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BEYOND TIME AND SPACE

Edited by
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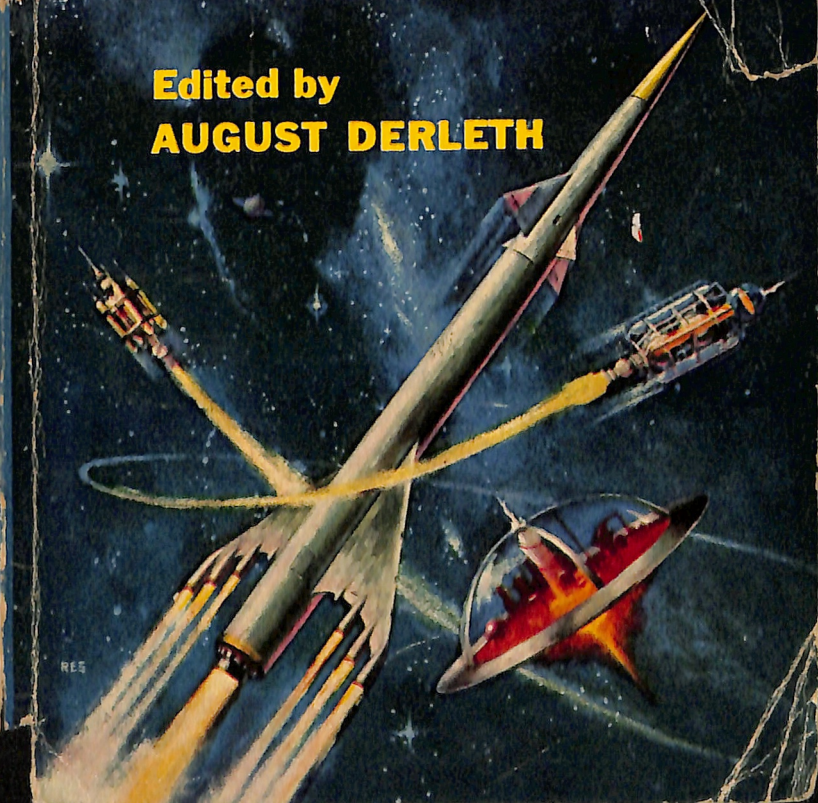

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The Long Watch

by Robert A. Heinlein

"NINE *ships blasted off from Moon Base. Once in space, eight of them formed a globe around the smallest. They held this formation all the way to Earth.*

"The small ship displayed the insignia of an admiral —yet there was no living thing of any sort in her. She was not even a passenger ship, but a drone, a robot ship intended for radioactive cargo. This trip she carried nothing but a lead coffin—and a Geiger counter that was never quiet."

—From the editorial *After Ten Years,* film 38, 17 June 2006, Archives of the *N. Y. Times*

Johnny Dahlquist blew smoke at the Geiger counter. He grinned wryly and tried it again. His whole body was radioactive by now. Even his breath, the smoke from his cigarette, could make the Geiger counter scream.

How long had he been here? Two days? Three? A week? Time doesn't mean much on the Moon. He let his mind run back: the last clearly marked time in his mind was when the Executive Officer had sent for him, right after breakfast——

"Lieutenant Dahlquist, reporting to the Executive Officer."

Colonel Towers looked up. "Ah, John Ezra. Sit down, Johnny. Cigarette?"

Johnny sat down, mystified but flattered. He admired Colonel Towers, for his brilliance, for his ability to dominate, and for his battle record. Johnny had no battle record; he had been commissioned on completing his doctor's degree in nuclear physics and was now junior bomb officer of Moon Base.

The Colonel wanted to talk politics; Johnny was puzzled. Finally Towers had come to the point: it was not safe (so he said) to leave control of the world in political hands; power must be held by a scientifically selected group. In short—the Patrol.

Johnny was startled rather than shocked. As an abstract idea, Towers' notion sounded plausible. The League of Nations had folded up, so had the United Nations; what would keep the Federation from breaking up, too, and thus lead to World War IV? "And you know how bad such a war would be, Johnny."

Johnny agreed. Towers said he was glad that Johnny got the point. The senior bomb officer could handle the work, but it was better to have both specialists.

Johnny sat up with a jerk. "You are going to *do* something about it?" He had thought the Exec was just talking.

Towers smiled. "We're not politicians; we don't just talk."

Johnny whistled. "When does this start?"

Towers flipped a switch. Johnny was startled to hear his own voice, then spotted the recorded conversation as having taken place in the junior officers' messroom. A political argument, he remembered, which he had walked out on . . . a good thing, too! But being spied on annoyed him.

Towers switched it off. "We've started," he said. "We know who is safe and who isn't. Take Kelly——" He waved at the loudspeaker. "Kelly is politically unreliable. You noticed he wasn't at breakfast?"

"Huh? I thought he was on watch."

"Kelly's watch-standing days are over. Oh, relax; he isn't hurt."

Johnny thought this over. "Which list am I on?" he asked. "Safe or unsafe?"

"Your name has a question mark after it. But I have said all along that you could be depended on." He grinned engagingly. "You won't make a liar of me, Johnny?"

Dahlquist didn't answer; Towers said sharply, "Come now—what do you think of it? Speak up."

"Well, if you ask me, you've bitten off more than you can chew. While it's true that Moon Base controls the Earth, Moon Base itself is a sitting duck for a ship. One bomb—*blooie!*"

Towers picked up a message form and handed it over; it read: I HAVE YOUR CLEAN LAUNDRY—— ZACK. "That means every bomb in the *Trygve Lie* has been put out of commission. I have reports from every ship we need worry about." He stood up. "Think it over and see me after lunch. Major Morgan needs your help right away, to change control frequencies on the bombs."

"The control frequencies?"

"Naturally. We don't want the bombs jammed before they reach their targets."

"What? You said the idea was to *prevent* war."

Towers brushed it aside. "There won't be a war—just a psychological demonstration, an unimportant town or two. A little bloodletting to save an all-out war. Simple arithmetic."

He put a hand on Johnny's shoulder. "You aren't squeamish, or you wouldn't be a bomb officer. Think of it as a surgical operation. And think of your family."

Johnny Dahlquist had been thinking of his family. "If you please, sir, I want to see the Commanding Officer."

Towers frowned. "The Commodore is not available. As you know, I speak for him. See me again—after lunch."

The Commodore was decidedly not available; the Commodore was dead. But Johnny did not know that.

Dahlquist walked back to the messroom, bought ciga-

rettes, sat down and had a smoke. He got up, crushed out the butt, and headed for the Base's west airlock. There he got into his space suit and went to the lockmaster. "Open her up, Smitty."

The marine looked surprised. "Can't let anyone out on the surface without word from Colonel Towers, sir. Hadn't you heard?"

"Oh, yes! Give me your order book." Dahlquist took it, wrote a pass for himself, and signed it "by direction of Colonel Towers." He added, "Better call the Executive Officer and check it."

The lockmaster read it and stuck the book in his pocket. "Oh, no, Lieutenant. Your word is good."

"Hate to disturb the Executive Officer, eh? Don't blame you." He stepped in, closed the inner door, and waited while the air was sucked out.

Out on Moon's surface he blinked at the light and hurried to the track-rocket's terminus; a car was waiting. He squeezed in, pulled down the hood, and punched the starting button. The rocket car flung itself at the hills, dived through and came out on a plain studded with projectile rockets, like candles on a cake. Quickly it dived into a second tunnel through more hills. There was a stomach-wrenching deceleration and the car stopped at the underground atom-bomb armory.

As Dahlquist climbed out he switched on his walkie-talkie. The space-suited guard at the entrance came to port-arms. Dahlquist said, "Morning, Lopez," and walked by him to the airlock. He pulled it open.

The guard motioned him back. "Hey! Nobody goes in without the Executive Officer's say so." He shifted his gun, fumbled in his pouch and got out a paper. "Read it, Lieutenant."

Dahlquist waved it away. "I drafted that order myself. *You* read it; you've misinterpreted it."

"I don't see how, Lieutenant."

Dahlquist snatched the paper, glanced at it, then pointed to a line. "See? '——except persons specifically

designated by the Executive Officer.' That's the bomb officers, Major Morgan and me."

The guard looked worried. Dahlquist said, "Damn it, look up 'specifically designated'—it's under *'Bomb Room, Security, Procedure for,'* in your standing orders. Don't tell me you forgot them again!"

"Oh, no, sir! I've got 'em." The guard reached into his pouch. Dahlquist gave him back the sheet; the guard took it, hesitated, then leaned his weapon against his hip, shifted the paper to his left hand, and dug into his pouch with his right.

Dahlquist grabbed the gun, shoved it between the guard's legs, and jerked. He threw the weapon away and ducked into the airlock. As he slammed the door he saw the guard struggling to his feet and reaching for his side arm. He dogged the outer door shut and felt a tingle in his fingers as a slug struck the door.

He flung himself at the inner door, jerked the spill lever, rushed back to the outer door and hung himself on the handle. At once he could feel it stir. The guard was lifting up; the lieutenant was pulling down, with only his low Moon weight to anchor him. Slowly the handle raised.

Air from the bomb room rushed into the lock through the spill valve. Dahlquist felt his space suit settle on his body as the air pressure in the lock began to equal the pressure in the suit. He quit straining and let the guard raise the handle. It did not matter; thirteen tons of air pressure now held the outer door closed.

He latched open the inner door of the lock. As long as it remained open, the lock could not operate; no one could enter.

Before him in the room, one for each projectile rocket, were the atom bombs, spaced apart to defeat any faint possibility of spontaneous chain reaction. They were the deadliest things in the known universe, but they were his babies. He had placed himself between them and anyone who would misuse them.

But, now that he was here, he had no plan to use his temporary advantage.

The speaker on the wall sputtered at him. "Hey! Lieutenant! What goes on here? You gone crazy?" Dahlquist did not answer. Let Lopez stay confused—it would take him that much longer to make up his mind what to do. And Johnny Dahlquist needed as many minutes as he could squeeze. Lopez went on protesting. Finally he shut up.

Johnny had followed a blind urge not to let the bombs —*his* bombs!—be used for "demonstrations on unimportant towns." But what to do next? Well, Towers couldn't get through the lock. Johnny would sit tight till hell froze over.

Don't kid yourself, John Ezra! Towers could get in. Some high explosive against the outer door—then the air would whoosh out, our boy Johnny would drown in blood from his burst lungs—and the bombs would be sitting there, unhurt. They were built to stand the jump from Moon to Earth; vacuum hurt them not at all.

He decided to stay in his space suit; explosive decompression didn't appeal to him. Come to think about it, death from old age was his choice.

Or they could drill a hole, let out the air, and open the door without wrecking the lock. Or Towers might even have a new airlock built outside the old. Not likely, Johnny thought; a *coup d'état* depended on speed. Towers was almost sure to take the quickest way—blasting. And Lopez was probably calling the Base right now. Fifteen minutes for Towers to suit up and get here, maybe a short dicker—then *whoosh!* the party is over.

Fifteen minutes—

In fifteen minutes the bombs might fall back into the hands of the conspirators; in fifteen minutes he must make the bombs unusable.

An atom bomb is just two or more pieces of fissionable metal, such as plutonium. Separated, they are no more explosive than a pound of butter; slapped together, they explode. The complications lie in the gadgets and cir-

cuits and gun used to slap them together in the exact way and at the exact time and place required.

The circuits, the bomb's "brain," are easily destroyed —but the bomb itself is hard to destroy because of its very simplicity. Johnny decided to smash the "brains"— and quickly!

The only tools at hand were simple ones used in handling the bombs. Aside from a Geiger counter, the speaker on the walkie-talkie circuit, a television rig to the base, and the bombs themselves, the room was bare. A bomb to be worked on was taken elsewhere—not through fear of explosion, but to reduce radiation exposure to personnel. The radioactive material in a bomb is buried in a "tamper"—in these bombs, gold. Gold stops alpha, beta, and much of the deadly gamma radiation— but not neutrons.

The slippery, poisonous neutrons which plutonium gives off had to escape, or a chain reaction—explosion!— would result. The room was bathed in an invisible, almost undetectible rain of neutrons. The place was unhealthy; regulations called for staying in it as short a time as possible.

The Geiger counter clicked off the "background" radiation, cosmic rays, the trace of radioactivity in the Moon's crust, and secondary radioactivity set up all through the room by neutrons. Free neutrons have the nasty trait of infecting what they strike, whether it be concrete wall or human body. In time the room would have to be abandoned.

Dahlquist twisted a knob on the Geiger counter; the instrument stopped clicking. He had used a suppressor circuit to cut out noise of "background" radiation at the level then present. It reminded him uncomfortably of the danger of staying there. He took out the radiation exposure film all radiation personnel carry; it was a direct-response type and had been fresh when he arrived. The most sensitive end was faintly darkened already. Half way down the film a red line crossed it. Theoretically, if the wearer exposed himself enough in a

week to darken the film to that line he was, as Johnny told himself, a "dead duck."

Off came the cumbersome space suit; what he needed was speed. Get it done and surrender—can't hang around in a place as "hot" as this. He grabbed a ball hammer from the tool rack, paused to switch off the television pick up, and got busy. The first bomb bothered him. He started to smash the cover plate of the "brain," then stopped, filled with reluctance. All his life he had prized fine apparatus.

He nerved himself and swung; glass tinkled, metal creaked. His mood changed; he began to feel a shameful pleasure in destruction. He laid into it, swinging, smashing, destroying!

So intent he became that he did not at first hear his name called. "Dahlquist! Answer me! Are you there?"

He wiped sweat and looked at the TV screen. Towers' worried features stared out.

Johnny was shocked to find that he had only wrecked six bombs. Was he going to be caught before he could finish? Oh, no! He *had* to finish. Stall, son, stall! "Yes, Colonel? You called me?"

"I certainly did! What's the meaning of this?"

"Uh, I'm sorry, Colonel."

Towers' expression relaxed a little. "Turn on your pick up, Johnny, I can't see you. What was that noise?"

"The pick up is on," Johnny lied. "It must be out of order. That noise—uh, to tell the truth, Colonel, I was fixing things so that nobody could get in here."

Towers hesitated, then said firmly, "I'm going to assume you are sick and send you to the Medical Officer. But I want you to come out of there, right away. That's an order, Johnny."

Johnny answered slowly, "Uh, I can't just yet, Colonel. I came here to make up my mind and I haven't quite made it up yet. You said to see you after lunch."

"I meant you to stay in your quarters."

"Yes, sir. But I thought I ought to stand watch on the bombs, in case I decided you were wrong."

"It's not for you to decide, Johnny. I'm your superior officer. You are sworn to obey me."

"Yes, sir." This was wasting time; the old fox might have a squad on the way now. "But I swore to keep the peace, too. Could you come here and talk it over with me? I don't want to do the wrong thing."

Towers smiled. "A good idea, Johnny. You wait there. I'm sure you'll see the light." He switched off.

"There," said Johnny, "that should convince you I'm a half-wit—you slimy mistake!" He started to use the few minutes gained.

He stopped almost at once; it dawned on him that wrecking the "brains" was not enough. There were no spare "brains," but there was a well-stocked electronics shop. Morgan could jury-rig control circuits for bombs. Why, he could himself—not a neat job, but one that would work. Damnation! He would have to wreck the bombs themselves—and in the next ten minutes.

But a bomb was solid chunks of metal, encased in a heavy tamper, all tied in with a big steel gun. It couldn't be done—not in ten minutes.

Damn!

Of course, there was one way. He knew the control circuits; he also knew how to beat them. Take this bomb; if he took out the safety bar, unhooked the proximity circuit, shorted the delay circuit, and cut in the arming circuit by hand—then unscrewed *that* and reached in *there,* he could, with just a long, stiff wire, set the bomb off.

Blowing the other bombs and the valley itself to Kingdom Come.

Also Johnny Dahlquist. That was the rub.

All this time he was doing what he had thought out, up to the step of actually setting off the bomb. Ready to go, the bomb seemed to threaten, as if crouching to spring. He stood up, sweating.

He wondered if he had the courage. He did not want to funk—and hoped that he would. He dug into his jacket and took out a picture of Edith and the baby.

"Honey chile," he said, "if I get out of this, I'll never even try to beat a red light." He kissed the picture and put it back. There was nothing to do but wait.

What was keeping Towers? Johnny wanted to make sure that Towers was in blast range. What a joke on the jerk! Me—sitting here, ready to throw the switch on him. The idea tickled him; it led to a better: why blow himself up—alive?

There was another way to rig it—a "dead man" control. Jigger up some way so that the last step, the one that set off the bomb, would not happen as long as he kept his hand on a switch or a lever or something. Then, if they blew open the door, or shot him, or anything—up goes the balloon!

Better still, if he could hold them off with the threat of it, sooner or later help would come—Johnny was sure that most of the Patrol was not in this stinking conspiracy—and then: Johnny comes marching home! What a reunion! He'd resign and get a teaching job; he'd stood his watch.

All the while, he was working. Electrical? No, too little time. Make it a simple mechanical linkage. He had doped it out but had barely begun to build it when the loudspeaker called him. "Johnny?"

"That you, Colonel?" His hands kept busy.

"Let me in."

"Well, now, Colonel, that wasn't in the agreement." Where in blue blazes was something to use as a long lever?

"I'll come in alone, Johnny, I give you my word. We'll talk face to face."

His word! "We can talk over the speaker, Colonel." Hey, that was what he wanted—a yardstick, hanging on the tool rack.

"Johnny, I'm warning you. Let me in, or I'll blow the door off."

A wire—he needed a wire, fairly long and stiff. He tore the antenna from his suit. "You wouldn't do that, Colonel. It would ruin the bombs."

"Vacuum won't hurt the bombs. Quit stalling."

"Better check with Major Morgan. Vacuum won't hurt them; explosive decompression will wreck every circuit." The Colonel was not a bomb specialist; he shut up for several minutes. Johnny went on working.

"Dahlquist," Towers resumed, "that was a clumsy lie. I checked with Morgan. You have sixty seconds to get into your suit, if you aren't already. I'm going to blast the door."

"No, you won't," said Johnny. "Ever hear of a 'dead man' switch?" Now for a counterweight—and a sling. He'd use his belt.

"Eh? What do you mean?"

"I've rigged number seventeen to set off by hand. But I put in a gimmick. It won't blow while I hang on to a strap I've got in my hand. But if anything happens to me —*up she goes!* You are about fifty feet from the blast center. Think it over."

There was a short silence. "I don't believe you."

"No? Ask Morgan. He can inspect it, over the TV pick up." Johnny lashed the belt of his space suit to the end of the yardstick.

"You said the pick up was out of order."

"So I lied. This time I'll prove it. Have Morgan call me."

Presently Major Morgan's face appeared. "Lieutenant Dahlquist?"

"Hie, Stinky. Wait a sec." With great care Dahlquist made one last connection while holding down the end of the yardstick. Still careful, he shifted his grip to the belt, sat down on the floor, reached out and switched on the TV pick up. "Can you see me, Stinky?"

"I see you," Morgan answered stiffly. "What is this nonsense?"

"A little surprise I whipped up." He explained it—what circuits he had cut out, what ones had been shorted through, just how the jury-rigged mechanical sequence fitted in.

Morgan nodded. "But you are bluffing, Dahlquist. I

feel sure you haven't disconnected the 'K' circuit. You don't have the guts to blow yourself up."

Johnny chuckled. "I sure haven't. But that's the beauty of it. It can't go off, *so long as I am alive*. If your greasy boss, ex-Colonel Towers, blasts the door, then I'm dead and the bomb goes off. It won't matter to me, but it will to him. Better tell him." He switched off.

Towers came on over the speaker shortly. "Dahlquist?"

"I hear you."

"There's no need to throw away your life. Come out, and you will be retired on full pay. You'll go home to your family. I promise."

Johnny got mad. "You keep my family out of this!"

"Think of them, man."

"Shut up. Get back to your hole. I feel a need to scratch and this whole shebang might just explode in your lap."

Johnny sat up with a start. He had dozed; his hand hadn't let go the sling, but he had the shakes when he thought about it.

Maybe he should disarm the bomb and depend on their not daring to dig him out? But Towers' neck was already in hock for treason; Towers might risk it. If he did and the bomb were disarmed, Johnny would be dead and Towers would have the bombs. No, he had gone this far; he wouldn't let his baby girl grow up in a dictatorship just to catch some sleep.

He heard the Geiger counter clicking and remembered having used the suppressor circuit. The radioactivity in the room must be increasing, perhaps from scattering the "brain" circuits—the circuits were sure to be infected; they had lived too long too close to plutonium. He dug out his film.

The dark area was spreading toward the red line.

He put it back and said, "Pal, better break this deadlock or you are going to shine like a watch dial." It was

a figure of speech; infected animal tissue does not glow —it simply dies, slowly.

The TV screen lit up; Towers' face appeared. "Dahlquist? I want to talk to you."

"Go fly a kite."

"Let's admit you have us inconvenienced."

"Inconvenienced, hell—I've got you stopped."

"For the moment. I'm arranging to get more bombs——"

"Liar."

——"but you are slowing us up. I have a proposition."

"Not interested."

"Wait. When this is over I will be chief of the world government. If you will coöperate, even now, I will make you my administrative head."

Johnny told him what he could do with it. Towers said, "Don't be stupid. What do you gain by dying?"

Johnny grunted. "Towers, what a prime stinker you are. You spoke of my family. I'd rather see them dead than living under a two-bit Napoleon like you. Go away —I've got some thinking to do."

Towers switched off.

Johnny got out his film again. It seemed no darker but it reminded him forcibly that time was running out. He was hungry and thirsty—and he could not stay awake forever. It took four days to get a ship up from Earth; he could not expect rescue any sooner. And he wouldn't last four days—once the darkening spread past the red line he was a goner.

His only chance was to wreck the bombs beyond repair, and get out—before that film got much darker.

He thought about ways, then got busy. He hung a weight on the sling, tied a line to it. If Towers blasted the door, he hoped to jerk the rig loose before he died.

There was a simple, though arduous, way to wreck the bombs beyond any capacity of Moon Base to repair them. The heart of each was two hemispheres of plutonium, their flat surfaces polished smooth to permit per-

fect contact when slapped together. Anything less would prevent the chain reaction on which atomic explosion depended.

Johnny started taking apart one of the bombs.

He had to bash off four lugs, then break the glass envelope around the inner assembly. Aside from that the bomb came apart easily. At last he had in front of him two gleaming, mirror-perfect half globes.

A blow with the hammer—and one was no longer perfect. Another blow and the second cracked like glass; he had tapped its crystalline structure just right.

Hours later, dead tired, he went back to the armed bomb. Forcing himself to steady down, with extreme care he disarmed it. Shortly its silvery hemispheres too were useless. There was no longer a usable bomb in the room —but huge fortunes in the most valuable, most poisonous, and most deadly metal in the known world were spread around the floor.

Johnny looked at the lethal stuff. "Into your suit and out of here, son," he said aloud. "I wonder what Towers will say?"

He walked toward the rack, intending to hang up the hammer. As he passed, the Geiger counter chattered wildly.

Plutonium hardly affects a Geiger counter; secondary infection from plutonium does. Johnny looked at the hammer, then held it closer to the Geiger counter. The counter screamed.

Johnny tossed it hastily away and started back toward his suit.

As he passed the counter it chattered again. He stopped short.

He pushed one hand close to the counter. Its clicking picked up to a steady roar. Without moving he reached into his pocket and took out his exposure film.

It was dead black from end to end.

Plutonium taken into the body moves quickly to bone marrow. Nothing can be done; the victim is finished.

Neutrons from it smash through the body, ionizing tissue, transmuting atoms into radioactive isotopes, destroying and killing. The fatal dose is less than a tenth the size of a grain of table salt—an amount small enough to enter through the tiniest scratch. During the historic "Manhattan Project" immediate high amputation was the only first-aid measure.

Johnny knew all this but it no longer disturbed him. He sat on the floor, smoking a hoarded cigarette, and thinking. The events of his long watch were running through his mind.

He blew smoke at the Geiger counter and smiled without humor to hear it chatter more loudly. By now even his breath was "hot"—carbon-14, he supposed, exhaled from his blood stream as carbon dioxide. It did not matter.

There was no longer any point in surrendering, nor would he give Towers the satisfaction—he would finish out this watch right here. Besides, by keeping up the bluff that one bomb was ready to blow, he could stop them from capturing the raw material from which bombs were made. That might be important in the long run.

He accepted, without surprise, the fact that he was not unhappy. There was a sweetness about having no further worries of any sort. He did not hurt, he was not uncomfortable, he was no longer even hungry. Physically he still felt fine and his mind was at peace. He was dead—he knew that he was dead; yet for a time he was able to walk and breathe and see and feel.

He was not even lonesome. He was not alone; there were comrades with him—the boy with his finger in the dike, Colonel Bowie, too ill to move but insisting that he be carried across the line, the dying Captain of the *Chesapeake* still with deathless challenge on his lips, Rodger Young peering into the gloom. They gathered about him in the dusky bomb room.

And of course there was Edith. She was the only one he was aware of. Johnny wished that he could see her

face more clearly. Was she angry? Or proud and happy? Proud though unhappy—he could see her better now and even feel her hand. He held very still.

Presently his cigarette burned down to his fingers. He took a final puff, blew it at the Geiger counter, and put it out. It was his last. He gathered several butts and made a roll-your-own with a bit of paper found in a pocket. He lit it carefully and settled back to wait for Edith to show up again. He was very happy.

He was still propped against the bomb case, the last of his salvaged cigarettes cold at his side, when the speaker called out again. "Johnny? Hey, Johnny! Can you hear me? This is Kelly. It's all over. The *Lafayette* landed and Towers blew his brains out. Johnny? *Answer me.*"

When they opened the outer door, the first man in carried a Geiger counter in front of him on the end of a long pole. He stopped at the threshold and backed out hastily. "Hey, chief!" he called. "Better get some handling equipment—uh, and a lead coffin, too."

"Four days it took the little ship and her escort to reach Earth. Four days while all of Earth's people awaited her arrival. For ninety-eight hours all commercial programs were off television; instead there was an endless dirge—the Dead March *from* Saul, *the* Valhalla *theme,* Going Home, *the Patrol's own* Landing Orbit.

"The nine ships landed at Chicago Port. A drone tractor removed the casket from the small ship; the ship was then refueled and blasted off in an escape trajectory, thrown away into outer space, never again to be used for a lesser purpose.

"The tractor progressed to the Illinois town where Lieutenant Dahlquist had been born, while the dirge continued. There the casket was placed on a pedestal, inside a barrier marking the distance of safe approach. Space marines, arms reversed and heads bowed, stood guard

around it; the crowds stayed outside this circle. And still the dirge continued.

"When enough time had passed, long, long after the heaped flowers had withered, the lead casket was enclosed in marble, just as you see it today."

Minority Report

by Theodore Sturgeon

THIS is the strange story of Dr. Falu Englehart's change of heart and the truth of how he turned from a dedicated lifetime to tear down his dream. It can be told now because, in the matter of the Titan invasion, humanity has shown itself, en masse, to have come of age—to have reached a stage of understanding.

For we in this twenty-eight century are a strange race, only now entered upon our Third Phase, the first being an age of faith—and ignorant superstition—and the third of understanding—and tolerance. The years between are a hell and a horror—the accursed five centuries which began in the eighteenth century, and which ended in near suicide in the twenty-second—years in which faith was destroyed and understanding not yet achieved.

It can be told now because it cannot hurt us. Had the story been circulated in those mad years of the Second Phase, it would have a dealt a blow to humanity's belief in itself from which it might never have recovered. Humans knew what they were, even then; but during that violent adolescence they went to insane lengths to prove that they were otherwise—that they were supreme.

When the Titans descended upon us fifty years ago and dealt their insignificant portion of death and ruin, we answered as an understanding people would. We recognized in them our counterparts, a race in the throes of the disease called conquest. We are a peaceful species, close to the land; and they did not understand that our farms and our city-less planet represented, not a primitive society, but a society fulfilled. They took our achieve-

ment for a stasis or a recidivism, our decentralization as a sign of the primitive. When we immobilized them without machines—and like all very young humanoids, they worshipped machines—and defended ourselves by the simple expedient of teaching them their own terrible, acquisitive history, why, we did not dam their stream and drive it back, like sweating savages; we dried it up. So much for that well-known tale; it does, however, demonstrate one of the ways in which we have proven our maturity, and our fitness to hear the strange story of Dr. Englehart.

Falu Englehart was born, to quote Umber's epic poem on his life, "with stars in eyes that were myopic to all earthly things." At nine he built his first telescope, and at twelve he developed a new technique for cataloguing novae.

He lived in the uneasy peace of the twenty-first century, when the world was an armed mechanical thing which seized upon a race to the stars as a means to absorb its overproduction while maintaining its technology.

The Gryce Expedition lit a fire in the boy Englehart which nothing could extinguish—nothing but his own incalculable energy, which he turned so strangely on it when he put it out. The epic is in error when it states that Gryce taught the boy; they never met. But Englehart followed Gryce's every move in the newspapers, on the air—by a prepathic device known as radio—and through more esoteric talks with the astronomers who had fallen under the spell of his exuberant genius. Englehart's feeling for Gryce was an exaggerated hero-worship. When Gryce's interstellar drive was announced, it is said that the boy, then thirteen, burst into tears of joy; and when a professional writer dared to challenge Gryce's theories on the grounds that interplanetary travel had not yet been developed, and said that Gryce was a visionary and a mountebank, the youth traveled fifteen hundred miles by begging rides from travelers, and physically attacked the writer.

Gryce took off in his ship the *Falu*—so named from

the initials of the society which built it, the First Antares League Union, and not, as Umber so flamboyantly put it, "In honor of the burning infant genius of Englehart." Englehart, whose given name was Samuel, took the name of Falu after the ship, for he identified himself completely with it, and wanted no one to identify him otherwise.

At eighteen Falu Englehart, purely by the violence of his own desires, secured a menial position with the Gryce Laboratories and soon was at work on the counterpart of the interstellar drive which had taken Gryce away—forever. Of his years with Gryce Laboratories there is little record, and it is a temptation to succumb, as Umber did, to the manufacture of such a record out of Englehart's prodigious enthusiasm and the act of his departure in his own ship, *Gryce,* thirty years later.

It is certain, however, that he clung to the hope that Gryce would return longer than anyone else alive, and that he transmuted his hope into a determination to follow, and find out what had happened to the great man. One may learn something of the utter dedication of Englehart's life by realizing that he regarded his own genius, which far outshone that of Gryce, as a secondary thing—perhaps a negligible one. But Englehart's talent was more than a scientific one; in the troubled days of the ship *Gryce's* departure, the lush days of government grants and popular subscriptions were over, and the union of local Antares Leagues had withered and died with the fading hope of Gryce's return. Somehow or other Englehart took the wreckage and leavings of Gryce's work and built with them; somehow he took upon himself the appalling task of financing the work; somehow he procured materials, met payrolls, and kept men working for him in the heat and light of his incandescent purpose.

When the *Gryce* was ready for launching, Englehart was nearly fifty years old, and in those days, fifty years marked the autumn of middle-age. Umber's poetry sketches him vaguely, but gives an impression of a tall, compelling man, a voice like deep music, eyes filled with the immensities. Actually, Englehart was a pudgy little

man of fifty, nearly bald, unmarried—and this was not a difficult state to maintain for him or for the few women he met—and, for all his monomania, a gentle-spoken citizen save when he was crossed; and then his compulsion was not that of magnetism, but of sheer nuisance.

He was nearly as forgotten by the world as Gryce, at launching time, except for sensationalist writers who drew on his manifest folly for humorous material from time to time. There was a stir of interest when it was known that he was gone, and his epitaph was written in pity and laughter, and in one or two cases, with an expression of genuine respect for his astonishing dynamism. No one respected his purpose, his goal.

And then he did the most astonishing thing of his surprising life. He came back.

His ship materialized inside the orbit of Mars, causing a warping-eddy perilously close to a primitive exploring ship, one of those pioneer interplanetary reaction-drive contraptions that had been developed since Gryce's disappearance. Englehart himself made no calls, but the pioneers did, and Earth was ready for him when he warped in. He was welcomed as a hero, as a conquistador, a demigod. He was none of these. He was a man who, for half a century, should have been exhausted, but had never thought of it until now. It would seem that even the irony of his return, not only from the grave, but from obscurity, escaped him completely. He showed no emotion whatsoever except a dogged determination to destroy his ship, its drive, and everything pertaining to them; to spend the rest of his life in preventing mankind from ever again trying to reach the stars.

