

The Second Cataclysm

*They still call themselves "men"—
and their name for Tyblani is "earth."*

by Dow Elstar

WE HAVE no chance then, Kor Situ? We must all perish?" "It seems so, mighty ruler of Tyblani. I gave warning two hundred days ago, but no one listened. A few of us could perhaps have burrowed deep into the crust of our planet, where there is a chance for survival. But now there is no time for that."

"And you are sure that there is no other way for us to save ourselves, Kor Situ?"

"None, at least that our limited science could ever apply effectively."

For a full minute there was a tense silence in the vast, cavernous hall. Hard, white light, stabbing from glass globes fixed to the ceiling, spread garishly over the motionless multitude.

Had a man of our era looked into that hall at that moment, he would have felt small sympathy for its occupants, even though they were faced by a plight which to us seems as vague and unreal as a nightmare. They were far from human. Their forms suggested the unthinkable baroques of some remote and ghoulish planet of another galaxy. Few of us would have believed that our earth could ever spawn creatures such as they.

Sluglike and horrible, they crouched in a packed horde on the floor of the chamber, their multiple eyes fixed on their ruler and on the scientist, Kor Situ, who squatted close together on a raised platform.

But in some respects the kinship of these beings of Tyblani with us of today, was remarkably close. They already had ample reason to feel fear; but,

as in the case of humankind, there were many skeptics among them.

Gradually, a rising murmur of doubt and derision replaced their stunned silence. Some one hissed a throaty insult, and others followed suit, until it appeared that in a moment a third of the entire concourse would be heaping abuse on the learned Kor Situ.

THEN, HOWEVER, something happened which restored the scientist to a position of respect. Through the high, slitted windows of the hall stabbed a tremendous blaze of light. An instant later there was a fearful, rolling concussion that made even the solid masonry of the floor vibrate perilously. After that came the roar of sudden wind and deluging rain.

Kor Situ saw an opportunity to convince the doubters, and he was not slow to take advantage of it.

"Nothing but lightning and thunder," he said in the sibilant speech of his kind. "As you all know by the experiences of the last several days, both are exaggerated in intensity to a degree far above normal. I have told you that our sun is on the verge of an explosion. Intense magnetic radiations from it have supercharged our atmosphere. That is why, all over Tyblani, violent electrical storms are raging. Thousands of our race have already been killed. Perhaps within a short time no one will be able to go abroad under the open sky without being instantly electrocuted."

"Tell my subjects more, Kor Situ," the ruler commanded. "Tell them all



Crouching there, with the lurid flares of the storm flickering on his ghoulish body, Kor Situ waited. It was the beginning of the end—

that you told me! The waves that bear words through the ether will carry your voice to the farthest corner of the planet. Proceed!"

"Much of what I can say will be a repetition of what others have said and written," the scientist began, his grotesque body bending close to a small microphone apparatus. "It has long been known that new stars suddenly blaze forth in the firmament. For a short period—usually only part of a year—they burn brightly; then their emanations wane again. They are not truly new stars at all, for they have always been there in the sky, though before and after their period of phenomenal activity it is not usual for them to be visible to our unaided vision.

"Their light-giving capacities are suddenly multiplied hundreds of thousands of times, as the result of their explosion. Their substance is hurled outward with terrific speed, causing them to expand enormously. Later, the force of gravity, inherent in all matter, causes a contraction of the scattered material, and these stars return to a normal, or approximately normal, state.

"Just such a phenomenon is about to take place in our own sun now. As yet, the intensity of its heat and light has increased but little. Yet my observations proved months ago that this catastrophe was coming. Certain fine solar emanations revealed to me subatomic processes whose unnatural violence can have but one result. Within ten days, at best, we shall be burned from the face of this planet."

"And the planet itself—Tyblani," the ruler prompted. "Will it also be destroyed? Tell my subjects your theory, Kor Situ."

"GLADLY, most mighty," the scientist answered. "To me it seems improbable that a world as solid as Tyblani could be disintegrated even by the forces of the exploding sun; though, if

we leap to conclusions, it is easy enough to believe that such a calamity would happen. But I have considered carefully all angles of the question, and I am sure that our planet will at least be able to survive in some form.

"It is true that when the sun bursts, its substance will actually touch the surface of Tyblani. Tremendously heated vapors, hurled outward at a velocity approaching that of light, will envelop this world for many days. But those vapors must necessarily be very tenuous. This is true because, though the sun's volume will be multiplied millions of times, causing the solar sphere to actually fill the orbits of several of its planets, its mass, in spite of this expansion, must obviously remain about the same. There is no outside source of matter for it to draw on; in fact, some minor part of the materials it contains will be changed into energy.

"Tyblani will be bathed in superheated flame, and in inconceivably intense etheric vibrations of every form. But since the gases of the flame will be as thin, almost, as the gases of a comet's tail, their powers of destruction will be limited. Tyblani's oceans will boil away; perhaps the heat will be sufficient to reduce all the water in them to free hydrogen and oxygen. The crust of our world will be fused and even vaporized to a considerable depth; but the vapors themselves, still for the most part retained by our gravity, will shield the deeper, solid crust of Tyblani from the solar radiations. When the nova fire dies down, our planet shall still exist, a hot, rejuvenated, lifeless sphere, such as it once was, shortly after its birth. Its gravity shall have attracted to it much debris and dust from the solar explosion, and enough oxygen, hydrogen, and nitrogen to replace that portion of its original supply of atmosphere and water that was stripped from it during the catastrophe.

