

# NIGHT

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Condon was staring through the glasses with a face tense and drawn, all his attention utterly concentrated on that one almost invisible speck infinitely far up in the blue sky, and saying over and over again in the most horribly absent-minded way, "My Lord—my Lord——"

Suddenly he shivered and looked down at me, sheer agony in his face. "He's never coming down. Don, he's never coming down——"

I knew it, too—knew it as solidly as I knew the knowledge was impossible. But I smiled and said: "Oh, I wouldn't say that. If anything, I'd fear his coming down. What goes up comes down."

Major Condon trembled all over. His mouth worked horribly for a moment before he could speak. "Talbot—I'm scared—I'm horribly scared. You know—you're his assistant—you know he's trying to defeat gravity. Men aren't meant to—it's Wrong—wrong——"

His eyes were glued on those binoculars again, with the same terrible tenseness, and now he was saying over and over in that absent-minded way, "wrong—wrong—wrong——"

Simultaneously he stiffened, and stopped. The dozen or so other men standing on that lonely little emergency field stiffened; then the major crumpled to the ground. I've never before seen a man faint, let alone an army officer with a D.

S. medal. I didn't stop to help him, because I knew something had happened. I grabbed the glasses.

Far, far up in the sky was that little orange speck—far, where there is almost no air, and he had been forced to wear a stratosphere suit with a little alcohol heater. The broad, orange wings were overlaid now with a faint-glowing, pearl-gray light. And it was falling. Slowly, at first, circling aimlessly downward. Then it dipped, rose, and somehow went into a tail spin.

It was horrible. I know I must have breathed, but it didn't seem so. It took minutes for it to fall those miles, despite the speed. Eventually it whipped out of that tail spin—through sheer speed, whipped out and into a power dive. It was a ghastly, flying coffin, hurtling at more than half a thousand miles an hour when it reached the Earth, some fifteen miles away.

The ground trembled, and the air shook with the crash of it. We were in the cars and roaring across the ground long before it hit. I was in Bob's car, with Jeff, his laboratory technician—Bob's little roadster he'd never need again. The engine picked up quickly, and we were going seventy before we left the field, jumped a shallow ditch and hit the road—the deserted, concrete road that led off toward where he must be. The engine roared as Jeff clamped down on the accelerator. Dimly, I heard the major's big car coming along behind us.

Jeff drove like a maniac, but I didn't notice. I knew the thing had done ninety-five but I think we must have done more. The wind whipped tears in my eyes so I couldn't be sure whether I saw mounting smoke and flame or not. With Diesel fuel there shouldn't be—but that plane had been doing things it shouldn't. It had been trying out Carter's antigravity coil.

We shot up the flat, straight road across wide, level country, the wind moaning a requiem about the car. Far ahead I saw the side road that must lead off toward where Bob should be, and lurched to the braking of the car, the whine and sing of violently shrieking tires, then to the skidding corner. It was a sand road; we slithered down it and for all the lightness and power, we slowed to sixty-five, clinging to the seat as the soft sand gripped and clung.

Violently Jeff twisted into a branching cow path, and somehow the springs took it. We braked to a stop a quarter of a mile from the plane.

It was in a fenced field of pasture and wood lot. We leaped the fence, and raced toward it: Jeff got there first, just as the major's car shrieked to a stop behind ours.

The major was cold and pale when he reached us. "Dead," he stated.

And I was very much colder and probably several times as pale. "I don't know!" I moaned. "He isn't then;!"

"Not there!" The major almost screamed it. "He must be

—he has to be. He has no parachute—wouldn't take one. They say he didn't jump——"

I pointed to the plane, and wiped a little cold sweat from my forehead. I felt clammy all over, and my spine prickled. The solid steel of the huge Diesel engine was driven through the stump of a tree, down into the ground perhaps eight or nine feet, and the dirt and rock had splashed under that blow like wet mud.

The wings were on the other side of the field, flattened, twisted straws of dural alloy. The fuselage of the ship was a perfect silhouette—a longitudinal projection that had flattened in on itself, each separate section stopping only as it hit the ground.

The great torus coil with its strangely twined wrappings of hair-fine bismuth wire was intact! And bent over it, twisted, utterly wrecked by the impact, was the main-wing stringer—the great dural-alloy beam that supported most

of the ship's weight in the air. It was battered, crushed on those hair-fine, fragile bismuth wires—and not one of them was twisted or misplaced or so much as skinned. The back frame of the ponderous Diesel engine—the heavy supercharger was the anvil of that combination—was cracked and splintered. And not one wire of the hellish bismuth coil was strained or skinned or displaced.

And the red pulp that should have been there—the red pulp that had been a man—wasn't. It simply wasn't there at all. He hadn't left the plane. In the clear, cloudless air, we could see that. He was gone.