That he did this effectively, we know. For years he had had sole possession of the Gryce premises and records, and the men who had helped him and Gryce never had been able to understand, fully, the principles of the drive. Neither Gryce nor Englehart were teachers; they were doers, and apparently certain esoteric syntheses were done by no one else.

Englehart landed in the Chesapeake Bay in Old North

America and was taken off, along with one of the two men who had gone with him—one of them had died on the trip—by the hysterically cheerful crew of a towing-craft of some description. The *Gryce* was anchored, and Englehart was seen to lock the port with a magnekey. That same night the *Gryce* pulled her moorings, mysteriously took off out of control, and crashed into the ocean three hundred kilometers off shore. She apparently sank to the bottom and then exploded horrendously; nothing recognizable was ever found of her.

And, shortly after Englehart returned to the old Gryce plant, which had been under lock and key during his absence, there was an explosion and fire there which destroyed everything.

He made as few statements as he possibly could; the gist of them was that he had not found Gryce, though he still would not admit that Gryce was dead; that he had emerged from his drive "capsule" in a portion of space which he did not recognize, and had spent the entire four years of his trip in an attempt to find his way back; that certain one-in-a-billion combinations of space stresses had made his flight possible at all, that the odds were incalculable against its ever being done again. He published these statements along with a short thesis on the mathematical theory of his drive, and a series of patently sequential formulae which proved the drive impracticable, the directional control impossible, and his return miraculous. The mathematical philosopher who discovered his reasoning fallacious, and further proved that the fallacy was purposely brought into the calculations, was not born for another two hundred years, and by that time there was hardly industry left on Earth to produce a clock, much less an interstellar drive. We could build such a thing today, certainly; and certainly we shall not. And the debt we owe Falu Englehart is beyond measure.

This pudgy colossus had a crew of two, a man of forty named Horton or Hawton who was an engineer, and a creature called Gudge, who was apparently some sort

of menial, a twisted being of great physical strength. What his background was is not known. He was feted on his return to Earth with Englehart; and little as Englehart said, Gudge said so much less that it was widely believed that he was deaf and dumb. This is not true. He was certainly warped in body and mind, a man of intense secretiveness, and the possessor of a mad philosophy of ego-isolation which is beyond understanding. He had one amusement, and until very recently no one ever suspected it. He wrote.

He had, apparently, the dexterity of those who write long passages of verse on grains of rice, and he must have been able to do it in the dark. Certainly Englehart never dreamed that he was doing it. If he had, Englehart would have come back alone. We must picture for ourselves the great, ugly hulk of Gudge, curled on his bunk around his knotted careful hands, while his stylus made studied, microscopic marks on enduring vellumplex. There must have been no detectible sound, and no motion but his controlled breathing and the tiny jumping of a muscle at the base of his thumb. Certainly it is a picture that Gudge never drew for us; no man ever had less to say about himself. And the events that led up to the entombment of the script, cast into a block of plastic that was carved, possibly by Gudge himself, into the only replica of the ship *Gryce* ever preserved—the concealment of the many sheets somewhere about his misshapen person, the risk he ran on leaving the ship with Englehart while carrying them, and his motivation in concealing them in an artifact that he knew would be preserved intact—these are things, also, at which we must guess. One wonders what the poet Umber would have done with the information. Gudge probably would have found his way into the epic as a doughty Boswell, and the murder of Hawton would have provided a fine counter-plot of mutiny.

Much of Gudge's writing is maundering in his own idiom; without background or references, it is impossible to decipher. "They talked about loyalty," he wrote, near

what, in order of pages at least, seems to be the beginning. "You do what you do because it is the last part of what you have done, and the first part of what you will do. Loyalty is the problem of minds which can think of stopping before the end, to take up something else after it has begun."

And "Gryce is a lover, pursuing the stars, and Falu, who never knew a mother, wants to be the mother of Gryce."

Between and among these extraordinary reflections, Gudge wrote enough about the trip so that a narrative emerges.

"Falu said to sleep in the ship. I thought there would be more boxes to pack but when I saw his face, his mouth so tight, his upper lip ballooning with the pressure inside, his eyes with bright tears in them behind the thick glasses, the glasses so thick the glass was frosted at the edges—why, I knew we were going, and I did not ask about the boxes. I went into the ship and Hawton was there and Falu came after. And he did not take Pag and Freehold and the three Poynters, but locked the port. I saw them out there, understanding and frightened, and they ran away."

Who were these five, and where did they go? And had they thought they were to leave with the ship?

"The noise of the jets was always a terror; a scream first, and then a blowtorch, and as we moved, a great blowtorch in a barrel. I fell and was hurt. Horton came to me, holding to the corridor rails. I could hear his hands crackling. He put me to a bunk, and straps. He strapped himself, too. We were very heavy."

So they blasted off—how far, and for how long, they used the reaction drive, it is hard to tell. Probably it was a long time. There is a brief reference to Saturn "like two hats covering their mouths, one with another," and a period after that. Then there is one of the few references to Gudge himself, and his strange attitude. "Horton struck me, which did not hurt me and which made him foolish. He said I should have shown him the leg

so it could be cured. I think a man should die if he can not mend himself. Hawton put me on the bunk and with rays and a paste, mended me."

How long had it been—two months—three, since Gudge hurt himself on the takeoff? And yet he had no complaint to make then, nor when it got worse, nor when Horton struck him for it, nor when he treated the leg. One cannot help wondering whether Gudge was animal-like, abject, broken, or whether he had a strange, ascetic dignity.

"Falu put on the big ones. They started slowly, down in the belly of the ship, and Falu stood in the control room watching the meters. The big ones rumbled and rumbled, and though it never grew louder, it crept into the blood; the heart was pumping the rumble, the water we drank was full of the rumble, rumble.

"Hawton was white and sweaty. He put his hands on his temples and squeezed, and cried to Falu, 'Englehart, in Heaven's name, how much more of this do we have to take?' and Falu talked to the instruments and said, 'Not much more. We take off from the peak of one of these vibrations, but we've got to be vibrating in unison, or we'll never get together in one piece.'

"A gong sounded, and light flashed on the board. Falu reached and chopped off the ignition, and the jets were silent, which was a terrible thing, for it left the big ones shrieking. I could hear them, and I could not, and they seemed to be tearing my blood apart. Hawton cried.

"Falu was wet but quiet. He braced his knees between the chart table supports and passed his hand over the spot of light."

(This was undoubtedly some sort of photoelectric control, installed in anticipation of the devastating effects of the capsule-entry on the motor centers. It is remarkable that Falu could direct his hand to it at such a time.)

"Then we were blind," Gudge wrote, "and I heard them fall as I fell. We could not see and we could not move, but we were glad, because the silence was blessed."

There is a gap here in the narrative. Apparently some time—ship's time—passed, and their sight and motive power returned to them. Gudge wrote a great deal about the insubstantial appearance of everything aboard, and the changing shapes of utensils and stanchions. It would seem that Gudge's ordinary observations, even in normal space, were somewhat similar; that is, everything, to him, was wavering and distorted, and he was more fit to adjust to the strange conditions of an encapsuled ship. Englehart doggedly and stolidly went about the ship's business with a furious pretense of normalcy. There is no mention of Horton, and it is probable that he simply withdrew into himself.

And then they emerged. "Never was there such hurt," wrote the man who had not complained of a take-off injury for months, "never such bathing in pain, such twisting and writhing. Hawton's arm tensed against itself and I heard the bone break. Falu sat at the chart table, his hands frozen to the edges, pulling himself on to it until I thought he would cut himself in two. He screamed more than Hawton."

They lay in space for some time, recovering from the brutal transition. Near them was a reddish sun. In all likelihood it was Antares; it was for Antares that Gryce had set his course, and the one-time popular Antares Leagues had that star as their goal, once the etheric drift theory showed that for all its distance, it would be easiest to reach. It is difficult to be sure, however, since there is no record of the capsule-time Englehart spent, nor any real indication of his temporal directions.

They fired up the reaction drive and began to move toward the sun. With the restoration of gravity, Horton found it impossible to keep his food down, and Englehart complained of a splitting headache. These conditions apparently continued until the return.

Englehart ate and slept and lived at his instruments. And one day—

"I brought him his broth, and just as I set it down Falu's breath whistled suddenly, once, through a tight

at the screen and cried for Hawton. s the large one for seeing ahead. It outside the corona of the sun, was the bruise, and beyond that black; and in the black floated a planet like Earth.

"But what made Falu cry out was the sight of the glimmering bowls, like parachutes without shrouds, which rushed toward us. I think there were seven.

" 'Ships!' shouted Hawton. 'Englehart—are they ships?'

"Falu said nothing then, but made us heavy as usual." (This odd phrase probably means that he cut the drive to one Earth gravity.)

"The bowl-ships were in a single line, but as we watched, they deployed, the leader rising, the last dropping, the others flanking, until they approached us as a ring.

" 'They're going to box us,' Hawton said. He was frightened. Falu said, 'They can't, at our combined speeds. Watch.'

"He set the starboard jet to roaring, and the ring of bowl-ships began to march sidewise across the screen as we turned.

"But Falu was wrong. The ring of bowl-ships, quite unchanged, began to shift with us, and it seemed that the planet and the stars were moving instead, and that the ring was painted on our screen.

"Falu shook his head and peered at them through his thick glasses. 'How can they do it without killing everyone aboard them?'

"Hawton said something about overcoming inertia. He said that perhaps there was nothing alive aboard the ships. He glistened with fear.

"When the ring of ships was centered on our screen again, Falu put his hand to the board and drove us harder so that we were heavy again. The ships began to grow, the ring widened, but with nearness. Falu said, through closed teeth, 'Then we'll go through them. Turn-

ing like that is one thing; to stop and follow is something else again.'

"'They'll fire on us.' Hawton whimpered. 'Falu—use the capsule drive!'

"Falu snarled like an animal, and his voice was like a whip for animals. 'Don't be stupid. It takes three days to build up resonance for the capsule. They'll be on us in an hour. Sit down and be quiet.'

"The ships grew and the ring widened until we could see the markings on their silver sides, red and blue, and the triangular openings around their bottom edges. Falu clicked on the small screens—sides, above, below as we entered the ring.

"And at the instant we entered the ring, there were two ships above us, and two high on each side, and two low on each side, and one beneath—and they stayed with us. They approached us, they stopped and reversed to go with us, all in that instant of surrounding.

"Falu tried his forward jets, and then one side and the other, but the ring of ships stayed around us. They had no jets.

"And then, in the next hour, the ring began to shift, with those high on the right coming closer to us, and those low on the left moving away. Falu watched them, leaving his controls alone, while Hawton danced about him, mouthing advice. Falu did not answer him, but at last called me. 'Gudge—get him out of sight.' I went to Hawton and pointed to his bunk room. He pushed me away. I hit him on the neck and put him on the bunk. I was careful of his broken arm. I think the pain he had been through had soured him through and through, like old warm milk.

"Falu waited and watched, while the ships above came closer and closer, and those below on the other side drifted away. Falu muttered, 'They'll crash us if they keep that up.' And closer they came, and Falu watched them and I stood behind him, watching, too.

"At last Falu grunted and turned to his controls. The near ships seemed close enough to touch with the hand.

Falu jetted away from them, down and away to the center of the ring. And it happened that that put the nose of our ship again on the planet; and now the ring of ships stayed equally distant from us as we drove toward this new world. Twice more in the next twenty hours Falu tried to change course, but each time the strange ships led us back toward the planet.

"Hawton cried to be freed. Falu told me to unstrap him. Hawton was angry. He told me he would kill me if I ever touched him again. I said nothing and thought my own thoughts. He went to the control room and stared silently at the screens. Falu said, 'Try to keep your head, Hawton. Those ships want us to go to the planet. We were going there anyway; Gryce probably went there, too. So far these ships have made no hostile move except to keep us on course. They outnumber us and there is nothing we can do but go along with them.'

"Hawton looked at the screens and trembled, and said nothing about the ships at all. Instead he said, 'What did you bring that stupid slug along for?' He meant me.

"Falu said, 'Because he does his work and he keeps his mouth shut. Try it.' I knew then that Hawton would hate me as long as he lived. He went to the settee by the port bulkhead and sat there with his arms folded around his hate."

There follows, in Gudge's account, another of those indeterminate periods of idiomatic reflection, in which Falu Englehart, Hawton, and the lost Gryce expedition have no part. Probably some days passed, in which there was little to do except wait until they reached wherever it was that the bowl-ships intended to take them. Perhaps nine days passed—it may have been more. In any case, Gudge interrupted in mid-sentence an extraordinary series of thoughts on the similarity of his reactions to sound and to color: "They all say anger is red. Anger is not red while Red is peace in a bright light with your eyes closed——" to write:

"It looked like Earth at first, but not as blue. There were icecaps and seas, and many clouds. Falu turned the

magnescope on it, and when it could find rifts in the rolling clouds, valleys could be seen, and mountains, and once a rapid river. There were cities, too. I saw no life in them.

"The bowl-ships forced us around the planet. Falu said we were in a closed orbit. We stopped using the jets, and drifted weightless around the planet.

"Two of the ships fell away from the ring and dropped toward the blue world. Before them a great green light fanned out, and where it touched the clouds they were gone. Down and down they went, circling around each other and destroying the clouds beneath us until we could see perhaps a quarter of a planet.

"The planet had a burned face. Burned and pitted and twisted, gouged out, melted, blasted. For miles around a boiling hell-pit which threw molten gobs of rock high in the air, the land was sere and smoking. The planet had a face like my face. The two ships came back up to airlessness, and clouds swirled in and mercifully covered the planet's face.

"The two ships flashed past us, spacewards, and the other five began nudging us to follow. Falu ignited the jets, and Hawton, who was taking courage now, helped him trim the ship to keep it inside the ring formation. They talked of the blasted planet, wonderingly. Earth had never seen such a cataclysm.

" 'They showed it to us,' breathed Falu. 'They just showed it to us, and then took us away. Why? Who are they? Why don't they attack, or free us? Why have we never seen ships like this in our System? Their science—' and he fell silent, awed. Falu was awed."

Falu's awe is the only thing on which Gudge expresses astonishment. Apparently it shook Gudge to his roots, sending him off into a wild metaphysical orgy on the subject of constancy in the universe, and the half-dozen things he had felt he could rely upon to remain unchanged—the color of interstellar space; each man's threshold of pain; what he called "the touch of greenness" and two other items which are abbreviated and

undecodable. If Gudge were not completely mad, he had a set of sensitivities completely alien to any human norm.

At this point in his narrative it is necessary to fill in certain movements which must have occurred, unmentioned by the chronicler. For his next mention of their trip describes four of the five escort ships deployed in a square before them, with the fifth above, and the other two holding a body "a rock as big as our factory on Earth" between them by orange beams of light. These must have been the two ships which went down to disperse the clouds, and which led the flotilla out from the planet. Apparently they went to capture this asteroid and bring it to a rendezvous in space. At the rendezvous, the seven ships were motionless in relation to the *Gryce*.

"The four ships made a square, perhaps two miles on a side. There was a dim purple glow from a single plate on each side of each ship, and from this purple spot a blackness gathered and spread. Whether it was gas or dust or a substance, we could not tell. It reached out from the four ships, filling the square of space between them, blotting out the stars, until it lay like a great black blanket in space.

"And then lights appeared on the expanse of blackness—a yellow triangle, a red circle, a series of coruscating amber lines, moving and merging, writhing about, forming mosaic and kaleidoscopic patterns. We were all three spellbound, watching them, and this, apparently, was what the aliens wanted of us.

"For they began to show us pictures, and never have there been such pictures, such blendings of color and proportion. The black velvet of the screen on which they were projected—or which projected them to us—lent a depth that made the screen more a vast window through which we looked at happenings, rather than a mere picture. I could understand why Falu cried out wordlessly and leapt to his feet when the designs faded away and were replaced suddenly, brilliantly, by the picture that had burned in his brain since he was a downy youth;

for here, with colors and depth, was the shape of his dream.

"A ship. An Earth ship.

"The *Falu* herself.

"She was shown from behind and above, gleaming and beautiful, and before her were the edge of the red sun and the cloudy planet we had seen.

"We saw the planet come nearer, but with the action speeded up so that it swelled visibly, and we understood that this would be a re-enactment of what had happened to the *Falu*.

"Until the planet was a great curving mass filling the lower half of the picture, the *Falu's* broad shining back was in the foreground, but now it receded from us, curving down and away toward the clouds. And suddenly the picture was gone.

"It was replaced by another view of the cloudy sphere, and in a moment there was a rift in the clouds through which we saw a valley, not brown like the ones we had actually seen, but green and lush. There was a river set about with groves of feathery trees, and there were rolling fields under cultivation. Some of these were blood-red, some fallow, some pale blue with blossoms. It was a rich and peaceful valley.

"The view followed it upstream. There were boats on the water, moving rapidly without sails or turbulence in their wakes, and soon there was a city.

"It was a low, wide city of low, wide houses, not crowded together like Earth cities, but park-like. The water's edge was not bunioned with cramped and rusty sheds and quays, but forest and lawn. We could see the prim openings here and there into which towboats and barges slipped into the bank and disappeared, probably to underground terminals.

"The view, the camera-eye, swept down into the city and slowed, as if one were driving through the wide streets. As it swung from side to side, we saw the planet's people.

"They were not human. They were bipeds with strange flexible legs having two knee-joints each. Their arms were set low on their bodies, and were jointed differently from those of humanity, bending up and downward like the claws of a mantis, rather than down and forward like the arms of a man. Their heads and faces were tiny and grotesquely human, except for the placement of ear-flaps where cheekbones should be. Their bodies extended downward past the hips, terminating in a flattened point on which they sat, bracing themselves with legs folded to make a three-point support; they used no chairs.

"They were busy people. We saw pictures of them making metal beams in great automatic forges, growing food in tanks, and making paint and tools. There were beds of truly gorgeous flowers, and parks in which were shapes of stone that must have been sculpture, though none resembled the people; but people walked among them.

"Through the city the pictures took us, and it was a wondrous thing. It made one realize that this was a people completely in command of itself; that it used its resources and did not abuse them; that the stretches of wild country we saw around the city were so because the people wanted it so, and not because there was any frontier which they could not conquer.

"Outside the city again the pictures showed us a wide expanse that at first view seemed to be an airfield; indeed it was so, but it was something more. There were launching cradles on which rested great ships—ships ten times the size of the *Falu* and the *Gryce,* though of roughly the same pattern; and in addition were the bowl-ships, a row of perhaps thirty of them. There were some small ones, but most of them were two hundred feet or more across.

"Then, in a beautifully synthesized picture diagram, we saw one of the ovoid ships leave its cradle in a cloud of flame, and mount the sky; and behind it appeared a silver dotted line, while the whole picture contracted as if the camera were leaping away from the planet, back

and back, until it was a ball again, and the dotted line showing us the course of the ship; and still back and back, until the red sun itself was a small disk and the cloudy planet a dot, and the dotted silver line reached outward until it touched another planet.

"And suddenly, making us gasp with the brilliance of it, the same dotted silver lines appeared throughout a system of the red sun and seven planets—a great silver network of them.

"Hawton said, 'I don't understand.'

"Falu Englehart growled at him, without turning his face from the screen. 'Their commerce, stupid. They're showing us that they have a highly developed space commerce.'

"The pictures changed again; again we saw the spaceport, and the aircraft, and the rocketship ramps, and the camera swung to show us the bowl-ships. One of them lifted; but here was no screaming flame, no gout of dust. Here was simply the balloonlike lifting of the whole sweetly curved structure of the ship, up and up into the iridescent sky. And now there was a golden dotted line; and again we had the breathtaking recession from the planet. But this time it was a greater one; this time it left the red sun, and the stars about it rushed together, until we saw a whole segment of the galaxy, thousands of suns. And yet the golden line went out and out, until at last it touched a blue-white star. And then there was a network again, this time golden, and so vast that one wanted to cry. For the whole galaxy seemed woven together with a fabric of golden threads.

"Hawton snorted. 'I don't believe it. That simply can't be. They're lying to us. If they had a commerce like that, we'd have had them on Earth thousands of years ago.'

"Falu said, 'Wait.'

"The cosmic picture winked out, and after a moment of that total blackness, we saw again the picture of Gryce's ship, the *Falu,* spinning down into the clouds of the planet we had visited.

"As she entered the gaseous envelope, a flame appeared, purple, but blue-white at the center, around the *Falu*. And in a moment, the whole side of the planet seemed to open outward in one furious, hellish blast. Falu grunted and covered his eyes against that terrible radiance, and Horton closed his and wrinkled up his face, turning away.

"Down and down the picture-eye took us, to the infuriated clouds. It swept us along the valley we had seen before, and as we reached the same city street, we saw the people stop in the shops, in the factories and parks, and turn as one to the sky. A great glare, purple and white, filled the scene, and the ground came up once, twice, again, hurling the people off their feet, bringing the buildings down on them. Here an inhabitant holding two young ones was crushed; there another fell into the gaping mouth of a crack in the earth, which closed on him.

"Out we were taken, to the spaceport. We saw a rocket blast off just as its cradle crumpled, and the ship wavered, turned, and crashed into the row of bowl-ships. Great ravines appeared on the smooth landing area; and then we saw, in the distance, a gleaming cliff that was not a cliff, but a towering continent of water, rushing toward us. So real was this that as it approached the picture's foreground, we all shouted and drew back, and then found ourselves in our own control cabin, shaken and looking at each other foolishly.

"Now the picture was of the planet again, back and back from the planet with its ravening scar, back to show the whole system of the red sun. Again we saw the silver network, and part of the greater, golden one; and where they based on the cloudy planet, those lines dimmed and died out, until at last the planet lay deserted, alone, unwanted and dead.

"Once more the picture brought us to the planet, only briefly, to show up again the wreck and ruin, the burned, broken, murdered thing that we had seen before with

our own eyes, when the two bowl-ships had opened the clouds for us. And then the great screen went dark.

" 'I don't understand,' whispered Hawton. 'Gryce went to that planet and something happened, something that——'

" 'Wait,' Falu said again.

"And now the two bowl-ships which bore between them, on beams of orange light, the great rock which was as big as our factory on Earth, came forward. They swung the rock between us and the strange black screen, steadied it, and their orange rays disappeared. The ships withdrew to a point above us.

"There was a picture again on the huge screen, a picture of our ship, seen from a point just at the other side of the floating rock. We saw, at the side of the image of our ship, a movement, as something came from it toward the rock. It drifted out until it touched the rock, and just before it touched, we saw it was a piece of metal, a block. Then the picture disappeared, to be replaced immediately by the same scene, the only difference being that the object, when it came near enough to see, was a metal disk. Again the picture disappeared and repeated itself, but this time the object which came from our ship was a cube.

"Again and again this was repeated, this scene of some object being projected from our ship to the rock, and each time the object was different. Sometimes it was metal with a silver or golden luster, and sometimes it was a smaller piece of rock, and sometimes a red or green or yellow lump of plastic. I understood what they wanted of us, but said nothing."

(Why did Gudge never, or almost never, speak?)

"Falu, watching this reiteration for the twentieth time, said, 'They want us to do something. They want us to throw something out to that rock. I wonder what exactly they want us to throw?'

"And Hawton said, 'From the looks of those pictures, it might be almost anything.'

"Falu said, 'Well, let's throw something. Gudge——'

"But I had already gone, as soon as Falu said he wanted it done. In the after storeroom was a dense roll of insulex for space repair. There was more. It weighed four hundred pounds on Earth, but nothing here, of course. I cast off its buckle-clamps and brought it out to the disposal chute. Beside it I put a pressure-bottle of carbon dioxide. Then I waited. Falu came aft to watch me, and said, 'You know, Gudge, sometimes I wonder just where the limits of your mind are. Yes, I'll turn the ship.' He was always surprised when I understood anything before he did. Hawton was never surprised. He forgot it, time and time again, because he wanted to.

"With the steering jets Falu gently nudged the ship over so that the disposal lock pointed directly at the rock. As soon as his jets appeared, the pictures on the black screen ceased, and all of the ships around us withdrew perhaps a hundred miles, in a single instant.

"I put the roll of insulex and the bottle in the disposal lock, tripped the trigger on the bottle, and slammed the inside port as the carbon dioxide began whistling out. In a moment the bottle was empty and the lock full of gas under pressure. When Falu had steadied the ship and called out to me, I turned the valve that opened the outer port, and with a *whoosh* the gas swept out, taking the insulex with it. Then I went to the control room and stood again behind Falu, where I could see the forward visiscreen.

"The bulky roll turned slowly end over end as it flew, in the spot of light that Hawton kept on it with the pistol-grip control over the chart table. It needed no light when it struck, though——

"And I thought it was going to miss! It barely touched, and yet——

"Before us we saw a miniature of what had happened to the cloudy planet—a miniature, because it was only a roll of insulex and a fragment of rock compared with the mass of the *Falu* and an entire planet. But it was a miniature close to our eyes, too close. Had we known,

we could have put the filters up over the viewing cells; at least we could have looked away.

"In the split second before the cells went out, we got a flash of that white and purple radiance that was knives in our eyes, and then blindness, for our ship and for us. And I know that as I lie dying I shall carry still a tattered shard of that frightful brilliance in my old eyes. In that moment there was nothing to do, no thought to pass, no move to make but to claw at the eyes which had captured and held white flame behind their lids.

"It was an hour before we could see dimly again, and six before we could ship new cells on the forward and low starboard viewers.

"And there on the restored screen we saw the seven bowl-ships, patiently and passively waiting some sign from us. Falu shoved the trembling, red-eyed Hawton aside and grasped the searchlight grip. 'I want the rest of it,' he said. His face deeply scored, pouchy. The loss of his dream of finding Gryce was as much as he could bear—all the burden he could ever carry. Anything else he might learn would be a small thing indeed. He blinked the light.

"The four bowl-ships had restored, or rebuilt, the great screen. Again we saw the shifting patterns and mosaics, which were apparently their 'ready' signal. And then there were more pictures.

"First a picture of our roll of insulex and the rock, and then, in that bewildering fashion, the picture became a diagram. The roll of insulex turned into a glowing ruby color, ran together, separated into two blobs which in turn became two cubes. They approached each other, touched, separated, touched again, separated and were still.

"The the rock was shown, and it turned a shimmering yellow; and it, too, ran together into a formless mass, separated into two cubes. And these too, came together and moved apart.

"Next, all four cubes were shown, the two red and the two yellow, the red above, the yellow below; and a

red and yellow cube changed places. A red cube moved and touched a yellow—and both dissolved in ghastly, glaring flame. And again, the remaining yellow cube moved and touched the red one, and they married in purple-white violence and were gone. And Falu breathed, 'I think I see——'

"The pictures then repeated the scene of Gryce's ship, the *Falu,* approaching the cloudy world. And then the scene was frozen into a still photograph, and the *Falu* turned the same glowing red as had the insulex, while the planet was shown in the shimmering yellow.

"The red ship moved down to the yellow planet, and devastated it.

"We were then shown a picture of our own ship as it released the insulex. Ship and insulex turned red as the rock fragment and the bowl-ships turned yellow; and when our red property touched the yellow rock, the hell was loosed again.

"And now we saw the great, expanding chart of the galaxy, and on it again were superimposed the shining networks of dotted gold and silver lines, showing the wide commerce of these people. And suddenly every sun and planet was the shimmering yellow—every one, except for a scattering of red here and there near the edges of the galaxy.

"The eye of the camera moved to one of these red spots, expanded it, and we saw Sol and her planets, all untouched by the shining network, and all of them but the retrograde moon of Uranus, in glowing ruby.

"We saw a new kind of dotted line, the deadly red this time, leave the third planet, and followed it across the corner of the universe to the cloudy planet, and saw for the third time the picture of the *Falu* plunging into the deadly clouds.

"After that, the black screen dissolved and the seven ships took up their ring position around us again.

"Slowly, with sick hands, Falu Englehart fired the jets and swung the ship about. Hawton cried, 'What are you doing?'

"Tiredly, Falu said, 'Going back, Hawton. Back.'

"Hawton ran to the screen. 'They'll kill us! They'll kill us!'

"Falu glanced briefly at the seven ships. They were not moving. Still in a ring, they were motionless, letting us leave them behind. 'They'd kill us if we went toward their planets, or any other sun in the universe but Sol—or one or two others. They won't kill us if we go home. They wanted us to know what we are. They've known it for . . . for eons. And they want us to go home and tell our people. The fools!' he spat suddenly. 'Gryce surprised them. They didn't know we had advanced as far as capsule-flight. Gryce did it, and I followed, and they judge all humanity by Gryce. They don't know, they just don't know——'

"Hawton said he only partly understood. 'I mean, I know that when we contact them, there is an insane violence; but why? Why?'

" 'They're contraterrene,' said Falu.

"Hawton grunted in surprise. 'I thought that was simply an idle amusement for theoretical physicists.'

"Falu waved at the screens. 'You saw.'

" 'Contraterrene,' Hawton mused. 'Matter with the signs transposed—atoms with negative nuclei, and positive satellite-shells. And when terrene matter comes close, the whole thing becomes unstable and turns to energy. *Falu!* Were they telling us that the whole universe, except Sol and a few other outer-edge stars, are contraterrene?' I think that only at that moment had Hawton received the full impact of what he had seen with his own eyes.

"Falu simply nodded tiredly.

" 'And they have commerce—galaxy-wide commerce, and civilizations on every habitable planet, while we——'

" 'We're in the corner. Excommunicado. Left to our own devices, as long as those devices don't bring us to contact them,' Falu finished."

With the bland *non sequitur* quality of his writing, Gudge here departs from the narrative, in a welter of

thoughts of his own. He looked on Englehart and Hawton with new eyes; indeed, he seemed to regard all of humanity in a new way. He himself had always lived "in Coventry"—out of contact with those around him; and he seemed to take a certain pleasure in the chance to regard all mankind as in the same position. These long and gleeful passages contain nothing of the events which followed, except for one brief and important scene:

"Falu had told him and told him not to say it again, but he did. He shrieked at Falu. He said, 'You must tell the world, Falu! You'll be great, don't you see? Terrene beings can rule the galaxy. What science would the Contraterrene peoples share with us, to appease us? What man could fail to see the advantage of his unique position, when every stone he throws can be an atomic bomb? Let us build a fleet of Gryce-drive capsule ships, and go out and demand equality in the universe!'

"Falu said, 'Hawton, for the last time—for really and truly the last time—the Earth isn't ready for this yet. What you suggest would have one of two results; if we succeed, which isn't likely, we would only bring terror and destruction into a highly organized, peaceful universe—just as we have brought it on ourselves repeatedly. The other and more likely result is that before we could launch our ships, the Contraterrenes would wipe us out. There will be no more picture-shows. We have already killed a planet; in return they gave us some information about ourselves which we had not known. The next time we make a move toward them, they will destroy us with a clear conscience. I don't doubt for a moment their ability to hurl a planet the size of Earth into Sol, and then you know what would happen. You've studied supernovae.'

" 'You're an idealistic child,' Hawton screamed. 'And if you won't tell the world, I will.'

"Falu squinted up at him through his heavy glasses. He saw, I think, the beginnings of fanatic purpose in the man. 'Gudge,' he said.

"I went to him. He pointed his finger at Hawton, and said, 'Gudge, kill him.'

"So I did, with my hands, very quickly, and put him into the disposal lock and turned the valve.

"When I came back Falu looked at me strangely. 'I suppose I should kill you, monster,' he said. 'Can I rely on your not talking?'

"I said nothing. Suddenly he shrugged. 'I'd give a whole lot to know what goes on in that ugly head of yours. If I wanted to kill you, I don't believe you'd try to stop me. Right?'

"I nodded, pitying him a little, for he was thinking again about loyalty and wondering why I had given him mine; he did not know that one goes on doing what one is doing, and never stops."

And that is how, according to the sheets found in a carven spaceship model, Samuel Falu Englehart made his journey, and how he saved us from certain doom at the hands of those who are perfectly willing to leave us alone. Now we can know the story, for we are grown and no longer acquisitive, and have our farms and our minds, and can bridge space telepathically, wherein there is no valence.

