

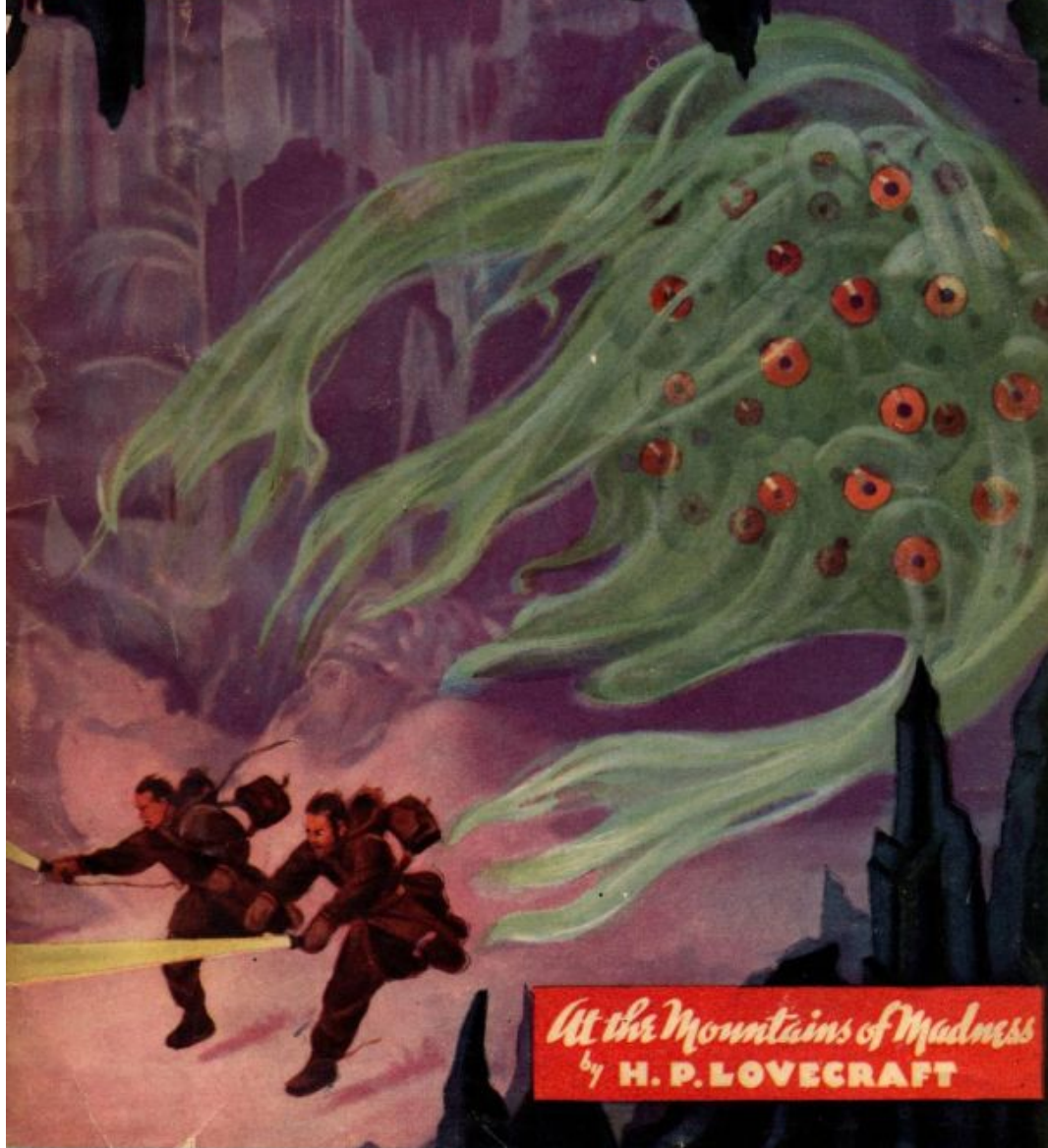
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STORIES

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At the Mountains of Madness
by H. P. LOVECRAFT

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Mathematica

A novel of the science of origins

By

John Russell Fearn

First published *Astounding Stories*, February 1936.

I.

I sit down to write these words in a world that has changed unrecognizably—indeed in a new world altogether; in a universe that is alien and strange and bears no relation whatever to the universe I once knew.

In the retrospect, I see now quite clearly that it was the fragment from Vulcan that started the whole amazing business and precipitated me—my name is Vernon Walsh—Dr. Farrington, and a denizen of another universe into the most remarkable experience ever meted out to thinking creatures——

To commence my story properly I must return to a scorching day in July, 1980. At that time I was an analyst in the New York Institute of Scientific Research, and a firm friend of Dr. Farrington's. He, by far my superior in knowledge, was directly connected with metallurgy, electricity, magnetism, and kindred subjects; hence, it was into his hands that the metal from Vulcan first came.

Space travel was first accomplished in 1975, and two years later Captain Dawson of the spaceways, at extreme risk to himself and crew, located the formerly purely theoretical planet of Vulcan. His ship, composed of the strongest fire-resisting alloys known to the science of that time, was nevertheless badly blistered by the approach to the asteroid called Vulcan, owing to its alarming nearness to the Sun.

However, despite the danger and the overpowering drag of the orb of day, he was successful in landing on the strange little world, to find it nothing more or less than a circular mass of riveted metal. This alone was enough to suggest that the asteroid itself might be the work of intelligent beings—but so inimical to life were the conditions, that the party stayed only long enough to remove a portion of the surface with magnetizers—the merest fragment compared to the whole mass—and returned to Earth with the prize.

It was on that July in 1980 that Dawson brought the metal to my friend for examination, and as fortune—or was it misfortune?—had it, I was also present at the time.

"The stuff doesn't classify into anything I know of," Dawson remarked, lifting the lid of the stout bakelite box in which the foot-square of metal was contained. "It's some very heavy element of some kind or other—nothing on Earth like it, I believe. Have a look."

Dr. Farrington surveyed the metal thoughtfully, then he smiled.

"Well, I'll try and analyze it, anyhow," he promised. "Congratulations, Dawson. You've made up the collection now. We've fragments from all the planets except mysterious Vulcan. Now that's cleaned up we're O. K. Next time you can bring something back from the Milky Way, if you like."

Dawson ignored the banter; his face was grimly serious.

"Offhand, what would you say the metal is?" he persisted. "I want to know."

"Why so anxious?"

"Well—er—it may sound queer, but when we were on Vulcan, everything we thought about *happened!*"

Farrington's expression changed. So, I imagine, did mine.

"Happened!" he echoed blankly. "What do you mean by that?"

"Well, you know—just the ordinary run of our thoughts. For instance, while we were getting the stuff I happened to think, quite subconsciously, of my wife and kids at home.

Believe it or not they materialized in the flesh right before me, then changed just as rapidly into something beyond my understanding, which finally evaporated altogether. Believe me, it scared me stiff! All my boys will testify to similar experiences. Just as though the thought became actual and then transformed itself like something alive into something—well, quite beyond my limited understanding. That’s why I want to know what the metal’s composed of.”

“I don’t wonder!” Farrington muttered, and began to stroke his chin. Had Dawson made such statements twenty years earlier he would have been deemed insane; in 1980, however, men were more prone to listen to extraordinary narratives—and analyze them. Besides, Dawson was a man of renown—steady, iron-nerved, and certainly not given to fantastic conceptions.

“Have you tried this thought-materializing stunt with this chunk?” the doctor asked presently, and Dawson vehemently shook his bullet head.

“No! It scares me, I tell you. I put it in that bakelite box to insulate it against electric waves. I’ve read somewhere that brain vibrations, or thoughts, are like electricity. I thought the insulation might help.”

“Probably right. Still, I’m going to experiment.”

Farrington reached forward into the box, then withdrew his hands sharply, gazing at blistered fingers.

“Hm-m-m—energy of sorts. No heat; just a sort of vibratory action—friction. This gets interesting.”