We examined it, of course. A farmer came, and another, and looked, and talked. Then several farmers came in old, dilapidated cars with their wives and families, and watched.

We set the owner of the property on watch and went away

—went back to the city for workmen and a truck with a derrick. Dusk was falling. It would be morning before we could do anything, so we went away.

Five of us—the major of the army air force, Jeff Rodney,

the two Douglass Co. men whose names I never remembered and I—sat in my—our—room. Bob's and Jeff's and mine. We'd been sitting there for hours trying to talk, trying to think, trying to remember every little detail, and trying to forget every ghastly detail. We couldn't remember the detail that explained it, nor forget the details that rode and harried us.

And the telephone rang. I started. Then slowly got up and answered. A strange voice, flat and rather unpleasant, said: "Mr. Talbot?"

"Yes."

It was Sam Gantry, the farmer we'd left on watch. "There's a man here."

"Yes? What does he want?"

"I dunno. I dunno where he came from. He's either dead or out cold. Gotta funny kind of an aviator suit on, with a glass face on it. He looks all blue, so I guess he's dead."

"Lord! Bob! Did you take the helmet off?" I roared.

"No, sir, no—no, sir. We just left him the way he was."

"His tanks have run out. Listen. Take a hammer, a wrench, anything, and break that glass faceplate! Quick! We'll be there."

Jeff was moving. The major was, too, and the others. I made a grab for the half-empty bottle of Scotch, started out, and ducked back into the closet. With the oxygen bottle under my arm I jumped into the crowded little roadster just as Jeff started it moving. He turned on the horn, and left it that way.

We dodged, twisted, jumped and stopped with jerks in traffic, then leaped into smooth, roaring speed out toward the farmer's field. The turns were familiar now; we scarcely slowed for them, sluing around them. This time Jeff charged through the wire fence. A headlight popped; there was a shrill scream of wire, the wicked *zing* of wire scratching across the hood and mud guards, and we were bouncing across the field.

There were two lanterns on the ground; three men carried others; more men squatted down beside a still figure garbed in a fantastic, bulging, airproof stratosphere suit. They looked at us, open-mouthed as we skidded to a halt, moving aside as the major leaped out and dashed over with the Scotch. I followed close behind with the oxygen bottle.

Bob's faceplate was shattered, his face blue, his lips blue

and flecked with froth. A long gash across his cheek from the shattered glass bled slowly. The major lifted his head without a word, and glass tinkled inside the helmet as he tried to force a little whisky down his throat.

"Wait!" I called. "Major, give him artificial respiration, and this will bring him around quicker—better." The major nodded, and rose, rubbing his arm with a peculiar expression.

"That's cold!" he said, as he flipped Bob over, and straddled his back. I held the oxygen bottle under Bob's nose as the major swung back in his arc, and let the raw, cold oxygen gas flow into his nostrils.

In ten seconds Bob coughed, gurgled, coughed violently, and took a deep shuddering breath. His face turned pink almost instantly under that lungful of oxygen, and I noticed with some surprise that he seemed to exhale almost nothing, his body absorbing the oxygen rapidly.

He coughed again; then: "I could breathe a heck of a sight better if you'd get off my back," he said. The major jumped up, and Bob turned over and sat up. He waved me aside, and spat. "I'm—all right," he said softly.

"Lord, man, what happened?" demanded the major.

Bob sat silent for a minute. His eyes had the strangest look—a hungry look—as he gazed about him. He looked at the trees beyond and at the silent, watching men in the light of the lanterns; then up, up to where a myriad stars gleamed and danced and flickered in the clear night sky.

"I'm back," he said softly. Then suddenly he shivered, and looked horribly afraid. "But—I'll have to be—then—too." He looked at the major for a minute, and smiled faintly. And at the two Douglass Co. men. "Your plane was all right.

I started up on the wings, as arranged, went way up, till I thought surely I was at a safe height, where the air wasn't too dense and the field surely wouldn't reach to Earth—Lord!— reach to Earth! I didn't guess how far that field extended. It touched Earth—twice.

"I was at forty-five thousand when I decided it was safe, and cut the engine. It died, and the stillness shocked me. It was so quiet. So quiet.

"I turned on the coil circuit, and the dynamotor began to hum as the tubes warmed up. And then—the field hit me. It paralyzed me in an instant. I never had a chance to break the circuit, though I knew instantly something was wrong—terribly wrong. But the very first thing it did was to paralyze me,

and I had to sit there and watch the instruments climb to positions and meanings they were never meant for.