Colossus

by Donald Wandrei

"Their (certain astronomers) picture is the picture of an *expanding universe*. The supersystem of the galaxies is dispersing as a puff of smoke disperses. Sometimes I wonder whether there may not be a greater scale of existence of things, in which it *is* no more than a puff of smoke."—Sir Arthur Eddington, *The Expanding Universe*. Macmillan, 1933.

LIKE a flame in the sky, the golden-red stratoplane circled Mount Everest and dipped toward its crest. Not so many years ago, that peak had been unclimbed, almost unknown, a challenge to man. Wintry gales tore across this top of the world, and cold rivaled precipices to defeat assault. The bitter winds still blew, but a man-made tower rose higher than the old peak, and a landing field which was a triumph of engineering audacity and genius stretched over sheer space beside the tower.

The circling stratoplane landed and rolled to a stop. The man who climbed out—Duane Sharon—seemed distinctive even in his heavy flying clothes.

His hands were powerful. No one would have admired any single feature of his, the hair of casual brown, a weathered face, a nose far from classic, and eyes of gray that glittered or softened as occasion required. But the general effect was good. He had a kind of loose rhythm, and a genial personality.

He sauntered toward the great observatory of the WLAS—World League for the Advancement of Science. Fifteen years had been required to build and equip this observatory which had been planned as long ago as 1950.

Once inside the tower, he identified himself and

tossed a cheery word to the guard before sauntering into the observation room.

Probably the 400-inch reflector of Mount Everest Observatory would never be surpassed. Man, on Earth, could go no further toward conquering the limitations of atmosphere, metals, and optics. Through this gigantic mirror, underlying a telescope in whose construction the efforts of dozens of great minds had been united for years to produce an instrument of unrivaled accuracy, intricacy, and range, equipped with every device desired by and known to astronomers, study of the universe had reached a climax.

A man of ascetic features was studying the reflector. His speculation must be idle, since the Sun had not set. Calculations and symbols, equations and reductions covered a blackboard near him. A sheaf of scribbled pages lay on a table beside a heap of photographs, charts, and books. Professor Dowell had his own quarters, but he usually worked in the observation room itself. Here the temperature always remained constant, at thirty below zero, but special clothing warmed him and nonfrosting goggles permitted vision.

Dowell did not look up until Duane stood beside him. Even then, consciousness of another's presence was slow to dawn.

"Hello! Am I intruding?" Duane asked.

Dowell blinked. A far-away look in his eyes faded. "Not at all; I'm glad you came. Here, have a chair—sit down!"

"Thanks, but I've been sitting in a plane for the last hour. I'd rather stand around for a while. Anything new? What's on your mind?"

The astronomer motioned toward the calculations. "You remember when you were here the day before yesterday? And I showed you photographs we made of the thirty-first magnitude nebulae in the Orion group?"

"Of course! You said they marked a milepost in astronomy."

"Did I? Yes, yes; to be sure. Just to think that only

eighteen magnitudes were visible until we built this telescope, and now there are thirty-one, while the known universe has been expanded to nearly a billion light-years."

"Don't!" protested Duane. "That's too much!"

The professor did not hear him. "I'm puzzled about a phenomenon of the thirty-second magnitude."

"What is it?"

"There is no thirty-second magnitude!"

Duane reflected, lit a cigarette. "That's very interesting," he remarked. "I don't understand."

Dowell fretted. "Neither do I. Several nights ago, we photographed nebulae of the thirty-first magnitude. According to Jeans' theory and Valma's equations of the expanding universe, there should be nebulae up to about the fortieth magnitude."

"And there aren't?"

"Right."

"What's the reason?"

"I don't know. There are only two possible answers. Either Valma made an error, which is inconceivable, or our whole theory of the universe is wrong."

Duane thought this over. "How?"

Dowell paced back and forth nervously. "You know the three main theories of the universe, of course. There's the old one that space is limitless and extends forever in all directions. There is the theory elaborated by Einstein early this century, that space is affected with a curvature which makes it return upon itself. After Einstein, a group headed by Jeans advanced the idea of an expanding universe which might be said to create space as it expanded."

"Yes, I'm familiar with them and some others," Duane commented.

"No doubt. But nebulae and dark spots from the thirty-first to fortieth magnitudes do not exist, though they should. That may mean any of several possible explanations. Perhaps the universe has stopped expanding. Perhaps it is stationary, or even contracting now. Or if

Einstein was right, perhaps the outer star-clusters have swerved through the curvature of space so that they are now approaching us instead of receding. That would account for the suprising number of aggregates in the twenty-ninth to thirty-first magnitudes. Possibly the oldest theory is correct, but some unknown set of factors prevents us from seeing galaxies beyond the thirty-first order. There are other possibilities."

"What's your guess?"

"I don't know," Dowell replied querulously. "But there is a fourth alternative that has almost driven me mad just to think about."

"So? What's this one?"

Dowell polished his glasses. "I don't know whether I can explain it, the concept is so gigantic. Well, here goes: You are familiar with the atomic theories. Has it ever occurred to you that all the billions of stars that form all the millions of nebulae and galaxies of our whole universe might be only the electrons of a superatom upon which vast beings might exist as we dwell upon the surface of Earth? The concept would explain the absence of nebulae beyond the thirty-first magnitude.

"From there on would be an outer shell, or an invisible plane of energy and tension that incloses our universe but is substantial enough for beings to live on. There is no such thing as solid earth. The apparently solid matter we are standing on is, ultimately, atoms, electrons, vibration, with spaces between each particle comparatively as great as those between the stars and galaxies."

The voice of the astronomer trembled in presenting this tremendous theme. "Think what might happen if some one from Earth could burst through that superatom!"

Duane pondered. "It's a staggering conception. If you carry it out to its limit, that giant atom might be only one of billions of other atom-worlds on a scale we can't even begin to imagine, and all that super-universe forming—what?"

"A molecule! And there might be on that still vaster

universe, still more tremendous beings! And that molecule might be only one of billions of other molecules sown through trillions of trillions of light-years of space and forming even——"

"Don't!" Duane cried. "It's too big! I can hardly grasp it!"

He stared at the reflector. When sunset came, its vast disk would gather the light of stars from far places, light that had been traveling since land boiled out of steaming seas and formed continents on young Earth. Lights of infinity, the stars would record their being upon plates for men like Dowell to analyze.

In the old days, the prophets had looked at the night sky and bowed to God who made Earth the center of the universe of fixed stars. Then the scientists had come to prove that the Sun was the center only of a planetary system that moved in a universe. Then the astronomers had shown that a spiral haze in Andromeda was a galactic universe 800,000 light-years away, and that the whole Milky Way was only a galaxy among thousands.

So the roll of star-fields mounted, and the boundaries swept outward, and man's imaginations, roving afar, found new glory while the universe expanded and its depth staggered understanding. Beyond the stars lay nebulae, gaseous and spiral and helical, with vast voids between; until by 1933, some 30,000,000 galaxies were identified in a range of 200,000,000 light-years; and by Duane's time with the Mount Everest telescope, the range had risen to over 800,000,000 light-years, comprising 150,000,000 galaxies, each composed of millions of stars.

"Tell me," Dowell requested, "how is the *White Bird* coming along? Is she about ready? It was stupid of me to bore you with my guesswork."

"Don't mention it," Duane answered. "It wasn't dull. The mere idea of limitless space is as exciting as life itself. As for the *White Bird,* she'll be done by October. The power-converters are being installed now. I think that a preliminary test can be made in September."

"I see. Perhaps you'll have the honor of informing us astronomers what the outer universe really is like!"

Duane retorted: "Long before then, you'll have worked out the one theory that my voyage will only prove to be true. I still wonder if the theory you mentioned a while ago could be right. And what would happen if the *White Bird* could carry us through?"

"If there were beings on that giant atom, they would never see you, so infinitesimal would you be. We have never seen an electron, let alone anything that might be on an electron. And you could never get there in a million lifetimes even at the speed of light."

"True," Duane answered thoughtfully, "but I haven't told you the whole story. The *White Bird* draws on intraspatial emanations and radiations. It has unlimited power. It should be able to reach a maximum velocity of thousands of light-years, *per second!*"

"What!" cried Dowell, his face shining with excitement. "Do you realize what that means? You and the *White Bird* would extend in the direction of flight until you were as tenous as a gas and elongated to thousands or even millions of times your first proportion! The ship would swell sidewise as well from the transverse energy-pull of the universe! You might become huger than Earth, or the solar system, or even our galaxy! You would be Colossus himself! And you would never realize any change because you would have nothing for comparison! Duane, if you do it, you may burst through to that giant atom, and you *would* be visible to, and you *could* perceive, whatever was on it!"

Duane, overwhelmed, looked dreamy-eyed. "Vast concepts!" he murmured. "They're too much for my brain."

"Colossus!" Dowell half whispered, as though this vision, this apex of cosmic conjecture, dominated his mind and exerted a hypnotic fascination. "Colossus of time, space, and matter!"

"Even the mention of such a journey appalls me."

"I wish I could go with you."

"Nothing would please me better."

"I know, but if Anne is along—by the way, I suppose you would like to see Anne?"

Duane, the chain of cosmic theory broken, made gestures of mock deprecation, "Oh, my, no! Anne? Why, I merely came from America to make sure that Mount Everest was still standing."

"I like that!" A musical but at the moment sarcastic voice broke in. "So it's Mount Everest you're here to see and not me? Well, you can have Mount Everest." With truly feminine pique, the girl who had entered banged the door as she went out.

Anne was not a beauty in the sense of Mona Lisa or a movie star. She had above all animation of expression, clearness of thought, and more than average appeal. Her dynamic qualities were masculine wit, reason, energy, originality. Her aesthetic characteristics were feminine changeability, the figure of a patrician, Nordic features with mahogany-colored hair, a rhythmic stride and beauty of motion.

Probably she was most effective when annoyed as at present, for the triumph of emotion over reason lent her face a kind of hectic charm, and she made a study of strength and weakness.

Duane turned to Dowell. "If you will excuse me, I'll try to make my peace. I——"

"Go right ahead!"

It took little time to find Anne. It required patience to pacify her. He need not have done so, but he found delight in playing up to her mood. The game of pursuit and the world of pretense would never change, however long Earth wore away to old age.

The holidays of August drew to a close. September came in with a burst of riotous colors through forest and hills. Work on the *White Bird* came to an end. Professor Dowell knew of its imminent launching. So did Anne. The world did not. Duane figured that there would be ample time to tell the world after, of success or failure.

It was a windless evening whose chill approached frost

when he and Anne stood beside the *White Bird* at Havenside, north of New York.

"Almost anything can happen," Duane said gravely. "The ship may not work, something might go wrong, or we might run into dangers beyond our knowledge. Do you know what you are letting yourself in for?"

Anne looked at him with slightly disgusted eyes. "I'm not a child. Forget this protective business. Let's go."

Duane sighed. Anne's realism was disconcerting.

The girl's eyes sparkled as she looked at the *White Bird*. "Only you could have built such a thing of beauty," she said.

The ship lay long and low in the light of the full moon. It shone with a glow like phosphorus. A hundred feet in length, the cylinder, never more than ten feet thick, tapered to points. Crystalite composed its shell—crystalite, that strange element numbered ninety-nine. Invented by chemists, it had the transparency of glass, the color of platinum, and a higher tensile strength than any other metal, combined with a melting point above 6,000° C.

The *White Bird's* interior contained only essentials: a pilot room; a cabin; a supply room; and the front and rear power compartments. The torpedo looked bizarre, for its shell was transparent, but the inner walls dividing room from room were of vanachrome, that thin, rubbery steel which was virtually indestructible.

To look at the *White Bird* was to look into a house like a glass cylinder and see the rooms within, though, from within, no room could be seen from any other room.

"I'll never get over this funny arrangement," Anne remarked as they entered. "The whole world can look inside, but I have to walk from room to room to see what's there."

"Not a bad idea," Duane answered cheerfully. Anne's eyelids went down. Duane fidgeted. He suddenly stated, "Let's go!" and pushed a button.

The *White Bird* curved up from the ground like a real bird soaring after a dive.

"Oh!" exclaimed Anne. "You should have warned

me!" Her face sobered. The great adventure had begun. "Isn't it strange?" she asked in a very small voice and with very big eyes.

"It's a miracle," Duane answered. His fingers caressed the dials as he spoke. "Just to think that a simple condenser-transformer picks up cosmic radiations all around us, turns them to power and drives us on. Power by radio, more power than we could ever use, out of thin air!"

The *White Bird,* at steadily mounting speed, passed beyond the stratosphere.

Above them, the sky darkened and blackened. Stars brightened to a brilliance that dazzled the eyes.

Then the Sun of the solar system became visible beyond Earth, and the light of the Sun and its reflected glare from Earth and Moon bathed the *White Bird* in a flood of radiance so bright that Duane and Anne donned goggles, and the craft's interior became perceptibly warmer in spite of the crystalite hull.

There was a glory to the skies, a spacious sweep, an infinite majesty of stars that ranged from brilliant white to faint and far-away orange, from pale blue to flame red and emerald green, which silenced the voyagers by its cosmic beauty.

It was long before either traveler spoke, and steadily the *White Bird* fled outward, erasing the way to the Moon in ever faster time.

Anne broke the reverie. She waved her hand toward the universe. "If all this affects us so much," she said simply, "what would we feel out there?" She pointed toward the faintest star, out where the spiral nebulae began in Andromeda.

"When I go there, perhaps I can answer then," Duane replied.

A dreamy look entered Anne's eyes, and they shone with an almost mystical fervor. "I have a queer idea, Duane. Maybe it wouldn't be so different from Earth. Back home, everything is related to something else. The same trees grow every spring. The same Sun rises and

the days are always alike. Don't look so skeptical—you know what I mean. Of course they aren't the same trees, and the days are separated by time, and there aren't any two persons alike, but, just the same, nature repeats herself, and there seems to be some sort of pattern to everything, a pattern that unites everything and recurs again and again." She ended with a breathless rush of words.

"I think you're right," Duane mused, "but who knows? I don't. I don't suppose anyone will ever know, unless he can go out there, where the stars end."

"Why don't we?" A hectic note heightened Anne's voice, and her cheeks flushed with excitement.

"Why don't we?" Duane echoed. "Why—I mentioned it to Professor Dowell and we joked about it, but I never really expected to go beyond the planets."

Mysterious raptures burned in Anne's eyes. "I wonder what's beyond the stars?"

That question which the wisest philosophers never have been able to answer, and the most learned astronomers have fretted in vain to solve, brought only reflective silence from Duane for a long period.

"I don't know," he said at last. "Professor Dowell thinks I might break through and discover that our whole universe is just an atom, and that the great atom might be only one world among billions forming a still more gigantic molecule. Why, Anne, if he's right——"

Anne looked dazed. "What an idea! I once took a course in biology. If we are essentially like matter, then electrons make atoms that form cells that compose organs which are part of the body. If that's so, Duane, and you got on to the giant atom-world, and could go still farther, you might eventually come out on a vast living organism of which Earth is merely part of a single cell."

Anne went on recklessly, with morbid mischief, "Darling, maybe some one like you on one of those invisible particles inside you is traveling outward now on a space ship and is going to burst through on a cell——"

"Anne!"

"—and you'll feel just a little twitch in your side, and maybe he'll keep on going and pop out of your brain finally and——"

Visions beyond infinity changed gradually to speculation about the Moon, which loomed ever larger overhead. The buoyant feeling that Duane and Anne should have experienced as they drew away from the attraction of gravitation did not materialize, since the speed of the *White Bird* counteracted it.

The Moon swelled, cut off a fiftieth, a tenth, a fifth of the sky above. Their viewpoint modified. Instead of flying upward, they found themselves falling. The new perspectives of space gave rise to new experiences and unfamiliar sensations. They had been shooting upward from Earth. Now they were descending toward the Moon.

Duane cut off their power. The *White Bird* fell at furious speed. He turned on the forward repellers, unloosing upon the Moon's surface an invisible bombardment of energy that almost counterbalanced their speed.

The *White Bird* plunged less rapidly, slowed, and finally hung a few thousand feet above the Moon.

"Only Doré could have dreamed it!" exclaimed Anne.

Great craters pitted its surface. Masses of slag and lava flowed down the sides of extinct mountains, and fissures like the marks of giants' swords marred its lowlands.

Dead sea bottoms and barren continents alone suggested life of long ago; these, and certain clusters that might have been cities; masses of granite, blocks of marble and basalt, quartz, and silica, arranged in geometric formations. Were these ruinous heaps the remains of cities? Had a civilization flourished here, of a race that had perished, leaving only its works to crumble beneath the everlasting encroachments of time? What legends and records, achievements and histories might lie beneath those shards?

Duane drew a deep breath. The answer would never be known to men. Great as the curiosity was that impelled him to study the riddles of the Moon, the dan-

gers were greater, and greater still the goal of his dream. There was a mystery to all the universe. What lay beyond? Where would the end be, if one started off and traveled at random in any direction for as long as space lasted or life permitted?

"Let's land!" cried Anne. "Just imagine—walking on the Moon! And we can do it with your space suits!"

"Not now. We ought to be returning to Earth. There is little to be gained by landing, and a lot that we might lose."

Anne looked hurt. "All this way, all this trouble, and we don't find out what's on the Moon?"

Duane, exasperated, cursed inwardly this plague of woman's desire, this wish to exhaust the moment. Aloud, he answered: "We can always come. I've proved what I wanted—the *White Bird's* capacity. Let's head home. Our next trip will take us—well, wait and see."

"Where will we go?"

"Outside. Away to the end of things, whatever that may be. The *White Bird* can do it, and I'm going to where space ends. Whatever lies beyond the universe, empty and endless space or giant atom, I'll find—with you."

Anne's eyes shone. She held the breathless appearance of a mystic to whom a vision of glory comes. The dream transfigured her face as she gazed at infinity and saw the far places. Sappho might have had so lovely and rapturous an aspect when she stood on a cliff of Lesbos and looked at the sweep of sky and wine-dark sea. Never before, and never again, did Anne's expression achieve such beauty. And Duane, as he watched her, absorbed something of her mood, that supernal wonder which the old philosophers and the great poets and the prophets have been gifted with.

Alexander, wishing for more worlds to conquer; Marco Polo, wending his way across lands of legend; Columbus, sailing upon unknown waters; Peary, assaulting the roof of the world; Lindbergh, winging through the skies —the ghosts of all the master explorers and travelers of

the past haunted him, and he felt an invisible presence urging him on to that voyage for which history, and almost thought, had no counterpart. An exaltation of spirit possessed the two, and spontaneously they leaned together in unity of mood and vision.

"The way is homeward," said Duane at last.

Almost regretfully, he sent the *White Bird* flying Earthward, and the crag-strewn, jagged, white ruin of the Moon's surface fell swiftly away, paled into softer outline, until once again, like a silver disk in the sky, it floated glowing and lovely and bathed in soft radiance. Then the majesty of stars and the procession of the Milky Way; and Earth looming larger. A buoyancy of spirit raised Duane to a peak of mental intoxication.

Here, in open space, he felt a sense of freedom such as he had never before known. Was it the nearness of Anne, whose mere presence influenced him strangely? His partial escape from the attraction of gravitation? Or a headiness that came inevitably from this preliminary voyage? He looked at the Moon and Earth, Sun and stars, the great void beyond, and then back to Anne. Anne's eyes were refreshing. Especially when they were as large and reliant as now. Duane parked her beside him on the way back. There was a mutual need for physical reality in the presence of space rampant.

September marched into October; and the maples vied with the oaks in colors of russet and tawny and flame. Earth throbbed with the activity that was industrializing Africa, tapping energy from the Gulf Stream, capitalizing power from the Sun. Socialized Russia in the eastern hemisphere stood powerful and defiant against the yellow menace that rolled over northern Asia. The proscripted United States, operating under dictatorship with industrial and capitalistic socialism, wealthier and stronger than ever before, with the unfit retired, the insane eliminated by euthanasia, and the criminal sterilized, surged on to dominance of the western world.

Economic rivalry in the new market of Africa cre-

ated estrangement between England and the United States. The ugly undercurrents of competition and diplomatic folly were repeating themselves as in the World War. Russia and the United States against Japan and England seemed to be the coming line-up of Titans, with the rest of the world involved in a holocaust that would undoubtedly mark the end of civilization.

Duane looked at a news sheet. "Japan Creates Secondary Militia of Women; British Claim New Germ That Kills Millions," ran the headlines.

"The world goes mad," he mused. "I only hope that all this slaughter will be over by the time I return."

For the remodeling of the *White Bird* went swiftly. Adjustments of the delicate power controls to give the ship greater drive, corrections in its sensitive hull so that it might make the utmost of cosmic rays, gravity attractions, and atomic repulsions, correction of instruments to accuracy—these were changes that must be made before the *White Bird* could start upon that tremendous voyage to the ends of the universe.

The work ran on, and the world raced ahead to disaster. The looming clouds of war grew blacker, and Duane fretted. What did the bickerings of mankind matter when so vast a project neared fruition?

October nineteenth. Mist opened the day at Havenside. By noon, a fine rain was falling, and the skies were solid gray. Duane roved restlessly around. Tonight was the night of launching. The *White Bird* would set out to the ends of the universe, in an effort to solve one of the greatest riddles that confronted man—the mystery of space.

Twelve o'clock brought an ominous note. Duane, as always when he felt nervous, sat down at his light-piano and rippled off phrases of his favorites—a Bach fugue, the frantic monotone of Ravel's *Bolero,* Lecuona's wild *Malagueña,* a few bars from the *Peer Gynt* suite of Grieg. And while he played, upon a panel in front of him, wizardry of supersonics transformed sound to light and color that wove a visible symphony.

Duane had reached an impressive passage from *The Hall of the Mountain King* when the television broke forth: "Count Katsu Irohibi, Minister of War for Japan, announced at 11:55 A. M. today that Japan was prepared to drop bombs of a new nature upon any part of the world by remote control unless Russian aggression in Central Asia ceased immediately, and unless the United States and England permitted her to compete with them in the development of Africa."

Duane felt a growing tightness. He anxiously wanted to fly immediately to Everest and bring Anne back, but she would not be ready until two, by which time Professor Dowell and she would have analyzed the previous night's photographs—their final effort to riddle the stars and uncover the secret of perplexing vacua beyond the thirty-first magnitude nebulae.

He rambled through sonatas and fugues, fragments of symphonies. The drizzle turned to a sodden downpour, and the oaks and poplars shook with sodden groans.

About twelve-thirty, the televisor erupted: "Russia replied to Japan's ultimatum at 12:25 P. M., to the effect that she was not the aggressor, and that her territorial rights would be fully protected in Central Asia. The British and American governments simultaneously issued a redeclaration of African policy, denying the right of interference to any third party.

"Russia's defenses and offenses are already full mobilized, as are Japan's according to unconfirmed report. England is expected to issue a proclamation of national peril at any moment. John L. Caverhill, dictator of America, will declare our position shortly, according to reports from Washington. The situation has grown tense. Analysts fear a recurrence of the World War upon a more serious scale. Every effort is being made to avoid armed conflict, but—" the voice droned on.

Prophetic clouds of war! Events were moving far too swiftly in a world of delicate economic adjustments. Duane turned away from the speaker's image and strode toward his stratoplane.

Rain beat upon him and ran in rapid trickles down the slicker he had donned, a sullen, heavy, steady rain splashing from skies of slate. Nations plunged toward disaster. Darker than any clouds loomed the threat of war. Mass murder might come by nightfall—and his dream would be ended. Duane had no illusions. If war came, he knew that he would plunge blindly in at the draught like millions of other pawns in the game of economic kings. He would serve for loyalty, patriotism, many reasons, but he would serve unwillingly because a greater goal lay at stake.

He climbed in his stratoplane, headed toward Tibet. Anne should be ready by the hour of his arrival. The voyage through infinity would begin at sunset—unless war intervened.

Skies of blue steel overhung Everest. The quarrels of nations seemed something alien and apart from this austere summit of Earth. The skyward pointing finger of the observatory rose like a timeless tower, a thing of perpetual beauty, a challenge above the assaults of weather and war, age and decay.

But the televisor gave pictures and words of ugly meaning: "War Minister Irohibi issued a proclamation at 1:10 interning all Russian ships lying in Japanese ports. The order will remain in effect until Russia makes a satisfactory explanation and settlement for the mysterious explosion that wrecked the Japanese embassy in Stalingrad yesterday. It is reported that a great concentration of all Russian aircraft is now taking place outside of Stalingrad.

"Simultaneously, a second note was received at Washington demanding unrestricted colonization privileges for Japanese in the recently formed Anglo-American territory of Tanesia in Southeast Africa. The state department has made no official reply as yet; but a bulletin issued at noon today announced the perfection of a new instrument of war. Short-waves are sent by remote control to cause the collapse by vibration of buildings at any given spot. The situation is critical. Mobilization may

be ordered by nightfall." Suppressing the anxiety and weariness he felt over this danger that loomed, Duane landed his ship and walked into the observatory.

Professor Dowell was striding back and forth irritably, his sandy mustache bristling. "War! War!" he choked. "They want me to work out formulae for the flight of projectiles! They want me to tell them just how to shoot at a point a thousand miles off and kill every one within a mile radius. Me? And there is work to be done on those!" He waved thin fingers toward the sky whose stars were hidden by day.

"I know; I'm worried, too. It looks like the end."

The astronomer raved: "They want to store munitions here! Make this a mere depot! This, the finest observatory ever built!"

Duane tried to soothe him. "War has not been declared yet. Everyone knows that it will be the end if it comes. It will be the last war and maybe the last of civilization. But where's Anne? I took out the license this morning. We're to be married at three, and I've advanced the take-off to three-ten."

The professor bristled in one of those swift changes of mood that make the individual both fantastic and human. "Running away, eh? On the eve of battle, as the historians would say?"

"No," Duane replied steadily. "I've got a goal. A tremendous goal. Something that may enrich man's life more than the last two thousand years. I have a mission. If I fail, what is one life lost? If I succeed, the rewards will be beyond guessing. If I stay here—what? Whether I am killed or not, nothing is gained. Therefore, I go. If that is cowardice, then I am glad to be a coward. If war is declared, I will serve. Frankly, I am trying to get started before war begins."

Dowell stalked around. "Madness, all is madness. Let war come. Science must push on. There may never be another opportunity to find out what lies at the end of the universe. Electrons and atoms. Giant atom universes in a vaster molecule." He paused and stared owlishly a

long minute through thick glasses at Duane. "Go away!" he commanded. "I'm upset. I do not know what I say. Find Anne and take her with you, my blessings upon you both!"

Duane deposited Anne in the cockpit beside him and headed homeward. She leaned back, stretched in a most unfeminine but natural fashion. "So we get married today?" she remarked casually.

"So it would seem, but don't let that bother you. You'll get over it and——"

The televisor cut in: "Emergency announcement! Japan declared war against Russia at two-five today. The Bank of England has just issued a call for the loan of one billion pounds by popular subscription. The department of war of the United States has evoked the compulsory clause of the war code of 1943. All males registered as voters are required to report at their district military station before sundown."

Duane stepped up the speed of his stratoplane to the limit.

"That means—what?" Anne queried.

"The end," replied Duane grimly, "unless we leave sooner."

The stratoplane bored westward high above the Atlantic. New York City curved into view, a vague blur looking like some fantastic toy with its towers and megaliths, its set-backs and hanging gardens and sky palaces showing as a sodden blur through the rain that still fell.

Duane headed north of the city and landed at Havenside. Standing beside the hangar that housed the *White Bird,* with rain pouring down his face and oilskins, he smiled at his bride-to-be. Casual though they had been thus far, he felt the stir of vast, sinister forces that menaced life, and felt, too, a surge of emotion that was novel.

A small blue plane darted from leaden skies toward them. "That must be the official minister and the National Marriage Bureau's representative," Duane speculated.

Anne, looking suddenly flustered and with heightened

color, decided: "Darling, I'll go straighten myself up a bit if you don't mind," and turned toward Duane's bungalow. "What a rotten day!" The steady downpour had soaked fields and trees, and pools gathered in every hollow.

A blast of sound, an explosion like thunder smote the air! The stratoplane's televisor crackled: "A terrific explosion has just occurred in New York City. The explosion was preceded by a shrill whine. It is believed that this is the unofficial opening of war. It will be recalled that Japan announced the possession of a new explosive that could be dropped in bomb form on any part of the globe by remote control. Stand by! A second whine has come——"

Out of the televisor came a roar that deafened. Then silence. And out of the south swept a second blast. Duane looked up. The blue plane rocked wildly in violent currents of air. Rushing winds caught it, flung it upward, sent it spinning to earth. Flames licked it up; the wreck became a funeral pyre. The rain eddied in mad gusts.

Duane's face was gray. "It is war," he said coldly and swiftly. "Get anything you want. We're leaving now!"

Anne flung her arms around him like a child, her wet face pressed to his. She kissed him quickly and ran toward the house, after a promise, "I'll be right back—by the time you're ready."

Duane entered the hangar, and moved his space ship outside. Resting on automatic rolling supports, the *White Bird* glistened with silvery transparency. Her mechanism in the fore and aft compartments was of provocative design and strangeness. All possible essentials piled the supply room amidship. Behind it lay sleeping quarters. Controls occupied the room behind the fore power chamber. A door, so finely fitted that it was unnoticeable, supplied the only entrance midway between stem and tail.

Duane surveyed everything in a quick appraisal. The long streamlined hull, pointed at each end, passed his inspection. He waited anxiously, peered through mist and

water toward his bungalow. He felt relieved when Anne appeared, running through the doorway.

Something screamed from afar. Duane paled. "Hurry!" he called.

A blast of flame roared up beyond his home, colossal gouts of soil and rock belched skyward, and his home flattened from a hurricane wind. Rain drove at him like needles. The explosion blew him down and swept the *White Bird* from her supports.

"Duane!"

That faint cry brought him out of his daze as nothing else could have. He staggered toward the spot where he had last seen Anne. He threw boards and planks aside with incredible strength. The rain beat down, but the darker rain of débris ceased.

Somehow, he clawed and dug his way to Anne, all the while cursing fate and the gods of war who had mocked him. A great dead quiet overhung the world. Only the endless rain dripped while riven oaks and blasted bushes gave the dreary, sloshy sound of wet vegetation.

Anne was dying.

The realization of that fact was the most heartbreaking moment in his life. He stared dumbly at the face, lovely and white and calming, with whose repose would go half the driving desire of his life. And with that love lost, the trip became as nothing.

Anne's eyes opened tiredly. Her lips moved. "Go," she whispered. "I'll be with you, darling. Remember what I said when we were coming back from Everest a few weeks ago? There is no beginning or end to anything. All goes on and on, and so will you and I."

A moody look misted her eyes, they grew ghostly with something that only a mystic could interpret. If this were death, then death was ecstasy. The effort to speak exhausted her. Duane bent over as her lips moved, and her voice came to him from infinite distances with a last command, faint and barely audible: "Go!" Longing and love, peace and dreams, were in her eyes.

The embrace that she asked for, the kiss he gave, was the seal of death and the token that parted.

Beginning and end. End, or beginning? The words danced a monotonous refrain in his thoughts when he raised himself and stared bitterly ahead, a queer, hurt look warping his expression, as though he tried to understand some simple fact that continued to elude him.

Why go? Where to? War ran a red smear around the globe. He would be needed. But war had taken Anne from him. Hatred of man and his savage works seethed through his mind, a crimson background to the black tapestry of his thoughts. Go—go—go—that was Anne's request.

In the distance, the eerie whine of radio projectiles shrilled anew. Earth shook with blasts and detonations. Fumes of acrid and pungent odor bit into his lungs.

The air itself was now becoming poisoned.

The glare of a great conflagration or explosion reddened the sky above New York City, turned the wall of rain into smoky scarlet. His mind was made up. He entered the *White Bird.*

The door closed behind him. Burned energy shot from the three rear projectors. The craft swooshed away and up in a great arc and disappeared like a ghost amid rain and gloom, while giant flashes of flame roared up where cities had stood.

