rings around them."

"I suppose you're right, lad . . ." muttered the frogfaced little savant, fingering his jaw thoughtfully.

"Sure I am," Star grinned. He nodded to the scene in the big 'scope. "Phath, let's take her down to a landing in that big central plaza. See it? There's a stand of funny-looking trees in the very middle, ringed with a wide circle of crushed gravel. Bring us down there."

"You got it, chief!"

"Right: now, Doc, it's up to you and me to man the guns. Just in case we're way off the mark in supposing the Persephonians' level of technology is still back in the bow-and-arrow period. Oh, leave your sensors on and set them to 'record.' Every bit of data we can get may come in handy."

The two took stations at the big proton needle guns whose blisters protruded from the smooth hull of the trim little speedster. The proton needles could reduce half the city to rubble in minutes, so they felt they had little to fear from natives armed--most likely--with nothing less serious than pikes and javelins.

To either side of the central plaza rose two imposing edifices, built of the same lustrous, dark stone as were most of the buildings which composed the mysterious city. Whether the two, which faced each other across the greensward of the little park amidst the plaza, were palaces or temples it was impossible to guess. Probably one of each, was Star Pirate's guess, and his guess turned out to be accurate.

The Jolly Roger floated down on her null-gravity field. Then her keel crunched and squealed as it sank into the bed of gravel that ringed about the grove.

The rocket-tubes coughed and died.

They had landed on the surface of the unknown world!

11. The Flying Men

Chemical analysis proved that the air outside the ship was composed of a mixture of oxygen, nitrogen and hydrogen very similar to Earth's own atmosphere, and therefore breathable without the need of protective masks and bottled oxygen. So Star opened the control cabin airlock and stepped out, followed by Dr. Zoar and Phath, as soon as the Venusian pilot had

locked the controls against any possibility of tampering.

They stepped forth not on grass, as they had unconsciously supposed they would, but on soft, cushiony, emerald-hued moss, pearled with sweet dew.

The air was warm and moist and fragrant with the heady aroma of many strange flowers and blossoming trees unfamiliar to the Earthling, the Martian and the Venusian. The frigid, howling gales that swept the golden skies of the world beyond the immense valley, sheltered behind its dim dome of force, seemingly could not penetrate into this alien Eden. Looking about at the lush shrubbery, the velvet moss, the strange flowers, Star shook his head; it was difficult to believe that, not half a mile away, the surface was locked under an adamant sheath of eternal ice and swept by frozen hurricanes of terrific force, hostile to all life.

"People coming, chief!" snapped Phath warningly. Star Pirate looked up to see a strange sight. From the uppermost tiers of the big palace-like structures which faced each other across the plaza, there came hurtling towards them immense, red-furred, prick-eared creatures, with the ribbed, membranous wings of bats. But enormous bats--their wingspread must have measured thirty feet and more.

And mounted upon their backs, seated between the beating vans, were human riders! Star thrilled to a distinct shock as he had his first glimpse of the mysterious denizens of this weird new world. They rode their batlike steeds, seated in capacious wicker-work saddles, guiding their aerial mounts with long reins. The men--for only one of them seemed to be a woman--were completely humanoid, save for their dead-white skins and lustrous eyes, slightly larger and rounder than Star was accustomed to back in the many worlds of the System. They were as black as obsidian,

those staring eyes, and the hair upon their heads, which they wore long and which whipped behind them in their flight like elfin banners, was of the rare shade called platinum-blond.

They were slight of build, a trifle shorter than Phath, but taller, of course, than the green-skinned dwarf at his side. They were all dressed alike in silken tunics of some dark, glittering metallic weave, short-sleeved and ending at the knee. Soft buskins of something like supple doeskin clad their feet, and bound about the brows of each of the newcomers on a silver-link chain was a large disc of glimmering amber crystal which swirled and sparkled with uncanny inner fires.

"I don't see any weapons, chief--guess they've come to have a polite palaver with the sky-gods from the silver bird," grinned the Venusian at his side. Phath's sense of humor generally tended to get broader the more danger they were in, so Star tried to ignore his sidekick. But, in fact, he saw nothing resembling javelins or bows or swords--not even knives. Each, including the young woman, however, did clasp a slim metallic baton of dully gleaming metal, perhaps ceremonial in function, like a mace of office.