"I realized I alone was being affected by that coil—I alone, sitting directly over it. I stared at the meters and they began to fade, began to seem transparent, unreal. And as they faded into blankness I saw clear sky beyond them; then for a hundredth of a second, like some effect of persistence of vision, I thought I saw the plane falling, twisting down at incredible speed, and the light faded as the Sun seemed to rocket suddenly across the sky and vanish.

"I don't know how long I was in that paralyzed condition, where there was only blankness—neither dark nor light, nor time nor any form—but I breathed many times. Finally, form crawled and writhed into the blankness, and seemed to solidify beneath me as, abruptly, the blankness gave way to a dull red light. I was falling.

"I thought instantly of the forty-five thousand feet that lay between me and the solid Earth, and stiffened automatically in terror. And in the same instant I landed in a deep blanket of white snow, stained by the red light that lighted the world.

"Cold. Cold—it tore into me like the fang of a savage animal. What cold! The cold of ultimate death. It ripped through that thick, insulated suit and slashed at me viciously, as though there were no insulation there. I shivered so violently I could scarcely turn up the alcohol valves. You know I carried alcohol tanks and catalyst grids for heating, because the only electric fields I wanted were those of the apparatus. Even used a Diesel instead of gas engine.

"I thanked the Lord for that then. I realized that whatever had happened I was in a spot indescribably cold and desolate. And in the same instant, realized that the sky was black. Blacker than the blackest night, and yet before me the snow field stretched to infinity, tainted by the blood-red light, and my shadow crawled in darker red at my feet.

"I turned around. As far as the eye could see in three directions the land swept off in very low, very slightly rolling hills, almost plains—red plains of snow dyed with the dripping light of sunset, I thought.

"In the fourth direction, a wall—a wall that put the Great Wall of China to shame—loomed up half a mile—a blood-red wall that had the luster of metal. It stretched across the horizon, and looked a scant hundred yards away, for the air

was utterly clear. I turned up my alcohol burners a bit more and felt a little better.

"Something jerked my head around like a giant hand—a sudden thought. I stared at the Sun and gulped. It was four times—six times—the size of the Sun I knew. And it wasn't setting. It was forty-five degrees from the horizon. It was red. Blood-red. And there wasn't the slightest bit of radiant heat reaching my face from it. That Sun was cold.

"I'd just automatically assumed I was still on Earth, whatever else might have happened, but now I knew I couldn't be. It must be another planet of another sun—a frozen planet—for that snow was frozen air. I knew it absolutely. A frozen planet of a dead sun.

"And then I changed even that. I looked up at the black sky above me, and in all the vast black bowl of the heavens, not three-score stars were visible. Dim, red stars, with one single sun that stood out for its brilliance—a yellowish-red sun perhaps a tenth as bright as our Sun, but a monster here. It was another—a dead—space. For if that snow was frozen air, the only atmosphere must have been neon and helium. There wasn't any hazy air to stop the light of the stars, and that dim, red sun didn't obscure them with its light. The stars were gone.

"In that glimpse, my mind began working by itself; I was scared.

"Scared? I was so scared I was afraid I was going to be sick. Because right then I knew I was never coming back. When I felt that cold, I'd wondered when my oxygen bottles would give out, if I'd get back before they did. Now it was not a worry. It was simply the limiting factor on an already-determined thing, the setting on the time bomb. I had just so much more time before I died right there.

"My mind was working out things, working them out all by itself, and giving answers I didn't want, didn't want to know about. For some reason it persisted in considering this was Earth, and the conviction became more and more fixed. It was right. That was Earth. And it was old Sol. Old—old Sol. It was the time axis that coil distorted—not gravity at all. My mind worked that out with a logic; as cold as that planet.

"If it was time it had distorted, and this was Earth, then it had distorted time beyond imagining to an extent as meaningless to our minds as the distance a hundred million light years is. It was simply vast—incalculable. The Sun was dead. The

Earth was dead. And Earth was already, in our time, two billion years old, and in all that geological time, the Sun

had not changed measurably. Then how long was it since my time? The Sun was dead. The very stars were dead. It must have been, I thought even then, billions on billions of years. And I grossly under-estimated it.

"The world was old—old—old. The very rocks and ground radiated a crushing aura of incredible age. It was old, older than—but what is there? Older than the hills? Hills? Gosh, they'd been born and died and been born and worn away again, a million, a score of million times! Old as the stars? No, that wouldn't do. The stars were dead—then.

"I looked again at the metal wall, and set out for it, and the aura of age washed up at me, and dragged at me, and tried to stop this motion when all motion should have ceased. And the thin, unutterably cold wind whined in dead protest at me, and pulled at me with the ghost hands of the million million million that had been born and lived and died in the countless ages before I was born.