The sweep of infinity, so impressive, so implicative of mysteries that mind never had solved, helped to relieve Duane of his misery. He would never forget, wholly; but there were splendor and cosmic riddles all around, and beyond the end—would there be another beginning? What lay out there, past the ultimate stars? Was Dowell correct, and did the circling stars represent only vibrating electrons of a giant atom? And if the extension and expansion of the *White Bird* took place as predicted, would Dowell follow his progress, watching him grow ever larger and dimmer as he sundered space, until he became invisible because of distance and attenuation?

Sunlight flooded the *White Bird,* and the Sun hung

radiant and the Moon gleamed, but the skies were a blackness fretted with hordes of stars, not only above, but below, and in every direction; and the traveler felt again the overwhelming strangeness of things, the crushing magnitude of the universe, as Earth dropped away.

Go he must. All his dreams lay buried upon Earth. As if to symbolize his flight—or was it pursuit?—he stepped up the cosmic-ray power in successive jerks that hurled the *White Bird* at ever-accelerating velocity toward the constellation Cygnus. Any constellation would serve, but Cygnus, the Swan, was overhead when he burst from the air blanket of Earth, and toward Cygnus he shot.

Power he would never lack. Space was filled with more power than he could use. Light rays, cosmic rays, infrared rays, radiations of countless kinds were all picked up by his driving mechanism, much as a radio picks up waves, and were transformed into energy that bombarded all matter lying behind his line of flight with a force that hurtled him forward. There was only a theoretical limit to the speed he could attain—whatever limit the nature of things imposed.

He had not yet, even in his experimental runs, tested the *White Bird's* capacity, but he knew that she could exceed the velocity of light. He knew, too, that a metamorphosis would occur when he passed the speed of light rays. According to the law propounded decades ago by Einstein, the *White Bird,* all its contents, and he himself would undergo a change, lengthening in the direction of flight. How great that extension would be depended upon the velocity itself.

He could estimate it in advance, but he could never realize it as an experience, simply because he could have nothing for comparison excepting the stars. An expansion would accompany that elongation; enlargement, to a degree beyond computation, along the planes of both the long and the short axes of the *White Bird.*

The planets of Saturn, Uranus, Neptune, and Pluto passed behind. Ahead lay a great void of four light-years until the myriad stars of the solar system's galaxy began

with Alpha Centauri. The solar system diminished to a mere point. The bright illumination in the *White Bird* faded to a glow which was all that the stars provided. Duane did not turn on the interior lights. He preferred this shadowy and soft luminance.

There was nothing to do, little to calculate, nothing to expect until he approached his goal. The danger of collision remained ever present, but automatic safeguards could be depended upon to swing the *White Bird* around any important mass that loomed ahead. Later, at the ultimate enormous speed he hoped to attain, scarcely any mass smaller than the sun would disturb his cruiser. Its attenuation and expansion would be so great, its elongation and atomic separation so tremendous, that it would approximate the nature of a gas and literally pass through intervening bodies.

Stars paraded. Constellations swung behind. Cygnus vanished, the Big Dipper changed its outlines, the evening star became faint, Betelgeuse and Antares flamed away, second- and third-brilliance suns loomed as bright as the old first-magnitude stars. His speed pyramided. He achieved the velocity of light and outdid it. The *White Bird* swept onward with cyclonic fury. It tore outward in tens, hundreds, and thousands of times the speed of light.

It streamed beyond the eighth, ninth, and tenth-magnitude stars. Always its velocity increased. The man who watched the controls had a demon's set expression. He seemed to take a bitter pleasure in increasing the *White Bird's* velocity to a pitch that imagination itself could hardly grasp.

Eight hundred million light-years formed the distance to the farthest nebula. Even if he hurtled at a million times the rate of light, it would require eight hundred years for him to reach the outpost. Even at a light-year per second, more than twenty years would lapse before he achieved the goal. So he continued to draw on universal energy in a steady acceleration that ripped the *White Bird* through space at a blasting and frightful

velocity now mounting toward dozens and hundreds of light-years per second.

Duane, exhausted, dropped into a dreamless slumber at some point of his journey. The automatic controls were set. Whether they worked he hardly cared. His accumulated hopes, tragedy, and undertaking of the day were above rational analysis.

The eternal procession continued. He wakened to find stars and suns hurtling past in linear streaks. All the heavens were strange. Not one body did he recognize. Star-point far ahead, streaks parallel with his plane, dwarfing maze of light flecks remotely to his rear—these were intangible realities.

Blackness deepened ahead. The Milky Way and its spectacular infinitude of suns became as a dream. He bored out of this galaxy in a haze of vaporous extension, burst through eternal voids. Now space was a misty immensity where the nebulae, the island universes, sown afar on a lavish scale, rushed toward him out of the cosmic depth, with glow of birth and procession of star-filled units, and blaze of youth and parade of creation. He was a star treader, a traveler who used the starry galaxies for fleet stepping points toward the outer blackness.

Days and nights passed, but there were no days and nights, only the ceaseless gyration of stars, passing of constellations, traversing of nebulae and clusters and great gaseous patches, in whose center cosmic birth or death might be taking place.

The *White Bird's* speed still increased. That vast gap between the solar system and Alpha Centauri, a distance so enormous that light required four years to cross it, represented a fraction of a second at his present velocity. The fastest lens, the quickest eye, could not have seen his passing. The *White Bird* fled swifter than a dream, winged through infinity almost as instantly as the mind itself could think of the spaces outward.

A cyclone stood still compared to the *White Bird*. The flight of bullets, the flight of meteors, the flight of light,

were snails in relation to Duane. He annihilated the far reaches of the universe at hundreds and thousands of light-years per second. A flash in infinity, a silvery bolt through the black, a ghost that was gone more quickly than the messengers of death, the *White Bird* bored the known universe, and went on.

Great constellations, Cygnus itself, which had loomed large ahead, had resolved themselves into streaks shooting by all around him, and had then faded behind to a cluster, a point, a mote, were now nothingness. He hurtled stars and clusters and nebulae, plunged wildly across voids, leaped infinitudes. His galaxy had utterly disappeared.

And all the while, according to theory, the *White Bird* underwent a transformation, became longer, stretched away farther and farther as the speed mounted, but Duane would never know, for he was part of that change.

The *White Bird* by Earth measurements must be hundreds, perhaps thousands, of miles in length, so attenuated as to be almost vaporous, so nebulous and distorted as to appear like a mist. According to calculation, he must also be annihilating time, for his whole relation to the cosmos had been profoundly altered, and what he perceived as a thousand miles was in reality a thousand light-years, and what seemed to him a second must actually be centuries of Earth time.

If Dowell were watching, he must have seen the *White Bird* become as a meteor, a vaporous fog, a gigantic haze, hurtling and expanding toward infinity, until it vanished, since it exceeded the speed of light, and light-rays from it would require hours or years to reach Dowell's reflector.

Now it mattered not whether he pierced suns or struck planets. Automatic controls veered the *White Bird;* but, in theory, at this frightful velocity, and with this vaporous extension, he should pass through apparent solids, much as air blows through a sponge. Power? All space held invisible power. He had not begun to tap the inex-

haustible store, but greater speed he feared to achieve lest the *White Bird* pass completely out of control.

The crystalite cruiser traversed voids and eons in moments. Nebulae of the twentieth magnitude streaked past. White suns and blue, pale-orange and apple-green stars, colossal tapestry of night blazing with eternal jewels, the procession approached and receded. Blackness deepened ahead. The hordes of star systems grew fewer. The spiral nebulae and the black gas clouds, the island universes and the chaoses of flaming birth decreased. He was nearing the end.

By only one comparison could he sense the change that was occurring. At first, the galaxies had seemed gigantic, flaming constellations and aggregates of billions of stars. Now they looked like dim and hazy disks of mist; and, by that diminution alone, Duane guessed that his extension and expansion had progressed on an unbelievable scale of magnitude. Had the *White Bird* surpassed in size the Earth or the solar system or even his galaxy? He would never accurately know, though he were Colossus beyond measurement.

What would he find? Some scientists held that the universe was expanding and that space was created with this expansion. What would happen if this were true, and if the *White Bird* at its present velocity passed beyond the limit? Other astronomers held that space was infinite in all directions. Must he go on till death overtook him while he tried to find an end when there was no end?

Still other prophets suggested that all the bodies of the universe might be only the myriad components of a superatom, beyond which lay a greater universe; and if these proved true, would that superuniverse be only a stepping-stone, only a larger atom in a yet more gigantic cosmos? Where did the end lie? And if those speculative mathematicians were correct who thought that space was subject to a curvature which made it return to its beginnings—

Duane's head ached. So vast the possibilities, and so limited his ability to understand! Life so short, and truth

so hard to learn! And this the attempt to solve a problem above even the deepest inquiries of mind, exceeding the oldest attempts that thought had made to fathom!

"Thus far shall ye go, and no farther." A phrase from dimly remembered teachings drifted through his brain. "Seek, and ye shall find." What? He wondered. "Men are deceived in their conceits beneath the Moon, and have sought in vain for any patent from oblivion above the Sun!" So a mystic had said.

Who had guessed closest to truth? Dowell, with his theory about a giant atom-world composed of electronic vibrations represented by all the stars of all the galaxies of all the universe known to man? Einstein? Jeans? Or some obscure prophet? Duane shook his head as though to free it of oppressive weight. These were thoughts too complex and inconceivable for mortal mind, too dangerous for sanity.

Now the last stars shone close, and streaked by, and one emerald sun marked the outpost of space.

Remotely ahead came blackness, solid, absolute blackness. Behind lay Earth and Sun, stars and constellations, galaxies and star-fields, a hundred million strong, billions of billions of stars, trillions of trillions of miles, enormity comprehensible solely in terms of the stellar mathematics of astrophysics. The young emerald sun, flaming in the radiant beauty of birth, swirled by and became one with the billions of billions of stars behind. Duane looked back. There was a vast and dwindling conglomeration of points of light that receded to haze, to a vague luminousness, and that mysteriously was blotted out. The phenomenon puzzled him until he thought of one explanation—light rays had not yet penetrated thus far!

No loneliness, no fear of darkness, no feeling of utter helplessness in the grip of frightful forces and in the presence of far places and alien lands, no longing for the sweet companionship of Anne, such as now overwhelmed him, and ever before combined to appall in such magnitude any mortal creature. The blackness

everywhere was solid, so complete that his eyes ached, and not one part of his ship could he discern, not one object, not even the hand that he held before his eyes.

A horror of that infinite blackness, that absolute void, gripped him, and he stumbled about with something akin to blind panic in an effort to find the interior-lighting controls. The glow comforted him, until he looked at his velocity dial. The speed of the *White Bird* was falling off swiftly!

Was this immensity so vacant that there were not even cosmic radiations to supply him with power? Or some unknown but terrific drag slowing him down? Would the *White Bird* come to inertia and he to death in this black void? What forces prevailed here?

And what was the nature of that dim and shadowy glow, like a pale fog, that gradually appeared in place of a void blacker than coal?

Hope surged anew through the voyager, an uncontrollable excitement gripped him, he stared with painful intensity at the faraway mist. Had he followed a curvature of space and did he now approach his own universe? Had the *White Bird* leaped some titanic chasm to a new universe? Did he plunge toward that enormous atom imagined by Dowell? Was he now Colossus, exceeding man's deepest dream of giantism?

Colossal speculations of a colossal journey!

The mist drew closer. The *White Bird's* velocity fell to thousands, hundreds, and now only tens of light-years per second. Duane experienced a curious buoyancy and dizziness. He felt as if unfamiliar power and forces were gathering him in. Weakness overcame him. The play of foreign laws inclosed him. His sensations baffled analysis. His mind, governed still by Earth principles, could not understand what was happening. A whirling confusion as though his brain were an eddying mist enveloped him. Darkness and light divided his course. He sensed a shudder and a trembling of the *White Bird* as if it were a deep-sea creature caught in tides and forced toward the surface.

A shock followed by a violent jolt stunned him. *He had literally burst space.*

When Duane's dazed faculties began to function again, it was with a feeling of the deepest awe that he stared around and tried to comprehend what had happened. Realization came slowly, and he found it difficult even to decipher his surroundings.

Light flooded his compartment, bright white light that was curiously restful and soothing to his eyes, unlike the glare of the Sun. The *White Bird* rested on a flat plain of what looked like glass, perhaps a hundred yards long and ten wide. Far below him he saw a second plain, mahogany-colored, which swept away in the distance, then stopped at a sheer cliff that fell an unknown distance down toward the blur of what seemed to be solid ground. From the second level rose two brass-like towers that supported the glassy oblong upon which the *White Bird* rested.

What did this mean?

He looked upward. What was that giant circle overhead?

He peered out. What were those colossal and serrated monuments that looked like the mechanism of giants and possessed eerie illusions of a four-dimensional geometry? What were those other massive bulks that towered toward the spaces above?

Understanding and fright paralyzed him in a flash of intuition.

The White Bird *reposed on the slide of a microscope! The second plain was a table top, the third plain a floor. The geometric metallic mountains were apparatus and machines. The towering things were living beings. He had burst through the atom that was his universe and had emerged on a planet of a greater universe, a superuniverse!*

The vastness and spaciousness around, the acres and leagues of ground, staggered him. Everything was on a giant scale to which it was hard for him to become accus-

tomed. And yet it was not until he looked intently upward that the full magnitude of his surroundings impressed themselves upon him.

At what seemed the horizon, and seen as through a light haze, beyond plains and mountains that were only tables and machinery, rose walls more towering than the peaks of the Himalayas or the cliffs of the Moon, walls that curved gigantically zenithward where lay an opening toward which pointed a monstrous tube whose length must have been miles.

Around this tube stood two of the alien beings, and at a table far to one side sat a third, and a fourth faced a complicated mass of blue-white metal apparatus whose nature was beyond conjecture, while a fifth leaned beside the great miscroscope.

Duane at long last understood completely. This vast region of bare surfaces and precipitous descents was only a single room, an observatory, and the beings were astronomers studying whatever skies lay above!

Still dazed by his pilgrimage, he experienced a new awe. Dowell had guessed the truth in his amazing theory! All the universe that he had traversed was only an atom, perhaps drifting in the air around him, perhaps part of the slide, perhaps the whole interior of this world. He would never know where, for it was as lost to him as the treasures of Atlantis. But that universe, with its scope and sweep and myriad components, formed only the least part of this sphere. There must be other worlds, an entire new universe of stars and suns and comets! And beyond these—what? His mind, numb from the exhaustion of mere speculation upon so stupendous a scale, turned wearily to the beings.

They were Titans. Compared to Duane, the Colossus of Rhodes was infinitely less than the tiniest particle of matter. Compared to the Titans, Duane stood as lowly as a worm!

Anthropomorphic in general appearance, they possessed both strikingly human characteristics and alien traits. They reminded Duane—but on how gigantic a

size—of the Easter Island sculptures, for these Titans had flat-backed heads, high, slanting foreheads, deep-set eyes, the noses of kings, and thin, ascetic lips above a jutting jaw. No race of conquerors ever before gave such an impression of strength, austerity, intelligence, and power.

Godlike, the incarnation of supremacy, these giants gained added impressiveness from the radiant texture of their skin, which was as clear and cold as the glint of ice of the sparkle of a blue-white diamond, and as smooth. Had some dim awareness of these entities filtered through the minds of the races of Earth and helped to develop the concept of diety? Were these the prototypes that served the sculptures of Easter Island?

Duane, moody and tired, longed for the companionship of Anne, for the presence of one human being to accompany him in this Odyssey that vanquished space, only to plunge him into the beginning of new mystery.

Far, far overhead towered the Titans, league-long, massive creations overshadowing even the inhabitants of Brobdingnag. The reddish tunics that they wore formed a splash of color against the brightness of their Cyclopean bodies.

They were talking among themselves, the Earth man observed by the motion of their lips, and curiosity overcame fear. He stealthily opened the *White Bird's* door. A Titan, peering through the telescope, spoke. In the vast but clear resonance of that voice, Duane distinguished a syllable wholly foreign to the tongues of Earth. The Titan by the mechanisms pushed a lever, and from the machine came five strokes of a gong. The first Titan peered through the telescope and spoke again, a different syllable. The mechanism rang once.

Understanding flashed through Duane. The first Titan, evidently an astronomer, was studying a body in the skies and reading its position to his companion who registered the figure. The first word, then, meant "five," and the second word, "one." He jotted down the syllables as accurately as he remembered them.

The astronomer spoke again, the recorder pressed a lever, but no gong resounded. "Nothing, or zero," Duane wrote. The last number was "nine."

Silence descended, and now the intruder made out, upon a great mirror beside the recorder, a reflection of star fields, and guessed that the Titans were studying one among that horde. The astronomer called out, and the recorder raised his head. Duane wrote two words as the name of the recorder who played with intricate mechanisms.

Then the star fields began an apparent march, drawing ever nearer, until one bright sun or planet loomed largest in the mirror's center. The astronomer uttered a command, the reflection became motionless, and Duane wrote the phonetic transcription for "stop."

All this while his fear of discovery had been lessening since the attention of the giants was centered elsewhere, but his curiosity was mounting. Why were the great ones so interested in this star or planet? Who were they and how did their apparatus function? He wished that he could understand every word they spoke; given time enough, he would, for already he had a fair list of primary words: several mathematical numbers, the concept "zero," a few verbs, including "stop," "continue" or "go," and "to be," the names of three of the Titans, and several adjectives of whose meanings he was uncertain but had an approximate understanding.

The star cluster swam closer until only one body filled the mirror. The recorder played with dials and levers, and the one sphere, now discernible as a planet, and approaching rapidly, expanded beyond the reflector's sides.

The Titans gathered around the mirror. The surface of the satellite raced toward them. Continents became visible, outlined by seas. Dark masses of forest and mountain ranges contrasted with units that looked like villages or cities. Paths, trees, huts, and lakes were visible. At last the recorder adjusted whatever mechanism controlled this optical marvel, and the picture again became stationary.

There on the Gargantuan panel, a forest glade showed clearly to the last detail. Strange and exotic trees, not unlike those of Earth's carboniferous era, raised great conical leaves and flower buds and full blooms to the sky. The ground was riotous with ferns and glossy flowers, orchidaceous cups and blossoms of wallflower brown.

Dawn was breaking and blue-white light filtered through the vegetation. Shadows shortened. Moths fluttered, and birds of brilliant plumage soared up with lyrical morning songs. A creature similar to a deer crossed with a rabbit bounded away in search of breakfast. Another beast, resembling a huge squirrel, but with a glossy coat and the membranes of a bat, flitted to the edge of a pool and, after drinking greedily, frolicked away through the forest.

A path led to the pool. While the Titans and Duane looked on, a girl danced into view.

Nothing that he had experienced in these hectic weeks affected Duane as profoundly as the sight of that girl. She differed from the women of Earth, and yet she possessed a similarity. He thought that she looked like Anne —or was his impression only a wish fulfillment? In the quiet of dawn, she danced along. She wore no garments. Her supple figure, tawny as ripe wheat, pirouetted around trees, and her light feet dipped across mosses. She had hair of emerald, that floated lightly around her, and liquid, beguiling eyes of amber. A glow the color of goldenrod pollen enriched her face. Her fingers seemed boneless, so tapering were they, and flexible as she cupped them and wove them in supplication to the dawn.

The scene held beauty of an exquisite kind, from the lush petals of flowers and mossy carpet to the exotic trees; from the young girl dancing in the glow of sunrise to the light that shimmered through branch and leaf and formed patterns of divided darkness upon the ground.

Then the girl flung her arms skyward and lifted her face to greet the sun. In the forest glade she seemed lovelier than a naiad out of legend. Her lips parted, and Duane could almost hear the rapturous song that she car-

oled. Then she danced again in carefree abandon, swirling toward the edge of the pool, and there she flung herself down and laughed at her own drowning image in the waters.

From the poetry and enchantment of the idyll, Duane's attention was gradually turned to a crescendo whose volume reverberated through the air. The Titans were talking excitedly, one Titan apparently scoffing at the others who ringed him. Judging by his gestures, he was discounting the truth of the visualization which had occurred upon the mirror. He strode from the circle and in a few Gargantuan steps was beside the microscope to resume whatever investigation he had interrupted.

His peril engraved itself on Duane's mind in a second that saw him frantically spin the door to the *White Bird.* His action came too late. The door was only partly sealed when a vast cry issued from the throat of the giant. The others looked over and began approaching him. Two fingers the size of barrels appeared at the edges of the slide and lifted it in a wild swoop skyward!

That curving sweep, almost vertical, which carried him a mile upward in a mere second, was more sickening than a plunge, but Duane quaked at a simple but terrifying incident that followed. The Titan raised him to eye level and scrutinized him with cold appraisal. His eye, huge as a room, with fathomless depths of black in it and a piercing, hypnotic pupil, overwhelmed Duane with its conviction of dynastic power and its attitude of unhuman, solely scientific analysis. No worm in alcohol, no microbe under the lens, could have felt more lowly than he, under the glare of that tremendous orb.

Duane was trapped and he knew it. One squeeze of colossal fingers and he would be pulp in the flattened shards of his stratoplane. It might have been fear, it might have been courage, that prompted him. He opened the *White Bird's* door and stepped out onto the slide.

The great eye widened and its black depths stirred. The four other Titans gathered around like shining angels of doom, their stern, conquerors' faces staring at

him with more interest, but no more personal feeling than they would have studied a fly. They talked rapidly, the cruel lips forming thunder that deafened at this close range. Duane gesticulated, and they became silent, looking at him and at each other with questioning glances. Using all the power he could muster, he shouted out the miscroscopist's name.

The effect was electrical. The Titan almost dropped the slide. He broke into a flood of questions, but the Earth man shook his head and shouted the syllable for "nothing."

The Titan understood—Duane did not know the questions. Walking toward a mechanism of abstruse nature, the astronomer set his captive on a table and placed upon his head a cap of metal with a skein of fine wires terminating in what resembled a telephone switchboard beside a smooth panel. He placed a similar cap on the table and indicated that Duane touch it with his head. It looked like the crown of an observatory, this hemisphere of the gods. A tingling flux ebbed through his body upon contact.

In the mirror appeared an image of the astronomer with his name underneath. Duane comprehended. This miraculous apparatus transformed thought currents into pictures and made ideas visible. Duane thought of his portrait and his name. Promptly they flashed upon the panel. In this novel manner, with the start he already had in finding something of their speech and language, he had little difficulty in carrying on a silent conversation.

"Did you come from Valadom—the planet in the reflector? Are you one of the little creatures?"

"No."

The Earth man's reply obviously surprised them. The scientists conferred, as if deciding whether he was giving truthful answers.

"Whence came you?"

Duane hesitated. Would they believe him if he told the truth? Should he rescind his first answer and assert that he was one of the "little creatures"? These were

giants of intellect as well as Titans of body. It would be wiser to answer truthfully even if they scoffed. "I came from an atom under your microscope," he answered.

His reply raised a tempest, but not the skepticism that he had expected. The astronomer talked with new animation as though he had found support for a theory, and the mind reflector became a crazed confusion of mathematical symbols, concepts involving energy and matter, and hypotheses of atoms.

Appearances indicated that he had once set forth a theory that each particle of matter was as complex as the universe, and that submiscroscopic parts might be star fields as elaborate as those visible above, and with life on a proportionately most infinitesimal scale, a theory which his associates must have decided against. The very concept taxed Duane's faculties. His universe an atom forming this sphere; this globe a planet in the superuniverse; and what if that billion-bodied unit was, as Dowell had suggested, only the molecule of a cosmos still more far-flung, above and beyond and outside? Conversely, were there universes within the atoms of the Earth he had left? Where did the cycle begin or end?

His gangling figure, in which tenseness fought his desire to relax, must have presented a study in contrasts. The cathedralesque majesty of this one hall that formed an arena as large as the ground and the heavens and the horizons of Earth was in itself a thing of wonder, but the lordly dwellers added the emotional burdens of awe and fear and inferiority, so massive were their statures, so radiant, so stern, so implacable, and godlike. And to the weight of these visible things were piled on concepts to stagger the brain of genius, or the universal mind, if such existed, or the intra-universal intellect. Yet the general patterns of nature as he knew it seemed to recur here. Where lay the beginning and whither the end? To what purpose? He drifted back from mental fog to find the Titans questioning him anew.

"Can you return to your universe, your atom?"

"No," Duane replied.

"Why not?"

"I do not know where it is. I would not know how to find it. If I could find it, I would not be able to enter. Something happened, when I burst through. I am bigger than my whole universe was. I cannot shrink down. Besides, millions of years have passed back there since I departed. I do not even know whether Earth, my planet, still exists."

The sages nodded gravely, accepting his statement, and evidently understanding far better than he did what had happened.

"What is the principle of your tiny ship, little one?"

Duane bristled and his lank joints stiffened. The *White Bird* a "tiny ship"? He, Colossus, called a "little one"? He swore angrily, and a flock of "damns" appeared on the mind reflector. The Titans stared without feeling at these strange words, asked him to elaborate. Swallowing his indignation, he tried to pictoralize the building of the *White Bird,* and how it harnessed universal radiations for its energy. The Titans watched, attentive and impassive as before. And yet Duane sensed an extraordinary interest in his ideas; and by careful observation came to the conclusion that they had only recently built this laboratory with a scientific knowledge far in advance of that of the human race.

They, too, had discovered how to tap perpetual power. Already exploration of the great spaces, the outer abysses, the chasms and voids and illimitable depths, was under way. They were plainly amazed that any creature as minute as he could have progressed so far; and still more eagerness accompanied their absorption in his story of the submicroscopic electrons which, to beings as small as he once had been, yet represented a mysterious, enormous, and complex universe of inconceivable magnitude.

Duane felt his prestige rising. He thought it his turn to watch mind pictures and obtain some understanding of his journey's end.

"Who are you? Where am I?" he began.

The astronomer reflected soberly, as though weighing whether this mite could possibly grasp the ideas that might be presented. Then, upon the panel, flowed a stream of images: Qthyalos, a giant world in its ripe maturity, inhabited by Titans of deific knowledge and power, whose intellects rivaled in proportion the girth of their bodies; mind supreme in supreme and vital matter whose life-span averaged thousands of years.

Duane's eyes ached when he saw their cities, how Cyclopean they were, and their works, how passing strange, and their arts, how alien and bizarre. Their structures baffled him with their apparent fluxes and processional changes, their tenuous and unreal unstability, combining with solid attributes. Had they a four-dimensional basis that warped straight lines into arcs, and spheres into helical spirals, and cubes into weirdly shimmering pyramids?

What was the gleaming stuff that composed these megalithic metropolises which shone with blinding color and yet whose incandescence was underlain with the shadow and ambiguity and shifting forms of a geometry that eluded him? Whether he understood or not, the résumé flowed on, and now he found why they were examining Valadom with such interest when he came. He translated the series of images into words.

"One of our exploring flyers reported that he thought he saw signs of life on a small planet of our system." Here the consecutive pictures broke, and a sight of the giant globe Qthyalos flashed forth alone, then the image of its sun and hundreds of large and small planets that made a solar system upon a huge scale; then the great sweep of a galaxy, and beyond this island universe—nebula after nebula, star-field on star-field, flaming gas and black voids, soaring outward and deepening afar toward infinity, the eternal abyss.

Duane, humble in the presence of this immensity so like his own universe but of so immeasurably a more stupendous range, watched with almost glazed eyes the resumption of the story.

"Only recently have we controlled optical and intra-spatial laws to such a degree that we could bring any planet of our system into as close focus as we wished. We have been studying one planet or more nightly for the past year, but discovered no signs of life until the explorer reported today on Valadom, which we studied through a telescope a while ago.

"We had intended to send scientists there to obtain specimens of these curious little creatures, who seem to be much like us, for laboratory study and analysis. There are several difficulties in the way. One is their tiny size. Judging by the one we saw, they can be no larger than you. Consequently, if we landed, they would probably be so paralyzed by fright that they would all run away and hide. We might step on thousands of them without ever realizing it. Great pains would be needed to capture even one, and he would be likely to be badly damaged or fear-filled so as to be useless to us.

"We could not camp there. It is doubtful if we could live on that small asteroid. The air blanket would extend, perhaps, no higher than our heads. Even if we took advantage of all our wisdom, conditions would be most unfavorable for observation. Our purpose would not be wholly answered by observation from here. We can watch actions, but we cannot discover their past, interpret their thoughts, examine their true nature, or obtain more than a general idea of their life."

This long sequence, much of it obscure and only guessed at by Duane because of the abstract quality of the pictures which resulted from the Titan's attempt to visualize concepts, seemed to be leading up to a definite end.

The five conferred among themselves, their miens dignified and stately with an austerity that ascetics would have envied. Like sculpture of gods, like the chiseled, enigmatic heads of Easter Island, like uncrowned rulers debating the fate of empires, and with expressions immobile to a degree that seemed stony, the Cyclopean beings conversed in voices that quaked like thunder,

roaring in Duane's ears, cataclysmic volumes of resonance. From this table top, now that the shining giants stood erect, they looked like figures of hewn marble slashed from mountains.

Fleetingly, he thought of plunging into the *White Bird* and rocketing off, but he knew the gamble would not win. The heads in conclave miles above, the horizon-reaching sweep of floor and apparatus and devices, the seemingly boundless space overhead, offered no hope of escape. Then the stone-hard, mercury-glistening head of the astronomer bent toward him in a rush that sent violent currents of air whirling across the table, and the lordly entity spoke words that he could not understand, but whose import was translated by the mind panel.

"Since it is unwise to explore Valadom, and difficult to obtain a little creature, we have decided to dissect you, instead, and discover how you work, what you are made of, and how you react."

The Titan enunciated doom as if he conferred an honor. His expression was imperturbable. Why he should have announced to the victim his purpose remained a riddle, unless he had access to power beyond Duane's knowledge, or unless the fervor of scientific inquiry obsessed him, and he saw goals but forgot intermediaries.

Whatever the reason, it mattered little to Duane. His life hung at stake. He was no more than a germ, an insect, a minute creature, a worm, to these Titans. There was neither cruelty, enmity, nor any other emotion in the statement. To them, it was a simple fact. Here stood a little creature who stimulated their curiosity. He would make a splendid laboratory specimen. They did not like him or resent him. They had no feeling about him. The cause of knowledge would be far advanced by the dissection and analysis of this specimen of a new species.

The Earth exile, the chill of horror overcoming him at his prospective fate, strove to think. Was this to be the reward of his stellar Odyssey? This bitter death in foreign places to be the last goal? This going out, not in

glory, but ignominiously, with not so much quickness and almost as little distinction as the lowliest insect?

He would make a run for it at the end, a dash that at least would win him fast oblivion in a snap of those monstrous fingers. Better to be slapped into pulp than to linger under the knife. But these were Titans dominated wholly by mind and its pursuits. If he could only appeal to their rational nature!

Upon the reflector appeared the ideas set up by his chain of thought, the appeal and defense that he mentally projected: "Titans! I am not one of the little creatures of Valadom! You may put me under the microscope and the knife, but you will know nothing of how the little creatures work!"

The master of the microscope lowered the mammoth and marmoreal sculpture of his flat-backed head, donned a metal cap, and with brooding visage replied through thought-presentation: "It does not matter. We will find out how you work, and later how the little creatures work, as well."

Disheartened, Duane tried again. "My death will not serve you, Titans! You will discover what I am made of, but only that, and you will know little of my life!"

He had made a bad mistake, a tactical blunder, and he realized it the instant he spoke. Sweat oozed out on his forehead. The biologist-Titan destroyed his plea with: "We do not plan to end you for some time. We will keep you under observation for experiments in the laboratory for as long as may be necessary until we have exhausted your animate being. Then we will take you apart."

Only the aims of high endeavor lightened the black, enormous eyes. No feeling marred their serenity and repose as the sentence of death remained.

Discouraged, but with will indomitable while life lasted, and with wits sharpened by this intellectual battle for preservation, Duane made a new shift in the game. "Titans! I am like you. I think, I feel, I am as you are!

Why then dissect me? I differ principally in size from you! Would you dismember one of your own race?"

"We have taken apart enough beings among ourselves to find out what causes us to be what we are," came the unexpected and disillusioning response. "You resemble us, but exact study of everything in you will be necessary to prove the similarities and differences between us. Your head has a strange shape. Thus your brain cannot function quite like ours."