The gigantic batlike flying steeds settled to the emerald sward some several yards away, their thundering membranous wings raising a dust-storm of leaves, twigs and bits of gravel. The first of the riders to dismount was a languid, slender young man who seemed a personage of high rank or importance, from the way the members of his entourage deferred to him. He hesitantly came nearer, staring with growing amazement at the three strangers. His wide eyes flew from Star's bronzed features, red curly hair and bright green eyes, to the diminutive green-skinned dwarf in the dusty red smock at his side, and the lithe, hairless, pink-eyed Venusian.

Above all else, he seemed fascinated with the Jolly Roger. From the way he stared at its sleek, glistening lines with awe and bewilderment, it was blatantly obvious that he had never seen--perhaps had never even dreamed--of such an astounding vehicle as the spacecraft.

And the gaze he turned on Star Pirate reflected this. It would seem that Phath's joke about "sky-gods from the silver bird" had struck a lot closer to the center of the truth of the matter than had at first seemed likely.

This personage and his retinue had all flown hither from the imposing structure directly ahead of them, which they soon discovered to be the palace of the prince. The second party, consisting of the young woman and what at first appeared to be a boy--but whom they discovered was a girl with her bright hair shorn mannishly short, a novice in the temple service, bidden this day to attend upon the person of the high priestess--had flown in the same instant from the upper works of the huge building at their backs, which proved to be the temple.

That palace and temple confronted each other across the plaza was symbolic of the confrontation and the struggle for power between the two centers of administration. But this they did not suspect until a bit later.

Star Pirate stepped forward and saluted the princely personage with a lifted palm. His other hand, however, although unobtrusively, hovered mighty close to the butt of his proton needle in its worn holster at his hip.

"I don't expect that you folks will be able to understand my lingo, but maybe you can read my meaning in the tone of my voice," he said. "We come as friends to visit you on a peaceful scientific mission, and we greet you in the name of peace."

The reply he received astounded

him--but it came, not in words, but in the form of a cool thought-tendrill insinuated into the depths of his brain.

There is no need to accompany your thoughts, lord, with vocal utterance. And we, in turn, greet you in the name of peace! I am Narba, prince and ruler of this country, the Great Vale of Tuluun. I bid you and your stranger-friends welcome to this city of Alazar, and will be happy to offer the three of you lords the hospitality of my palace yonder--

"Controlled telepathy, by the Twin Moons!" croaked Dr. Zoar just loud enough for Star Pirate to hear. "Thank the space-gods I left the sensors switched on as you said, lad. At last we will have measured the wavelengths of telepathic communication and of thought itself!"

Phath jostled the green dwarf into silence with a rude elbow.

"Watch what you're blabbing, frog-face," hissed the Venusian in sibilant tones. "Utton-bay yer ip-lay. Le's not give the show away in front of all these telepaths--"

Dr. Zoar simmered towards a boil, then subsided. He cleared his throat with a grating cough and fixed the white-skinned space-adventurer with a cold hard eye that could probably pry open an oyster at twenty paces.

"A civilization where telepathic communication is the norm, my swamp-lizard of a friend, would of necessity have to be a civilization in which one politely ignores--or somehow manages to filter out and remain oblivious of--any thought-waves which are not specifically directed at you by another person. Otherwise polite society would collapse into raw red savagery in a moment. Think what would happen at a Manhattan cocktail party, or in a singles bar, or during a high-level business conference, or when a politician is giving a speech, if everyone felt free to read everyone else's

slightest thought, and you will realize what I mean!"

"Um," said Phath, with a shudder, looking gloomy. He hated it so, whenever Dr. Zoar proved to be right about something. Which, come to think of it, was depressingly frequent!

Just then Prince Narba hastily stepped aside as the young woman from the temple and her little novice strode forward. The woman advanced through Narba's entourage, which melted from her path like snow before a spring rain. She stepped forward, brushing past the Prince unceremoniously, not even deigning to cast a glance in his direction, and planted herself squarely in front of Star Pirate, hands planted on her hips, sweeping him from heel to crown with a sharp, searching gaze.

12. Gods of Tuluun

She was young and handsome, in a bold, domineering sort of way, and she moved with a swaggering arrogance that left no doubt in your mind that she held a remarkably high opinion of herself, and was not at all accustomed to being thwarted.