He turned about and moved among the masses of his professional apparatus, finally pulling forth a small, insulated crane. With expert fingers he guided the machine so that it finally lifted the Vulcanian metal from its bakelite bed and laid it down on a sheet of two-inch-thick rubber a little distance away.

“Have a care!” Dawson warned him timorously. “Don’t think up any tigers or anything of that sort——”

He broke off, and I simultaneously let out a yell. Distinctly for a moment I beheld a vision of a tiger itself amidst the laboratory fittings. Then, even as I blankly stared, it altered its shape, transformed, became a peculiarly oblong mass of rotating stripes—and was gone. I swallowed hard.

“Astounding!” Farrington breathed, quickly moving back to the metal. “That thought of yours took instant effect. That transformation business puzzles me just a bit.”

He ceased to speak and gingerly guided the metal back into its box.

“Thought reflection,” he went on, looking down at the stuff in its case. “Most extraordinary. Like a mirror reflecting the image of oneself. But how the devil does it do it? Manifestly the stuff is electrical in some unheard-of manner, and is composed of some element having only a very vague parallel in uranium. I wonder—— Can it be, perhaps, a race of beings in a universe, or on a world unknown? Strange beings of far higher intellect than ours?” He stopped and smiled ruefully. “Guess I’m getting flavored with the fantastic stories of the day. Next thing I know I’ll be thinking up some weird creature with a bulging cranium and calling him an idiotic name like Pelathon, or something of that nature.”

He slammed down the lid of the box.

For nearly a year, Dr. Farrington—assisted rather inadequately by me at intervals—struggled to analyze the mystic metal of Vulcan, yet he found out very little concerning it. It baffled his powers of trained reasoning; it performed feats that were at variance with all

normal science. The creation of materiality out of thought was something that, not unnaturally, had him guessing. And the inevitable transformations of these literal brain children into visible mathematical and geometrical conceptions that afterward dissolved was absolutely beyond all understanding.

So, at the end of twelve months, he was little nearer. The metal was a scientific enigma, and as such was finally relegated in its bakelite case to the section perfunctorily labeled “unclassified.”

Then there came into this strange web of mystery the most remarkable visitor Earth had ever known. The occurrence happened almost a year to the day of the coming of the metal into Farrington’s hands. He was seated in the laboratory, actually discussing the metal with me, when the visitor arrived.

We first became aware of his coming by the gradual mergence out of thin air of a hazy enigma of machinery—a mass of coils, bands, wires and struts of gleaming metal that caught the sunlight streaming through the glass roof. Silent, utterly transfixed, the doctor and I watched this apparition merge slowly into our view, watched the laboratory equipment become misty and vague as the ghostly machine took on solidity and finally became perfectly material.

Before us there stood the most peculiar contrivance we’d ever seen. It was oblong in shape, not unlike a box of highly polished ebony, with the strange devices and machinery affixed to its exterior. It stood perhaps seven feet high, and remarkably enough possessed easily recognizable windows.

“What the devil——” Farrington stopped, helplessly starting forward. Then he watched as a section of the machine’s wall fell away and there emerged into our presence the most fantastic personage imaginable.

In contour he bore a faint resemblance to an Earthling. He could not have been more than four feet tall, possessing a pinched and scrawny body clothed in tight-fitting scarlet fabric. Then, above this ridiculous body came a thin neck and colossal head, enormously domed and veined, with a puckered little face and beady, all-embracing eyes beneath its overhanging bone structure. I remember I vaguely wondered how he—or it—managed to keep upright at all beneath such an egregious superstructure.

For a while he stood surveying us in silence; I could feel the physical shock from his eyes. The strength of his mentality was remarkable. Then he spoke, in a voice that was curiously mellow considering his undersized lung and vocal capacity. What convinced me that I was dreaming was that he spoke in English!

“My name is Pelathon,” he volunteered, revealing teeth like those of a rabbit. “As I understand it, somebody here on this world, in this universe, created me and my fellows, and my universe, roughly ten thousand millions of your years ago. I have left that universe, my own world, forever. I have journeyed through space and time—to here. There can be no mistake. My machines cannot be wrong.”

“Pelathon,” Farrington muttered, recovering from his first shock. “I seem to have heard that name before somewhere—— Oh, but all this is absurd!” he went on, laughing huskily. “We’re seeing things, Vernon; I’m sure of it. That damned metal from Vulcan, probably. This—er—fellow speaks English. That’s impossible.”

“I speak the language of the people who populate my world,” the visitor replied steadily. “It was our language in the beginning, and was still our language when I set out on my

astounding journey to try and prove that our world, all our universe, only came into being through the mathematical multiplication of an original thought.”

“Pelathon,” Farrington murmured again, ruminatively. “I’ll swear I’ve heard it before somewhere—I think you said something about somebody on Earth being responsible for your universe?” he asked, looking up. “How can that be? Your universe, by your own telling, died tens of thousand of years ago. Millions, I think you said.”

“When dealing with time one must, of necessity, incorporate distance, size and relativity,” Pelathon replied calmly. “To me—to my instruments—the time is certainly of that duration—but to you, in a different space-time continuum, it may have been but yesterday, but yesteryear —”

“A year!” Farrington interrupted suddenly, snapping his fingers. “Pelathon! Unknown universe!”

I saw his face blanch as he pursued some inner thought. Then, quite suddenly, he gripped my arm, almost hysterically. “Vernon, this fellow comes from the very universe I *thought* of more than a year ago! You remember, when Dawson first brought the metal to us, I concluded our brief investigations with a theory about the stuff perhaps being the work of some highly intelligent mind. I pursued a fantastic theory, conceived in my mind’s eye a creature identical with this one, with the same name! My thoughts must have reproduced themselves by that infernal Vulcanian metal. I hadn’t closed the lid of the bakelite box, if you remember——”

“I remember!” I muttered, hardly knowing what to say. “To this man it was æons ago—to us a year. Do you begin to realize——”

“Throughout the ages on our world we have believed the entire construction of our universe, and those of other universes, to be mental and mathematical,” Pelathon commented. “We knew there must be an ultimate source for our race. In our early times we were exactly akin to you in appearance, but with the passage of ages our brains increased, naturally, until they formed us into the hypertrophied walking intellects of which I am an example. I alone, practically the last of my race, had had handed down to me, through my ancestors, the belief that all life is but thought manifestation combined with figures. I built a machine—you see it here—attuned to work on the principle of mathematical subtraction. By that means I was bound to subtract myself down to the cause of our life. I did so. I crossed space, following an arithmetical line, the ship changing itself automatically as I did so. I came from the infinitely big into the microscopically small—— But my search is not yet ended.”

“No?” Farrington breathed weakly.

“No. You came into being as well! How? What is the reason for all this procreation and materialization of mathematics and thought? You created our universe; therefore, somebody must have created yours! We have much to discuss and discover, my friends. I have crossed time and space, and am at your service, as intent as you are on solving the reason for life being present at all. Clearly, you created my peoples and myself; our identical language is proof enough of that. We caught the mathematics of your thoughts—a strange, as yet unexplainable transfiguration took place—and there came materiality! I even got the name you thought of! Yes, we must discuss—and plan.”

“But the entire thing’s so amazing—unreasonable!” Farrington breathed.

“Why so?” Pelathon asked calmly.

“Well, your coming—your subtracting machine, as you call it—your obvious intelligence. It will be necessary to inform our world; we shall be plunged into an ocean of cross-questioning.”

Pelathon shook his massive dome slowly. “I do not desire that, my friend. I have found you, the creator of myself and universe—to you alone I shall talk. With you alone, and your companion here, shall I experiment. Do you not realize what lies before us? Do you not realize that so far, despite my amazing journey, I have but scraped the very surface of knowledge? We must drive on to the cause of everything—to the beginning!”

II.

So came Pelathon into our formerly organized lives. By a considerable amount of surreptitiousness, the doctor and I managed to smuggle him from the laboratory by night and gave him residence at my home, where, to my single manservant, matters were explained satisfactorily and an oath of secrecy placed upon him.