The web tightened. They closed each argument as quickly as he advanced it. His sole comfort was their consent to listen, dispassionately, detached, impersonal, weighing his reasons for their intrinsic validity. He had one chance left, short of a fatal dash, and he put all his persuasive mental resources into the gamble.

"Titans! I will make a bargain with you! Let me enter my cosmocraft and depart. I will go to Valadom! I will live among the little people. I will stay there for a year. I will learn their language, study their customs and history, interpret their life. At the end of a year, I will return and give you all the knowledge I have obtained. Furthermore, I will bring back at least one dead specimen of the little people for you to examine. All this I promise, Titans, in return for two conditions—you will agree not to harm me when I return, and you will agree not to harm the little people of Valadom."

The five grave giants, like judges studying evidence, considered his proposal. He sensed the biologist arguing against him, and in favor of immediate experimentation, since specimens of the little creatures might be obtained later. The astronomer favored his case, for he would enable them without trouble to obtain a complete record of Valadom, and in the year intervening they could pursue researches into other parts of the universe. The three remaining giants appeared to show little preference which way the discussion ended.

Duane, tense and drawn, waited for their decision. There was a grotesque quality to this situation, something both superhuman and supernormal, something both fa-

miliar and foreign, something gigantically dissimilar between these Cyclopean conquerors with their minds that thirsted for knowledge alone, and he himself, a mite to them, but pleading for his existence—he, who in his own search for the answer to the mystery of things had performed the feat of bursting through a universe and leaving it but an atom behind. Colossus though he had become, he was only an insect to them! Titanic though they seemed, were they only submicroscopic, submeasurable motes in the fathomless molecule beyond?

The astronomer prepared to reply, and Duane's eyes hovered on the reflector; a lone, small figure against fate and the gods, he watched judgment.

"Little creature, we have decided that the cause of knowledge will be furthered better and quicker by your going to Valadom and returning here, than by our analyzing you now. We will allow you to proceed on your way, but you must return according to your agreement in a year. Go!"

Shaking in the nervous let-down that followed reprieve, he said: "I thank you, Titans. What pledge will you have?"

"Pledge? Truth showed in your thoughts. If it had not, we would not let you depart. Do you know the way to Valadom?"

"No."

The astronomer flashed upon the screen picture after picture of the skies, the principal stars, Valadom and Qthyalos and their system, until Duane had the necessary directions. Then he bowed to those great beings, who, incalculable, thinking thoughts beyond his grasp, and preserving a silence more stately than the repose of a deserted cathedral watched him depart.

Neither well-wishing nor friendly farewell attended his going. The flat-backed heads of sloping brow, the stern lips, the chins and noses of deific disdain, the cheek bones of godlike pride, the faces of sexless radiance, the black, tremendous eyes from whose wells shone

the vision of destroying angels, these betrayed unhuman, abstract interest, and nothing more.

The *White Bird* soared skyward in a beautiful arc. The heads of the Titans dropped away. The horizon-sweeping immensity of the observatory fell behind, and became like an ordinary room, with beings of generally anthropomorphic nature standing amid devices and structures of puzzling design. The austere faces of the giants blurred to points as the wanderer of infinity rocketed outward through the open roof in a trajectory that followed the league-long telescope.

It gave him a queasy sensation to realize that he himself, could he see himself with the eyes of man, must be Colossus multi-magnified as a result of the transmutation that had occurred when he annihilated space and sundered his universe, yet only a thumbnail pygmy to them, who were nothing compared with the molecule beyond!

His last impression of the lordly dwellers of Qthyalos was one of profound reverence mingled with fruitless speculation. Who they were and what their nature remained almost as insoluble conjectures as when he first saw them. Then darkness enfolded him and he burst through the dome where it lay open for the telescope.

Now there were star-fields again, and the ceaseless throngs shone above, and the skies hung strange and alien, ablaze with infinite beautiful jewels. On the rim of the northern horizon sank a pale-gray moon, and on the edge of a southern sea sank a moon of orange.

As the *White Bird* soared, Duane looked back. The surface of Qthyalos, in the shadow of night and under the canopy of stars, stretched vast, dim, and mysterious. There were mountain ranges striking stark and bold five thousand miles and more into the citadels of space, peaks of terrific bleakness until their ice-crowns of naked and blue-white grandeur blocked the skies beyond them.

The observatory itself stood on a precipice whose sides were chasms plunging sheer through sooty gulfs. There were cities on the plains and in the valleys, mon-

strous metropolises, dark towers out of fable, erections on titantic scale that tortured vision with illusions of a new geometry, dream cities as unreal as the domes of Xanadu, and assaulting the skies themselves with their topmost and almost topless towers.

There were lakes as large as seas, and seas that curved like the arc of heaven. There were islands the size of continents, and continents of unguessable extent.

Colossal lords of a colossal planet! Qthyalos, a single planet huger than the universe, faded, with all its mysteries and all its visionary wonder, farther and ever farther behind. Its mass became a dark puzzle, but its rim brightened sharply and the edge of a dazzling sun crept out.

The *White Bird* sped on, and the central sun emerged into the radiant glory, a white-hot orb that compared with Qthyalos as a balloon to a ball-bearing. There were great planets and multiple moons and a host of asteroids behind, on the opposite side of this system; and ahead shone other planets and moons against the tapestry of space; and among them glimmered Valadom, a mere asteroid to Titan, a sphere as big as Earth to Duane's sense of values.

The *White Bird* winged onward in accelerating tempo that shot her toward her goal. Scarcely an hour could have lapsed as his senses recorded time before Valadom became discernible as a tiny globe. Beyond it, the enormous sweep of constellations sprinkled infinity; and beyond the riotous blaze the haze of nebulae where the celestial parade began of outward-flung galaxies in the remote depths and recesses of this cosmos. Twin stars and suns of purple and white and gold, myriad moons and planets of silvery splendor, space and night held unrivaled beauty, majesty, and glory, a spectacular display that challenged the scope of imagination, and the *White Bird* only a streaming blur amid the immensities and infinitudes.

He felt tempted to trick the Titans; to blast his way outward and discover the final organism of farthest mega-

cosmos, to test Dowell's theory in its ultimate scope. His pledge to the Titans prevailed.

Yet it was with a sense of cosmic weariness that Duane approached Valadom. The everlasting procession of stars and galactic universes began to pall. Who could say what lay beyond the utmost outpost? Beyond this cosmos—another atom on a larger scale? A cell or molecule? Or night eternal? Or mysterious limitations where space finally ceased? His mind withdrew from visions too vast, speculations where madness lay.

Oddly, he felt a gladness as Valadom loomed large, the gladness of the wanderer homeward bound from voyages afar. The blinding sun shone remotely behind, yet still far larger than the Sun of Earth; and to one side hung Qthyalos, abode of Titans; and, in relation to them, Valadom seemed hardly so much as a pin point, but it loomed fully the size of Earth.

Duane's thoughts recurred to Anne with a kind of sad longing for her companionship. So well she would have changed the loneliness of his travels! So sweet a comfort she would have been! But irrecoverable years in a universe more distant that Carcosa and Hali divided him from the dead dream of love.

Valadom swept close. Moody, the expression of an old man in his youthful eyes, Duane watched the harbor draw nigh. He could not rid himself of the feeling that the Titans watched his progress through their telescopic and ultra-optical equipment; and the sense of their invisible presence billions of miles behind was a depressant only partly relieved by his impression of another presence, ghostly, intangible, elusive.

But over Valadom lay quiet; the quiet of dawn above the seas and continents toward which he dropped; and peace became part of his mood. His thoughts drifted to the lovely and forlorn creature he had watched make her obeisance to the morning. Did she still recline beside the pool? Or had she danced her way back to lover or family or mate? Duane was startled by his interest and resentment. Preposterous! He did not even know the na-

ture of this child of Valadom, and he might never find her, yet he dreamed while the planet rushed near.

Seas outlined themselves against land masses. He recognized the topography as he recalled it in the Titans' reflector. Swiftly the *White Bird* settled, too swiftly. He unloosed the triple fore projectors to break his fall. The *White Bird* leveled away high over a tossing sea, and headed westward until the coast of a continent swam out of azure mist.

There were dots on the ocean below—atolls or flotsam or small craft? He could not tell and did not pause. The ramparts of a village or city rose on a bay. Civilization? Or savagery? Did it indicate rising culture and progress, or decline from a peak surpassed? Time might answer; now, he had only a desire, curiously compelling, to reach the glade he had seen. The village flowed underneath, its architecture analogous to that of the Greeks—temple and dwelling, shrine and inn, lying white and pagan in the dawn.

The *White Bird* dipped toward the surrounding forest, for here should lie the haven he sought. The dark thread of a river wound its way seaward in the distance. The forest rushed up. The *White Bird* settled toward a greensward between two ridges, which he recognized immediately as the vista he had scrutinized from Qthyalos. Here lay the pool, a disk of emerald.

The *White Bird* came to rest upon grasses and lush flowers amid trees of fantastic shape. The loose-jointed figure of the Earth man slouched out.

Morning had broken. The sun stood high, Qthyalos a sphere of misty beauty beside it. A soft wind blew, and he breathed deeply of that fresh, fragrant elixir. Sounds came from the forest, strange songs of unknown birds and cries of hidden beasts. Moths of brilliant coloring made splashes of cerise and greengold, lemon and indigo and ebony; one long-beaked bird, imperial purple with markings of pomegranate red, flew past, a lovely thing until it croaked harshly.

Everywhere rose curious vegetation; flower-capped

stalks; ferns of feathery grace; lichens and great single leaves; coniferous trees; weird trunks and stems from which clusters of berries, fruit, nuts, and blossoms hung; buds like bursting seed pods; thick moss. The ground was a carpet where green grew the grasses, and over them wealth of blooms; orchids that lifted hot faces to the sun; petals of silver freaked with black, and of turquoise, of cinnamon, of pistachio, and blood; a hectic riot wherein colors of fever and tones of coolness splashed the landscape.

The wanderer, amid this drowsy paradise, where dreams faded and aspirations vanished in the presence of nature's extravagance, trod his way toward the pool. Through foliage and frondage and leafy patch, with sunlight fretting arabesques of light and shadow athwart his path, he sauntered on, wearily, hesitantly, but with active curiosity.

There was never so exquisite a peace as this, so ineffable a haven, and the rising music of birds became a choir that only deepened the repose. Then a voice caroled a rich, glad hymn to the sun, soaring and falling, deepening with ecstasy and dreamful of rapture. His mood responded to the song and the invisible singer. As he wove his way through the forest, the recollection of Anne rose like a specter hovering behind the lyrical and golden-throated phrases.

Then he came to the edge of the glade and saw the girl. She stood beside the pool. She laughed at the sky and the sun, the land and the waters. Her young face flushed in the bloom of youth. Her emerald hair hung silken around her throat and shoulders. She sang for the glory of living, the breathless adoration of being, and her voice warbled gladness. She whirled in light abandon, and the hair rippled across her back and shimmered against the glow of her skin.

For a long minute, Duane dwelt on the beauty of her figure and her dance, the grace of her rhythm, before he stepped out.

Exile from Earth and child of Valadom, they faced

each other. The dance came to an abrupt end. Her amber eyes grew wide and startled, questioning the intruder. Hesitantly, he stepped a pace forward and greeted the girl with hands spread in token of peace.

Her lips parted and her eyes, showing neither the fear nor the mistrust that he might have expected, shone of something secret, as if to greet some dimly remembered and half-forgotten friend of long ago.

A Voyage to Sfanomoë

by Clark Ashton Smith

THERE are many marvelous tales, untold, unwritten, never to be recorded or remembered, lost beyond all divining and all imagining, that sleep in the double silence of far-recessive time and space. The chronicles of Saturn, the archives of the moon in its prime, the legends of Antillia and Moaria—these are full of an unsurmised or forgotten wonder. And strange are the multitudinous tales withheld by the light-years of Polaris and the Galaxy. But none is stranger, none more marvelous, than the tale of Hotar and Evidon and their voyage to the planet Sfanomoë, from the last isle of foundering Atlantis. Harken, for I alone shall tell the story, who came in a dream to the changeless center where the past and future are always contemporary with the present; and saw the veritable happening thereof; and, waking, gave it words:

Hotar and Evidon were brothers in science as well as by consanguinity. They were the last representatives of a long line of illustrious inventors and investigators, all of whom had contributed more or less to the knowledge, wisdom and scientific resources of a lofty civilization matured through cycles. One by one they and their fellow-savants had learned the arcanic secrets of geology, of chemistry, of biology, of astronomy; they had subverted the elements, had constrained the sea, the sun, the air and the force of gravitation, compelling them to serve the uses of man; and lastly they had found a way to release the typhonic power of the atom, to destroy, transmute and reconstruct the molecules of matter at will.

However, by that irony which attends all the triumphs and achievements of man, the progress of this

mastering of natural law was coincidental with the profound geologic changes and upheavals which caused the gradual sinking of Atlantis: Age by age, eon by eon, the process had gone on: huge peninsulas, whole seaboards, high mountain ranges, citied plains and plateaus, all went down in turn beneath the diluvial waves. With the advance of science, the time and location of future cataclysms was more accurately predictable; but nothing could be done to avert them.

In the days of Hotar and Evidon, all that remained of the former continent was a large isle, called Poseidonis. It was well known that this isle, with its opulent seaports, its eon-surviving monuments of art and architecture, its fertile inland valleys, and mountains lifting their spires of snow above semi-tropic jungles, was destined to go down ere the sons and daughters of the present generation had grown to maturity.

Like many others of their family, Hotar and Evidon had devoted long years of research to the obscure telluric laws governing the imminent catastrophe; and had sought to devise a means of prevention, or, at least, of retardation. But the seismic forces involved were too deeply seated and too widespread in their operation to be controllable in any manner or degree. No magnetic mechanism, no zone of repressive force, was powerful enough to affect them. When the two brothers were nearing middle-age, they realized the ultimate futility of their endeavors; and though the peoples of Poseidonis continued to regard them as possible saviors, whose knowledge and resource were well-nigh superhuman, they had secretly abandoned all effort to salvage the doomed isle, and had retired from sea-gazing Lephara, the immemorial home of their family, to a private observatory and laboratory far up in the mountains of the interior.

Here, with the hereditary wealth at their command, the brothers surrounded themselves not only with all the known instruments and materials of scientific endeavor, but also with a certain degree of personal luxury. They

were secluded from the world by a hundred scarps and precipices and by many leagues of little-trodden jungle; and they deemed this seclusion advisable for the labors which they now proposed to themselves, and whose real nature they had not divulged to any one.

Hotar and Evidon had gone beyond all others of their time in the study of astronomy. The true character and relationship of the world, the sun, the moon, the planetary system and the stellar universe, had long been known in Atlantis. But the brothers had speculated more boldly, had calculated more profoundly and more closely than any one else. In the powerful magnifying mirrors of their observatory, they had given special attention to the neighboring planets; had formed an accurate idea of their distance from the earth; had estimated their relative size; and had conceived the notion that several, or perhaps all, might well be inhabited by creatures similar to man; or, if not inhabited, were potentially capable of supporting human life.

Venus, which the Atlanteans knew by the name of Sfanomoë, was the planet which drew their curiosity and their conjecture more than any other. Because of its position, they surmised that it might readily resemble the earth in climatic conditions and in all the prerequisites of biological development. And the hidden labor to which they were now devoting their energies was nothing less than the invention of a vehicle by which it would be possible to leave the ocean-threatened isle and voyage to Sfanomoë.

Day by day the brothers toiled to perfect their invention; and night by night, through the ranging seasons, they peered at the lustrous orb of their speculations as it hung in the emerald evening of Poseidonis, or above the violet-shrouded heights that would soon take the saffron footprints of the dawn. And ever they gave themselves to bolder imaginings, to stranger and more perilous projects.

The vehicle they were building was designed with complete foreknowledge of all the problems to be faced,

of all the difficulties to be overcome. Various types of air-vessels had been used in Atlantis for epochs; but they knew that none of these would be suitable for their purpose even in a modified form. The vehicle they finally devised, after much planning and long discussion, was a perfect sphere, like a miniature moon; since, as they argued, all bodies traveling through etheric space were of this shape. It was made with double walls of a metallic alloy whose secret they themselves had discovered —an alloy that was both light and tough beyond any substance classified by chemistry or mineralogy. There were a dozen small round windows lined with an unbreakable glass, and a door of the same alloy as the walls, that could be shut with hermetic tightness. The explosion of atoms in sealed cylinders was to furnish the propulsive and levitative power and would also serve to heat the sphere's interior against the absolute cold of space. Solidified air was to be carried in electrum containers and vaporized at the rate which would maintain a respirable atmosphere. And foreseeing that the gravitational influence of the earth would lessen and cease as they went further and further away from it, they had established in the floor of the sphere a magnetic zone that would simulate the effect of gravity and thus obviate any bodily danger or discomfort to which they might otherwise be liable.

Their labors were carried on with no other assistance than that of a few slaves, members of an aboriginal race of Atlantis, who had no conception of the purpose for which the vessel was being built; and who, to insure their complete discretion, were deaf-mutes. There were no interruptions from visitors, for it was tacitly assumed throughout the isle that Hotar and Evidon were engaged in seismologic researches that required a concentration both profound and prolonged.

At length, after years of toil, of vacillation, doubt, anxiety, the sphere was completed. Shining like an immense bubble of silver, it stood on a westward-facing terrace of the laboratory, from which the planet Sfanomoë was

now visible at eventide beyond the purpling sea of the jungle. All was in readiness: the vessel was amply provisioned for a journey of many lustrums and decades, and was furnished with an abundant supply of books, with implements of art and science, with all things needful for the comfort and convenience of the voyagers.

Hotar and Evidon were now men of middle years, in the hale maturity of all their powers and faculties. They were the highest type of the Atlantean race, with fair complexions and lofty stature, with the features of a lineage both aristocratic and intellectual. Knowing the nearness of the final cataclysm, they had never married, they had not even formed any close ties but had given themselves to science with a monastic devotion. They mourned the inevitable perishing of their civilization, with all its epoch-garnered lore, its material and artistic wealth, its consummate refinement. But they had learned the universality of the laws whose operation was plunging Atlantis beneath the wave—the laws of change, of increase and decay; and they had schooled themselves to a philosophic resignation—a resignation which, mayhap, was not untempered by a foresight of the singular glory and novel, unique experiences that would be entailed by their flight upon hitherto-untraveled space.

Their emotions, therefore, were a mingling of altruistic regret and personal expectancy, when, on the evening chosen for their departure, they dismissed their wondering slaves with a writ of manumission, and entered the orb-shaped vessel. And Sfanomoë brightened before them with a pulsing luster, and Poseidonis darkened below, as they began their voyage into the sea-green heavens of the west.

The great vessel rose with a buoyant ease beneath their guidance; till soon they saw the lights of Susran the capital and its galley-crowded port Lephara, where nightly revels were held and the very fountains ran with wine that people might forget awhile the predicted doom. But so high in air had the vessel climbed that Hotar and Evidon could hear no faintest murmur of the loud lyres

and strident merry-making in the cities beneath. And they went onward and upward till the world was a dark blur and the skies were aflame with stars that their optic mirrors had never revealed. And anon the black planet below was rimmed with a growing crescent of fire, and they soared from its shadow to unsetting daylight. But the heavens were no longer a familiar blue, but had taken on the lucid ebon of ether; and no star nor world, not even the littlest, was dimmed by the rivalship of the sun. And brighter than all was Sfanomoë, where it hung with unvacillating lambence in the void.

Mile by stellar mile the earth was left behind; and Hotar and Evidon, peering ahead to the goal of their dreams, had almost forgotten it. Then, gazing back, they saw that it was no longer below but above them, like a vaster moon. And studying its oceans and isles and continents, they named them over one by one from their maps as the globe revolved; but vainly they sought for Poseidonis, amid an unbroken glittering waste of sea. And the brothers were conscious of that regret and sorrow which is the just due of all evanished beauty, of all sunken splendor. And they mused awhile on the glory that had been Atlantis, and recalled to memory her obelisks and domes and mountains, her palms with high and haughty crests, and the fire-tall plumes of her warriors, that would lift no longer to the sun.

Their life in the orb-like vessel was one of ease and tranquility, and differed little from that to which they were accustomed. They pursued their wonted studies, they went on with experiments they had planned or begun in past days, they read to each other the classic literature of Atlantis, they argued and discussed a million problems of philosophy or science. And time itself was scarcely heeded by Hotar and Evidon; and the weeks and months of their journey became years, and the years were added into lustrums, and the lustrums into decades. Nor were they sensible of the change in themselves and in each other, as the years began to weave a web of wrinkles in their faces, to tint their brows with the

yellow ivory of age and to thread their sable beards with ermine. There were too many things to be solved or debated, too many speculations and surmises to be ventured, for such trivial details as these to usurp their attention.

Sfanomoë grew larger and larger as the half-oblivious years went by; till anon it rolled beneath them with strange markings of untraveled continents and seas unsailed by man. And now the discourse of Hotar and Evidon was wholly concerning the world in which they would so soon arrive, and the peoples, animals and plants which they might expect to find. They felt in their ageless hearts the thrill of an anticipation without parallel, as they steered their vessel toward the ever-widening orb that swam below them. Soon they hung above its surface, in a cloud-laden atmosphere of tropic warmth; but though they were childishly eager to set foot on the new planet, they sagely decided to continue their journey on a horizontal level till they could study its topography with some measure of care and precision.

To their surprise, they found nothing in the bright expanse below that in any manner suggested the work of men or living beings. They had looked for towering cities of exotic aerial architecture, for broad thoroughfares and canals and geometrically measured areas of agricultural fields. Instead, there was only a primordial landscape of mountains, marshes, forests, oceans, rivers and lakes.

At length they made up their minds to descend. Though they were old, old men, with five-foot white beards, they brought the moon-shaped vessel down with all the skill of which they would have been capable in their prime; and opening the door that had been sealed for decades, they emerged in turn—Hotar preceding Evidon, since he was a little the elder.

Their first impressions were of torrid heat, of dazzling color and overwhelming perfume. There seemed to be a million odors in the heavy, strange, unstirring air—odors that were almost visible in the form of wreathing vapors—perfumes that were like elixirs and opiates, that

conferred at the same time a blissful drowsiness and a divine exhilaration. Then they saw that there were flowers everywhere—that they had descended in a wilderness of blossoms. They were all of unearthly forms, of supermundane size and beauty and variety, with scrolls and volutes of petals many-hued, that seemed to curl and twist with a more than vegetable animation or sentiency. They grew from a ground that their overlapping stems and calyxes had utterly concealed; they hung from the boles and fronds of palm-like trees they had mantled beyond recognition; they thronged the water of still pools; they poised on the jungle-tops like living creatures winged for flight to the perfume-drunken heavens. And even as the brothers watched, the flowers grew and faded with a thaumaturgic swiftness, they fell and replaced each other as if by some legerdemain of natural law.

Hotar and Evidon were delighted, they called out to each other like children, they pointed at each new floral marvel that was more exquisite and curious than the rest; and they wondered at the speed of their miraculous growth and decay. And they laughed at the unexampled bizarrerie of the sight, when they perceived certain animals new to zoölogy, who were trotting about on more than the usual number of legs, with orchidaceous blossoms springing from their rumps.

They forgot their long voyage through space, they forgot there had ever been a planet called the earth and an isle named Poseidonis, they forgot their lore and their wisdom, as they roamed through the flowers of Sfanomoë. The exotic air and its odors mounted to their heads like a mighty wine; and the clouds of golden and snowy pollen which fell upon them from the arching arbors were potent as some fantastic drugs. It pleased them that their white beards and violet tunics should be powdered with this pollen and with the floating spores of plants that were alien to all terrene botany.

Suddenly Hotar cried out with a new wonder, and laughed with a more boisterous mirth than before. He had seen that an oddly folded leaf was starting from the

back of his shrunken right hand. The leaf unfurled as it grew, it disclosed a flower-bud; and lo! the bud opened and became a triple-chaliced blossom of unearthly hues, adding a rich perfume to the swooning air. Then, on his left hand, another blossom appeared in like manner; and then leaves and petals were burgeoning from his wrinkled face and brow, were going in successive tiers from his limbs and body, were mingling their hair-like tendrils and tongue-shaped pistils with his beard. He felt no pain, only an infantile surprise and bewilderment as he watched them.

Now from the hands and face and limbs of Evidon the blossoms also began to spring. And soon the two old men had ceased to wear a human semblance, and were hardly to be distinguished from the garland-laden trees about them. And they died with no agony, as if they were already part of the teeming floral life of Sfanamoë, with such perceptions and sensations as were appropriate to their new mode of existence. And before long their metamorphosis was complete, and every fiber of their bodies had undergone a dissolution into flowers. And the vessel in which they had made their voyage was embowered from sight in an ever-climbing mass of plants and blossoms.

Such was the fate of Hotar and Evidon, the last of the Atlanteans, and the first (if not also the last) of human visitors to Sfanomoë.

The Seesaw

by A. E. Van Vogt

MAGICIAN BELIEVED TO HAVE HYPNOTIZED CROWD

June 16, 1947—Police and newspapermen believe that Middle City will shortly be advertised as the next stopping place of a master magician. When he comes they are prepared to extend him a hearty welcome if he will condescend to explain exactly how he fooled hundreds of people into believing they saw a strange building, apparently a kind of gunshop.

The building seemed to appear on the space formerly, and still, occupied by Aunt Sally's Lunch and Patterson Tailors. Only employees were inside the two aforementioned shops, and none noticed any untoward event. A large, brightly shining sign featured the front of the gunshop, which had been so miraculously conjured out of nothingness. The sign constituted the first evidence that the entire scene was nothing but a masterly illusion. For from whatever angle one gazed at it, one seemed to be staring straight at the words, which read:

FINE WEAPONS
THE RIGHT TO BUY WEAPONS
IS THE RIGHT TO BE FREE

The window display was made up of an assortment of rather curiously shaped guns, rifles as well as small arms; and a glowing sign in the window stated:

Inspector Clayton of the Investigation Branch attempted to enter the shop, but the door seemed to be locked. A few moments later, C. J. (Chris) McAllister, reporter of the *Gazette-Bulletin,* tried the door, found that it opened, and entered.

Inspector Clayton attempted to follow him, but discovered that the door was again locked. It is believed that McAllister went through to the back, as several spectators reported seeing him. Immediately after his reappearance, the strange building vanished as abruptly as it had appeared.

Police state they are baffled as to how the master magician created so detailed an illusion for so long a period before so large a crowd. They are prepared to recommend his show, when it comes, without reservation.

[AUTHOR'S NOTE: The foregoing account did not mention that the police, dissatisfied with the affair, attempted to contact McAllister for a further interview, but were unable to locate him. Weeks have passed, and he has still not been found.]

What did happen to McAllister from the instant that he found the door of the gunshop unlocked?

There was a curious quality about the gunshop door. It was not so much that it opened at his first touch as that, when he pulled, it came away like a weightless thing. McAllister had the impression that the knob had freed itself into his palm.

He stood quite still, startled. He wondered how it was that Inspector Clayton, a minute earlier, had found the door locked. His thought was like a signal. From behind him boomed the voice of the inspector:

"Ah, McAllister, I'll handle this now."

It was dark inside the shop beyond the door, too dark to see anything, and somehow, his eyes wouldn't accustom themselves to the intense gloom. Pure reporter's instinct made him step forward toward the blackness that pressed from beyond the rectangle of door. Out of the corner of one eye, he saw Inspector Clayton's hand reaching for the door handle that his own fingers had let go a moment before. And he knew without considering it that if the police officer could prevent it, no reporter would get inside the building. His head was still turned, his gaze more on the police inspector than on the darkness in front. And it was as he began another step forward that the remarkable thing happened.

The door handle would not allow Inspector Clayton to touch it. It twisted in some queer way, in some *energy* way, for it was still there, a strange, blurred shape. The door itself, without visible movement, so swift it was, was suddenly touching McAllister's heel. Light, almost weightless, was that touch. And then, before he could think or react to what had happened, the momentum of his forward movement had carried him inside. As he breasted the darkness, there was a sudden, enormous tensing along his nerves. Then the door shut tight, the brief sensation of pain faded. Ahead was a brightly lit shop; behind were unbelievable things!

For McAllister, the moment that followed was one of blank impression. He stood, body twisted awkwardly, only vaguely conscious of the shop's interior. But he was tremendously aware in the brief moment before he was interrupted of what lay beyond the transparent panels of the door through which he had come.

There was no blackness, no Inspector Clayton, no dingy row of shops across the way. It was not even the same street. There was no street. Instead, a peaceful park spread there. Beyond it, brilliant under a noon sun, glowed a city so colossal that McAllister stared blankly. From behind him, a low, musical, woman's voice said:

"You will be wanting a gun?"

McAllister was not ready to stop gazing at the vision

of a city, but he turned automatically at the sound. And because everything was still like a dream the city scene faded almost instantly. His mind focussed on the young woman who was advancing slowly from the rear section of the store. She had a slender, well-shaped body, brown eyes and neat, wavy brown hair. She was smiling pleasantly, and her simple frock and sandals seemed so normal at first glance that he gave them no further thought.

He said: "What I can't understand is why the police officer, who tried to follow me, couldn't get in? And where is he now?"

The woman's smile faded. She studied him with a faint frown. She said at last, slowly: "Naturally, a policeman couldn't get in. We know that people consider it silly of us to keep the ancient feud alive." Her voice grew firmer. "We even know how clever the propaganda is that stresses the silliness of our stand. Meanwhile, we never allow any of *her* men in here. We continue to take our principles very seriously."

She paused as if she expected comprehension from him. But McAllister saw from the puzzlement creeping into her eyes that the expression on his face was not satisfactory to her. *Her* men! The young woman had spoken the words as if she was referring to a personage, and in direct reply to his use of the words, police officer. He meant stolid Inspector Clayton, of the Middle City force, whereas she meant—McAllister couldn't decide. What was clear was that *her* men, whoever she was, were policemen, and they weren't allowed in this gunshop. So the door was hostile, and wouldn't admit them. An emptiness grew in McAllister's mind, matching the hollowness that was beginning to afflict the pit of his stomach, a sense of unplumbed depths, the first, staggering conviction that all was not as it should be.

The girl said in a sharper tone: "You mean, you know nothing of all this, that for generations the gunmaker's guild has existed in this age of devastating energies as the common man's protection against enslavement. The right to buy guns——" She stopped again, her narrowed

eyes searching him; then: "Come to think of it, there's something very illogical about you. Your outlandish clothes—you're not from the northern farm plains, are you?"

He shook his head dumbly, more annoyed with his reactions every passing second. But he couldn't help it. A tightness was growing in him, becoming more unbearable instant by instant, as if somewhere a vital mainspring were being wound to the breaking point.

The young woman went on more swiftly: "And come to think of it, it is astounding that a policeman should have tried the door, and there was no alarm."

Her hand moved. Metal flashed in it, metal as bright as steel in blinding sunlight. There was no hint of friendliness in her voice as she said: "You will stay where you are, sir, until I have called my father. In our business, with our responsibilities, we never take chances. Something is very wrong here."

Curiously, it was at that point that McAllister's mind began to function clearly. His alarm, thought different, paralleled hers: How had this gunshop appeared on a 1947 street? How had he come here into this fantastic world? Something was very wrong indeed!

The girl was looking toward the wall to his left. McAllister turned, and seven miniature lights flashed on. Curious lights, a play of white and shade, a waxing and waning from one globe to the next, a rippling movement of infinitesimal increments and decrements, an incredibly delicate effect of instantaneous reaction to some supersensitive barometer . . . As the lights momentarily steadied, his gaze reverted to the girl. To his surprise, she was putting away her gun.

"The automatics are on you now," she said. She went on in a puzzled tone, "You may not realize it, but you have already upset our establishment. The lights of the automatics should have gone on the moment father pressed the buttons. They didn't. That's unnatural." She paused, frowning.

There was a chair to McAllister's right. He started for

it. "Look," he began, "I don't know what you're talking about. I don't even know how I came to be in this shop."

His voice trailed. He had been half-lowered into the chair, but now he came erect. His eyes stared at lettering that shone above a glass case of guns behind her. He said hoarsely: "Is that—a calendar?"

She followed his gaze. "Yes, it's June third. What's wrong?"

That was wrong in itself. This was June sixteenth, not June third. But that wasn't what he meant.