Her brilliant black eyes were afire with keen interest, and in their gleam shone something not unlike the fire of fanaticism. The redheaded space-adventurer had seen it before in other eyes, in his time, and knew that it usually meant trouble in anyone's language.

Having raked Star Pirate with her eyes, and examined the Martian and the Venusian with the merest flick of her gaze, she turned searchingly to Prince Narba, who virtually cringed before her. It was not hard to see that power was divided between church and state in here in the Great Vale of Tuluun, and that, for the moment at least, church seemed to be uppermost.

You speak of 'hospitality' in

the palace, Narba, as if you were
wining and dining emissaries from
some other city of the Vale! But
these are not men, but gods! In
sooth, they are none other than
the very star gods, whose descent
into the Great Vale has been for
so very long announced as forth-
coming by our prophets! And, as
such, it were only fitting that
I, Zarga, as high priestess of the
star gods, welcome them, not you--
and that they be most fittingly
housed in the temple, not your hovel
of a palace! Come, divinities!
Follow me--

And without so much as a backward glance to ascertain that the "gods" were obedient to her command, the young woman turned on her heel and was about to go swaggering back to where grooms held the immense winged steeds of herself and the girl novice, when she found the child directly in her way and thrust her aside with a sharp ejaculation of impatience.

The girl fell, uttering a little cry of pain--the first vocal sound which Star Pirate and his comrades had as yet heard from the lips of the Persephonians. Until then they had not been fully certain that the pale-skinned, bright-haired denizens of Tuluun in fact possessed the power of uttering sounds.

Star stepped forward quickly and bent to assist the shaken child to her feet. Tears glimmered in her huge dark eyes as she stared at him, lips trembling with incredulous disbelief.

Lord--!

"Are you hurt, girl?" demanded Star roughly. Zarga had frozen in her tracks and was looking back over her shoulder with a face filled with a torrent of conflicting emotions, whereamong rage, amazement, and fury were preeminent.

N-no, lord--please--my mistress--

Prince Narba seized this momentary distraction to speak up, however hesitantly.

But, my lady priestess, these

strangers do not in any wise resem-
ble the likenesses of the star gods
as recorded in our folios or bas-
reliefs or statuary . . . surely,
until we know for certain who and
what they are, the palace would
be most suitable--

Although the Prince, who seemed on the whole rather ineffectual, tended to defer to the haughty young priestess, it could be seen that he had not entirely surrendered the power of the monarchy to the authority of the temple.

They began the discussion, the Prince humble and tactful, the priestess punctuating her mental argument with sharp, emphatic gestures. At Star Pirate's side, Dr. Zoar chortled happily to himself:

"And to think that every mental transmission is being scanned and dissected by my sensors, and registering on the dials and meters! How delicious!"

"You mean your sensors are picking up these thought-waves?" demanded Star, surprised. Zoar shrugged and gave a leer which was his way of smiling.

"Certainly! You know that thought is electrical . . . that the brain is simply an electrochemical battery . . . hitherto, attempts to measure the wave-length of human thought have been faulty and inconclusive, since the waves are exceptionally short and the energy behind such broadcasts relatively feeble . . . but my sensors are detecting the whole thing."

The matter is settled, lords,
said Prince Narba resignedly, turn-
ing from the priestess to address
Star Pirate. We are agreed, Lady
Zarga and I, that you and your com-
rades would most fittingly be housed
in the temple of the star gods
across the plaza--

Something warned the redheaded adventurer that perhaps it were best if the three "star gods" stayed as far as possible from their priestess, since their ignorance of their

own theology was as complete and total as it could possibly be. And what was the point of being treated like a god, unless occasionally you decided to act like one?

"We disagree, Prince Narba, and desire to accept the hospitality of the palace," he said imperiously. "There will be time enough to visit the temple, where the Priestess Zarga will no doubt be happy to present the assembled clergy to us. For now, let us be gone to your palace."

Narba's eyes lit with delight and his pale face broke into a smile of pleasure--exactly matched, Star Pirate noticed, by the venomous glare which lit the dark eyes of the priestess, and the expression of outraged disapproval which marred and twisted her handsome but cold features. It was more than obvious that the Lady Zarga was not used to being opposed in anything; nevertheless, under his keen, watchful eye, she wilted and sketched a humble bow. But he could guess how much it rankled her soul to submit even to the wishes of a god, when it ran contrary to her own wishes.