Here, the night after his arrival, Pelathon explained his extraordinary conception, following a day in which he had apparently spent the time making curious and complicated calculations on an immense sheet of paper.

“The more I dwell upon the problem, the more convinced I become that everything is purely one original sum in mathematics,” he said slowly, looking at the doctor and me with his little eyes.

“I thought you said thought,” Farrington remarked.

“Truly—but mathematics and thought are the same thing fundamentally. Surely your own scientists believe in the possibility of everything being an original mathematical thought?”

“They theorize on it, but are not at all sure of its truth.”

“The theory is now substantiated,” Pelathon said with assurance. “The world of Vulcan, apparently, was deliberately placed in this solar system by somebody or something to build up the thoughts of somebody equally obscure, at the moment. The metal you obtained from Vulcan was undoubtedly highly energized in some way or another and reflects your thoughts just as easily when away from the influence which lies, presumably, within Vulcan itself. I find, from my short studies to-day, that your scientists believe matter was an accident? Believe that no other planet is populated?”

“Right enough.”

“Might not the latter belief be explained by the fact that the person thinking of this particular universe visualizes only *one* planet reproducing life exactly akin to his own? Therefore, no other planet possesses life?”

“That’s an idea,” Farrington admitted, startled. “Incidentally, several great scientists do believe—and did believe—in our universe being a mental conception. Jeans was one of them—so was Eddington. Jeans’ conception was of the universe being a mathematician’s thought, mainly because everything in the universe can be perfectly explained by mathematics and nothing else. He cites in one instance the conception of electrons being a system of waves in a three-dimensional space. Hence, two electrons require six-dimensional space, three electrons nine dimensions, etc., all of which is almost beyond the conception of an average brain, which again would point to pure thought and mathematics by the original conceiver. For another thing, it is never explained why one cannot annihilate a thought. Doesn’t it seem likely that that is the original essence of life which nothing can change?”

“Possibly,” Pelathon assented thoughtfully. “All the manifestations of thought are inexplicable. We can think of things impossible in practicability; we can accomplish feats which material matter cannot. The more I think on it the more do I become convinced that all of it can be traced to a mathematical fundamental. Indeed, the fact that I came here by pure subtraction of figures, convinces me. In my universe, as I have said, your universe is but an atom. So, it appears the answer lies in the infinite small.”

“It seems the best course would be to visit Vulcan,” I commented.

“Exactly so.” Pelathon nodded. “You have space travel, I observe. The heat of the Sun near Vulcan is very intense, I understand; therefore, I shall prepare a solution to cover the space ship. My solution will absorb heat radiation and create an equable temperature. Also, I shall equip the space ship with machines similar to those on my subtracting machine.”

“Well?” Farrington asked.

“We do not know for certain what we may find within Vulcan. We shall take instruments to break it open and enter; I shall prepare further mathematical machines to separate the surface of the asteroid. Then, once within, we may never return.”

“But why not?” I demanded.

“Because, as I have already said, the fundamental of creation lies in the infinitely, unimaginably small—lesser than the electron; lesser than the possible electrons within electrons; lesser than anything we can conceive. Just as the essence of energy lies within the atom, so I feel that the essence of creation lies within something else. If we are to pursue this something to the end of the space-time span we may never return. You understand?”

Farrington and I nodded silently.

“You are both men of science,” Pelathon went on. “Are you prepared to sacrifice your liberty, perhaps your lives, for this exploration? Remember that you will lose your own universe for all time, just as I have done with mine. I thought my journey would end here, and so far as my own universe is concerned it has. But I find myself in the midst of an even deeper problem. I’m going on, and if you love your profession you will do likewise and seek the explanation for the mystery of thought and life.”

That was an invitation that took some accepting, I can tell you. For nearly two hours Farrington and I weighed the pros and cons, and at last, mainly by reason of the intense mystery that lay before us, we gave our consent—which Pelathon took with his usual immobility.

It was decided ultimately that we would set out for Vulcan, secretly, in two weeks’ time. There was no reason for the world to know our object—we probably would be misunderstood, anyhow. Besides, we had to keep Pelathon’s presence unknown. A man of his powers and birth was certainly too valuable to lose upon the untrained masses making up the population of the electron called Earth.

III.

Through the ensuing days Farrington and I pursued our normal work—with due arrangements for a long vacation within a fortnight—and watched, upon our return to my home every evening, the progress of Pelathon with the various instruments, chemicals and ingredients we brought for him from the laboratories. His own strange machine we had also had moved over, and he had gradually dismantled it.

He was singularly reticent to explain his heat-nullifying substance. In appearance it was more like aluminium paint than anything else, but by its atomic constitution, arranged in a manner known only to Pelathon, it absorbed heat rays, dissipated a certain quantity of them, and retained the remainder—leaving an equable, almost thermostatic temperature, no matter what heat was applied. It was certainly effective. We placed a sheet of glass, coated with the stuff, in the blast furnace, yet when we took it out it was no warmer than the glass of an oil cycle lamp.

So, as far as Pelathon manufactured the stuff from the materials at his disposal, Farrington and I, by night, sprayed it over the space machine that had been loaned to us by the authorities for our vacation. They were under the impression we were taking a much-needed holiday at Ralsingford, leading city of Mars.

Later came the assemblage of Pelathon's astounding mathematical machines, both for opening up Vulcan and subtracting us to the infinite small. I cannot explain how they worked; I freely admit it. To me the machines were an incomprehensible jumble of bars, keys, little bowls filled with ticking mechanism, rotating shafts, oil baths, and a titanic switchboard supplied with all manner of geometrical and algebraical numerals, to each of which was affixed a filigree of fine, glittering platinum wires. This effort to subtract figures from nowhere, apparently, was something best left beyond my dumb, mortal brain— Everything went without a hitch. Nobody suspected a thing.

We took off quietly on August 6, 1981, and that was the last we ever saw of the Earth known to normal man.

Our journey was accomplished entirely without incident—save that we passed the Earth-Mars space liner on the way. Certainly we had a little difficulty in calculating the necessary figures to land us on the whirling planetoid, turning one burnished face to the dangerously near Sun. I doubt if we should have ever made it had it not been for Pelathon's almost uncanny skill. Thanks to that we landed safely in the twilight belt. Before us, through the windows, stretched a landscape of solid metal, the bisected Sun, flaming with prominences and corona, fixed immovably at the very near horizon. Beyond doubt, Vulcan was a man-made world.

For some time Pelathon stood in silence, surveying the strange sight; then he moved to the switchboard of his subtractor. Without hesitation he moved the switches and, before our eyes, a square nearly half a mile square suddenly began to evaporate into thin emptiness and was gone, as though it had never been. There remained a black and uninviting aperture.

“Now,” Pelathon murmured, “we shall see what lies within.”

Farrington and I stood watching intently as the ship rose very slightly from the metal ground and began to move forward. With extreme care Pelathon guided the vessel until it

reached the aperture, then began to lower it down, simultaneously switching on high-powered searchlights.

“Machinery!” Farrington ejaculated in amazement, pointing. “And *what* machinery!”

Pelathon’s expression did not change. For myself, I was speechless.

Below us, at a seemingly enormous depth, couched in the gloom of that strange world, there reposed the most extraordinary, the most complicated machinery on which I had ever set eyes.

It covered the entire floor of Vulcan—or else the spherical walls. Machines which in the main had no Earthly similarity, save that a few transformers and generators were dimly suggestive. The remainder consisted of countless thousands of cables extending upward to Vulcan’s sunless side, all of them leading back unerringly to one gigantic machine in the approximate center of this mechanical wilderness.

About this Cyclopean monster were grouped others, bristling with tubes, geared wheels, obviously moving engines, shanks, well-lubricated connecting rods, enigmatic pistons—the whole similar indeed to the works of some behemoth and futuristic clock.

As we dropped lower, toward a clear space, the blurred details took on outline. We realized we were descending into no accident of a world, but into a veritable interplanetary power house, perfectly controlled—obviously remotely. We tried to conjecture where the mind was back of all this complexity, and, not unnaturally, failed completely.