"I wondered as I went. I didn't think clearly; for the dead aura of the dead planet pulled at me. Age. The stars were dying, dead. They were huddled there in space, like decrepit old men, huddling for warmth. The galaxy was shrunk. So tiny, it wasn't a thousand light years across, the stars were separated by miles where there had been light years. The magnificent, proudly sprawling universe I had known, that flung itself across a million million light years, that flung radiant energy through space by the millions of millions of tons was—gone.

"It was dying—a dying miser that hoarded its last broken dregs of energy in a tiny cramped space. It was broken and shattered. A thousand billion years before the cosmical constant had been dropped from that broken universe. The cosmical constant that flung giant galaxies whirling apart with ever greater speed had no place here: It had hurled the universe in broken fragments, till each spattered bit felt the chill of loneliness, and wrapped space about itself, to become a universe in itself while the flaming galaxies vanished.

"That had happened so long ago that the writing it had left in the fabric of space itself had worn away. Only the gravity constant remained, the hoarding constant, that drew things together, and slowly the galaxy collapsed, shrunken and old, a withered mummy.

"The very atoms were dead. The light was cold; even the red light made things look older, colder. There was no youth in the universe. I didn't belong, and the faint protesting rustle of the infinitely cold wind about me moved the snow in muted, futile protest, resenting my intrusion from a time when things were young. It whinnied at me feebly, and chilled the youth of me.

"I plodded on and on, and always the metal wall retreated, like one of those desert mirages. I was too stupefied by the age of the thing to wonder; I just walked on.

"I was getting nearer, though. The wall was real; it was fixed. As I drew slowly nearer, the polished sheen of the wall died and the last dregs of hope died. I'd thought there might be some one still living behind that wall. Beings who could build such a thing might be able to live even here. But I couldn't stop then; I just went on. The wall was broken and cracked. It wasn't a wall I'd seen; it was a series of broken walls, knitted by distance to a smooth front.

"There was no weather to age them, only the faintest stirring of faint, dead winds—winds of neon and helium, inert and uncorroding—as dead and inert as the universe. The city had been dead a score of billions of years. That city was dead for a time ten times longer than the age of our planet to-day. But nothing destroyed it. Earth was dead—too dead to suffer the racking pains of life. The air was dead, too dead to scrape away metal.

"But the universe itself was dead. There was no cosmic radiation then to finally level the walls by atomic disintegration. There had been a wall—a single metal wall. Something—perhaps a last wandering meteor—had chanced on it in a time incalculably remote, and broken it. I entered through the great gap. Snow covered the city—soft, white snow. The great red sun stood still just where it was. Earth's restless rotation had long since been stilled—long, long since.

"There were dead gardens above, and I wandered up to them. That was really what convinced me it was a human city, on Earth. There were frozen, huddled heaps that might once have been men. Little fellows with fear forever fro/en on their faces huddled helplessly over something that must once have been a heating device. Dead perhaps, since the last storm old Earth had known, tens of billions of years before.

"I went down. There were vastnesses in that city. It was huge. It stretched forever, it seemed, on and on, in its dead-ness. Machines, machines everywhere. And the machines were dead, too. I went down, down where I thought a bit of light and heat might linger. I didn't know then how long death had been there; those corpses looked so fresh, preserved by the eternal cold.

"It grew dark down below, and only through rents and breaks did that bloody light seep in. Down and down, till I was below the level of the dead surface. The white snow persisted, and then I came to the cause of that final, sudden death. I could understand then. More and more I had puzzled, for those machines I'd seen I knew were far and beyond anything we ever conceived—machines of perfection, self-repairing, and self-energizing, self-perpetuating. They could make duplicates of themselves, and duplicate other, needed machines; they were intended to be eternal, everlasting.

"But the designers couldn't cope with some things that were beyond even their majestic imaginations—the

imaginations that conceived these cities that had lived beyond—a million times beyond—what they had dreamed. They must have conceived some vague future. But not a future when the Earth died, and the Sun died, and even the universe itself died.

"Cold had killed them. They had heating arrangements, devices intended to maintain forever the normal temperature despite the wildest variations of the weather. But in every electrical machine, resistances, balance resistances, and induction coils, balance condensers, and other inductances. And cold, stark, spatial cold, through ages, threw them off. Despite the heaters, cold crept in colder—cold that made their resistance balances tad their induction coils superconductors! That destroyed the city, Superconduction—like the elimination of friction, on which all things must rest. It is a drag and a thing engineers fight forever. Resistance and friction must finally be the rest and the base of all things, the force that holds the great bed bolts firm and the brakes that stop the machines when needed.

"Electrical resistance died in the cold and the wonderful machines stopped for the replacement of defective parts. And when they were replaced, they, too, were defective. For what months must that constant stop—replacement—start—stop—replacement have gone on before, at last defeated forever, those vast machines must bow in surrender to the inevitable? Cold had defeated them by defeating and removing the greatest obstacle of the engineers that built them—resistance.