"Is it wise to leave the ship unguarded, lad?" asked Zoar worriedly. Star Pirate shrugged.

"Unless they know the combination of the lock, how could any of them open the airlock? Stop worrying, Doc, and c'mon. We're armed and they're not--and they think we're their gods! How can we get in trouble?"

"I don't know, I'm sure," muttered the diminutive Martian savant. "But I have a suspicion that we'll manage to, somehow . . ."

13. Kidnapped!

The Prince gestured, and room was made for the three adventurers behind the riders of the red-furred bats. The saddles were capacious enough to hold an extra passenger, Star perceived, and while he wasn't

exactly anxious to ride the flapping creature through the skies, gods aren't supposed to be afraid of such things, so he pretended not to mind. It was a relief to the redhead to see that Dr. Zoar and Phath were taking their cue from his manner.

While the three newcomers mounted their saddles, however gingerly--in the case of Dr. Zoar--and distrustfully--in the case of the Venusian, Phath, who had no confidence at all in modes of transportation that did not involve machinery--Star could not help glancing over his shoulder to see the furious high priestess stalking away to her mount, followed by the little novice.

While the priestess did not deign to cast a glance behind, the child did, and the shy gaze she turned upon the tall, redheaded stranger was brimming with adoration . . .

Once in the saddle, the grooms fastened them in place by belting thin leather straps about their thighs for safety. Then the order for flight was given by Prince Narba, and the riders dug their heels into the furry ribs of their gigantic steeds.

Vast wings snapped open like enormous Chinese paper fans, and beat the air, throbbing like pounded drums. Dust and leaves and twigs and gravel arose about them in a blinding cloud. Slowly, but then faster and faster, they ascended into the air on the giant bats. They circled the park once, then soared off towards the palace, landing on gigantic perches fitted into the upper works, which served as nesting-places--Star found it hard not to think of them as "hangars"--for the winged creatures.

He was pondering the problem of the priestess, Zarga, whom he had seriously offended by his whim to frustrate her plan to have him as her guest, choosing Prince Narba. Narba seemed intimidated by the priestess, with her imperious and

domineering ways--

"As who wouldn't be?" muttered the Pirate humorously to himself.

Your pardon, lord? inquired the noble whose saddle he shared.

"Nothing--talking to myself . . . but couldn't you read my thoughts?" Star added, rather curious. The aristocrat smiled and explained that as the "lord" was not at the moment wearing his "talisman"--and here he touched with one forefinger the disc of amber crystal all the Tuluunites wore fastened to their brows--his mental transmissions were singularly difficult to perceive.

The redheaded adventurer instantly guessed that these curious crystals in some unknown manner focused or concentrated the thought-messages, as a lens focuses a random beam of scattered light.

It was an interesting datum, and one which Star filed away for later reference.

They might not as yet be proven gods to Prince Narba, but certainly they were considered guests of rare prominence, as was shortly demonstrated.

"Did you ever see such a place, chief?" chortled Phath incredulously. "Those wall-panels over there are carven ivory, and cut all of one piece. Makes you wonder how big the beast was they took the horns from! And these blackwood tabourets are inlaid with turquoises big enough to choke a hen, and plaques of mother-of-pearl."

Dr. Zoar was dreamily inspecting the goblets and plates of food and drink set out for their refreshment on a low table. "Gold," he murmured. Then he picked up a gem-studded goblet: "And platinum. Stud-ded with fire opals, no less. The 'hospitality' of the palace, indeed!"

"Yeah," drawled Phath lazily, sprawled on a silken couch amidst a nest of velvet cushions. He paused to take a gulp of luscious white

wine from a silver cup and to bite into a ripe, delicious fruit. Munching, he paused to select a sweetmeat from the gold bowl at his elbow. "I could sure get used to this sort of living, all right! If this is how star gods live, chief, let's never let 'em know we aren't the genuine article!"

"A good thing for you our telepathic hosts are too considerate to read your mind, or you'd blow the game on your own," scoffed Star Pirate with a grin. Then, sobering, he turned to Zoar who was sampling some sliced cold fowl.