"I mean——" McAllister caught himself with an effort. "I mean those figures above that. I mean——What year is this?"

The young woman looked surprised. She started to say something, then stopped and backed away.

"Don't look like that," she said. "This is the 4784th year of the Imperial House of Isher. It's quite all right."

McAllister finished sitting down. Not even surprise came to his aid. The events were beginning to fall into a kind of distorted pattern. The building front superimposed on those two 1947 shops, the way the door had acted, the great exterior sign with its odd linking of freedom and the right to buy weapons, the actual display of weapons in the window, the finest energy weapons in the known universe! . . . He grew aware that the girl was talking earnestly with a tall, gray-haired man who was standing on the threshold of the door through which she had originally come.

There was a tenseness in the way they were standing. Their low-spoken words made a blur of sound in his ears, strange and unsettling. McAllister could not quite analyze the meaning of it until the girl turned, and said, "What is your name?"

McAllister gave it.

The girl hesitated, then: "Mr. McAllister, my father wants to know what year you're from!"

The gray-haired man stepped forward. "I'm afraid," he said gravely, "that there is no time to explain. What has happened is that for which we have constantly had

to be on the alert: that once again would come one who lusted for unlimited power; and who, to attain tyranny, must necessarily seek first to destroy us. Your presence here is a manifestation of the energy force that she has turned against us—something so new that we did not even suspect it was being used against us. But I have no time to waste. Get all the information you can, Lystra, and warn him of his own personal danger." The man turned. The door closed noiselessly behind his tall figure.

McAllister asked, "What did he mean—personal danger?"

He saw that the girl's brown eyes were uneasy as they watched him. "It's hard to explain," she said in an uncomfortable voice. "That building over there is the source of the energy."

His alarm was gone. The gray-haired man seemed to know what it was all about. That meant there should be no difficulty getting home again. As for all this danger to the gun-makers' guild, that was their worry, not his.

The window occupied a space beside the "automatics," and the strange thing about it was that McAllister didn't remember having seen it earlier. He gazed for a moment at the massive, streamlined building, and then turned to ask the girl about the window. She cringed away from his movement, and said shakily: "Don't think I'm being silly, and don't be offended—but for your life's sake don't go near anybody!"

McAllister drew back. "Now, look," he began. "I want to get this clear. We're in no danger, providing I don't touch you, or come near you. Is that right?"

She nodded. "The floor, the walls, every piece of furniture, in fact the entire shop is made of non-conducting material."

McAllister had a sense of being balanced on a tightrope over a bottomless abyss. This girl had a way of implying danger without making clear what the danger was. He forced calm into his mind.

"Let's start," he said, "at the beginning. How did you and your father know that I was not of"—he paused be-

fore the odd phrase, then went on—"of this time?"

"Father X-rayed you," the girl said. "He X-rayed the contents of your pockets. That was how he first found out what was the matter. You see, the X-rays themselves became carriers of the energy with which you're charged. That's what was the matter. That's why the automatics wouldn't focus on you, and——"

"Energy—charged?" said McAllister.

The girl was staring at him. "Don't you understand?" she gasped. "You've come across seven thousand years of time. And of all the energies in the universe, time is the most potent. You're charged with trillions of trillions of time-energy units. If you should step outside this shop, you'd blow up Imperial City and half a hundred miles of land beyond."

"You——" It was her father's voice, coming from behind them—"you, sir, could conceivably destroy the earth. . . . The danger is so great, the importance of getting you back where you came from so urgent, that I have already called the Weapon Makers' Council and——"

He paused. "Ah, gentlemen," he said.

He spoke past McAllister, who turned with a start. Men were coming out of the solid wall, where the window had been, lightly, easily, as if it was a door, and they were stepping across the threshold. . . . One, two, three . . . thirty. They were stern-faced men, all except one. That one glanced at McAllister, then stopped with a half-amused smile.

He said quietly: "How else do you think we could have survived all these years if we hadn't been able to transmit objects over distance? The Isher soldiery have always been eager to block our sources of supply. Incidentally, my name is Cadron—Peter Cadron."

Before McAllister could reply, a heavy-faced individual said, "My name is Dresley." He faced about immediately, and began, "We have gathered here because it is obvious that the source of the new energy is the great building just outside this shop."

He motioned towards the magic wall, which, McAllister saw, was again a window. This time, however, the window could not distract him, and now he saw that neither near that building nor in the park was a living person visible. Everywhere was evidence of man's dynamic labor, but no men and no movement. Even the trees stood motionless in that breathless, sunlit day.

A hand, reaching from behind him, gingerly held out a limp, grayish thing. McAllister stared at it, as the young man walked around in front of him, and said: "This is an insulated suit, and it is our hope and yours. What we have in mind is an application of a sort of an energy and fulcrum principle. You are to be the weight at the long end of a kind of energy 'crowbar,' which lifts the greater weight at the short end. You will go back seven thousand years in time. The machine and all of that building, to which your body will be tuned, will move ahead in time on a basis of comparative weights, only a few seconds, but enough to break all the matter tensions of the space it occupies. It will become useless to the Imperial forces and no longer a danger to us."

"In that way," said another man, "we shall gain the time we need to counteract the entire attack."

McAllister accepted the suit, and stood holding it in his hands. He looked from it to the man, recalling vaguely that he had heard about such things before, in a different application.

"I get it," he remembered suddenly, aloud. "The lever principle, the old idea that if you had a lever long enough, and a suitable fulcrum, you could move the earth out of its orbit."

"Exactly." It was Dresley, the heavy-faced individual. "Only this lever works in time, and you at the long end have to swing seven thousand years."

Still McAllister hesitated. The room seemed insufferably hot. Perspiration streaked down his cheeks, and he felt sick with uncertainty. His gaze fell on the girl, standing silent and subdued near the front door. He strode

toward her, and either his glare or his presence was frightening, for she turned white.

"Look," he said. "I'm in this as deep as hell. What's the risk of this thing? I've got to feel that I have some chance. These fellows are too smooth. Tell me, what's the catch?"

The girl was gray now, almost as gray and dead-looking as the suit the young man was holding. "It's the friction," she mumbled finally. "You may not get all the way back to 1947. You see, you'll be a sort of dead weight and——"

McAllister whirled away from her. He climbed into the soft, almost flimsy suit, crowding the overall-like shape over his neatly pressed clothes. "It comes tight over the head, doesn't it?" he asked.

"Yes." It was Lystra's father who answered. "As soon as you pull that zipper shut, the suit will become completely invisible. To outsiders, it will seem as if you have on only your ordinary clothes. The suit is fully equipped. You could live on the moon inside it."

"What I don't get," complained McAllister, "is why I have to wear it. I got here all right without it."

He frowned. "Just a minute. What becomes of the energy with which I'm charged, when I'm bottled up in this insulation?"

He saw by the stiffening expressions of those around him that he had touched on a vast subject.

"So that's it!" he snapped. "The insulation is to prevent me losing any of that energy. That's how it can make a 'weight.' I have no doubt there is a connection from this suit to that other machine. Well, it's not too late."

He was tugging at the zipper, when four men grabbed him. Strong fingers locked the zipper tight, and he was being carried irresistibly towards the door when the voice of Peter Cadron snapped a command.

The forward movement slowed, then petered out. McAllister grew blurrily aware of Cadron, his head held proudly erect.

Cadron said quietly: "Gentlemen, I know that every minute counts, but this unseemly haste is degrading. At this point, therefore, we rise above our fears, and we say to this unhappy young man: 'Have courage. We can guarantee nothing, we cannot even state exactly what will happen to you. But we say, if it lies in our power to help you, that help you shall have.' And now—we must protect you from the devastating psychological pressures that would otherwise destroy you, simply but effectively."

Too late, McAllister noticed that the others had turned their faces away from that extraordinary wall—the wall that had already displayed so vast a versatility. He did not even see who pressed the activating button for what followed.

There was a flash of dazzling light. For an instant he felt as if his mind had been laid bare; and against that nakedness the voice of Peter Cadron pressed like some ineradicable engraving stamp: "To retain your self-control and your sanity—this is your hope; this you will do in spite of everything! And, for your own sake, speak of your experience only to scientists or to those in authority whom you feel will understand and help. Good luck!"

So strong remained the effect of that brief flaring light that he felt only vaguely the touch of their hands on him, propelling him.

He felt himself falling.

He landed on his outstretched hands, and saw presently that he was lying on a sidewalk. He climbed to his feet. A pall of curious faces gawked at him; and there was no park, no great city. Instead, a bleak row of one-story shops made a dull pattern on either side of the street.

A man's voice floated towards him out of a blur of other sounds: "I'm sure it's the reporter who went into that weapon shop."

So he was back in his own time. The same day. He moved off, as the man's penetrating voice spoke again: "He looks kind of sick to me. I wonder what——"

He heard no more. But he thought, "Sick!" These people would never understand how sick. But somewhere on Earth must be a scientist who could help him. The record was that he hadn't exploded.

He was walking rapidly now, and clear of the crowd. Once, he looked back, and saw that the people were dispersing in the aimless fashion of folks who had lost their center of interest. McAllister turned a corner, and forgot them.

"I've got to decide."

The words were loud, close. It took a moment to realize that he had spoken them.

Decide? He hadn't thought of his position as requiring a decision. Here he was. Find a scientist. . . . If that was a decision, he had already made it. The question was, who? Memory came of his old physics professor at City College. Automatically, he turned into a phone booth and fumbled for a nickel. With a sickening sense of disaster, he remembered that he was dressed in an all-enclosing transparent suit, and that his money was inside. He drew back, and stopped, shaken. *What was happening?*

It was night, in a brilliant, glowing city. He was standing on the boulevard of an avenue that stretched jewel-like into remote distance. A street that flamed with a soft light that gleamed up from its surface. A road of light, like a river flowing under a sun that shone nowhere else, straight and smooth.

He walked along for uncomprehending minutes, fighting a wild hope, but at last the thought forced through to his consciousness. Was this again the age of Isher and the gunmakers? It could be. It looked right, and it meant they had brought him back. After all, they were not evil, and they would save him if they could. For all he knew, weeks had passed in *their* time.

He began to hurry. Find a weapon shop. A man walked by him, and McAllister turned and called after him. The man paused curiously, and looked back, then continued on his way. McAllister had a brief picture of

dark, intense eyes, and a visualization of a person on his way to a marvellous home of the future. It was that that made him suppress his impulse to run after the man.

He should have. It was the last person he saw on all those quiet, deserted streets. It must have been the in-between hour before the false dawn. But it was not the absence of human life that disturbed him. It was the fact that not once did he see a weapon shop.

In spite of that, his hope mounted. Soon it would be morning. Men would come out of these strange, glowing homes. Great scientists of an age of wizard scientists would examine him, not in a frenzy of haste, with the fear of destruction hanging over their minds. But quietly, in the sanity of super-laboratories.

The thought ended. He felt the *change.*

He was in the center of a blinding snow storm. He staggered from the first, mighty, unexpected blow of that untamed wind. Then, bracing himself, fought for mental and physical calm.

The shining, wondrous night city was gone. Gone, too, the glowing road. Both vanished, transformed into this deadly, wilderness world. He peered through the driving snow. It was daylight, and he could make out the dim shadows of trees that reared up through the white mist of blizzard less than fifty feet away.

Instinctively, he pressed toward their shelter, and stood finally out of that blowing, pressing wind. He thought: "One minute in the distant future; the next—where?"

There was certainly no city. Only trees, an uninhabited forest and a bitter, primeval winter. How long he stood there, while those winds blew, and that storm raged, he had no idea. He had time for a thousand thoughts, time to realize that the suit protected him from the cold as if there was no cold; and then—

The blizzard was gone. And the trees. He stood on a sandy beach. Before him stretched a blue, sunlit sea that rippled over broken, white buildings. All around, scattered far into that shallow, lovely sea, far up into the weed-grown hills, were the remnants of a once tremen-

dous city. Over all clung an aura of incredible age; and the silence of the long-dead was broken only by the gentle, timeless lapping of the waves.

Again came that instantaneous change. More prepared this time, he nevertheless sank twice under the surface of the vast, swift river that carried him on and on. It was hard swimming, but the insulated suit was buoyant with the air it manufactured each passing second. And, after a moment, he began to struggle purposely towards the tree-lined shore a hundred feet to his right. A thought came, and he stopped swimming. "What's the use!" The truth was as simple as it was terrible. He was being shunted from the past to the future. He was the "weight" on the long end of an energy seesaw; and in some way he was slipping further ahead and further back each time. Only that could explain the catastrophic changes he had already witnessed. In an hour would come another change.

It came. He was lying face downward on green grass. When he looked up, he saw a half-dozen, low-built buildings on the horizon of grass. They looked alien, unhuman. But his curiosity was not about them. A thought had come: How long, actually, did he remain in one particular time?

He kept an eye on his watch; and the time was two hours and forty minutes. That was his last curiosity. Period after period, as the seesaw jerked on, he remained in his one position, water or land, it made no difference to him. He did not fight it. He neither walked nor ran nor swam or even sat up. . . . Past—future—past—future—

His mind was turned inward. He had a vague feeling that there was something he ought to do, inside his skin, not outside. Something about a decision that he had believed he must make. Funny, he couldn't recall what it was.

Beyond doubt, the gunmakers had won their respite. For at the far end of this dizzy teeter-totter was the machine that had been used by the Isher soldiers as an

activating force. It too teetered past, then future, in this mad seesaw.

But that decision. He'd really have to try to think about it. . . .

McAllister had forgotten about the personal decision he intended to make. It was so hard to think in this darkness. He opened his tired eyes, and saw that he was poised moveless in black space. There was no earth under him. He was in a time where earth did not yet exist. The darkness seemed to be waiting for some colossal event.

Waiting for him.

He had a sudden flash of understanding of what was going to happen. Wonder came then and a realization of what his decision must be . . . resignation to death!

It was a strangely easy decision to make. He was so weary. Bitter-sweet remembrance came of the day in far-gone time and space, in forgotten Italy, when he had lain half-dead on a meaningless battlefield, resigned to personal oblivion. Then he had thought that he must die so that others might live. The feeling now was the same, but stronger and on a much higher level.

How it would be worked he had no idea. But the seesaw would end in the very remote past, with the release of the stupendous temporal energy he had been accumulating with each of those monstrous swings.

He would not witness but he would aid in the formation of the planets.

The Flying Men

by Olaf Stapledon

THROUGHTOUT their career the Sixth Men had often been fascinated by the idea of flight. The bird was again and again their most sacred symbol. Their monotheism was apt to be worship not of a god-man, but of a god-bird, conceived now as the divine sea eagle, winged with power, now as the giant swift, winged with mercy, now as a disembodied spirit of air, and once as the bird-god that became man to endow the human race with flight, physical and spiritual.

It was inevitable that flight should obsess man on Venus, for the planet afforded but a cramping home for groundlings; and the riotous efflorescence of avian species shamed man's pedestrian habit. When in due course the Sixth Men attained knowledge and power comparable to that of the First Men at their height, they invented flying-machines of various types. Many times, indeed, mechanical flight was rediscovered and lost again with the downfall of civilization. But at its best it was regarded only as a makeshift. And when at length, with the advance of the biological sciences, the Sixth Men were in a position to influence the human organism itself, they determined to produce a true flying man. Many civilizations strove vainly for this result, sometimes half-heartedly, sometimes with religious earnestness. Finally the most enduring and brilliant of all the civilizations of the Sixth Men actually attained the goal.

The Seventh Men were pigmies, scarcely heavier than the largest of terrestrial flying birds. Through and through they were organized for flight. A leathery membrane spread from the foot to the tip of the immensely

elongated and strengthened "middle" finger. The three "outer" fingers, equally elongated, served as ribs to the membrane; while the index and thumb remained free for manipulation. The body assumed the streamlines of a bird, and was covered with a deep quilt of feathery wool. This, and the silken down of the flight-membranes, varied greatly from individual to individual in colouring and texture. On the ground the Seventh Men walked much as other human beings, for the flight-membranes were folded close to the legs and body, and hung from the arms like exaggerated sleeves. In flight the legs were held extended as a flattened tail, with the feet locked together by the big toes. The breastbone was greatly developed as a keel, and as a base for the muscles of flight. The other bones were hollow, for lightness, and their internal surfaces were utilized as supplementary lungs. For, like the birds, these flying men had to maintain a high rate of oxidation. A state which others would regard as fever was normal to them.

Their brains were given ample tracts for the organization of prowess in flight. In fact, it was found possible to equip the species with a system of reflexes for aerial balance, and a true, though artificial, instinctive aptitude for flight, and interest in flight. Compared with their makers their brain volume was of necessity small, but their whole neural system was very carefully organized. Also it matured rapidly, and was extremely facile in the acquirement of new modes of activity. This was very desirable; for the individual's natural life period was but fifty years, and in most cases it was deliberately cut short by some impossible feat at about forty, or whenever the symptoms of old age began to be felt.

Of all human species these bat-like Flying Men, the Seventh Men, were probably the most carefree. Gifted with harmonious physique and gay temperament, they came into a social heritage well adapted to their nature. There was no occasion for them, as there had often been for some others, to regard the world as fundamentally hostile to life, or themselves as essentially

deformed. Of quick intelligence in respect to daily personal affairs and social organization, they were untroubled by the insatiable lust of understanding. Not that they were an unintellectual race, for they soon formulated a beautifully systematic account of experience. They clearly perceived, however, that the perfect sphere of their thought was but a bubble adrift in chaos. Yet it was an elegant bubble. And the system was true, in its own gay and frankly insincere manner, true as significant metaphor, not literally true. What more, it was asked, could be expected of human intellect? Adolescents were encouraged to study the ancient problems of philosophy, for no reason but to convince themselves of the futility of probing beyond the limits of the orthodox system. "Prick the bubble of thought at any point," it was said, "and you shatter the whole of it. And since thought is one of the necessities of human life, it must be preserved."

Natural science was taken over from the earlier species with half-contemptuous gratitude, as a necessary means of sane adjustment to the environment. Its practical applications were valued as the ground of the social order; but as the millennia advanced, and society approached that remarkable perfection and stability which was to endure for many million years, scientific inventiveness became less and less needful, and science itself was relegated to the infant schools. History also was given in outline during childhood, and subsequently ignored.

This curiously sincere intellectual insincerity was due to the fact that the Seventh Men were chiefly concerned with matters other than abstract thought. It is difficult to give to members of the first human species an inkling of the great preoccupation of these Flying Men. To say that it was flight would be true, yet far less than the truth. To say that they sought to live dangerously and vividly, to crowd as much experience as possible into each moment, would again be a caricature of the truth. On the physical plane, indeed, "the universe of flight"

with all the variety of peril and skill afforded by a tempestuous atmosphere, was every individual's chief medium of self-expresssion. Yet it was not flight itself, but the spiritual aspect of flight, which obsessed the species.

In the air and on the ground the Seventh Men were different beings. Whenever they exercised themselves in flight they suffered a remarkable change of spirit. Much of their time had to be spent on the ground, since most of the work upon which civilization rested was impossible in the air. Moreover, life in the air was life at high pressure, and necessitated spells of recuperation on the ground. In their pedestrian phase the Seventh Men were sober folk, mildly bored, yet in the main cheerful, humorously impatient of the drabness and irk of pedestrian affairs, but ever supported by memory and anticipation of the vivid life of the air. Often they were tired, after the strain of that other life, but seldom were they despondent or lazy. Indeed, in the routine of agriculture and industry they were industrious as the wingless ants. Yet they worked in a strange mood of attentive absent-mindedness; for their hearts were ever in the air. So long as they could have frequent periods of aviation, they remained bland even on the ground. But if for any reason such as illness they were confined to the ground for a long period, they pined, developed acute melancholia, and died. Their makers had so contrived them that with the onset of any very great pain or misery their hearts should stop. Thus they were to avoid all serious distress. But, in fact, this merciful device worked only on the ground. In the air they assumed a very different and more heroic nature, which their makers had not foreseen, though indeed it was a natural consequence of their design.

In the air the flying man's heart beat more powerfully. His temperature rose. His sensation became more vivid and more discriminate, his intelligence more agile and penetrating. He experienced a more intense pleasure or pain in all that happened to him. It would not be true to say that he became more emotional; rather the re-

verse, if by emotionality is meant enslavement to the emotions. For the most remarkable feature of the aerial phase was that this enhanced power of appreciation was dispassionate. So long as the individual was in the air, whether in lonely struggle with the storm, or in the ceremonial ballet with sky-darkening hosts of his fellows; whether in the ecstatic love dance with a sexual partner, or in solitary and meditative circlings far above the world; whether his enterprise was fortunate, or he found himself dismembered by the hurricane, and crashing to death; always the gay and the tragic fortunes of his own person were regarded equally with detached aesthetic delight. Even when his dearest companion was mutilated or destroyed by some aerial disaster, he exulted; though also he would give his own life in the hope of effecting a rescue. But very soon after he had returned to the ground he would be overwhelmed with grief, would strive vainly to recapture the lost vision, and would perhaps die of heart failure.

Even when, as happened occasionally in the wild climate of Venus, a whole aerial population was destroyed by some world-wide atmospheric tumult, the few broken survivors, so long as they could remain in the air, exulted. And actually while at length they sank exhausted toward the ground, toward certain disillusionment and death, they laughed inwardly. Yet an hour after they had alighted, their constitution would be changed, their vision lost. They would remember only the horror of the disaster, and the memory would kill them.

No wonder the Seventh Men grudged every moment that was passed on the ground. While they were in the air, of course, the prospect of a pedestrian interlude, or indeed of endless pedestrianism, though in a manner repugnant, would be accepted with unswerving gaiety; but while they were on the ground, they grudged bitterly to be there. Early in the career of the species the proportion of aerial to terrestrial hours was increased by a biological invention. A minute food-plant was produced which spent the winter rooted in the ground, and summer adrift

in the sunlit upper air, engaged solely in photosynthesis. Henceforth the populations of the Flying Men were able to browse upon the bright pastures of the sky, like swallows. As the ages passed, material civilization became more and more simplified. Needs which could not be satisfied without terrestrial labour tended to be outgrown. Manufactured articles became increasingly rare. Books were no longer written or read. In the main, indeed, they were no longer necessary; but to some extent their place was taken by verbal tradition and discussion, in the upper air. Of the arts, music, spoken lyric and epic verse, and the supreme art of winged dance, were constantly practised. The rest vanished. Many of the sciences inevitably faded into tradition; yet the true scientific spirit was preserved in a very exact meteorology, a sufficient biology, and a human psychology surpassed only by the second and fifth species at their height. None of these sciences, however, was taken very seriously, save in its practical applications. For instance, psychology explained the ecstasy of flight very neatly as a febrile and "irrational" beatitude. But no one was disconcerted by this theory; for every one, while on the wing, felt it to be merely an amusing half-turth.

The social order of the Seventh Men was in essence neither utilitarian, nor humanistic, nor religious, but aesthetic. Every act and every institution were to be justified as contributing to the perfect form of the community. Even social prosperity was conceived as merely the medium in which beauty should be embodied, the beauty, namely, of vivid individual lives harmoniously related. Yet not only for the individual, but even for the race itself (so the wise insisted), death on the wing was more excellent than prolonged life on the ground. Better, far better, would be racial suicide than a future of pedestrianism. Yet though both the individual and the race were conceived as instrumental to objective beauty, there was nothing religious, in any ordinary sense, in this conviction. The Seventh Men were completely without interest in the universal and the unseen. The beauty which

they sought to create was ephemeral and very largely sensuous. And they were well content that it should be so. Personal immortality, said a dying sage, would be as tedious as an endless song. Equally so with the race. The lovely flame, of which we all are members, must die, he said, must die; for without death she would fall short of beauty.

For close on a hundred million terrestrial years this aerial society endured with little change. On many of the islands throughout this period stood even yet a number of the ancient pylons, though repaired almost beyond recognition. In these nests the men and women of the seventh species slept through the long Venusian nights, crowded like roosting swallows. By day the same great towers were sparsely peopled with those who were serving their turn in industry, while in the fields and on the sea others laboured. But most were in the air. Many would be skimming the ocean, to plunge, gannet-like, for fish. Many, circling over land or sea, would now and again swoop like hawks upon the wild fowl which formed the chief meat of the species. Others, forty or fifty thousand feet above the waves, where even the plentiful atmosphere of Venus was scarcely capable of supporting them, would be soaring, circling, sweeping, for pure joy of flight. Others, in the calm and sunshine of high altitudes, would be hanging effortless upon some steady upcurrent of air for meditation and the rapture of mere percipience. Not a few love-intoxicated pairs would be entwining their courses in aerial patterns, in spires, cascades, and true-love knots of flight, presently to embrace and drop ten thousand feet in bodily union. Some would be driving hither and thither through the green mists of vegetable particles, gathering the manna in their open mouths. Companies, circling together, would be discussing matters social or aesthetic; others would be singing together, or listening to recitative epic verse. Thousands, gathering in the sky like migratory birds, would perform massed convolutions, reminiscent of the vast mechanical aerial choreography of the First World State, but more

vital and expressive, as a bird's flight is more vital than the flight of any machine. And all the while there would be some, solitary or in companies, who, either in the pursuit of fish and wild fowl, or out of pure devilment, pitted their strength and skill against the hurricane, often tragically, but never without zest, and laughter of the spirit.

It may seem to some incredible that the culture of the Seventh Men should have lasted so long. Surely it must either have decayed through mere monotony and stagnation or have advanced into richer experience. But no. Generation succeeded generation, and each was too short-lived to outlast its young delight and discover boredom. Moreover, so perfect was the adjustment of these beings to their world, that even if they had lived for centuries they would have felt no need of change. Flight provided them with intense physical exhilaration, and with the physical basis of a genuine and ecstatic, though limited, spiritual experience. In this their supreme attainment they rejoiced not only in the diversity of flight itself, but also in the perceived beauties of their variegated world, and most of all, perhaps, in the thousand lyric and epic ventures of human intercourse in an aerial community.

The end of this seemingly everlasting elysium was nevertheless involved in the very nature of the species. In the first place, as the ages lengthened into aeons, the generations preserved less and less of the ancient scientific lore. For it became insignificant to them. The aerial community had no need of it. This loss of mere information did not matter so long as their condition remained unaltered; but in due course biological changes began to undermine them. The species had always been prone to a certain biological instability. A proportion of infants, varying with circumstances, had always been misshapen; and the deformity had generally been such as to make flight impossible. The normal infant was able to fly early in its second year. If some accident prevented it from doing so, it invariably fell into a decline and died before

its third year was passed. But many of the deformed types, being the result of a partial reversion to the pedestrian nature, were able to live on indefinitely without flight. According to a merciful custom these cripples had always to be destroyed. But at length, owing to the gradual exhaustion of a certain marine salt essential to the high-strung nature of the Seventh Men, infants were more often deformed than true to type. The world population declined so seriously that the organized aerial life of the community could no longer be carried on according to the time-honured aesthetic principles. No one knew how to check this racial decay, but many felt that with greater biological knowledge it might be avoided. A disastrous policy was now adopted. It was decided to spare a carefully selected proportion of the deformed infants, those namely which, though doomed to pedestrianism, were likely to develop high intelligence. Thus it was hoped to raise a specialized group of persons whose work should be biological research untrammelled by the intoxication of flight.

The brilliant cripples that resulted from this policy looked at existence from a new angle. Deprived of the supreme experience for which their fellows lived, envious of a bliss which they knew only by report, yet contemptuous of the naïve mentality which cared for nothing (it seemed) but physical exercise, love-making, the beauty of nature, and the elegance of society, these flightless intelligences sought satisfaction almost wholly in the life of research and scientific control. At the best, however, they were a tortured and resentful race. For their natures were fashioned for the aerial life which they could not lead. Although they received from the winged folk just treatment and a certain compassionate respect, they writhed under this kindness, locked their hearts against all the orthodox values, and sought out new ideals. Within a few centuries they had rehabilitated the life of intellect, and, with the power that knowledge gives, they had made themselves masters of the world. The amiable fliers were surprised, perplexed, even pained;

and yet withal amused. Even when it became evident that the pedestrians were determined to create a new world-order in which there would be no place for the beauties of natural flight, the fliers were only distressed while they were on the ground.

The islands were becoming crowded with machinery and flightless industrialists. In the air itself the winged folk found themselves outstripped by the base but effective instruments of mechanical flight. Wings became a laughing stock, and the life of natural flight was condemned as a barren luxury. It was ordained that in future every flier must serve the pedestrian world-order, or starve. And as the cultivation of wind-borne plants had been abandoned; and fishing and fowling rights were strictly controlled, this law was no empty form. At first it was impossible for the fliers to work on the ground for long hours, day after day, without incurring serious ill-health and an early death. But the pedestrian physiologists invented a drug which preserved the poor wage-slaves in something like physical health, and actually prolonged their life. No drug, however, could restore their spirit, for their normal aerial habit was reduced to a few tired hours of recreation once a week. Meanwhile, breeding experiments were undertaken to produce a wholly wingless large-brained type. And finally a law was enacted by which all winged infants must be either mutilated or destroyed. At this point the fliers made an heroic but ineffectual bid for power. They attacked the pedestrian population from the air. In reply the enemy rode them down in his great aeroplanes and blew them to pieces with high explosive.

The fighting squadrons of the natural fliers were finally driven to the ground in a remote and barren island. Thither the whole flying population, a mere remnant of its former strength, fled out of every civilized archipelago in search of freedom: the whole population —save the sick, who committed suicide, and all infants that could not yet fly. These were stifled by their mothers or next-of-kin, in obedience to a decree of the leaders.

About a million men, women and children, some of whom were scarcely old enough for the prolonged flight, now gathered on the rocks, regardless that there was not food in the neighbourhood for a great company.

Their leaders, conferring together, saw clearly that the day of Flying Man was done, and that it would be more fitting for a high-souled race to die at once than to drag on in subjection to contemptuous masters. They therefore, ordered the population to take part in an act of racial suicide that should at least make death a noble gesture of freedom The people received the message while they were resting on the stony moorland. A wail of sorrow broke from them. It was checked by the speaker, who bade them strive to see, even on the ground, the beauty of the thing that was to be done. They could not see it; but they knew that if they had the strength to take wing again they would see it clearly, almost as soon as their tired muscles bore them aloft. There was no time to waste, for many were already faint with hunger, and anxious lest they should fail to rise. At the appointed signal the whole population rose into the air with a deep roar of wings. Sorrow was left behind. Even the children, when their mothers explained what was to be done, accepted their fate with zest; though, had they learned of it on the ground, they would have been terror-stricken. The company now flew steadily West, forming themselves into a double file many miles long. The cone of a volcano appeared over the horizon, and rose as they approached. The leaders pressed on towards its ruddy smoke plume; and unflinchingly, couple by couple, the whole multitude darted into its fiery breath and vanished. So ended the career of Flying Man.

Fessenden's Worlds

by Edmond Hamilton

I REMEMBER very clearly walking the half mile from the station to the big stone house on the edge of the campus. The October wind was cold, and the night sky had the clear and savage brilliance of frost.

It was by old habit that I looked up at the stars, my companions and my adversaries for sixteen years. I was still an astronomer that night—that last night. And I saw the sky with a double vision, as a black tent pinpointed with light, and as a vast and shuddering gulf alien to all humanity.

An astronomer is two men. One of the two lives in the ordinary world, and marries and joins lodges and buys new shoes. The other lives in that vaster universe which he sees in the photographic plates he endlessly compares—that black and limitless ocean of infinity in which our tiny world floats lost and lonely.

Looking at those plates, you wonder how it all started, the nebulae, the island universes, the star clusters, the wandering comets, all with their intricate complexities of motion and their imponderable purposes of being. You think of distances in which a billion miles is less than a single step. You consider the splendid loneliness of the suns, and you shiver with a kind of awe, and you wonder, always wonder, how and why.

And so I thought about infinity, on my way to visit Arnold Fessenden. I passed the dark buildings of the college where Fessenden held the chair of astrophysics, and climbed the steps to the windy porch, and rang the bell.

Fessenden came to the door himself. I had not seen

him for several years, but I recognized instantly the big, powerful figure bulking against the light.

He stared out at me, and said, "Well, Bradley. So you did come! I was beginning to think you'd forgotten me."

He beckoned me in.

"I was away at Mount Wilson," I said. "Your letter was delayed."