“Obviously, the central machine is directly responsible for the conveyance to the asteroid’s outer surface of the thought-duplicating energy,” Pelathon observed, gazing fixedly through the window. “You notice, too, perhaps, a hazy aura of light—a fine, pearly mist—existing between those massive, copper pillars over there?”

“What do you think it might be?” I asked.

“Unless I’m entirely wrong it is the *cause* of this machinery. At least my figures tell me so. We’ll soon find out.” He turned the ship about slightly and headed straight for the mystery region.

The moment we entered it something happened. The ship jerked sharply as though it had struck a solid obstacle, to almost instantly relapse again into smooth, onward progress—yet, although our instruments revealed no decrease in speed, we showed no signs of leaving the mist. Yet, judging from our first observations, it could not possibly have been more than a mile in width!

Through the window we could dimly behold the machines that had formerly hemmed us in, yet the unusual thing was that, despite our motion forward, those to the frontward never came any nearer, nor did those behind visibly recede. The illusion presented to us was of both remaining stationary for a tremendous length of time. With every passing second we were shooting, by some unimaginable process, into an abyss of ever-widening space.

“What the devil’s happening?” I demanded suddenly.

Pelathon glanced at his mathematical subtractor, which was now automatically in action. The faintest of smiles came to his wizened face.

“We are subtracting. Perhaps to call it shrinking would be more to the point. Our surroundings are becoming gigantic by proportion. We are at the beginning of a very long journey. Those immense machines, I believe, are naught but the accrument of very brilliant figuring.”

“I’ll believe that when I have proof,” Farrington murmured. “All this concept of things being mathematical is too much for me! And yet, I must admit, it might be possible——”

“It is the only solution, I’m convinced,” Pelathon replied calmly. “I shall not attempt myself to outline the mystery because my exposition may be faulty. I shall leave it until we reach that ultimate something that conceived it all. Until then we can only wait—and watch.”

So commenced our journey, which took us through a period of time and space quite beyond comprehension. To correlate normal epochs with apparent very material hours was naturally beyond our mortal senses, yet Pelathon assured us that with every passing second inside the ship, thousands of years vanished into eternity in the space-time continuum in which lay the Earthly universe.

After a time the mist that hemmed us in changed into a perfect replica of our own Milky Way. We beheld solar systems by the countless scores. In some manner or other we had become free in space—or so it seemed at first to my own untrained mind.

“All we behold is purely the atomic formation of the mist,” Pelathon explained. “The electrons moving round their protons like planets round the Earth’s Sun—— But our journey does not end here, otherwise we’d cease subtracting. As it is, we are still going on.”

He was correct. The electrons and protons of the mist divided and subdivided again and again as we progressed in our amazing subtraction. The conception of Pelathon, that electrons existed within electrons, just as electrons exist inside a planet, was correct.

We passed these whirling worlds at close quarters sometimes, and despite their acknowledged speed of fifteen thousand miles a second round the proton, they seemed now, owing to our small size, to move much slower. Upon them we glimpsed no sign of life—purely barren worlds, apparently devoid of all atmosphere and water vapor, seeming to have no part in the general scheme of things.

And onward. The machines had long since melted into electrons, solar systems and nebulous hazes.

Hours on our chronometer merged into days. We took turns sleeping, Farrington and I. Pelathon never slept. Our engines had long since been switched off. Only the subtractors were at work, performing evolutions that were quite incomprehensible. All I realized was that we were within a free body which was patently lessening in size to proportions inconceivably microscopic with every second. Yet we felt there was nothing at all wrong with our bodies.

The constant succession of transformation of electrons into solar systems became almost monotonous in time.

IV.

It happened after the formation of perhaps the seventh set of solar systems. There came no more divisions. Our ship seemed to move very slightly and pursue a direct course for one brilliantly red world conspicuous among all the others—a world about which clung a roseate haze, issuing from the planet in the form of delicate ripples of magnificent color. Curiously enough the color bands did not lose their intensity of depth as they widened. Right until they were lost to sight in distance they retained their original strength.

“If it is a world, it is a very beautiful one,” Farrington muttered, gazing down upon it and its parent sun—or nucleus would perhaps be more truthful. “For all the world like a perfect ruby set in the blackness of velvet. I wonder what it contains. Something darned unusual if those colors are any guide.”

“We’ll soon discover,” Pelathon commented, glancing back at his subtracting machinery. “The ship is headed straight for that world, drawn to it by the immutable law of figures. Here, perhaps, we shall meet the ultimate!” And his little eyes gleamed beneath the great dome in scientific anticipation.

We remained at the observation window for a considerable time—perhaps centuries for all I know. Certainly time did advance because we eventually landed with hardly a jar on that strange and lovely world, to be immediately blanketed in the midst of that fine, carmine mist. Gravity, apparently, was almost identical to Earth’s.

The subtracting machinery ceased its activity. For a moment there was dead and complete silence. Then I turned to Pelathon.

“Well?” I asked. “Do we go outside?”

He surveyed the instruments. “There’s nothing to stop us walking right out,” he replied. “Atmosphere composition and density is similar to Earth’s; so is the gravitation, and the temperature is akin to a normally temperate day. The red mist, of course, we can’t explain. If you’re ready, we’ll go,” he concluded, with his customary speed of decision.

Still possessing that Earth-born sense of suspicion, of preparedness, Farrington and I took rifles down from the wall—but before we could move toward the air lock, our rifles—the entire control room itself—suddenly became transparent, wavered indecisively, and vanished as completely as steam from boiling water! The three of us stood motionless, empty-handed, astounded.

About us the red mist writhed curiously as though driven by a strong wind. Then, with a speed that was staggering, it all congealed abruptly into a solidity, building with lightning changes into a very material, overpoweringly mighty city.

Around us, above us, towered invincible skyscraping buildings. My own impression was of being watched by countless thousands of gleaming windows catching the light of an unseen sun. Then, just as rapidly, the city vanished and gave place to billions of reproductions of us! We saw ourselves repeated endlessly, into an eternal distance, in one vast and incredible vista that reeled away like an unraveling film into the inconceivable remotenesses of time and space itself.

Still we stood dumb, completely overawed. I realized dimly that this was no planet, but something sentient, something intelligent, and able to juggle with time and space in a manner that was miraculous.

I was thinking in this strain when the vista of images suddenly extinguished itself, and instead, there merged into view a being somewhat similar to Pelathon, save that his head was bigger—much bigger. Indeed, its dimensions were so considerable that he wore a curious, cradlelike affair of glittering metal to support it; it was fixed firmly to his narrow, atrophied shoulders. For a long time his almost-hidden eyes watched us intently, then—either by thought waves or some other complicated form of communication—he spoke to us:

“So, you came!” he commented, rather enigmatically. And before we could even attempt an answer we were within a hall of enormous dimensions, surrounded by a multitude of scientific apparatus, with our peculiar host, if such he was, before us.

“Forgive these changes,” he resumed. “Everything is, of course, purely thought allied to mathematics. You have traveled far, my friends. You have courage; you have come to seek the ultimate reason for your universe. You have found it, but even so you have not reached the very beginning even yet. I, perhaps, may show you that. My name is Si-Lafnor. I am a mathematician, a demonstrator of equations, integrals, hyperbolas, etc. I, like you, am seeking the creator of mathematics.”

“*Creator of them?*” asked Farrington in puzzlement. “Is there such a thing?”

“Why not? No mathematics can exist unless somebody or something conceived them in the first place. You have no record in your world, for instance, of the originator of mathematics, have you?”

“We have possible theories, lost in dim antiquity,” Farrington answered.

“Quite useless—and baseless. Mathematics, life and probably thought, are all one. I knew you would come from the world of Earth; I knew, too, that the metal of Vulcan would be taken by you, Farrington, and that you, in turn, by a twist of mathematics, would create a mental birth—all unwittingly—namely of the universe of which Pelathon here is an inhabitant. Remember that only certain thoughts reacted on that metal—for instance, that of the tiger and Pelathon’s universe. In other cases your thoughts had no effect, otherwise your laboratory would have been full of manifested thoughts. Those thoughts that *did* operate changed immediately into progressive mathematics——”

“But—but where are we?” I asked dazedly. “What planet are we on?”