"They must have struggled forever—as we would say—

through a hundred billion years against encroaching harshness of nature, forever replacing worn, defective parts. At last, defeated forever, the great power plants, fed by dying atoms, had been forced into eternal idleness and cold. Cold conquered them at last.

"They didn't blow up. Nowhere did I see a wrecked machine; always they had stopped automatically when the defective resistances made it impossible to continue. The stored energy that was meant to re-start those machines after repairs had been made had long since leaked out. Never again could they move, I knew.

"I wondered how long they had been, how long they had gone on and on, long after the human need of them had vanished. For that vast city contained only a very few humans at the end. What untold ages of lonely functioning perfection had stretched behind those at-last-defeated mechanisms?

"I wandered out, to see perhaps more, before the necessary end came to me, too. Through the city of death. Everywhere little self-contained machines, cleaning machines that had kept that perfect city orderly and neat stood helpless and crushed by eternity and cold. They must have continued functioning for years after the great central power stations failed, for each contained its own store of energy, needing only occasional recharge from the central stations.

"I could see where breaks had occurred in the city, and, clustered about those breaks were motionless repair machines, their mechanisms in positions of work, the debris cleared away and carefully stacked on motionless trucks. The new beams and plates were partly attached, partly fixed and left, as the last dregs of their energy were fruitlessly expended in the last, dying attempts of that great body to repair itself. The death wounds lay unattended.

"I started back up. Up to the top of the city. It was a long climb, an infinite, weary climb, up half a mile of winding ramps, past deserted, dead homes; past, hen; and there, shops and restaurants; past motionless little automative passenger cars.

"Up and up, to the crowning gardens that lay stiff and brittle and frozen. The breaking of the roof must have caused a sudden chill, for their leaves lay green in sheaths of white, frozen air. Brittle glass, green and perfect to the touch. Flowers, blooming in wonderful perfection showed still; they didn't seem dead, but it didn't seem they could be otherwise under the blanket of cold.

"Did you ever sit up with a corpse?" Bob looked up at us—through us. "I had to once, in my little home town where they always did that. I sat with a few neighbors while the man died before my eyes. I knew he must die when I came there. He died—and I sat there all night while the neighbors filed out, one by one, and the quiet settled. The quiet of the dead.

"I had to again. I was sitting with a corpse then. The corpse of a dead world in a dead universe, and the quiet didn't have to settle there; it had settled a billion years ago, and only my coming had stirred those feeble, protesting ghosts of eon-dead hopes of that planet to softly whining protest—protest the wind tried to sob to me, the dead wind of the dead gases. I'll never be able to call them inert gases again. I know. I know they are dead gases, the dead gases of dead worlds.

"And above, through the cracked crystal of the roof, the dying suns looked down on the dead city. I couldn't stay there. I went down. Down under layer after layer of buildings, buildings of gleaming metal that reflected the dim, blood light of the Sun outside in carmine stains. I went down and down, down to the machines again. But even there hopelessness seemed more intense. Again I saw that agonizing struggle of the eternally faithful machines trying to repair themselves once more to serve the masters who were dead a million million years. I could see it again in the frozen, exhausted postures of the repair machines, still forever in their hopeless endeavors, the last poor dregs of energy spilled in fruitless conflict with time.

"It mattered little. Time himself was dying now, dying with the city and the planet and the universe he had killed.

"But those machines had tried to hard to serve again—and failed. Now they could never try again. Even they—the deathless machines—were dead.

"I went out again, away from those machines, out into the illimitable corridors, on the edge of the city. I could not penetrate far before the darkness became as absolute as the cold. I passed the shops where goods, untouched by time in this cold, still beckoned those strange humans, but humans for all that; beckoned the masters of the machines that were no more. I vaguely entered one to see what manner of things they used in that time.

"I nearly screamed at the motion of the thing in there, heard dimly through my suit the strangely softened sounds it made in the thin air. I watched it stagger twice—and topple. I cannot guess what manner of storage cells they had—save that they were marvelous beyond imagination. That stored energy that somehow I had released by entering was some last dreg that had remained through a time as old as our planet now. Its voice was stilled forever. But it drove me oyt—on.

"It had died while I watched. But somehow it made me more curious. I wondered again, less oppressed by utter death. Still, some untapped energy remained in this place, stored unimaginably. I looked more keenly, watched more closely. And when I saw a screen in one office, I wondered. It was a screen. I could see readily it was television of some type. Exploratively, I touched a stud. Sound! A humming, soft sound!

"To my mind leaped a picture of a system of these. There must be—interconnected—a vast central ofSce somewhere with vaster accumulator cells, so huge, so tremendous in their power once, that even the little microfraction that remained was great. A storage system untouchable to the repair machines—the helpless, hopeless power machines.