The house was chilly as though no one had bothered with the furnace. Fessenden closed the door, locking it carefully, and helped me off with my coat.

"Things are a bit primitive here, for I'm doing without a housekeeper right now," he said. "Come on in the living-room. Sit down. Have a drink."

The room was littered and dusty. But the light was brighter here, and for the first time I saw Fessenden's face.

"For God's sake," I said, "what have you been doing to yourself?"

"The usual things," he answered, finding glasses and a half-empty bottle. "Skipping meals and sleep. Neglecting my work at the college. Not drinking, though—at least, not much, only when I need it to keep going."

He sat down opposite me, leaning forward on the edge of his chair. His dark eyes were very bright.

"We used to be good friends, Bradley. That was years ago, I know, but you don't forget those things. You and I could always talk. Remember how we used to talk, when we were in school together? Remember the things we used to talk about?"

"Sure," I said. "Life and death and the stars. We were damned young, then. Young enough to be scared by what we'd learned of the cosmos, and yet also determined to solve all the things we didn't know."

Fessenden nodded. "And we're still scared—perhaps even more so. Aren't we?"

I was silent. He'd voiced what every astronomer broods on at times, but never puts into his neat papers.

"Aren't we, Bradley?"

"Yes. We are. Though you're the only one who would admit it."

"Also," he said, "I think I'm the only one who's stuck to that youthful resolve to solve the mysteries of the universe."

I looked at him. "You've something to tell me? That's why you asked me here?"

"I've something to *show* you," he corrected. He sprang up and began to pace the room. "I had to show somebody, and you were the only person I could think of who would understand. We always thought alike, you and I. We always shared a certain—hunger."

He came to stand over me then, looming very tall, his face ravaged and worn, and yet triumphant with a terrible strength and knowledge.

"Always," he said, "astronomy has been an academic, impotent science—the one science that merely observes its subject and does not experiment with it.

"I resolved to be the first *empirical* astronomer. Do you understand that, Bradley? I would not only observe a universe——*I would experiment with it.*"

I stared. "Experiment with the universe? You must be speaking allegorically."

Fessenden shook his head. "No. And I did not say 'the' universe, but 'a' universe. A universe that I have created, for my experiment."

I said impatiently, "That's a grandiose metaphor, but just what does it mean?"

"It's not a metaphor at all," Fessenden answered. "I mean literally that I have created a universe in my laboratory, a universe with thousands of suns and tens of thousands of worlds."

My face must have showed my bewilderment. For Fessenden laughed a little. "I'm sorry to be so dramatic about this, but it *is* dramatic."

He added, "Come along to the laboratory, Bradley, and see for yourself."

I followed him along a corridor. I didn't know what to

think, but he must have something to show me and I was eager to see what it was.

The laboratory was a long, stone-walled room whose walls were crowded with shelves of chemical and physical apparatus, and whose corners held massive electrical mechanisms. Much of the equipment I saw was unfamiliar to me. Then my gaze fastened on the thing at the center of the room.

It consisted of two twelve-foot metal disks with grid-like surfaces, one disk on the floor and one on the ceiling directly over it. They were connected by cables to the electrical machinery, and their surfaces shone faintly with wan blue light.

Between the two disks, floating unsupported in the air, hung a cloud of tiny sparks of light. It looked like a swarm of minute bright bees, countless in number, and the swarm was lenticular in shape. Mounted near this weird thing were several instruments that vaguely resembled electron-microscopes. They seemed to be trained upon that little cloud of shining sparks.

Fessenden walked over to the thing and gestured toward the blue-glowing disks in floor and ceiling. "These disks, Bradley, neutralize all the ordinary gravitational forces of Earth in the space between them."

"What?" I cried, astonished. I stepped forward, was about to thrust my hand between the two disks to test the assertion. But Fessenden held me back.

"Don't try that," he warned. "The human body is accustomed to Earth's gravitation, and is inwardly braced against it. If you were to step between those disks, out of Earth's gravitational field, the too-sudden change would explode your body from its own inward pressure, just as a deep-sea fish will explode when suddenly brought to the surface."

Fessenden added, pointing to the floating swarm of sparks between the disks, "It was necessary that this should be outside Earth's gravitational field. For this is the universe I have created."

I stared from him to the shining swarm, and then back

again to his dark, amused face. "Those little flecks of light, a universe?"

"Just that," he assured me. "Look closer at them, Bradley."

I looked closer, and I felt a weird chill creeping over me. Those points of light were so infinitesimal that I could barely distinguish them one from another, and I knew there must be many thousands of them in this dense swarm. Yet there were some oddly familiar features about them.

Some of the tiny sparks were blazing white in color, others smoky red, others golden yellow. The colors of suns in our own universe! Some of them were in double or triple groups, and here and there were clusters of them that contained hundreds. And here and there, too, were little glowing patches that looked like tiny nebulae, and crawling sparks with tails of light like Lilliputian comets, just as the floating sparks looked like tiny suns.

Those sparks *were* tiny suns! I knew it, beyond doubt, even while my brain fought against the knowledge and called it impossible. I knew that I was looking at a miniature universe, one on a scale many billions of times smaller than our own universe, yet one that proportionately was comparable to our own. A little microcosm, floating here in Fessenden's laboratory.

Fessenden's eyes had been following my stupefied change of expression. He said calmly, "Yes, Bradley, it's true. That is a tiny, self-sustaining universe. Everything in it, down to the atoms which compose it, is infinitely smaller in scale than our own. But it is a real universe."

"And you say you created this?" I gasped.

Fessenden nodded. "Yes. After many failures, I succeeded in bringing that universe into being only a few weeks ago. I have been experimenting with it ever since."

His dark eyes flashed a little. "Didn't I tell you it was the greatest experiment any scientist had ever conducted? Think of what I am able to do——I can conduct my astrophysical and other experiments on a *cosmic* scale. I can change or destroy suns or nebulae at will, with

the instruments I devised, and can observe the minutest details of that tiny universe through my super-magnifying microscopes. I can make observations with a universe itself as my subject!"

I said in amazement, "But how did you make it—start it?"

He shrugged. "How did our own universe start, Bradley? As a vast cloud of glowing gas that filled all space. The mutual attraction of the cloud's particles drew them together, so that the cloud condensed into huge nebulae and suns, which threw off matter that formed into circling worlds.

"Well, I started this tiny universe just that way. I filled the non-gravitational space between these disks with a cloud of glowing gas, whose atoms were infinitely tinier than our atoms because their electronic structure was subtly changed. Then all I had to do was watch while the same inevitable natural process that eons ago formed our universe, formed this little microcosm.

"I watched as the gas condensed into tiny nebulae, and miniature suns, just as in our own cosmos long ago. And I saw those suns, by the same natural law, throw off tiny worlds.

"Tens of thousands of little worlds here in this microcosm, Bradley! Worlds that I can change and tamper with and destroy at will, worlds with every conceivable kind of conditions, worlds whose life I can develop or wither as I wish. That is my experiment, Bradley."

"Whose *life*, you say?" I repeated in a whisper. "On the tiny planets of this microcosm—life?"

"Of course," said Fessenden. "Life always develops automatically on worlds where conditions are favorable, and usually in very much the same forms." He turned toward one of the bulky microscopic instruments. "Wait, and I shall find such a world for you, Bradley. I shall let you watch its life develop, for yourself."

He applied his eye to the instrument, focusing it upon that shining cloud of sparks; turning knobs, twisting, searching—until at last he straightened.

"Look through this, Bradley. I'll use the other microscope."

I put my eye to the instrument, looked into that cloud of floating sparks. There leaped into my vision, dazzling and gigantic, a huge white sun moving majestically through the darkness of space. Just one of those tiny sparks, seen through the super-magnifying microscope!

Fessenden was beside me, gazing through the other instrument. His fingers were touching the focus knobs and he said calmly, "Keep watching. You'll see the changes of ages in a few minutes of our time. For, of course, the time of this microcosm runs at an infinitely swifter rate than the time of our vaster universe."

As he shifted the focus of our instruments, my gaze seemed to leap toward that great sun. I made out two planets that circled it at tremendous speed—a year of their time being no more than a moment of ours.

One of those planets was still partly molten, but the other was cooling, its vapor envelope condensing. My vision leaped forward until I seemed almost standing on that cooling world. It was a wild, rocky planet, rain falling heavily on its surface from the cloudy sky, water collecting with unbelievable swiftness in seas.

Green life came into being on that world, first along the shores of the shallow seas, then creeping out and advancing over the land. Swiftly vegetation mantled the globe. And now crawling animal life made its appearance as the ages ticked by.

The animal life developed quickly. So rapid were the changes that my gaze could hardly follow them. Warring species of unhuman monsters passed and vanished. Tiny hordes of man-like animals began to throng here and there, to multiply with each passing moment.

I saw rude villages of huts spring up on that world. The villages quickly became cities, as that people developed in intelligence, age after microcosmic age. The cities towered higher each moment, great ships sailed upon the seas, epochs of progress and development were run through before my eyes in moments.

I was shaking as I recoiled from the microscope. I cried, "This is all impossible—unreal——"

Fessenden smiled. "I assure you that that tiny race and their world are quite real." He chuckled. "No doubt that little folk think that they have reached such a pinnacle of power and knowledge that nothing can threaten them. We shall see now whether or not they are able to face a real danger."

He turned to a curious needle-like instrument and carefully trained it upon that part of the microcosm which held the tiny white spark that was the sun of that world we had been watching.

There was a tiny comet crawling through the swarm, some distance from that white sun. Fessenden touched a knob, and from the needle-like instrument a thin, almost invisible filament of force crept into the microcosmic swarm of sparks and touched the little crawling comet. It seemed to veer a tiny bit aside.

"Now watch," said Fessenden with interest, "and we shall see just how great is the power of that little people."

I did not yet understand, but I looked again with him through the microscopes at the tiny world. By now, so swift its development in terms of our time, its cities had become even vaster and were roofed with glass-like shields. Huge aircraft flashed above them.

All seemed peace and progress on that world. Generation after generation ticked by as we watched. Then came a mad stir of movement, a wild scurrying about of the little folk, a swift change in the tempo of their life. A faint green light was now falling upon their planet, the baleful glow of a monster comet that was coming headlong toward it.

I knew then that it was the tiny microcosmic comet whose course Fessenden had slightly altered. But in the microscope it was colossal, a huge orb dripping green light across the heavens as it rushed toward that world. Remorselessly it came on.

Then that comet struck the planet, and I saw the doom of the little folk's cities. The meteors that were

the comet's only solid substance shattered the glass-roofed cities to ruin. The poisonous gases of the rest of the comet veiled that whole world in a toxic cloud.

The comet passed on as we watched, but its deadly gases had wiped away all life from that planet. It was still and brown and dead, now, a lifeless world circling its sun. The ruined cities melted swiftly down into decay and disappeared, as we watched.

Fessenden nodded interestedly. "You see—their knowledge was not enough to save them from the mere slight shifting of the comet's course."

Let me confess it now. I should have been horrified by that deliberate destruction of a world's people. But I wasn't. My fascination of interest overcame anything else.

The scale of that microcosmic universe was so small, that it could not really touch my emotions. Perhaps in the profound interest of the experiment, I would not *let* it touch my emotions. I had the same detached curiosity as a man who kicks open an anthill and watches.

"Let's look at another world," Fessenden was saying. "Here are two that interest me."

My vision in the microscope leaped to another sun, as Fessenden shifted the focus. It was a yellow sun with four planets circling it. Two of them were airless worlds, but the other two bore different forms of life, one of them quite man-like, the other verging on the reptilian, each supreme on its own world. Both races had a certain amount of civilization, as was evident from the queer cities on their worlds. There was no contact or communication between them, for the two planets were widely separated from each other.

"Now I wonder," Fessenden was saying interestedly, "just what the result would be if those two races came into contact with each other? Which of them would prove superior?"

"The humanoid race, of course," I argued. "All scientific knowledge proves the human or near-human to be the most adaptable to new conditions of any highly organized creature."

"And yet those reptilian folk look tough and tenacious," Fessenden mused. "Well, we'll soon find out."

Again he reached toward the needle-like instrument. Another ghostly little thread of force stole into the microcosm.

I saw its effects through the microscope. One of those planets, beneath that impetus, began to change its orbit. It moved closer and closer toward the other inhabited world. Soon the two were so close together that they had formed an Earth-Moon system, revolving around a common center of gravity as they circled their sun.

Soon, very soon, ships began to fly from one world to the other across the narrowed gulf. Communication had been established. And almost at once came war between the two worlds, a conflict of the man-like and reptilian races. Cities were destroyed by flashes of fire in that war, great throngs went to death in battles of incredible ferocity. The tide turned in favor of the reptilian race. Their invading hordes destroyed the last of the man-like folk. Then it was all over. The reptilian race reigned supreme over both worlds.

"You see—your humanoids didn't have the adaptability to the situation of the reptilians, after all," said Fessenden.

"The non-humans may simply have had a head-start from developing civilization sooner," I defended.

He shook his head. "No, Bradley, the humanoid form simply isn't as adaptable as science has believed. I've proved that, experimenting with these microcosmic worlds. I'll prove it to you now. Watch!"

In a fascinated trance I watched as Fessenden continued, taking my vision to world after world, prodding and changing, observing the fall of empires and the crash of planets. Planet after planet, race after race, furnishing data to support Fessenden's theoretical contention.

Fessenden showed me a planet in the microcosm that was covered with wild forest in which dwelt little communities of hunting folk. Generation after generation

flashed by without change in their rude society—they were content to hunt and eat and love and die, without developing any higher civilization.

Then Fessenden turned upon that little world a tiny ray that altered its chemical stability. Beneath the influence of chemical changes, the plant life of that world began to unfold in weird hypertrophy, began to change into great, rootlesss plant-things that soon fell upon and killed the animals. The communities of hunters battled valiantly for a few generations against the moving plant-hordes, but in the end they all succumbed, and that world was covered only with restlessly moving plant life.

And Fessenden brought into our observation another world, planet of a sun near the edge of the microcosm. It was a watery world, covered with oceans over all its surface. And teeming life had evolved in the planetary sea, developing into intelligent, seal-like people who had reared great submarine cities whose spires lifted here and there above the waters.

Fessenden's filaments of force played upon that world, and the seas began to dwindle, the water molecules to fly off into space. And as the seas rapidly shrank, for generation after generation, more and more of that world became dry land and the seal-people had to desert many of their cities and retreat with the waters.

Very soon, as we watched, there was but one shallow sea remaining on that little world. And here were crowded the last of the seal-folk, and here they fought blindly with all manner of scientific devices to prevent the evaporation of this last refuge. But the remorseless process that Fessenden had started went on, and that last sea dried and disappeared also, and there was only a desert planet with the ruined wrecks of the dead seal-folk's cities standing here and there as memorials of the vanished race.

World after world I fascinatedly watched. I saw an icy planet that swung far out from its parent sun, and upon which was strange life adapted to the cold—a bloodless humanoid folk who had reared also a mighty

civilization. Their weird palaces and cities rose amid the awful chasms of eternal ice, and it was evident that they were far advanced in scientific power.

Fessenden reached and touched their sun with a tiny thread of force. And that sun blazed suddenly hotter and brighter, casting forth a quadrupled radiance. Its increased heat began to melt the ice-sheet of that far swinging little world, and its people began to perish from the unaccustomed warmth.

We saw them frantically laboring for the next generation at a great work upon the side of their world. Then its purpose became clear to us, for from that spot there projected a plume of fire and force whose rocket-like push moved their tiny planet suddenly outward. They were moving their world farther from their sun to escape the increased warmth, and at a suitable distance they let it settle into a new orbit where it was as cold as before. And Fessenden laughed and applauded their ingenuity.

And there was a world whose crowded peoples were ruled by an oligarchy of living brains. Time after time, each generation that passed, we saw the enslaved people revolt against the tyranny of the brains, and each time the weapons of their unhuman masters subdued them.

Fessenden's probing threads of force reached deep into the bowels of that little planet, and it rocked with terrific quakes that threw up vast masses of radioactive material from the interior. And a strange glowing plague seized the bodies of the people and also seized the brains, so that they began to rot and die.

Swiftly the people were annihilated by that glowing rot, but the brains managed to contrive for themselves an antidote against the deadly infections, so that most of the brains survived. For a few generations the brains clung to existence, served now by machines of their own devising. But they must have made their mechanical servants too intelligent, for in time the machines rose against the brains and destroyed them. And later still, without

any directing intelligence, the machines themselves came to wreck and vanished from that world.

Almost dazedly, I watched as we viewed world after world of the microcosm, as Fessenden probed and experimented and destroyed. And then there came into my view a world whose utter loveliness gripped me, a green and blossoming world whose people were human, but of a fineness and beauty far beyond our own humanity.

On their world were no towering cities or huge machines or swarming vehicles. Their civilization had reached a plane above material progress, and their planet was like a surpassingly lovely park. Here and there amid the flowering trees shimmered exquisite buildings, and through flowers and forests went noble men and women. And their knowledge had almost conquered death, since for many microscopic generations they remained unchanged.

I watched that world through the microscope with my heart struck by the vision, and in the peace and loveliness of that planet and its people I seemed to catch a glimpse of what humanity might aspire to in some unthinkably far future.

And then I suddenly awoke to the fact that Fessenden, beside me, was reaching again toward the needle-like instrument that loosed his tampering forces upon the microcosmic worlds.

"Fessenden, you're not going to experiment with *that* world?" I exclaimed.

He looked at me, astonished. "Why, of course. And this should be really interesting. We shall see if these people, after their long peace and plenty, are not too decadent to face disaster."

The horror of what he proposed to do broke upon me. And with it, for the first time, came realization of the horror of all that he had already done.

The fascination of the experiment had kept that crowded into my subconscious until now. But now I re-

alized our full guilt, the blackness of wringing knowledge from the agony of those little worlds.

Fessenden was sighting the needle-like thing. "A mere tiny thread of force—but it will cause their little sun to spin so fast that it will break up. Will that people still have the resourcefulness to save themselves by flight to another sun? We'll soon find out."

But I tore him away from his instrument, so forcibly that he staggered back a little.

"Fessenden, no!" I cried. "My God, it makes me sick to think what we've been doing here tonight. Those worlds and peoples we've been experimenting with—they're real!"

Fessenden's black brows drew together in cold anger. "Bradley, I thought you a scientist, and I see now you're only a sentimentalist."

His voice rasped. "But that microcosm is *my* experiment, *my* property. I'll experiment with and destroy every world in it, if I please. So get away from that instrument."

But a sick hatred, a hatred of him for what he had done and of myself for sharing in it, held me now.

"No, Fessenden—no more!" I exclaimed. "We've wreaked evil enough on these tiny planets, subjecting their little folk to agony and toil and death to gratify our curiosity. I won't let it go on!"

"*You* won't let it go on?"

His voice and face were raging, and he sprang straight at me. His heavy fist descended on me and knocked me away from the instrument I held.

As I reeled back from that blow, I heard a hoarse cry. Fessenden had tripped on one of the cables in his lunge, and was toppling into the space between the two disks.

His toppling body struck the microcosm squarely and it crashed around him in a broken shower of sparks—a universe wrecked in a second. At the same time, Fessenden's body exploded—it exploded into a bloated, torn thing of flesh, just as he had warned me any human

body would do if it entered the area between the disks where there was no gravitation.

The cable he had tripped over had jerked loose—and there was a flash of fire across the lower disk. In an instant, destroying blue electrical flames enveloped the disks and Fessenden's body, and danced around the electrical machinery in the laboratory with a sputtering, increasing roar.

I turned and stumbled out of the laboratory, out of the house into the windy night. I heard a crackling roar behind me and the flickering light of the now flaming house shot past me as I went on, but I did not look back....

So ended Fessenden and his great experiment. No one doubted that the fire in which he perished was purely accidental, and I said nothing to change that opinion. I didn't want to tell anyone of the thing we had done in there that night. For I shared his guilt.

I wish I could forget Fessenden and his microscopic worlds, but I cannot. And because I cannot, I am no longer an astronomer. For now when I look up at the stars, it is not only with the old fearful wonder but with a question—a question that haunts me.

And the question is this—is our own great starry universe nothing but a tiny microcosm, on some vaster scale? And in that vaster cosmos, is there a superexperimenter who regards our universe as nothing but an interesting experiment, and who smites us with disasters just to study our reactions for his own amusement? Is there a Fessenden up *there?*

Humpty Dumpty Had a Great Fall

by Frank Belknap Long

KENNETH WAYNE was dressing for dinner when he heard the tapping. It was loud, insistent and seemed to be saying: "No use pretending you're not at home, old man! I can hear you moving around in there!"

Wayne groaned. He had no desire to discuss vasomotor psychology with young Graham or polytonal music with the long-haired Dr. Reydel. He was dining out with a charming girl, and he wanted to stay alive, vital, every nerve alert to her beauty.

Wayne was one of those imaginative young men who attract ideas to themselves in the fashion of a baby specialist. Instead of babies, people brought him their budding ideas to admire.

Wayne told himself that he was a fool to be annoyed. The mere sight of his tux draped across a chair should discourage a talkative visitor. With an angry shrug he turned and crossed the room in three long strides. He threw the door wide.

The boy who stood in the doorway was a stranger to him. Boy? Well, it was hard not to think of the youngster as a man, for he was heavily bearded and he carried himself with an air of maturity. But Wayne could see that he wasn't more than eighteen or nineteen years old. His clear blue eyes held the tortured look of the very young, and there was a newness about him which contrasted sharply with Wayne's aspect of world weariness and cynicism. Wayne was only twenty-seven, but his age rested heavily upon him. His eyes were shadowed and the planes of his face craggy with thought.

"I'm Phillip Orban," the boy said. "I ran away. They were torturing me with their questions."

The Orban boy! Wayne shut his eyes while the universe reeled.

Young Orban was carrying an enormous, glowing loop of hollow metal. Before Wayne could cry out in protest the trembling lad stepped in the room and set the loop down on the floor.

"Shut the door," Orban pleaded. "Lock it tight! If they try to get in, tell them I'm not in this room."

Mechanically Wayne locked the door. When he turned, his lips were white.

"Why did you come here?" he demanded. "Do you realize I never saw you before in my life?"

The Orban boy nodded. "I hid in a cellar under an empty house. But I was cold and hungry. I had to come out. A policeman saw me and I had to run for it. I never saw you before, but I like you. You will tell them I'm not here?"

Wayne made a despairing gesture. "All right!" he cried. "Did I say I wouldn't? Just take it easy now. Relax!"

It seemed to Wayne that standing before him was an impossible little gnome with a conical cap on his head, made visible by a dimensional vortex that was about to dissolve in a blaze of light.

That was absurd, of course! The Orban boy wasn't one of those mutant supermen freaks science-fiction writers were always speculating about. He was a quiet normal youngster who had been trapped from infancy in the mind-numbing blackness of space.

But what would be the penalty for sheltering a boy with a price on his head, a boy about whom five million words had been written? Young Orban had committed a serious crime. An ugly crime! To get rid of a man by making him disappear was not a whit less ugly than cold-blooded murder!

Wayne stared down at the shining loop of metal, his eyes wide and incredulous. "Is that the machine you

built?" he demanded, and was astonished that he could speak at all.

"It's the *door* I built!" Orban said. "I didn't push Dr. Bryce into it. He stumbled and fell."

"But how did you build it?" Wayne prodded. "You never saw a tool."

"There were tools in my father's workshop," Orban said, quickly. "I knew how to build it. Dr. Bryce isn't dead. He's alive in the blue world."

Structurally the machine was an incredibly simple thing. It consisted of a single loop of hollow metal, twisted into a perfect arch like a gigantic croquet wicket. It was easy to see that the loop was hollow, for it was riddled with holes and an eerie radiance was spilling out of it.

"You've got to help me hide it," Orban pleaded. "If I don't get Dr. Bryce out of the blue, bowmen will kill him!"

Wayne turned and gripped the lad's shoulder. "You say you were hungry. Perhaps we can do something about that."

"I am hungry," the lad admitted. "But there's food in the blue world."

Wayne thought that over for a minute; then found himself propelling his guest toward the kitchen.

He left him devouring a glass of milk. No, you didn't devour milk. But the Orban boy was dipping crackers in the milk and eating the crackers. It amounted to the same thing.

Wayne felt that he needed the support of cold print. Actual confirmation of the Orban story in black type. He found the clipping by turning out all the drawers of his desk and then looking under the blotter. It was crumpled and stained, as though someone had wept bitter tears over it. It read:

THE ORBAN STORY
by Ruth Stevens

An infant rocked from birth in a cradle two hun-

dred feet long! A little boy lost in a high-test rocket-ship, seesawing through space! Around and around he whirled, obeying instructions from the age of eight, eating just enough to keep the spark of life from going out.

No disease germs bothered him out there in space! There were no measles, whooping cough, scarlet fever —just instructions in his head and—a long forgetting!

What did he think about all those years? What did he dream about?

Phillip Orban was born on that ship. His father invented the Orban drive and built the first rocket ship with an outer hull of sufficient hardness to withstand the stresses of a billion-mile journey through space.

But the power drive gave out and the ship never completed its journey. It went into a circular orbit in the Asteroid Belt and for seventeen years it drifted through space.

The boy's mother died when he was three, mercifully from a heart attack. The boy's father kept a log. We know that he climbed out on the naked hull when the boy was eight, to tighten a loosened gravity plate. A minor repair job—but he put off coming back. Put it off forever!

The boy remembered to remember. Food concentrates should be taken sparingly, twice a day. "You're seven now, son! No—eight tomorrow! Old enough to look after yourself!"

He hadn't one bitter-sweet, earthy memory to cling to. He'd never played pranks on other kids, or dressed up on Hallowe'en, or gone fishing in a creek. He'd never watched the dawn redden a haystack or the moon silver the sea.

There were books on that ship. An odd assortment of books. The old English Nursery Rhymes, Mother Goose, the Brothers Grimm, Lewis Carroll. And How to Build it *books. How to build it if you were Michael Faraday, or Edison or Steinmetz or Nullson. But Phil-*

lip Orban read every book on that ship. The psychologist's who are in charge of him now won't tell us why they're so excited about his marginal notes.

They found the ship and Orban at last, sank magnetic grappling irons in the hull and towed it back to earth. They returned Orban to his home in North Dakota, the family home, within a dozen yards of his father's dust-choked workshop.

A boy of seventeen, watched night and day by three trained psychologists. A robust boy, physically almost a man, would have to be terribly warped not to resent that! They're studying him like a guinea pig in a cage. And here's one unladylike journalist who raises her voice in protest! If the Orban boy——

Wayne shuddered, folded the clipping and crammed it in his vest pocket.

Kenneth Wayne began remembering things: About a machine in an open field, spilling an eerie radiance! And Dr. Bryce struggling with the Orban boy in front of the machine, and plunging backwards into the light. What shocking, incredible event had taken the famed psychologist from the sunlight before he could regain his balance?

Wayne also remembered that the Orban boy had fled, taking the machine with him! A hue and cry had been raised in the nation's press. A shrill screaming, journalism raised to high C. Had Orban deliberately pushed Dr. Bryce into the machine?

If an individual were the sum total of his experiences from birth would not the whole outlook of Orban depart from the human norm! It was a terrifying thought! Was Orban a malicious monster with an inhuman capacity for deceit? Was he—

Twang!

Wayne wheeled with a gasp of horror.

A barbed and deadly looking arrow was quivering in the wall directly opposite the machine! It was an arrow two feet in length—fitted with metallic feathers to give

it steadiness of flight, and tipped with a point of jeweled brightness, visible through the translucent plastic of the wall.

Stark terror twisted Wayne's features into a glazed, unnatural mask. That the arrow had come out of the machine he could not doubt. It was directly in line with the "croquet wicket" and there was a spattering of blood on the still quivering shaft.

There was blood on the wall too! Yet Wayne was quite sure that the arrow hadn't grazed his flesh. Automatically he raised one hand to his cheek, and then stared at his palm. His hand gleamed whitely in the cold light. That dripping redness had come out of the machine along with the arrow! The arrow had missed him completely.

Whom had it wounded?

Wayne was swaying in sick horror when a knock sounded on the door and a familiar voice said: "Ken! For heaven's sake, why did you lock the door?"

Wayne turned, unlocked the door and threw it open, his face white.

The girl who came into the room was vividly alive. Coppery hair she had, cut in a bang, and her lips were slightly parted, her cheeks flushed. She was plainly out of breath and a little angry to be barred by a locked door, after climbing two flights of stairs.

Ruth Stevens did not look like a newspaperwoman. She was striking in a challenging, vibrant way—the kind of girl who could change a man's center of gravity with a look, a quick smile.

She wasn't smiling now. Her eyes darted to the machine and then to the arrow.

"The Orban boy," Wayne said. His voice was thick and it trembled a little, as though he were just about to lose control of it. "He's here. You wrote an article about him, remember? Would you like to meet him?"

Ruth swayed.

Wayne thought perhaps she was going to faint. It was a crazy thing to do, but he leaped toward her without

realizing that he was standing a yard from the machine.

As he caught her in his arms something caught him. It was like a fierce rush of wind. It was cyclonic. It whirled him around and started pulling him backwards, straight toward the machine. He held on to the girl without realizing that he was pulling her inexorably in the same direction.

Ruth screamed.

The room seemed to pinwheel. It was much easier for Wayne not to let go of the girl. He did not realize that she was in deadly danger. He thought only of protecting her. There was a howling in the room as light blazed out from the croquet wicket to envelop them.

Far off as though in an inverted lens Wayne saw the Orban boy rushing out of the kitchen, his bearded face twitching in terror. Then everything in the room seemed to whip away into emptiness. . . .

Stability came back in slow stages. Wayne was aware first of warmth in his arms, a cry quavering from human lips. Then of a firm surface taking shape beneath him.

He was sitting on the ground holding Ruth in his arms. She was struggling to free herself, one hand pushing against his chin, her face a blob of whiteness.

He was sitting with his back against a firm stone surface, staring down at her. He could see her face clearly now, distinct and white in a blue glimmering light.

"Ken, where are we?" she choked.

It wasn't an easy question to answer. It was a world of rugged contours. They seemed to be resting on a plain that sloped away into glowing blue mist. There was a curious, dynamic quality about the landscape. Its very emptiness thrust itself on Wayne like chords of music struck wildly on a piano.

Certainly he was resting with his back against a wall of some sort, rising sheer behind him. When he turned his head he could see the wall clearly.

With a little groan Ruth disentangled herself and slipped to the ground at his side, making it easier for him to take note of his surroundings.

There wasn't very much to take note of. Just the wall and the bleak, desolate landscape. A few pebbles were scattered about, and—something small and globular and blubbery that was stirring in a cuplike hollow directly in front of Wayne.

Ruth cried out suddenly and plucked at his sleeve. "Ken, look! That little egg thing is alive!"

An egg thing! Of course. It did resemble an egg. It was veined and oddly cracked and something wet was spilling out of it. Something projected from it too—the long shaft of an arrow.

Wayne's neck hairs rose. He got up and staggered toward the "egg" and as he did so the whole surface of the wall swept into view. It bore an unmistakable resemblance to the Great Wall of China reduced to fairy tale dimensions.

Rugged and battlemented it was, but small—not more than thirty feet in height at the tower sections and much lower in between. It curved in and out over the plain, under a sky of fiery blueness, to lose itself at the horizon's rim with a kind of downsweeping rush that conveyed an illusion of motion.

The egg-shaped object had stopped moving when Wayne dropped to one knee beside it. The arrow had pierced it cruelly and Wayne could not doubt that it had ceased to feel pain. The little white tadpole arms which sprouted from it were limp now, completely inert in the blue glare. Equally limp was its puckered, little old man face, the mouth hanging open, the heavily lidded eyes drained of all expression.

Wayne did not attempt to withdraw the arrow. Obviously the egg thing was dead. He was glad that it could not return his stare. He arose and turned to Ruth.

"It was alive!" he said. "A ghastly little animal with an almost human face, shaped like an egg. I can't believe——"

Twang!

As the arrow sped past Wayne he leaped back with a startled cry. Something huge and blue had come out

from behind a bend in the wall to aim a bow at him. He caught a brief terrifying glimpse of it as it darted back into shadows.

Wayne turned abruptly, and gripped his companion's arm.