"What about this mind-reading stuff anyway, Doc? How come we seem to be able to do it, too?" he inquired.

The Martian dwarf shrugged, chewing the tender spiced meat. "I gather the ability to project and receive thoughts is common among the members of the human species, but that in order to exercise the faculty properly you need some sort of assistance."

"Those crystals they wear, you mean?" asked Star.

"Good thinking, boy!" grinned Zar, selecting one of the ripe fruits.

Star continued, "They seem to focus the thought-waves, as a lens focuses light-waves. The fellow guiding the bat-thing I was riding remarked, in response to my question, that he could receive my thoughts fuzzily, and that I really needed 'talismans.' It took me a minute or two to realize what he was referring to--"

"Hsst!" cried Phath, tensing suddenly. The faintest sound had come to his keen ears--the soft scuff of sandals and the creaking of hinges.

His comrades rose to their feet uncertainly, Star's hand going to the butt of his proton needle.

"Look, lad!" hissed Zoar, pointing.

A panel opened in the wall directly before them, revealing a

black rectangle in which stood several robed and hooded figures. One of these in the forefront tossed back the cowl which obscured its features. It was the imperious young woman whose invitation Star had spurned--the high priestess, Zarga!

Seize them, she commanded. The robed figures flung themselves without warning upon the three visitors. Star tugged his weapon free, but an intruder touched his arm with a metal baton, and a stunning wave of force numbed him from shoulder to wrist. Paralyzed, his grip loosened and the needler fell from lax fingers to thud against the softly carpeted floor.

The numbing wave of force had come from the odd metallic batons Star had first noticed when the welcoming party had greeted them in the park. Then he had thought them merely ceremonial in nature; now he grimly understood that they were weapons of some queer sort.

"The batons conduct thought-force from the crystals!" cried Zoar. But by this time all three had been rendered helpless by the paralysis of the metal rods, which benumbed whichever part of the body they touched.

Working with swift, silent efficiency, the templar warriors bound Star and his companions, leaving their legs free but trussing their paralyzed arms behind their backs. Apparently, the numbing mind-force would soon wear off.

Hurry! Take them through the underground passage, commanded Zarga.

"A fine way to treat your gods, lady," complained the Venusian ruefully. She shot him a fierce glance from sparkling black eyes.

'Gods'? You are not gods--you have nostrils; your breast rises and falls when you breathe. What need have star gods to take breath? Is there air about the stars, fool? The gods--if gods in sooth there are!--are more like sapient energy-

forms than aught else. They certainly are not flesh and blood. You are only men--men of a breed strange and unfamiliar to us, true--but men, for all that. Which does not mean that the temple cannot use you . . .

"Just to set the record straight," said Star grimly, "we never claimed to be gods in the first place! That was entirely your own idea, remember?"

The priestess flushed, eyes flashing with resentment, and sank strong white teeth into her lush lower lip in vexation. But she made no reply, turning on her heel and stalking through the opening in the wall, leading the way. Her three captives were hustled along after her.

Just before the darkness of the unlit secret passage swallowed him up, Star Pirate had one glimpse of a face he recognized. It was that of the little novice, the girl called Sequin, as Prince Narba had told him--the child priestess Zarga had callously struck to the ground in her furious impatience, and whom he had helped to her feet.

Her hood had fallen back, baring her flower-like face and huge, troubled eyes that brimmed with unshed tears. Her soft lips trembled and she seemed almost on the point of speaking, of begging his pardon--

But then his captors thrust him head-first into the dark tunnel and the panel closed and locked behind him. And he was forced on into the blackness--a helpless, friendless captive on a planet of hostile strangers.

You will not want to miss the third part of this thrilling adventure in the spaceways, as Star Pirate battles the mind masters of an alien world! Read BEYOND THE WORLDS WE KNOW, Part III, in the very next action-packed issue of ASTRO-ADVENTURES!