“This planet has no name. Like any other planet it is built up of mathematics. I am the last of a race of mathematicians and, being such, am the most advanced of them all. But, before I go any further, permit me to refresh you after your journey. There! You are feeling better, are you not?”

How am I to begin to explain things in cold print? Even as Si-Lafnor spoke, we were immediately invigorated, as though an unknown surge of energy had passed through us. He resumed with scarcely a pause, still by that method that might have been either speech or telepathy.

“You, Pelathon, being of an advanced race, may be able to understand what I am about to tell you. You other men may even be confused, but I will do my best to make it simple. Firstly, it is perhaps as well that you understand the mathematical concept of eternity, explainable in figures easily understandable to all of you. You are naturally aware of that elementary freak—the recurring decimal.

“In the simplest form it is obvious to you that a third of ten is three and one third; yet, if you reverse the process you get the conception of eternity. Thus, three and a third. You have never yet solved what it is. It is three plus three tenths, plus three hundredths, plus three

thousandths, plus three ten thousandths, and so on until the end of time. There, my friends, lies eternity—and it also leads to the beginning, of which I will presently talk. Incidentally, my countless reflections of yourselves when you arrived here was another facet of the recurring decimal system. The city was but a figment of triple harmonic analysis.

“Now to the creation of your universe. Firstly, the conceptions of your Earthly science lean to the theory of every electron requiring a three-dimensional space to itself—hence two require six dimensions, etc. In all then, the building of dimensions attributable to all the countless millions of electrons in your universe mounts up into dimensions inconceivable. You are forced to believe, therefore, that the waves associated with dimensions are purely mathematical—which is correct. They exist in such an order of mathematics that you will never understand them. You heap confusion on yourselves by trying to understand an electron.

“To you, along with its protonic nucleus, it is the foundation of the universe—of matter itself. A clever theory, certainly. You might even try to build instruments to study electrons, only you know you’re doomed to failure before you begin. An electron in complete isolation would be unknowable. It’s only when an electron is interchanging energy with some other part of the known universe that you become aware of its existence. No interchange of energy can take place that does not involve at least one quantum of atom of energy. In order to see an electron with your instruments you would have to use light; a quantum of energy would be involved and you’d so completely disturb the electron as to render it unviewable.

“So, the more and more you sink yourselves into the study of electrons, the more baffled you get, until finally some of your scientists have glimpsed the truth by pronouncing the entire universe to be mental. Then, and then only, are the paradoxes of physics solved, and the theoretical ether reduced to a mathematical abstraction. Also, you realize then that energy, the very basis of matter, becomes the constant of integration of a differential equation—just another mathematical abstraction.”

“Maybe, but that hardly explains our universe,” I put in.

“To arrive at that point I have to explain first your concept of it,” the mathematician answered. “In truth, my friends, the ether *does* exist purely as a mathematical abstraction—that is to imply that it exists as a separate thing, a background on which to throw the calculations of other figures relating to specified objects. It is absolutely a gigantic unknown quantity—an etheric X immovably unified to the laws of figures.

“Hence you see that my own creation of a mathematical abstraction, used in conjunction with my equations, etc., totals up in finality to the creation of a material universe. Everything in your universe, you admit, can be relegated to a mathematical constant. It has dimensions, light, mass, energy, gravitation—all relegated to figures. Humans, oceans, landscapes, everything, are purely figurative, and can be analyzed into dimensions of length, breadth and thickness.

“They move likewise in time and space, and, by the building up of more figures, create further beings like themselves. Again, take the example of the receding galaxies. The problem is easily explainable. As the figures accrue and multiply constantly the fixed basis they started from moves upwards and further away from your conceptions. In the galaxies you have the essence of figures incarnate. They are multiplying perpetually, and will do so toward an end which I cannot yet foresee.”

“By heaven!” muttered Farrington slowly. “I begin to see now! Just like the recurring decimal in an unthinkably advanced form. It goes on forever! That explains away all the

riddles of science, explains away all flaws in figures, all materiality, everything. Purely because our mathematics are not advanced enough to understand pure figuring, the basis of life and being always evades us. Naturally, on that basis, the figures must repeat and multiply and reform into fresh conceptions constantly, which accounts for why my conception of Pelathon's universe came into being."

"Precisely that. Electrons do exist, to your minds, because they are the visible outcome of the mathematics. They are the particular basis of figures working in conjunction with the etherical abstraction which produces a total whole in the form of, to you, an electron. In all, as you have seen, there are seven sets of electrons, every one of them actually a world, but unpopulated, since in my original formula of figures I only allowed for life fairly similar to my own on one world—Earth.

"Also, there are in all ninety-two concepts from my one basis of figures, which concurs exactly with the known ninety-two elements in your periodic table. Out of those ninety-two concepts is everything made. The metal of Vulcan came in that conception, too. It was your missing Element 87. So, out of those ninety-two concepts, of which only Element 85 still eludes you, is built up your bodies, your air, your planet—everything, resolving not into so many figures totaled on paper, but into the actual mathematical form of life, materiality and energy.

"Thought alone is apparently also mathematical, since it creates the original figures. You cannot annihilate a thought, but you can annihilate matter. All the same, here again the truth of mathematics is glaringly displayed. Destroy matter and you get energy; destroy energy and you get matter. Hence the sum total remains the same. You can never waste anything. In other words, you cannot cancel a faultless sum!"

"All that is fairly clear," I remarked. "I see now how everything Earthly and universal can be traced to your own original mathematics, but I don't see the reason for Vulcan, its machines, and the creation of Pelathon's universe."

"Surely that is simply explained, my friend. Two years ago, by my own time here, I devised the mathematics that would produce a universe—with these machines here. It was no work of mine how those mathematics would form. They arrange themselves, if properly handled. Mathematics are thoughts, remember! Hence, those mathematics produced changes in the ether abstraction and built up an entire world of machines, known to you as Vulcan.

"Vulcan came before your universe—from Vulcan's outflowing mathematics your universe was formed. In the Vulcanian machines there existed a haze wherein was the link to the original source—here. Once that universe was formed Vulcan created again out of figures an energy duplicating the energy existing in the mind of the original conceiver—myself. Hence, thought became reproduced on that particular planetoid. Removing a fragment of that world and taking it to Earth built up another form of figures and you, Farrington, thinking of a universe, reproduced, all unwittingly, another train of constantly multiplying figures that reacted on the ether and brought Pelathon's universe into being. Again it multiplied and his race came into being. He was clever enough to subtract his way back to the source—to Earth, just as easily as you would subtract yards to inches on paper. You in turn traced the mathematical train of figures back to the start again—here.

"Indeed, you were powerless to stop doing so, because you came directly to zero. You could not have arrived anywhere else; such a procedure would have been out of alignment with figures. You saw the concept of a red world with outflowing radiations of color. That was purely a figment of my mind, relative to the particular figures I was engaged on at the

moment. When you arrived here I divided your ship mathematically, gave a few figure impressions in the form of Earthly cities to impress you. The rest you know. Naturally, I knew of your coming purely by thought alone.”

“And these machines? What are *you* seeking?” Pelathon asked. “Are you not wondering how *you* came into being?”

“Yes,” Si-Lafnor said slowly. “I am wondering. These machines here are very similar, in a complex form, to yours, Pelathon. They subtract, add, multiply—perform arithmetical miracles. I seek the very beginning.”

“And you think you can find it?” Farrington asked.

“I have been trying to do so throughout my life, just as my ancestors did before me. I have already conceived, I think, the necessary mathematical computation to take me there. If everything goes as planned there will ultimately arrive a point when these machines will resolve the required figures into the proper answer and I will be whipped away into an essence of figures at present unknown. Then, and then only, shall I find the beginning.”