"In an instant I was alive again with hope. There was a strange series of studs and dials, unknown devices. I pulled back on the stud I had pressed, and stood trembling, wondering. Was there hope?

"Then the thought died. What hope? The city was dead. Not merely that. It had been dead, dead for untold time. Then the whole planet was dead. With whom might I connect? There were none on the whole planet, so what mattered it that there was a communication system.

"I looked at the thing more blankly. Had there been—how could I interpret its multitudinous devices? There was a thing on one side that made me think of a telephone dial for some reason. A pointer over a metal sheet engraved with nine symbols in a circle under the arrow of the pointer. Now the pointer was over what was either the first or the last of these.

"Clumsily, in these gloves, I fingered one of the little symbol buttons inlaid in the metal. There was an unexpected click, a light glowed on the screen, a lighted image! It was a simple projection—but what a projection! A three-dimensional sphere floated, turning slowly before my eyes, turning majestically. And I nearly fell as understanding flooded me abruptly. The pointer was a selector! The studs beneath the pointer I understood! Nine of them. One after the other I pressed, and nine spheres—each different—swam before me. . "And right there I stopped and did some hard thinking. Nine spheres. Nine planets. Earth was shown first—a strange planet to me, but one I knew from the relative size and the position of the pointer must be Earth—then, in order, the other eight.

"Now—might there be life? Yes. In those nine worlds there might be, somewhere.

"Where? Mercury—nearest the Sun? No, the Sun was too dead, too cold, even for warmth there. And Mercury was too small. I knew, even as I thought, that I'd have one good chance because whatever means they had for communication wouldn't work without tremendous power. If those incredible storage cells had the power for even one shot, they had no more. Somehow I guessed that this apparatus might incorporate no resistance whatever. Here would be only very high frequency alternating current, and only condensers and inductances would be used in it. Super-cooling didn't bother them any. It improved them. Not like the immense direct-current power machinery.

"But where to try? Jupiter? That was big. And then I saw what the solution must be. Cold had ruined these machines, thrown them off by making them too-perfect conductors. Because they weren't designed to defend themselves against spatial cold. But the machines—if there were any—on Pluto for instance, must originally have been designed for just such conditions! There it had always been cold. There it always would be cold.

"I looked at that thing with an intensity that should have driven my bare eyesight to Pluto. It was a hope. My only hope. But—how to signal Pluto? They could not understand! If there were any 'they.'

"So I had to guess—and hope. Somehow, I knew, there must be some means of calling the intelligent attendant, that the user might get aid. There was a bank of little studs— twelve of them—with twelve symbols, each different, in the center of the panel, grouped in four rows of three. I guessed. Duodecimal system.

"Talk of the problems of interplanetary communication! Was there ever such a one? The problem of an anachronism in the city of the dead on a dead planet, seeking life somewhere, somehow.

"There were two studs, off by themselves, separate from the twelve—one green, one red. Again I guessed. Each of these had a complex series of symbols on it, so I turned the pointer on the right to Pluto, wavered, and turned it to Neptune. Pluto was farther. Neptune had been cold enough; the machines would still be working there, and it would be, perhaps, less of a strain on the dregs of energy that might remain. "I depressed the green symbol hoping I had guessed truly, that red still meant danger, trouble and wrongness to men when that was bui't—that it meant release and cancellation for a wrongly pressed key. That left green to be an operative call signal. >•

"Nothing happened. The green key alone was not enough. I looked again, pressed the green key and that stud I had

first pressed.

"The thing hummed again. But it was a deeper note now, an entirely different sound, and there was a frenzied clicking inside. Then the green stud kicked back at me. The Neptune key under the pointer glowed softly; the screen began to shimmer with a grayish light. And, abruptly, the humming groaned as though at a terrific overload; the screen turned dull; the little signal light under Neptune's key grew dim. The signal was being sent—hurled out.

"Minute after minute I stood there, staring. The screen grew very slowly, very gently duller, duller. The energy was fading. The last stored dribble was being hurled away—away into space. 'Oh,' I groaned, 'it's hopeless—hopeless to \_\_\_\_\_'

"I'd realized the thing would take hours to get to that distant planet, traveling at the speed of light, even if it had been correctly aligned. But the machinery that should have done that through the years probably had long since failed for lack of power.

"But I stood there till the groaning motors ceased altogether, and the screen was as dark as I'd found it, the signal light black. I released the stud then, and backed away, dazed by the utter collapse of an insane hope. Experimentally I pressed the Neptune symbol again. So little power was left now, that only the faintest wash of murky light projected the Neptune image, little energy as that would have consumed.