CAPTAIN FUTURE

YESTERDAY'S MAN OF TOMORROW

by Will Murray

Edmond Hamilton was possibly the most famous name in pulp science fiction during the thirties. He was a pioneer, a master of a then-new form, called "Space Opera." In an absolute sense, he was to pulp SF what George Lucas is to film SF today: a giant. As such, he was the logical choice to write Standard Publications' new SF hero, Captain Future, who was created by Editorial Director Leo Margulies and editor Mort Weisinger in response to the First World Science Fiction Convention held in New York in the summer of 1939. Margulies, the story goes, attended the convention out of curiosity, and was struck by this early manifestation of organized fandom. "I didn't think you fans could be so damn sincere," he blurted. Huddling with Weisinger, they created a character they called "Mr. Future, Wizard of Science," who would best be described as a futuristic version of Doc Savage. Weisinger, still years away from editing Superman, wrote a long prospectus for the character, which he outlined as a genetic superman who battled evil in the twenty-first century along with a trio of alien sidekicks. An extremely gimmick-minded editor, he must have thought Doc Savage the greatest series in history, because everywhere he went he brought Doc Savage ideas with him. (He was a personal friend of Doc's main writer, Lester Dent.)

But Weisinger had ideas of his own, too. A couple of them appeared in the Mr. Future prospectus and were never used. They later showed up in Superman when Weisinger took over that comic. One was Mr. Fu-

ture's device which intercepted light rays that had traveled off into space, thus enabling him to see events in the past. Superman needed no such device to accomplish this handy feat, however. One of Future's sidekicks, as outlined by Weisinger, was a robot constructed in Future's likeness, designed to substitute for him in emergencies. This is the source for Superman's robots.

This unnamed robot, along with the other supporting characters, which included a tiny, rubylike alien named Otho, which Future wore set in a ring (!), and Simon Wright, a walking encyclopedia with a photographic memory, but no initiative of his own, were an unwieldy group. When Margulies and Weisinger hired Hamilton to take on the series, the latter objected loudly to this supporting cast, and over a series of meetings Hamilton and the others refined the entire concept. The robot became Grag, a hulking mechanical man who combined strength and good-natured loyalty; Otho was turned into a white-skinned, emerald-eyed android who possessed the wit and intelligence Grag did not; and Simon Wright was recast as an elderly scientist who, at death, had his brain encased in a transparent box fitted with artificial eyes and force beams for mobility. Hamilton dubbed the trio the Futuremen, and somewhere along the line Mr. Future was rechristened Captain Future.

The end product of all this work was a novel, Captain Future and the Space Emperor, which appeared in the Fall 1939 issue of Captain Future. The quarterly was subtitled

"Wizard of Science," which became "Man of Tomorrow" not long after Superman acquired that particular nickname. Hamilton's first Captain Future novel attracted its share of attention. Lester Dent read it, probably at Weisinger's urging, and decided Hamilton had done such a good job imitating the Doc Savage style that Dent asked Hamilton to ghost Doc Savage. Hamilton declined. He was too busy. Humorist S. J. Perelman also picked up that premier issue and it inspired him to pen an article for the New Yorker titled "Captain Future, Block That Kick!" It consisted of a rather arch plot synopsis of the novel to make Hamilton and his hero look silly. Still, Perelman did admit that "Beside Captain Future, Wizard of Science, Flash Gordon and the Emperor Ming pale to a couple of nursery tots chewing on Holland rusk." But perhaps even that much was not meant to be complimentary.

Captain Future and the Space Emperor may not have been the greatest SF novel of all time, but it was good, escapist pulp, recounting Captain Future's battle with the evil Space Emperor, who is fomenting unrest on Jupiter where Earthmen co-exist peacefully with the native Jovians. The Space Emperor is the first of the many super-criminals Captain Future chased around the solar system. Others included the Wrecker, The Life-Lord, Dr. Zarro and Future's eternal adversary, Ul Quorn, aka the Magician of Mars. More on him later.

As explained in that first novel, Captain Future was really Curt Newton, the orphan son of scientist Roger Newton who fled to a secret laboratory on the moon in order to escape an enemy named Victor Corvo and to conduct experiments in artificial life. These experiments led to the creation of Grag and Otho, and the technology which preserved Simon Wright as the Living Brain. But after Newton's son Curtis was born, Victor Corvo caught up with him and killed Roger and

his wife. In revenge, Grag and Otho killed Corvo barehanded, and a dying Elaine Newton entrusted the upbringing of her infant son to the inhuman trio.