"We've got to get away from here as quickly as possible!" he whispered, with hoarse urgency.

"Away?" Ruth stared. "How can we? The machine has disappeared."

"We must get away from this wall. There's something deadly here that shoots to kill!"

"Human beings?"

"Manshaped beings. Angular, flattish. They don't seem to have any heads."

Ruth swayed toward him. "Are you sure they're shooting at us?"

"We can't wait to find out. We've got to run for it."

"Where do you think we are?" Ruth breathed in sick horror. "Another dimension?"

Before Wayne could reply another arrow sped past them with a vibrant twang.

They broke into a run, keeping close to the wall, their shadows preceding them in blue glimmering. Panting, terrified, they came to a brief halt beneath a darkly looming tower that seemed to bulge out over the plain.

At right angles to the wall, a hundred feet from where they were standing, a vast circular mound bisected the plain, its edges misty in the strange light.

"Come on!" Wayne urged. "That mound may be hollow. We've got to chance it."

They were in motion again, racing toward the mound, when they heard a fluttering sound. It seemed to beat out from the mound, in tangible waves, like the stirring of migratory birds gathering in great numbers in a tree and shaking the air with their flutterings.

Then up from the mound twenty or thirty winged black shapes soared, spiraling up into the sky in a wild, soaring ecstasy of flight. Almost instantly the arrows started flying.

One by one the birds dropped like dead sticks to the ground, amidst a flurry of deadly arrows. With hoarse cawings they dropped, their feathers flying, their long, lizard-like bodies pierced by the cruel shafts.

Back into the mound they dropped, straight down with their flutterings stilled

For a moment there was complete stillness on the plain, unearthly, terrifying.

Then Wayne said in a choked voice: "Does all this remind you of something? In a vague, distorted, night-marish way, I mean? Does it?"

Ruth started across the plain before replying. It seemed to her that she saw shadows, angular, menacing, moving in the distance, on the rim of her vision. It seemed to her that she saw the shadows of bows, blue on the blue plain. "Humpty Dumpty sat on a wall!" she said. "Four and twenty blackbirds—baked in a pie!"

"You thought of that too, did you?" Wayne's lips were white. "We didn't see Humpty Dumpty fall, but it was a great fall he had. It smashed him, and not all the King's horses and all the King's men——"

"Stop it!" Ruth's voice was almost a scream. "There are no horses, no King's men here. That egg was a hideous little animal with the face of an ape. And blackbirds don't have lizard-like bodies."

A procession came around the mound with a far off beating of tiny drums. It could not be said that they were King's horses or King's men. They were something not quite rational.

It was a winding procession of egg-things, tottering on little stumpy legs, and prancing green shapes that bore a startling resemblance to walking stick insects. The eggs were linked together by dangling wisps of filmy stuff. When they came closer the filmy stuff resolved itself into a net, glimmering, metallic.

They're going to catch Humpty Dumpty when he falls, Wayne thought wildly.

Suddenly the long wall stirred with activity. A dozen

little egg-shapes were running along it, dodging and weaving, their tadpole forelimbs quivering.

A shadow, dark, ominous, moved on the plain.

Twang!

The running eggs splintered as they fell. A wailing went up from the advancing procession, long-drawn, shrill. The "King's horses" swerved in closer to the wall, the net floating free.

Too late! The ground was littered with writhing and dying egg shapes, shattered, spilling their yolks. One was not writhing. It was completely bashed in, a flattish horror swimming in its yolk.

Suddenly Ruth screamed. "Look over there! It's one of those angular, headless things. It's aiming at us!"

The blue bowman had stepped out from the shadow of the wall, and was sharply limned in the downslanting radiance. His arms and legs were metallic zigzags, his body an angular shaft. He was slim-waisted, broad-shouldered, a Zeus lightning bolt aping the human form, a cut-out shape like a figure on a lampshade, standing poised and vibrant as he raised his bow.

Wayne swung about, took hold of Ruth and dragged her to the ground. The arrow twanged horribly as it left the bow. They could feel death brushing them as the ghastly, headless figure sprang back into shadows.

Then they were in motion again. They headed straight for the mound, past the procession of toddling ovoids and prancing walking sticks, their faces livid with terror. Another arrow sped past them, raising a flurry of dust as it thudded into the base of the mound.

Then they were climbing up over a tumbled rampart of thrown-up earth, and down into a hollow rimmed with blue shadows that seemed to leap toward them out of the gloom.

"That took courage," a quiet voice said.

The man was sitting on a boulder with a Seral hand blaster cradled in his arms. He was a big man, with massive shoulders and a gaunt-featured face. He had torn off his shirt and made a bandage of it. He sat blinking

against the light, his right arm wrapped in the bandage, his eyes deep pools of torment. Empty cartridges lay scattered about at his feet.

He smiled wryly and started to rise—then thought better of it.

"I'm James Bryce!" he said. "How did you get here?"

He gestured toward another boulder as he spoke. "Sit down man. You're safe for the moment. I've been holding them off with carefully timed blasts."

Wayne helped Ruth to the boulder, and stood for an instant with his back to Bryce, breathing heavily as he stared across the plain. Then he swung about. Words poured from him, a torrent of words.

When he had finished Bryce nodded grimly. "I see! Pretty gruesome from start to finish. We're trapped in a world we never dreamed existed, and—we've the Orban boy to thank for it!"

Ruth spoke then. "Mother Goose," she whispered. "The Old English Nursery Rhymes. A world that exists only in the Orban boy's mind. Somehow he's made it real, three-dimensional."

Bryce smiled oddly. "You've been thinking that? It's not true, but it does you credit. It means you have at least a toe-hold on reality. You know that reality can't be re-shaped to any kind of preconceived mental pattern."

Bryce forced a crooked smile. "What would another dimension be like, logically? Peopled with men and women like ourselves? A mathematician's pipe dream?

"Rubbish, don't you think? Why should intelligence in another world function on a plane that's comprehensible to us? Take the dreams that have found their way into the literature of childhood. What is the literature of childhood? Isn't it, in its purest essence, a world of nightmare fantasy and diffuse cruelty, without rhyme or reason?"

He looked up quickly. "Humpty Dumpty sat on a wall, Humpty Dumpty had a great fall. What made him fall? Poor old Humpty Dumpty! Weep for him—rush

to the wall and watch the poor, pitiful attempts that will be made to put him together again.

"Nothing cruel about poor old Humpty Dumpty. He'd tear your heart out. A lovely goofy old egg. Where's the cruelty then? I'll tell you. The picture that devilish fantasy conjures up is the essence of cruelty. A smashed, quivering, alive egg, in torment, scattered, spilling its yolk."

"But——"

Bryce waved a muscular hand. "The world of a child's reading is like a pack of Tarot cards. You know the old stories of children bewitched and tormented by cruel goblins. There's a grotesquerie in it like nothing on earth.

"A child's mind is wide open to it—receptive. A child really sees into that world, in its dreams. Do you know why? That world really exists—as a sober scientific reality. When we grow up we forget to remember."

Bryce's lips tightened. "A child's mental receptivity isn't blunted by the world around it. It grows up in two worlds at once, until it adjusts to our reality. But the author of the Mother Goose rhymes remembered his dreams of childhood more vividly than most men."

Bryce made a deprecatory gesture. "The real Humpty Dumpties are quite a bit different. Living ovoids who are always the victims of a cruel sport, destined to be shot down, and rescued too late by their little stricken fellows.

"There's a doom on all of them. What a weird, wild shooting gallery world this is! Sport, archery. The headless archers. They're cocks of the walk here, I think, swaggering, slim-waisted bullies. But there's something automatic about them. I don't think they're prime movers."

"I'm glad to know that," Wayne grunted grimly.

"The prime movers who created this world may be a kind of puppet master without visible substance. What impressed me from the instant I arrived here was the automatic, clockwork aspect of everything. It's intangible,

hard to pin down. But a sensitive man can hardly fail to be aware of it."

"I know what you mean," Ruth whispered.

"Everything's cyclic. Those blackbirds ascend like clay pigeons released in swarms at intervals, and when the eggs fall others take their places on the wall. We haven't penetrated very deeply into this world. Old Mother Hubbard may be here too, with a ravenous dog that isn't a dog, really.

"It may be a dog that keeps going to an empty hole in a cliff wall. He rushes in, barking furiously, and comes out without a bone. The cupboard is bare. Then an arrow pierces him, and he's a dead dog for a while. Jack and Jill go up a hill, a target for the headless archers.

"They're Jack and Jill in the Nursery Rhymes. Here they may be angular, metallic figures, but horribly vulnerable. The pail of water is shattered, spills and runs like quicksilver into the ground. Jack and Jill pick themselves up, pluck out the arrows and go staggering back up the hill to get some more water, their faces writhing in agony. Or maybe there are Jack and Jill replacements and the first pair die!"

Bryce's gaunt face was deathly pale now in the chill blue light. "It's a hellish clock set in motion and staying in motion," he added.

"The Orban boy knew what this world was like," Wayne said, slowly. "He called the archers 'blue bowmen.' How does he fit into it?"

"Remember his strange destiny!" Bryce answered. "That's the crux of it, man! He——"

Bryce stiffened in sudden wariness, tightening his grip on the blaster. "Here they come," he warned. "Keep your shoulders down. They converge, shooting with ugly deliberation. But blasting scatters them."

As he spoke three blue archers came into view between the wall and the mound. They emerged from shadows to stand motionless for an instant on the plain.

Sweat ran cold on Wayne's back. The up-raised bows were trained on the mound, taut and glittering arcs of

metal bisected by gleaming arrow-heads. The shanks of the arrows were drawn back by hands like mailed fists, the bowstrings beaded with light.

The archers released their bows simultaneously. There was a single sound, like the crack of a whiplash in utter stillness.

It was followed by a dull roar. Smoke swirled from the mound as Bryce blasted, blotting the archers from view. When it cleared two of the original archers were lying prostrate, but their numbers had been augmented fivefold.

Bryce was cursing softly and holding on to his bandaged arm. "Caught an arrow when I came through," he muttered. "That concussion opened up the wound. Why did it have to be my right arm?"

"Here, let me take that!" Wayne said, wrenching at the blaster.

"I can handle it!" Bryce grunted, in angry protest. But Wayne had the blaster now and was aiming it at the headless figures, his lips a bowstring line.

Twang!

One arrow for an instant that seemed a lifetime, cleaving the air. Then came a dozen arrows, a hundred, in a swirl of brightness above Ruth's terror-wrenched face.

Wayne blasted not once, but four times in hot anger, his throat a throbbing ache. The energy flare blotted out the plain. A blinding pulse beat seemed to throb in the heart of the blast, amidst an expanding whiteness.

When the smoke thinned out the plain was littered with recumbent archers. A few were shattered. It was incredibly nerve-torturing to watch metallic zigzags twitch and, pick themselves up, and whip away into shadows like seared leaves.

"That was reckless!" Bryce grunted. "A single blast would have stopped them just as effectively. They can't stand the shattering repercussions!"

Wayne sucked in his breath. For an instant he remained in a crouching attitude, his eyes bright with horror. Then he stood up. "I asked you how the Orban boy

fitted into this," he said, grimly. "Let's have the rest of it."

Bryce shrugged. "Consider, man. For generations kids have been brought up on a diet of fantasy and reality. One offsets the other. Children don't know how real the fantasy world is, and the reality around them quickly blots out Humpty Dumpty."

"Well?"

"The Orban boy knew how to read and the fantasy world took on an unnatural brilliance for him. It became his own intimate, private world. He had just the stars of space to look at and that inward vision. Don't you see? He had to get to it. He had to break through the dimensional barrier. It became an obsession with him."

"But how?"

"There were technical, scientific books on that ship. The Orban boy knew how to read and he wasn't a little animal. He was whiplash smart. Even at eight, he had a working grasp of applied physics. He'd talked a lot with his father, knew how to tinker."

Bryce kicked at a loose stone with his toe. "Perfectly normal boys of eight have had I. Q.'s of one-fifty. Mozart was an accomplished musician at six—a great one at nine. Boy chess wizards crop up in every generation and chess is a three-way game. You've got to peg your naked intelligence into a background of semantics and applied psychology. But some kids get monumental backgrounds just by keeping their eyes and ears open.

"What do we know about human intelligence anyway? Illiterate rustics have mastered atomic theory, using hit and miss techniques. The Orban boy was precocious, granted. But we know even less about precocity than we do about adult intelligence."

Bryce looked at Wayne with a torturing surmise. "That kid slipped away from us for a couple of hours, got to his father's workshop. Sheer carelessness on our part. When I saw him with the machine, I rushed out of the house, and tried to reason with him. We got into an argument and I started tugging at him.

"Luckily I'd strapped a Seral blaster to my hip, just

in case. But it was the blaster that got in my way. It weighed me down—in the wrong direction. When I tripped I didn't have a chance of regaining my balance."

Bryce shrugged grimly. "I've been holding the archers at bay ever since. Funny thing about that machine. It's light—weighs about eight pounds. Orban can carry it, but if you stand directly in front of it your goose is cooked. After I came through I didn't see the machine. It must be invisible from this side!"

Wayne nodded. "We didn't see it either!"

"It's still around, I imagine. When I came through an archer saw me. I caught an arrow in my shoulder. I ripped it out and hurled it from me, and it vanished in a flash of light. You say you saw an arrow come out. Probably it was the same arrow."

Wayne started to speak, but Bryce stopped him. "Listen!" he warned.

From the purple-hollowed middle of the mound there arose a strange, mournful, dirgelike sound. Then up from the mound came a dozen "blackbirds," their lizard-like bodies quivering as they went spiraling into the sky.

No arrows pursued them. There was utter silence on the plain.

"Looks as though we've thrown a scare into the archers for the time being," Wayne muttered, but there was no exaltation in his voice.

Bryce shook his head. "They'll attack again," he said, with grim conviction. "Those birds were simply lucky this time. I wonder if they realize how lucky—or care!"

Ruth whispered: "Four and twenty blackbirds, baked in a pie! When the pie was opened, the birds began to sing! Wasn't that a dainty dish to set before a king!"

Her voice rose sharply. "Ken, who do you suppose the king was? We haven't seen him! Is there a king?"

"A symbolic embellishment," Bryce snapped. "I'll say it again: Mother Goose is simply this world seen through the distorted mirror of a child's imagination. The author of Mother Goose transformed what he saw here into a

medieval fairy tale. We'll never see the king because we have nothing in common with him."

The sky seemed to darken as Bryce spoke. Wayne looked up in chill apprehension, a shudder coursing up his spine.

"Oh, no!" Ruth choked.

But there *was* something high in the sky, swinging slowly down toward the mound. Something globular that wore what looked like a shining crown and shook like a mound of jelly.

Nearer it came and nearer, swinging lower with each vibration of its circular bulk.

It blazed suddenly into sharp visibility. It wasn't a king, and it wore no crown. It was a floating spheroid, veined and translucent, filled with an intricate assortment of moving parts that gave off a continuous whirring sound.

A madness seemed to possess Wayne as he stared up at it. He cupped his hands and shouted: "Who are you?"

"Who are you?" came back in a staccato echo.

"Who are you?"

"Who are you?"

"If it says: 'Who am I?' I'll die!" Ruth screamed hysterically.

"Who am I?" the spheroid flung out. "I'll die!"

"Wait!" Bryce gripped Ruth's arm, his lips shaking. "It's a tropism—nothing more. A kind of echo response. You soft-pedaled the 'If it says'—then screamed the rest. It only picked up the last part. It didn't change the question. It simply repeats what it picks up!"

"No—it doesn't," Ruth groaned. "Now it's going to say: 'You'll die!' "

"Not unless you scream it first," Bryce said, with a brittle laugh. "Look, I'll show you."

He cupped his hands. "You're going to win through," he shouted.

"You're going to win through!" came back.

"It's a promise," Bryce shouted.

"It's a promise!"

"You see?" Bryce turned with a relieved grimace. "You seldom get a better answer than that. It's a regular politician's answer. What you want to hear comes back in a vibrant echo that means absolutely nothing."

The gear-and-wheel-filled spheroid was swinging back now, straight up into the sky. It dwindled rapidly, vibrating as it swept from view.

"Well, that was your 'king,' " Bryce said. "I've a hunch it's simply a weird regulatory mechanism that sweeps down at long intervals. A kind of cog in the clock setup —a stabilizing flying pendulum that's needed here to keep things moving on an even keel."

Ruth sprang back with a gasp of horror. Three tiny metallic shapes had scurried swiftly over the edge of the hollow and were descending into the blackbird pit with the blindly groping movements of terrified moles.

Moles? Why not mice? Blind mice?

Wayne was the first to say it. "Three blind mice, see how they run——" He stopped, appalled.

"Finish it," Bryce muttered. "They all ran after the farmer's wife, who cut off their tails with a carving knife."

He gestured eloquently. "I told you cruelty was of the essence here. It's a savage, senseless, last turn-of-the-screw kind of cruelty. Why mutilate blind mice? Isn't that utterly ghastly? And yet it's in Mother Goose.

"There's hardly a Mother Goose rhyme that doesn't shadow forth this world. The hunters and—the hunted. Creatures pursued by blind cruelty, shot down in flight. Who killed Cock Robin?"

A grim puzzlement seemed to grip Bryce. "Cock Robin! That's the cruelest one of all. It's so devilish in its wicked, eerie malice that some editions of Mother Goose omit it entirely, as not for children!"

He frowned. "Just who was Cock Robin anyway? Why was everyone so horrified? Cock Robin with his bleeding breast, the taut and quivering arrow. Why was Cock Robin so different, almost a stranger to this world? Why did the cruelty pause to wonder? Why did everyone answer: 'Not I! Not I?'

"Why did everyone single out Cock Robin as the one creature in this world who shouldn't have been killed at all?"

Bryce strode back and forth, glancing over the mound as if in chill apprehension.

"A curious thing! Not only the Mother Goose rhymes shadow forth this world. An ancient Chinese vase bears the inscription: 'See how the harsh black birds fly into the bronze sun, pursued by the arrows of darkness!'

"And Lewis Carroll! There are things in *Alice in Wonderland* that seem to shadow forth this world. Why was Alice so real to generations of children?"

He shrugged. "A few men remembered their childhood visions well, apparently. Too well for comfort. The Looking Glass was simply a symbol. You step through. The Orban boy got at the scientific reality behind the symbol. He actually constructed a dimension-dissolving looking glass!"

Ruth stared at him. "Are you claiming that all children are dangerous little monsters?"

Bryce shook his head. "No. Only very special children. Children who were cut off from all normal activity, as Orban was. Their visions spur them on. But I think we've always known, subconsciously, that a child with too much knowledge would be dangerous. Why do people like to make up rhymes about the wickedness of children. Remember the Little Willie rhymes:

> *" 'Little Willie hung his sister*
> *She was dead before we missed her!*
> *Willie's always up to tricks!*
> *Ain't he cute? He's only six.' "*

From somewhere on the plain came an answering whisper, as though the cruel words had goaded the blue world to activity again. A low rustling swept across the plain, ominous, mind-chilling.

"Here they come!" Bryce whispered, reaching for the blaster.

Wayne moved quickly to forestall him. He had the weapon and was leveling it before the psychologist could glower in protest.

A shadow fell on the plain, grew larger. The blue archers were stepping out from the wall with a deadly deliberation, their reflections lengthening as they converged, their Zeus-taut bodies wrapped in a translucent glimmering.

Wayne held his fire until a dozen archers released their bows simultaneously. There was a pulsing at his temples as the trigger clicked. A swirl of whiteness followed the click, a silent whiteness for an instant as brief as a dropped heartbeat. Then a thunderous concussion shook the mound, hurling him backwards. . . .

An hour later Wayne sat with his back to the tumbled earth rampart, his face haggard with strain. A thin smoke was swirling over the mound, an acrid haze which obscured the slope directly below him and blotted out the crouching bulk of Bryce. But he could feel the despair which emanated from Bryce—a palpable force. Bryce spoke suddenly. "I'm glad we saved one blast!" he muttered. "We've got to decide how to use it!"

The words fell on a chill, deadly silence.

Then Ruth uttered a sobbing moan. Wayne knew with grim certainty that Bryce would not attempt to spare her. If he thought the blaster should be turned upon the hollow and held in steady hands, he would say so.

They sat silently together for an instant, not daring to voice what was in their minds.

Then Bryce spoke directly to Ruth. "By heaven, you're a pretty woman!"

A sudden, hot anger swept over Wayne like a flood of molten lava.

"If we had any chance at all," Bryce added, heavily, "Ken would have a rival!"

Wayne suddenly realized that Bryce had more delicacy than he had given him credit for. He had chosen an odd way to announce that there was no hope, but Wayne

was glad that he had not phrased it brutally. His anger evaporated.

Twang!

The arrow sped in close, barely missing Wayne. The archers were in motion again. As they drew in toward the mound, their bows thrumming, the air grew thick with deadly arrows in flight.

There was a continuous, deadly twanging, a drumming in the air, a drumming in Wayne's skull—a reeling giddiness. Wayne did not hesitate or swing about to voice an agonized doubt. The suddenness of the attack had settled the issue for him.

The last blast would not be guided by another man's caution. His decision was made, and nothing could alter it.

Wayne blasted with a quick intake of his breath.

The spurting radiation struck the plain with a mighty roar. Wayne felt again the shattering recoil, the shoulder-bruising impact of a heavy weapon leaping in his clasp.

For an instant fire and smoke danced on the plain, swirling over the base of the mound and blotting the archers from view.

Then the smoke thinned, and rolled back over a seared expanse of desolation the more awful because it wasn't quite empty. One archer was still advancing, swaying a little as it climbed the slope through the dissolving smoke, its bow upraised.

The archer was almost at the crest of the mound when Wayne sprang straight at it. With a sickening twang the arrow left the bow and thudded into the earth rampart at Wayne's back. Then Wayne was beating with the blaster against the archer's angular body, swinging with it again and again, pounding with all his strength.

The plain rang with the harsh, strident clang of metal against metal, as though knights in a tourney were colliding head-on in a suicidal contest of strength.

With a savageness that amazed him, Wayne fought the archer back down the slope. Eyes wild, lips quivering, he brought the sharp edge of his weapon against

the horror's gleaming chest, and slashed downward at the low-slung metal quiver at its waist.

Strange how much courage a man had when his life was forfeit, strange the shining strength, like a shield around the heart, blazing out for all to see!

Arrows were spilling from the archer's quiver and its body was twisting strangely when something seemed to lift it up and hurl it backwards toward the wall. Wayne cried out hoarsely as the writhing horror receded from him, twisting and turning like a gale-lashed leaf. It vanished abruptly, in a blinding flash of light.

And as it vanished a running figure came into view on the plain.

"Orban!"

It was Ruth who shouted it, coming to her feet in wild disbelief. The Orban boy was running straight toward Wayne and waving his arms in urgent appeal.

Wayne couldn't catch what the Orban boy was shouting. But he could see that the running lad was gesturing him back toward the mound.

In a daze of fevered uncertainty Wayne swung about and started climbing. He heard himself sobbing. His legs threatened to give out, but he managed to gain the crest and fling himself down in the hollow. He lay on his stomach, staring over the rampart, his lungs choked with dust.

Slowly he became aware that Ruth had thrown herself down beside him and was clinging to him in sobbing relief.

The Orban boy came over the crest with his breath coming in choking gasps. He flung himself down directly opposite Wayne, and raised himself on one elbow.

"Had to wait—until I was sure I could get you out," he breathed. "That man——" He gestured toward Bryce. "He's not so important, but you're my friend! Had to save you, Ken!"

Wayne stared, his mouth strangely dry.

"My idea was to hide the machine until I was equipped right to come into this world, Ken." Orban went on

feverishly. "I worked something out, but it wasn't good enough to protect me in here. That's why I asked you to help me hide the machine!"

"Just what did you work out?" Bryce asked. His face was ashen, but his voice was firm enough.

"Just met Ken last night," the Orban boy wheezed, his eyes shining. "But he's the only friend I ever had. He was going to hide me. That's more than you'd do, I bet."

"You're right about that," Bryce said, with a harsh laugh. "I asked you, What did you work out?"

For reply the Orban boy opened his hand. The object which rested on his palm was small, no larger than a jack-knife. It was shaped like a compass. Six tiny glowing knobs projected from it, but otherwise it was unbelieveably makeshift in aspect, as though the Orban boy had walked into a toyshop, picked up a compass, and twisted two wires intricately around the floating needle. And now he was displaying his prize with a fierce pride, as though he'd done something remarkable.

"Worked hard at it, in Ken's kitchen," the Orban boy explained. "Took me six hours to get it right."

"You're sure it works now?"

"You bet I'm sure," Orban said, pridefully. "The segments which feed that loop have been moved around, see? They pass right under the contact points. All I have to do is draw the second loop into position by the attraction of the needle."

As he spoke the Orban boy pressed one of the little knobs on the rim of the "compass." The "compass" lighted up.

"Now it's ready!" Orban said.

Bryce stared. "Ready for what?"

The Orban boy cupped his palm over the "compass." "You'll see. Watch!"

Light from the "compass" streamed out between the Orban boy's fingers and haloed his entire hand. Slowly he raised his hand and turned to Wayne with a triumphant cry.

"Look at what is happening!"

It was impossible not to look. The blue world was in sudden, furious activity. Down from the sky the "King" wobbled, to hang directly over the mound. The blind mice ran backwards out of the blackbird pit and four and twenty blackbirds rose into the sky. And out on the plain stepped a dozen blue archers, their bows upraised.

But the most terrifying thing was the gulf which yawned suddenly on the plain. Out of it stumbled something that looked like a jigsaw giant, bent nearly double. The figure went reeling and stumbling over the plain, as if in unendurable agony.

The figure was metallic, very similar to the archers, but it moved in a dizzyingly crooked way that brought a tortured reeling to Wayne's mind.

" 'There was a crooked man and he walked a crooked mile,' " Ruth heard herself screaming.

Twang!

An arrow pierced the blueness, thudding into the shoulders of the crazily weaving figure. The giant stumbled and fell forward, its loose-jointed arms flailing the air. It dragged itself crookedly backwards toward the trap door in the plain, its movements still geometrically insane.

Suddenly the archers froze. They stood rigid, unmoving, their bows held at grotesque angles. The "King" stopped vibrating. It hung motionless above the mound, congealed into the blueness like an ice-frozen jellyfish.

Every other object within view took on an aspect of rigidity. All movement ceased. There was a stillness so absolute even the stirring of a blind mouse would have set up a din. But the mice were stiff, impaled in a web of stillness.

"By heaven, he's stopped the clock!"

Bryce's stunned cry shattered the human stillness on the mound. But the "King" did not echo back the sound, and nothing on the plain moved.

Orban grinned then, for the first time. "I knew it would work," he exulted. "It had to work. It'll all start up

again, in just about three minutes. Can't stop it for long. You've got to get out fast."

"You mean——" Bryce wet his shaking lips. "That little thing——" He waved one arm——"stopped *all that?*"

"Size hasn't a thing to do with power," the Orban boy said, as though he were addressing a child. "Shucks, I could blow up every city on earth—big cities like New York and Chicago—with something half the size of this!"

Ruth swayed.

"I fixed the machine so you can see it from this side," Orban said. "When you go out, I'll break it up from this side. Come on, Ken. You got to get around that wall before it all starts up again."

All four of them started off in the direction Orban indicated, running at top speed.

Nerve-torturing thoughts, that fitted no pattern of sanity or logic, were churning about at the back of Wayne's mind, as he dashed after the youth. They rounded the wall in a run, the Orban boy in the lead, Bryce bringing up the rear.

The wall hadn't changed, but the toppled Humpty Dumpties resembled eggs that had dropped from a cold storage crate. Their tadpole arms had ceased to jerk and their spilled yolks were frozen solid.

The Orban boy paused an instant to nudge an egg with his toe. "The poor little thing!" he murmured, shaking his head. Then he was in motion again.

When the machine swept into view, the Orban boy was breathing heavily, his face tight with strain. But he kept on running until he was directly in front of it. Then he turned and waited for the others to come up.

"I can't go with you, Ken," he said, when Wayne reached his side. "I belong here. Always have—always will!"

He shuffled his feet as he spoke and suddenly, he was thrusting out his hand.

Wayne stared at him in stunned horror. "But you can't

remain!" he protested. "When those devilish archers start up again——"

Orban shook his head, squinting back at the wall. "I don't dare leave, Ken! Know what would happen if I did? I'd get careless and there'd be more accidents. People would get killed—everybody on earth, maybe. I know so much in some ways—I'm not safe to be trusted!"

The Orban boy was bending as he spoke, but Wayne did not suspect what he was about to do until he saw the shining croquet wicket looming in the air above him.

The Orban boy was behind the machine, and he was rushing straight toward Ken with the machine held out before him.

It was a little like passing into a warm shower. The light was all around Wayne, lashing against him, before he realized that he was no longer on the plain.

"Goodbye, Ken!" came in a dwindling echo of sound. "Sure was great to have a friend!"

Wayne picked himself up from the floor and looked around him. He wasn't alone in the room. Ruth was sitting beside him, Bryce lay on the floor, and the croquet wicket was dwindling to a shapeless lump of metal in a dwindling blaze of light.

Bryce was getting slowly to his feet, and staring about him with fiercely contracted brows, as though he despised Wayne's taste in furnishings and was about to say so.

Bryce went to a chair and sat down. "Nice place you have here, Ken," he said.

Suddenly his composure broke. Sweat came out on his face, the back of his hands. He shuddered.

"He'll never come back," he whispered. "We've seen the last of him."

Wayne got up and staggered back against the wall and stared at Bryce.

Bryce made a despairing gesture. "I wish now I'd said a few kind words to him. It was the least I could have done."

"Why?" Wayne was hardly aware that he had spoken.

"Oh, it's a paradox, all right," Bryce murmured. "Just

like—the paradox of time travel. Say a man lives now and goes into the past. Doesn't that mean he's always existed in the past? But how can he go back to where he's always been?"

Ruth had gotten up and was staring at Bryce with startled eyes. "What has that to do with the Orban boy?" she asked.

"Say you went into another dimension today," Bryce said, slowly. "Say it was a kind of timeless dimension—from our point of view. Wouldn't you in a sense exist in that other world from the very creation of that world? Wouldn't you freeze into that world and become a part of it from the start?"

"If someone from our world saw that other world centuries ago, wouldn't he find you there? I think he would."

Bryce paused an instant to stare out the window of Wayne's living room. The murk of an October morning stretched beyond the pane. He stared at Wayne, then at Ruth, as though challenging them to deny that they had just returned from a quite different world.

"You saw that King-clock horror, swinging down from the sky!" he went on. "A mechanical tropism enabled it to echo back sound. Suppose a boy, who never should have gone into that world, was trapped in it. Suppose he shouted his defiance to the sky as the arrows sped toward him.

"Suppose he shouted his name, in anger and fierce pride, recklessly as a defiant boy might well be tempted to do. His name, now and forever, long before he was born into our world, our time, because he'd made himself a timeless part of that timeless world."

"Well?" Wayne's voice was a puzzled whisper.

"A good many boys have nicknames. Young Orban's given name was Phillip, but his father didn't call him that."

Ruth gave a cry. "No! Oh, no!"

"Suppose the King-clock merely repeated the name," Bryce said, gently. "Suppose the boy lay slain on the plain and the King repeated his name, over and over.

And the little lad who was to write Mother Goose saw that world in a dream of childhood and heard the name. The author of Mother Goose must have been an imaginative child.

"Remember—he saw the horror only dimly. It bore the name of a familiar bird. Why not a bird lying slain on the plain and everyone in that world asking: 'Who killed Cock Robin? Not I! Not I?' Everyone horrified, appalled, because Cock Robin was a stranger in that world."

"You mean——"

"It was an intangible thing, the uniqueness of Cock Robin, but it must have communicated itself to the author of Mother Goose. He imagined the rest, the protesting voices, the shared horror, and remorse. He made a fantastic little nursery rhyme about it."

Bryce looked at Ruth. "Do you know who Cock Robin was now?" he asked.

Ruth drew closer to Wayne before she spoke, as though she dared not remain alone with such a burden of horror and pity resting its cold weight on her heart.

"His father called him Robin!" she whispered. "Robin! Robin! The Orban boy—he was Cock Robin!"

Charles Clore
H.R. 114

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