"I went out. Bitter. Hopeless. Earth's last picture was long, long since painted—and mine had been the hand that spent Earth's last poor resource. To its utter exhaustion, the eternal city had strived to serve the race that created it, and I, from

the dawn of time had, at the end of time, drained its last poor atom of life. The thing was a thing done.

"Slowly I went back to the roof and the dying suns. Up the miles of winding ramp that climbed a half mile straight up. I went slowly—only life knows haste—and I was of the dead.

"I found a bench up there—a carved bench of metal in the midst of a riot of colorful, frozen towers. I sat down, and looked out across the frozen city to the frozen world beyond, and the freezing red Sun.

"I do not know how long I sat there. And then something whispered in my mind.

" 'We sought you at the television machine.' "

"I leaped from the bench and stared wildly about me.

"It was floating in the air—a shining dirigible of metal, ruby-red in that light, twenty feet long, perhaps ten in diameter, bright, warm orange light gleaming from its ports. I stared at it in amazement.

" 'It—it worked!' I gasped.

" 'The beam carried barely enough energy to energize the amplifiers when it reached Neptune, however,' replied the creature in the machine.

"I couldn't see him—I knew I wasn't hearing him, but somehow that didn't surprise me.

" 'Your oxygen has almost entirely given out, and I believe your mind is suffering from lack of oxygen. I would suggest you enter the lock; there is air in here.' "

"I don't know how he knew, but the gauges confirmed his statement. The oxygen was pretty nearly gone. I had perhaps another hour's supply if I opened the valves wide—but it was a most uncomfortably near thing, even so.

"I got in. I was beaming, joyous. There was life. This universe was not so dead as I had supposed. Not on Earth, perhaps, but only because they did not choose! They had space ships! Eagerly I climbed in, a strange thrill running through my body as I crossed the threshold of the lock. The door closed behind me with a soft *shush* on its soft gaskets, locked, and a pump whined somewhere for a moment; then the inner door opened. I stepped in—and instantly turned off my alcohol burners. There was heat—heat and light and air!

"In a moment I had the outer laces loose, and the inner zipper down. Thirty seconds later I stepped out of the suit, and took a deep breath. The air was clean and sweet and warm, invigorating, fresh-smelling, as though it had blown over miles of green, Sun-warmed fields. It smelled alive, and young. \*

"Then I looked for the man who had come: for me. There was none. In the nose of the ship, by the controls, floated a four-foot globe of metal, softly glowing with a warm, golden light. The light pulsed slowly or swiftly with the rhythm of his thoughts, and I knew that this was the one who had spoken to me.

" 'You had expected a human?' he thought to me. 'There are no more. There have been none for a time I cannot express in your mind. Ah, yes, you have a mathematical means of expression, but no understanding of that time, so it is useless. But the last of humanity was allowed to end before the Sun changed from the original G-O stage—a very, very long time ago.' "

"I looked at him and wondered. Where was he from? Who

—what—what manner of thing? Was it an armor-incased living creature or another of the perfect machines?

"I felt him watching my mind operate, pulsing softly in his golden light. And suddenly I thought to look out of the ports. The dim red suns were wheeling across those ports at an unbelievable rate. Earth was long since gone. As I

looked, a dim, incredibly dim, red disk suddenly appeared, expanded—and I looked in awe at Neptune.

"The planet was scarcely visible when we: were already within a dozen millions of miles. It was a jeweled world. Cities—the great, perfect cities—still glowed. They glowed in soft, golden light above, and below, the harsher, brighter blue of mercury vapor lighted them.

"He was speaking again. 'We are machines—the ultimate development of man's machines. Man was almost gone when we came.

" 'With what we have learned in the uncounted dusty megayears since, we might have been able to save him. We could not then. It was better, wiser, that man end than that he sink down so low as he must, eventually. Evolution is the rise under pressure. Devolution is the gradual sinking that comes when there is no pressure—and there is no end to it. Life vanished from this system—a dusty infinity I cannot sort in my memory—my type memory, truly, for I have complete all the memories of those that went before me that I replace.

But my memory cannot stretch back to that time you think of—a time when the constellations——

" 'It is useless to try. Those memories are buried under others, and those still buried under the weight of a billion centuries.

" 'We enter'—he named a city; I cannot reproduce that name—'now. You must return to Earth though in some seven and a quarter of your days, for the magnetic axis stretches back in collapsing field strains. I will be able to inject you into it, I believe.'

"So I entered that city, the living city of machines, that had been when time and the universe were young.

"I did not know then that, when all this universe had dissolved away, when the last sun was black and cold, scattered dust in a fragment of a scattered universe, this planet with its machine cities would go on—a last speck of warm light in a long-dead universe. I did not know then.

" 'You still wonder that we let man die out?' asked the machine. 'It was best. In another brief million years he would have lost his high estate. It was best.'