True to her wishes, Simon Wright, Grag and Otho raised Curt Newton in the solitude of the moon, teaching him, acting as surrogate parents and ultimately transforming him into a physical and intellectual superman along a program obviously borrowed from Doc Savage--but which really goes back to the 1880s and Nick Carter. When he reached maturity, Curt Newton, scientist and adventurer, dedicated himself to preserving the future of the solar system against the forces of evil and took the name of Captain Future. He was not a Doc Savage clone, however. He was a brash, boyishly cocky redhead who may have owed much to C. L. Moore's grim space-farer, Northwest Smith.

As Captain Future, Newton patrolled the solar system in his tear-shaped ship, the Comet, which could perfectly imitate the look of a comet in flight when necessary. He always wore a gray or green zipper suit (although the Earle Bergey covers invariably showed him attired in red or blue spacesuits) and carried a worn proton-pistol cowboy-style. The rest of the system, including the Planet Police, had to content themselves with crummy blasters known as atom-guns. Future's unique sidearm had a discretionary stun capability, much like a Star Trek phaser. Eschewing any special costume, he was known by his special signet ring, whose jewels revolved in their setting to represent the nine worlds. A good friend of Earth's President, James Carthew, as well as various members of the Planet Police, including special agent Joan Randall, his main squeeze, Captain Future operated without official interference. His headquarters was a sort of Fortress of Solitude on the moon.

Initially, Captain Future concerned himself with just our solar

system--an editorial requirement as ironclad as those which demanded three big capture-and-escape scenes per novel and a futuristic sports game in every issue. With the ninth novel, Quest Beyond the Stars (Winter 1941), the Futuremen finally venture beyond Pluto to the Birthplace of Matter, which may contain the only method of regenerating Mercury's dying atmosphere. The Birthplace of Matter is somewhere beyond Sagittarius, they discover, and it contains an artificial world built eons ago by a strange race known as the Watchers, who have since vanished. Naturally, Captain Future's mission is a success.

As the series progressed, the scope of Newton's adventures broadened. He discovered a hidden world in a comet (The Comet Kings, Summer 1942), and in The Lost World of Time (Fall 1941) he traveled back in time to the lost world of Kaitain, where he discovered that all human life in the universe originated with a race from the Deneb system. In The Star of Dread (Summer 1943) he finally went to Deneb. Author Hamilton, nicknamed "the World-Saver" because his heroes often rescued entire planets from awesome destructive agencies, created a consistent milieu for his characters to romp in. Often, old characters, places and backgrounds were revisited.

One of these recurring characters was Ul Quorn, the renegade scientist whose red skin, ageless looks and black hair and eyes reflected his mixed Martian, Venusian and Terran blood. He first appeared, along with his sultry Martian girlfriend N'Rala, in Captain Future and the Seven Space Stones (Winter 1940), returned in The Magician of Mars (Summer 1941), and finally met his end in The Solar Invasion (Startling Stories, Fall 1946). The enmity between Captain Future and the Magician of Mars was not limited to good-versus-evil. Ul Quorn was the son of Victor Corvo. Theirs was a blood feud.

Captain Future was a wonderful magazine, but Hamilton's stories were considered too juvenile by many in the SF field, which was just beginning to mature at that time. A number of story elements were pretty childish. For one, Grag and Otho were always bickering. This was another Doc Savage gimmick. Doc's aides, Monk and Ham, acted the same way. In that series, both characters acquired silly pets. So did Grag and Otho. In one story, Grag adopted a metal-eating moon-pup and dubbed him Fek. Not to be outdone, Otho later found himself a meteor-mimic, Oog. Oog is described as a white, doughy creature with four legs and two big eyes. It's called a meteor-mimic because it could change its shape and impersonate any creature or object near its size. The idea for these pets may have been Weisinger's, but when Hamilton later went to work for Weisinger writing the Legion of Super-Heroes, he dug back into the pages of Captain Future and dusted off Oog for that series, rechristening him Protty. Weisinger and Hamilton worked together well wherever they went. Even when Hamilton reworked the original Mr. Future idea, he kept as many of Weisinger's ideas as possible. The original Otho was obviously the inspiration for Captain Future's signet ring, and as for the robot which was to have been Curt Newton's double, that idea was carried over in the android Otho, who often made himself up as his "chief."