“And we?” Pelathon asked quietly. “Can we not go with you?”

“I will try to arrange it. Since you have no way back you must come forward with me. To return to your own universe would mean another set of figures and the finding of a dimension which so far eludes me—the tenth dimension, one of foreshortening powers. Then I could send you back. Perhaps some day I shall find it——”

V.

Our future was very uncertain. Being Earthly, Farrington and I could not altogether resign ourselves to the thought we would probably never return to our native planet. The very idea seemed preposterous, so to a certain extent it did not oppress us so much as might otherwise have been the case.

Mathematica, as we christened the unnamed planet, appeared to have neither night nor day—only one uniform red glow that came from a sun that was perpetually shielded by rosy mist. We passed our time, in the main, watching Si-Lafnor at work, marveling at his mathematical knowledge, against which the efforts of Pelathon were promptly relegated to the background.

While we were with this scientist there was no necessity to eat, drink or sleep; he attended to such trivial details, hence our time was occupied in watching the almost constant manifestations he built up from pure mental conceptions, resolved by his uncanny machines.

“If my calculations are correct,” he observed, after one particularly long spell of work amidst the figures his instruments had built up, “the time is almost here for the transportation into the unknown realm. It would be as well for you to keep near me, ready for any event, so that we may——” He stopped.

A deep, rumbling roar smote upon our ears, gathering in intensity with the seconds. Before our eyes the colossal machinery was shifting and changing mysteriously. Bands of wavy light vibrated about the whole gargantuan mass. The air literally rippled mathematics, in a manner which I find impossible to describe.

“It is here!” Si-Lafnor exclaimed sharply. “Quickly! Join hands! We must be in contact!”

We obeyed, and stood waiting on the trembling floor. My heart was hammering violently against my side as I beheld strange, eddying mists gathering, mounting and melting in the air. I tried with my miserable brain to understand it all, and naturally failed. I could only dimly apprehend that an immense transfiguration of mathematics was taking place—a visible solution to a brilliantly planned series of figures upon an abstract background, the exact nature of which I could not even guess.

Faster and faster the giant machines raced themselves, ticking, checking, pulsating. I held on grimly to Si-Lafnor’s tentaclelike hand—then, to my utter amazement, he vanished from my grip, became transparent and disappeared completely into emptiness. At the same instant the machines ceased action. The hall was as it had ever been—the uproar was over. The only difference was the absence of our host.

I glanced at Farrington, open-mouthed. Pelathon began to move thoughtfully about, stroking his immense dome. Then presently, after a glance at the machines, he returned to us.

“The explanation is fairly simple—indeed, it could not have happened in any other way,” he commented quietly. “Si-Lafnor based his mathematics on the presence of only himself. Although he knew of our coming, he obviously created his particular figurative scheme before he was aware of the fact. Hence, when the desired solution was reached—or dissolution, as the case may be—it applied only to him, whirling him away into the unknown, leaving us here to grapple with things alone.”

“But how do we even start to grapple?” I asked worriedly. “We don’t even know where to begin!”

“I will turn my own abilities to deriving the necessary figures to return us to our native planets—if at all possible,” Pelathon answered slowly. “I have learned much from Si-Lafnor’s explanations and methods. I may be able to achieve something.”

“If you can, all to the good,” said I. “The doctor and I are powerless to aid you. We don’t understand enough.”

Pelathon, however, brilliant though his mind undoubtedly was, performed only the very simplest mathematical feats compared with those of our departed host. True, he did manage to create curious machines, with the aid of the mathematical monsters hemming him in, and they in turn built up equational sequences, but in the main they were useless and conveyed no intelligible meaning.

Then again, we were faced—Farrington and I—with the problem of nourishment. We were powerless to invent anything, and Pelathon was so at sea he was unable to devise how to supply us with renewed energy. Since he had given up eating, drinking and sleeping æons before, he was perfectly in order, but Farrington and I came to the grim conclusion that death awaited us on Mathematica unless something arrived very quickly.

But nothing did arrive. My friend and I sank lower mentally and physically as time went on, and all poor Pelathon’s frantic efforts to save us resulted in absolute failure. As a consequence, my friend and I both *died*, rather painfully, too, as I remember, our last vision being of the distracted Pelathon figuring and computing with all the power at his command.

I repeat, paradoxical though it may sound—we died! At any rate, we both performed an astounding transition from worn-out physical Earthly bodies into another state which I can only presume was beyond death itself. We died with the thought of the beginning burning into our minds.

It was a curious sensation, that passing from bodily trammels. I died a few minutes before Farrington, yet afterward we were not separate entities, possessing new bodies, nor were we relegated to some curious babyhood on another planet.

Instead, our respective mentalities were merged into one! In this state we possessed no bodies whatever, nor had we—or should it be I?—any concept of anything save infinite blackness. Mathematica had vanished from comprehension with its equations and cumulative figures. I was in a void, a dual being, still possessing full knowledge of what had gone before, yet shut off from that state utterly and completely by unknown dimensions and spatial differences.

Perhaps this conviction of voidlike infinity lasted for millennia; perhaps only for seconds. Then, very gradually, there began to seep into my intellect, which seemed quite unimpaired—indeed highly improved—a knowledge of the amazing truth.

Death had changed the order of mathematics relative to the particular bodies, or mathematical solutions, known as Dr. Farrington and myself. Hence we were liberated, existing as thought only, drifting on a tideless sea of intellect toward the central point, the absolute nucleus of all mental creation—where, presumably, Si-Lafnor had already gone.

The more the impression presented itself, the more convinced I felt that it was the truth. Then, after a seeming eternity, gray light began to spread athwart the blackness. My mind focused on that tiny stretch, watching it grow, increase in strength and size, until at last the blackness of infinity had changed to snow-white brilliance.

The sense of movement ceased. I had the impression of being very still. Followed a transient little jerk and a fleeting sensation of pain—then, to my dumfounded amazement, I

was in possession of a body again, unclothed certainly, but nevertheless a body, of such a shape and appearance that it appalled me. I was monstrous, badly formed, like some mad and crazy caricature of an Earthling. Beside me, lying flat on a table of polished metal, was the grotesque creature whom I assumed was Dr. Farrington.

Rather to my surprise I found vocal cords; I spoke with considerable effort.

“Doctor, it *is* you?” I asked quickly, staring at his atrocious face.

He nodded assent, glanced down at himself, then up at the machines that were grouped overpoweringly about us. Thus his gaze moved, until it came to an astounding apparition poised within a clear space between the predominant instruments. It had no shape identical two seconds together. It was an absolute riot of conceptions—I can describe it no other way. One moment it was two-dimensional, then receded into a one-dimensional dot. Afterward it passed into a composite of eight or nine dimensions, hazy, branch arms receding into invisibility as unknown hyperspaces closed about it. Now it was all eyes; now all triangles—changing, warping, shifting. A mad phantasm, a paradox of space and time.

“What—what in hell’s name is it?” I breathed weakly.

“I don’t know,” Farrington muttered. “We died all right—and we live again in these—these horrible bodies. They look as though they’re thrown together!” He stopped. Involuntarily his eyes were chained to the riddle in mid-air before us.

We rose to our elbows, and as we did so there appeared in front of us, blotting out the ceaselessly changing apparition, a composite series of symbols and signs, their basis obviously mathematical. Yet, despite the fact, either by reason of sharpened mentality, or else because they could only be interpreted one way, Farrington and I both read obvious words in them! I am inclined to believe, in this later stage of writing, that they were mathematics applying solely to the figures which had created our bodies, and therefore were quite understandable.

In other words, actual speaking is purely a series of vibrations in air which can be analyzed down to figures of wave length. Here we had the consummate example of the fact. I remember I had a passing surprise when I considered that I was breathing air; that gravitation was normal. Evidently we were on a world of some kind, then we—

Silently we read the messages that paraded so strangely before us.