" 'Now we go on. We cannot end, as he did. It is automatic with us.'

"I felt it then, somehow. The blind, purposeless continuance of the machine cities I could understand. They had no intelligence, only functions. These machines—these living, thinking, reasoning investigators—had only one function, too. Their function was slightly different—they were designed to be eternally curious, eternally investigating. And their striving was the more purposeless of the two, for theirs could reach no end. The cities fought eternally only the blind destructive-ness of nature; wear, decay, erosion.

"But their struggle had an opponent forever, so long as they existed. The intelligent—no, not quite intelligent, but something else—curious machines were without opponents. They had to be curious. They had to go on investigating. And they had been going on in just this way for such incomprehensible ages that there was no longer anything to be curious about. Whoever, whatever designed them gave them function and forgot purpose. Their only curiosity was the wonder if there might, somewhere, be one more thing to learn.

"That—and the problem they did not want to solve, but must try to solve, because of the blind functioning of their very structure.

"Those eternal cities were limited. The machines saw now the limit, and saw the hope of final surcease in it. They worked on the energy of the atom. But the masses of the suns were yet tremendous. They were dead for want of energy. The masses of the planets were still enormous. But they, too, were dead for want of energy.

"The machines there on Neptune gave me food and drink —strange, synthetic foods and drinks. There had been none on all the planet. They, perforce, started a machine, unused in a billion years and more, that I might eat. Perhaps they were glad to do so. It brought the end appreciably nearer, that vast consumption of mine.

"They used so very, very little, for they were so perfectly efficient. The only possible fuel in all the universe is one—hydrogen. From hydrogen, the lightest of elements, the heaviest can be built up, and energy released. They knew how to destroy matter utterly to energy, and could do it.

"But while the energy release of hydrogen compounding to the heavy elements is controllable, the destruction of matter to energy is a self-regenerative process. Started once, it spreads while matter lies within its direct, contiguous; reach. It is wild, uncontrollable. It is impossible to utilize the full energy of matter.

"The suns had found that. They had burned their hydrogen until it was a remnant so small the action could not go on.

"On all Earth there was not an atom of hydrogen—nor was there on any planet, save Neptune. And there the store was not great. I used an appreciable fraction while I was there. That is their last hope. They can see the end now.

"I stayed those few days, and the machine is came and went. Always investigating, always curious. But there is in all that universe nothing to investigate save the one problem they are sure they cannot solve.

"The machine took me back to Earth, fiet up something near me that glowed with a peculiar, steady, gray light. It



would fix the magnetic axis on me, on my location, within a few hours. He could not stay near when the axis touched again. He went back to Neptune, but a few millions of miles distant, in this shrunken mummy of the solar system.

"I stood alone on the roof of the city, in the frozen garden with its deceptive look of life.

"And I thought of that night I had spent, sitting up with the dead man. I had come and watched him die. And I sat up with him in the quiet. I had wanted some one, any one to talk to.

"I did then. Overpoweringly it came to me I was sitting up in the night of the universe, in the night and quiet of the universe, with a dead planet's body, with the dead, ashen hopes of countless, nameless generations of men and women. The universe was dead, and I sat up alone—alone in the dead hush.

"Out beyond, a last flicker of life was dying on the planet Neptune—a last, false flicker of aimless life, but not life. Life was dead. The world was dead.

"I knew there would never be another sound here. For all the little remainder of time. For this was the dark and the night of time and the universe. It was inevitable, the inevitable end that had been simply more distant in my day—in the long, long-gone time when the stars were mighty lighthouses of a mighty space, not the dying, flickering candles at the head of a dead planet.

"It had been inevitable then; the candles must burn out for all their brave show. But now I could see them guttering low, the last, fruitless dregs of energy expiring as the machines below had spent their last dregs of energy in that hopeless, utterly faithful gesture—to attempt the repair of the city already dead.

"The universe had been dead a billion years. It had been. This, I saw, was the last radiation of the heat of life from an already-dead body—the feel of life and warmth imitation of life by a corpse. Those suns had long and long since ceased to generate energy. They were dead, and their corpses were giving off the last, lingering life heat before they cooled.

"I ran. I think I ran—down away from the flickering, red suns in the sky. Down to the shrouding blackness of the dead city below, where neither light, nor heat, nor life, nor imitation of life bothered me.

"The utter blackness quieted me somewhat. So I turned off my oxygen valves, because I wanted to die sane, even here, and I knew I'd never come back.

"The impossible happened! I came to with that raw oxygen in my face. I don't know how I came—only that here is warmth and life.

"Somewhere, on the far side of that bismuth coil, inevitable still, is the dead planet and the flickering, guttering candles that light the death watch I must keep at the end of time."