During World War II, just when Captain Future was hitting its stride, it ran into problems. Edmond Hamilton resigned from the series because he expected to be drafted. Leo Margulies hired two writers to replace him, Weird Tales regular Manly Wade Wellman and Joseph Samachson, who wrote under the pen name of William Morrison. To cover this change, a house name was summarily attached to the series while Hamilton was still writing it, and the "new" author became

Brett Sterling. Then Hamilton discovered he wasn't going to be drafted, after all. He continued the series as Brett Sterling, but that wasn't the end of his troubles. Once, customs agents seized the manuscript to his story, The Magic Moon, because they were concerned over maps and diagrams which were part of two background features he also wrote for the magazine, "The Worlds of Tomorrow" and "The Futuremen." They were seized as he crossed the Mexican border and relayed to Washington where Hamilton's map of the imaginary planet Vulcan was closely examined by war-weary censors. Captain Future had to skip an issue; later, Hamilton got his story back. Another time, he was shocked when he read Joseph Samachson's Captain Future novel, Days of Creation (Spring 1944). It contained the same plot--Captain Future loses his memory--as a story he had just turned in, Outlaw World. Not wanting to appear to be imitating "Brett Sterling," Hamilton hastily rewrote Outlaw World. His editor, who approved all outlines in advance, must have been asleep. It wasn't Mort Weisinger; he joined National Comics (now DC Comics) in 1941, from which he was drafted into the Army himself.

Outlaw World never appeared in

the pages of Captain Future. The paper shortage killed the magazines. Several leftover novels were dumped into a companion magazine, Startling Stories; then Captain Future was retired in 1946. But not for long. For years later, starting with "The Return of Captain Future" in the January 1950 Startling Stories, Curt Newton returned. This time it was in a series of sharp, poignant novelettes heavy on character and short on action. Hamilton's reputation in the SF field had taken a beating because of the Space Opera aspects of Captain Future. He had already redeemed himself by 1950 with many good, mature stories, and now he was out to clear the good Captain's name.

This he did with a vengeance. Through seven novelettes, each focusing on a different character, Hamilton explored the Captain Future cast. Simon Wright briefly regained human form in "The Harpers of Titan" (September 1950), and Curt Newton's character was tested in a beautiful final story, "Birthplace of Creation" (May 1951), when he returned to the Birthplace of Matter to stop a scientist from tampering with the power to create worlds and found that even he was not immune from

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final Asteroid Planet was blown to pieces. Of course, an oversupply of anything can bust market-value. But romantic appeal still remains, doesn't it?"

Norensen paused. Experience had dimmed the charm of his younger viewpoint for a while. But it had refused to die.

"Vesta is a chunk some two hundred miles through," he went on. "Quite large. It came from deep down in the original planet. And it glows with a shining, pinkish brilliance. Almost like gold . . ."

the end of those poor Ionians, and the end of the pyramid! The end of the whole thing. Suicide, you might call it. You see, back there in the telepathy kiosk, I wished that too, and the machines were made only to obey. I hope that when Earthmen, in the future, learn as much science as existed here on Io, they'll know how to use it, too. We're much too young a race yet, I guess."

Clara Arnold's awe softened after a moment. "Come on, Evan," she said. "Let's forget all about that for now. I want to show you the kitchen, here. It's ducky! . . ."

the corruption of power. Captain Future had grown up.

Having closed off one phase of his SF career, Edmond Hamilton moved on, ultimately going into comics where he scripted Batman, Superman, and a series probably best suited to his skills, the Legion of Super-Heroes. All the while, he continued doing SF stories and novels, until his death in 1977.

As for Captain Future, he did not die. Not exactly. In the early seventies, Popular Library reissued thirteen of the novels with a few nice Jeff Jones and Frank Frazetta covers--although most of the covers

were awful reprints from the German dime novel series, Perry Rhodan. Better packaged reprints appeared in Sweden and Japan, where the character remains popular. The Japanese produced an animated TV series of Captain Future's adventures. It is now available here on videocassette. Maybe it will lead to a resurgence in interest in one of our earliest--and best--space opera heroes. Captain Future deserves a comeback. After all, it's only two years until 1990, the year in which, according to Edmond Hamilton's original story, Curtis Newton was (or will be) born.



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