“You are both solutions in the lowest form of mathematics. Formerly, on the world you named *Mathematica*, the particular figure-formula to which you applied had reached its ultimate solution and you could go no farther. Energy, in the terms of figures, failed you and you died—to use your own version. When those bodies ceased to exist and your minds were liberated, you built up a fresh series of figures—albeit subconsciously—because you died with the determination to reach the beginning, and that very thought built the necessary formula, aided by the machines of *Si-Lafnor*, which were also trained on the conception of moving to the beginning.

“As a consequence, the figures were correct and, after the second division of your minds into separate units again the figures built themselves up upon solution into the crude, overbalanced bodies you possess now and, naturally, brought you here—since that was the original object back of it all.

“I am the original mathematician. There are no figures prior to me. I came out of a realm of *supramathematicas*, out of a time and space beyond your conceiving; a circle that never

began and that will never end—a circle of consummate perfection. That, in mathematics, is myself.

“My purpose? The creation of mathematics, which are actually thoughts. Out of those mathematics I create. I live purely by the law of figures. My object during my ageless existence is to strive toward the ultimate cancellation of *all* figures! Only by that method can I release myself from an eternity of mental and figurative toil. Everything you have seen, that you have thought, that *is*—is of my configuration.”

“So this is the beginning!” I breathed. “And we, incredibly distant creations of your figures, gaze upon you!”

“Yes—but such a state shall not continue. I resent the solutions of my figures appearing before me to question their origin. One other came before you—one Si-Lafnor, another extremely complex series of figures which I originally built a long time ago. My purpose with him was to break him down into fresh numerical values, divide him into new computations, make of him one grand multiplicity. Unfortunately, he had mastered the knowledge of the figures that created him and, by a brilliant process of reasoning, evolved himself into an indivisible, uncancelling sum—thereby securing safety forever! Only multiplication, division and subtraction are possible in figures. Cancellation cannot take place if the figures are built up to withstand it. It is an impossible feat. That is why the figures I originally built up perpetually increase their powers and multiply automatically.

“But with you it is different. There is nothing to prevent me breaking you up into new conceptions. I can destroy your bodies, annihilate the very figures that form your minds, those figures being of a far-advanced order.”

“Which explains, I suppose, why thought cannot be annihilated by ordinary methods?” I asked quickly.

“Exactly. Thought consists of my figures. You cannot destroy thought because I am the basis. Destroy me, and you destroy the infinite and the infinitesimal simultaneously. I wish you no harm. It is purely that my existence depends upon figures. You would both make the bases of very good universes. Your solutions are admirable for the groundwork.”

“Say,” I muttered, glancing uneasily at Farrington, “this glorified proposition in Euclid means business!”

“Do you propose escaping? Purely by my own graciousness you have an atmosphere about you—the concept of a world—of machinery. All purely for your edification. In one second of your very simple time calculation I could change everything—fling you into extinction. Crush you into infinitesimal dust, or transform you into recurring figures that would mean an endless life of anguished computing, striving to find the way back.

“No, my friends. Si-Lafnor was clever enough with his mathematics; so much so that he found the tenth dimension, a problem which apparently had long evaded his solving. But with you it will be a simple task to transform you. After all, why not?”

VI.

The symbols faded. Once again that changing apparition appeared before us, shifting, indeterminable—a thing of angles, figures, and uncanny trigonometry. My brain began to buzz as I tried to follow the integrals and progressions that the being worked out before us. I, who had never been accustomed to anything but fairly ordinary mathematics, was soon lost.

Farrington, though, seemed to understand a trifle more. His terrible face was strained and earnest. Then he spoke, huskily:

“Unless I’m clean wrong, Vernon, he’s arrived at the point where the total of his calculations will divide the figures of which we’re built up into nothing. Come on—we’ll make a material dash for it!”

I needed no second invitation. We had no idea where to go, of course, but anything was better than watching doom in the form of pure figures build up before our very eyes. We slid from the flat metal table on which we’d been lying and rushed toward the door of the place. Immediately, however, a wall of metal manifested in front of us.

We fell back. Machines which moved on ponderous legs came from nowhere and traveled in our direction. Once again the symbols danced before our eyes.

“Why attempt such methods? You cannot defeat my figuring. I will soon have the solution that will cancel you for all time——”

I stopped still, shuddering involuntarily. So did Farrington. I began to feel something tearing relentlessly at my brain and body—yet nothing was visible. With a shock I realized that the original mathematician had reached the stage where the electrons—if I can call them such—comprising the atoms of my body were being changed into fresh numerical values, thereby bringing Farrington and me to the edge of dissolution. Indeed, I think at this stage that we had no electrons in our make-up, but something else more relevant to a complicated agglomeration of advanced figures.

Then something happened. Out of the emptiness before the wall that towered before us a figure merged. My heart leaped for joy as he took on shape.

“Si-Lafnor!” I gasped hoarsely. “Thank goodness! Look, Farrington!”

“Do nothing—stand still,” came Si-Lafnor’s telepathic command—then he and the original mathematician, literally father and son of incredible mathematics, became absorbed in the most terrific mental battle of computation.

Though we could not see the figures that passed between them, we felt the awful force of their conflict. Our bodies were torn and racked with pain as one or other gained the mastery.

Si-Lafnor’s eyes vanished under the bulging contours of his forehead. He stood completely rigid, tussling, struggling, pitting every ounce of his astounding powers against the overpowering figuring of his original computer.

Then something seemed to snap. A sense of delightful comfort suddenly stole over me. The wrenching at brain and nerve ceased. I breathed hard, recovering my strength, and, to my surprise, found that my body was no longer as large and repulsive as it had been—neither was Farrington’s. We had both changed considerably.

Si-Lafnor smiled very faintly as he looked at the changing riddle that hung over us.

“It is over,” he commented. “The original can do nothing. I have transformed you, even as I did myself, into indivisible creations of figures that no mathematical power can dissolve. Not

one figure will cancel. You are safe—forever.”

“Correct,” agreed the symbols of the original. “Si-Lafnor, you win. Not because your mathematics are necessarily cleverer than mine—that would be impossible—but because you evolved a quicker way than I to reach your solution. One day, when I finally solve the greatest problem toward which I am always struggling, you will become the first mathematician. I can do no more. You are indivisible.”

“Well, what happens now?” I asked slowly. “Being indivisible is an advantage, of course, but how do we get away from here?”

“I have found many things since we arrived here at the beginning,” Si-Lafnor replied slowly. “As you are already aware, I arrived at the computation of the tenth dimension, a riddle that had long puzzled me. By its aid space and time foreshorten to a fraction of their original extension. I was indeed working out further problems in the untouchable safety of the dimension when I became aware of your own presence and struggle. I came to aid you. Now I shall take you back to Mathematica. There is no reason why I cannot perform the necessary figures to transport you. I believe we will arrive and find my world only a little older. Besides—I may now be able to return you to your own world.”

Once again he plunged into concentration, and little by little a gray and indeterminable mist began to creep about us, gathering opacity with each passing moment. Presently it infolded us completely. We held each other’s hands, and waited. Si-Lafnor was presently lost to sight completely, but the slow and indisputable changes about us were alone indication of his supreme mental efforts.

The grayness changed to black. We became aware that our bodies were floating free in absolute space, yet there was no sensation of cold. Later we learned that the change in our bodies to indivisibility had rendered us immune to all things—space-cold included. Nothing could annihilate us, unless it be some incomputable figurative system.

The blackness continued. There were no visions of stars and planets or nebulae; they seemed peculiar only to the planetary universes of which that of Earth’s was but one in millions. Lower, in those intra-atomic regions we beheld no such evidences, presumably because we were beneath the microscopically small, shifting in the midst of the abstract called ether.

Gravitation, if there was any, had no effect on us either in that curious foreshortening dimension. Indeed, I am inclined to think that tenth dimension existed purely as a mental conception and was devoid of all the figures that normally make up dimensions, matter and energy.

However, whatever the causes and effects of that strange transition, we ultimately merged back into Si-Lafnor’s original laboratory, there to find a fallen figure lying at the base of the mighty machines that still calculated and operated with endless precision—building, building, into goodness knows what!

“Why, it’s Pelathon!” exclaimed Farrington, running forward, lifting the limp mathematician in his arms. “What’s happened to him?”

Si-Lafnor advanced slowly and looked down at him. Then he shrugged his attenuated shoulders.

“He is neither dead nor alive,” he pronounced. “Somehow, probably in trying to build up certain figures with these machines, he has placed himself in a state of suspended animation, which will last until I can create the necessary divisibility to break the effect. Most

unfortunate for him. Later, I will try to revive him. Presumably not any considerable time has elapsed since our departure. There are your own dead bodies over there, just as you left them.”

Farrington and I glanced at our corpses, then turned away, oddly nauseated.

“My effort now,” Si-Lafnor went on, when Pelathon had been gently laid back on the floor, “will be to return you to your space and time. I cannot return you to the actual Earth, that would be impossible—but I can return you to a world almost identical, thanks to the assistance of the tenth dimension. I will build up another series of figures identical to those that formerly created your universe, and so create another universe. During that time you will be traveling through space and time, through the tenth dimension, and will, if my figures fruitify as I expect, merge on to that world at the appropriate period.

“Also, your bodies will change from these grotesque monstrosities—brought about by haphazard subconscious figuring—into those normal to Earthlings. But remember, you are henceforth indivisible—immortal. I made you incapable of cancellation, and that can never be altered.”

“And when will the return take place?” Farrington asked eagerly.

“In approximately twelve of your Earthly hours you will commence the journey. For that period please do not converse with or disturb me. I must concentrate—deeply.”

VII.

Those last hours on Mathematica were undoubtedly the most remarkable that Earth-born men—or minds—ever spent.

Farrington and I, our natural tiredness revived by Si-Lafnor, stood aside and watched him work. And very amazing work it was, too! We saw the fundamentals for the creation of the second universe take place before our eyes, though how it was done confounded us both utterly.

We saw the mammoth machines responding to the mathematician's every thought.

He sat at the small control board, the droning monsters grouped about him, monsters that were literally the sheer essence of resolved conceptions. They moved; they altered; they created energies, magnetisms, formulas, angles—all manner of composite things, working their unforgettable trceries of master equations and supramathematics on the background of endless abstract. I smiled faintly as I tried to conceive the mind motivating Si-Lafnor, as I tried to fathom the knowledge and concentration he must possess to be able to perform such feats.

Hour after Earthly hour he sat at the control board, unmoving, eyes shut for the greater part of the time, huge dome brightly lighted by the strange, all-inclusive radiation that came from a carmine mist above the titanic hall. Farrington and I could easily have wearied had it not all been so fascinating—then at last the master mind arose and turned to us.

"It is complete," he said quietly. "The figures necessary are computed, and are even now multiplying upon themselves. I have endeavored to reproduce an exact duplicate of the original conception that brought your universe into being. Naturally, while I am still myself part of figures I am not infallible—I am not pure evolved mind like the original mathematician—and for that reason I may have made trifling errors of judgment here and there, but I do not believe they will affect you. You will both move through the tenth dimension to this universe I am building and will arrive there with proper bodies."

A silence fell—then he spoke again, steadily: "Are you ready?"

Farrington and I nodded and moved to the special area beneath the machines which Si-Lafnor indicated.

For a space we stood looking at each other—we, tiny brains from an unimaginably distant world; he, the penultimate intellect of creation itself. Eyes met.

"You have seen much, and learned much," he murmured. "For your own sake, I hope you never return here. Stay in the world you will find—immortal. Through your endless lives try to learn the purpose of these figures. Use them, live with them—*understand them!* If I can revive Pelathon from his unfortunate trance I will transport him back to this world you will find—this second Earth. After that he must work his own way home. I can do no more. And now, farewell."

"Farewell," we answered simultaneously, and watched a living switch depress itself under the force of the master mind's thoughts.

Instantly grayness and gloom were upon us, darkening into abysmal night. Mathematica reeled out of our conception—

Once again the concept of time and space defeated all means of knowing how long our journey through the tenth dimension occupied. We only realized that a universe must be forming as we moved—that the ether outside our dimension must even then be a mass of shifting figures, multiplying, dividing, subtracting, all in perfect invisibility, working out their own inconceivable pattern.

Perhaps æons later we found ourselves suddenly upright in a world from which the gray mist had cleared. We were unclothed, yet possessed of bodies that were indeed Earthly, magnificently proportioned—indeed far better than the bodies we had possessed before.

Above us was the vault of stars—far away in the distance hung the haze of a mysterious mass of angles, and crazy, almost four-dimensional buildings. A city that perpetually changed. Across the sky moved and pulsated strange shapes akin to cylindrical tubes that perpetually widened and contracted and, at times, became completely invisible. Once, one of these enigmas passed over us at a height of perhaps a thousand feet, and vanished in the all-embracing night. The air was warm, almost tropical. I turned to look at Farrington's handsome face.

“Well?” I asked quietly. “What sort of a city do you call that?”

“I don't know,” he answered slowly, staring above him at the stars. Then very gradually he looked back at me.

“Do you know,” he said, “there isn't a single known constellation in the sky! Nor is there a recognizable planet. Venus, Mars, Jupiter—all gone!”

“But what——” I was bewildered.

“We'll see what the city offers,” he interposed in a firm voice, and with that we both set off across the loose soil toward that insane flamboyance in the distance. Perhaps two hours of hard walking, which did not in the least fatigue us, brought us to the cliffs overlooking the city in the valley below.

Almost like Neanderthal men gazing down on modern New York we crouched and stared—baffled, perplexed.

It was a city utterly beyond our conjectures—an unsolvable puzzle in advanced geometry and dimensions. The buildings, in the main triangular in shape, seemed to own the odd property of being able to change their appearance constantly. We could see inside them, round them, all at the same time. We beheld indescribable traffic, and people. Such people! They seemed to be a mass of transfiguring lines and bars that rotated and shifted in mid-air or else moved with stupendous velocity. As to the strange light that hung over everything, we could not even guess at that.

“What——” Then I looked up with a violent start as something touched me on the shoulder. I jumped up in utter astonishment.

“Good night—Pelathon!” I exploded. “Pelathon! How did you get here?”

He shrugged. “An odd twist of time, I suppose, brought about I imagine by one body taking less time to travel in the tenth dimension than two. I have been here some time now—I have a cave up on the cliffs. Thought inference alone told me that you were near, and I came to find you. Needless to say, Si-Lafnor revived me from my accidentally self-inflicted suspended animation.”

“But this place! This isn't anything, like Earth!” I protested hoarsely.

“I know,” he answered slowly. “Somewhere, even as Si-Lafnor expected, he made an error in his figuring—perhaps only one fraction—but in the aggregate total it produced something utterly unlike the world you once owned. This world, what I have seen of it, is a profound

problem in dimensions. I have been studying it. Its peoples are friendless and cruel. They have tried to destroy me, but I escaped them easily—taking with me one or two odds and ends that might be useful. I found stuff for clothing, some material for writing and figuring, and a substance that gives perpetual cold light. It has made my cave life habitable. Food, of course, or sleep, we shall never need again. That to you is novel—to me no different. Only in one thing are we alike now—we are immortal.”

He paused and looked down at the city—saddened, brooding.

“It is a gigantic punishment,” he said at last. “We made a magnificent journey—and this is the price. We are all three indivisible. Nothing can kill or hurt us; that is why I so easily outwitted these people when they tried to destroy me. We have been returned to a world in which we have no part—fugitives of time and space surrounded by untouchable things.”

He said no more but motioned us to follow him.

So ends my story—— Through the days and nights we have sat in this cave gazing down on that mad city below, trying—so far vainly—to understand it. Farrington and I are like Greek gods; Pelathon, too, is much more beautiful. And we are deathless! The grim irony of it!

I have written down my experiences with the writing materials at my command, but I realize now I have come to the end of the ghastly punishment that has been meted out to us.

We are alone—utterly alone—unless Pelathon——

[The end of *Mathematica* by John Russell Fearn]