"Since the danger that Tyblani will

be completely destroyed is small, I have argued that we might have excavated caverns far under the ground, wherein a few hundred of us could continue to live. We might have laid up a supply of food and water there to last for centuries. Our science of synthesis is rapidly progressing. With plenty of energy in the heated rocks above, and in the eternally molten core below, to draw from, we might soon have learned to manufacture food and all our other necessities from inorganic materials. We might have gradually extended our cavern empire, and increased our numbers. But now this cannot be, for there is insufficient time. We can only go about our business as usual, and try to maintain a philosophical attitude toward our fate."

Kor Situ finished his speech with a dejected sigh.

"You have no more to say, then?" the ruler asked.

"No more," the scientist replied. "And now, most mighty, if you will permit it, I shall take my departure. There is much that I wish to accomplish during the last days."

TO AVOID the milling throng, Kor Situ left the hall by way of an underground passage. Presently he emerged into a broad, mawlike portico that fronted on a rain-drenched street between grotesque edifices of black stone. The spires of those edifices loomed gaunt and eerie into the midnight sky, in which rippled an endless pyrotechnic display of doom-born lightning.

From a niche in the wall the scientist drew an odd vehicle whose two wheels were set in tandem, after the fashion of the wheels of a bicycle. Skillfully, like a bounding mass of live rubber, he vaulted to the padded seat mounted on the mechanism's frame. In response to the forward thrust occasioned by his act, the thing's curious internal-combustion motor, which burned a fuel com-

posed of a gasolinelike mixture of volatile hydrocarbons, awoke to life. Throbbing evenly, the machine bore Kor Situ along a paved way which was protected from the fury of the elements to some extent by an overhanging arcade.

The cannonading of the thunder was incessant. Gusts of hot rain struck Kor Situ's body, making him crouch lower in his seat. If he had been weird before, from the human viewpoint, he was more so now, with the ghastly light flickering upon his wet flesh.

To see a trained beast perform those things which we normally regard as being the natural acts of *Homo sapiens* alone, is always to us something of a miracle. But this great, slimy slug did not have even the friendly, subhuman aspect of a circus animal. He was different and grotesque and unknown, and to this alienness of his was added the fact that the machine he rode, and all that was artificial around him, was the product of the inventive powers of his own kind. No man had had any part in developing the science of Tyblani.

Kor Situ rode on, breasting the storm with a savage fury of impatience and regret. He wasn't afraid of coming events; but that his various researches must be broken off so abruptly, just when the mysteries behind them were deepest and most fascinating, aroused in him a maddening bitterness. His whole being burned with mute and futile protest against inexorable nature; but there was nothing that he could do except to try to make the most efficient use of his every remaining moment. There was one matter in particular, the secrets of which he wanted to see revealed as he had never wanted anything else in his life.

AFTER SOME MINUTES, Kor Situ reached the building which contained his laboratory. Utilizing a spiral runway, he rode to the topmost floor, which was his own private domain. Here

he adjusted certain pieces of apparatus, strange and quaint to our way of thinking, but understandable in the light of modern achievement.

Now he squatted before a small cylinder covered with a whitish substance akin to paper. His outlandish body leaned forward, tense with savage eagerness. A thick, pulpy member of his, fitted with soft, boneless digits, moved a little metal bar—a switch. Electric current flowed through thin copper threads, setting up magnetic fields just as would have happened on our everyday earth. The parts of a queer, complicated electric motor began to hum busily, turning the cylinder.

Other apparatus was also active—devices which have counterparts familiar to us, yet always deviating widely in detail from those things which we know: photo-electric cells, detectors for wireless impulses, generators, engines. Tyblanian science surpassed ours of today to some extent, but in nature both were parallel, as is to be expected. Intelligence, no matter in what diverse shapes it may be cast, attacks its problems according to the rules of logic and experiment; and since natural law is universal and unvaried, results, always, must be similar.

Kor Situ watched the turning cylinder with breathless attention. A little stylus touched it with varying pressure, making a dark line that was sometimes wide and sometimes narrow, depending on whether the stylus was pressing hard or lightly against the rotating paper. Round and round went the line in a low-pitch spiral, as the stylus crept gradually along the bar that supported it.

The process was almost identical to that of our telephotography. The spiraling line was slowly building up a shaded picture or diagram. Kor Situ was elated. For days he had been trying to interpret correctly the delicate radio impulses that he had been receiving from an unknown source. Now,

after much trial and error, he had found the correct synchronization pattern, and was getting results.

Slowly, the simple picture grew. Now Kor Situ could see a large, lightly shaded area which he was sure represented a star at the beginning of a novel outburst. Near it was a small, dark disk, which he supposed was intended to be a planet.

It was true then! Some one or something, somewhere, had also learned of the threatened solar explosion. Could the mysterious source of the radio waves that activated this graphic reproducer of his, be another world? Kor Situ could think of no other answer.

If this explanation was correct, did those entities across space want something of him? Were they trying to convey a plea, information, or instructions vital to both themselves and Tyblani in the coming calamity?

WITH A CARE that allowed him to miss no minute detail, Kor Situ studied the now finished picture. Its mystery, however, was no less deep. It was just a kind of diagram of the solar system to which Tyblani belonged. There were the planets; there was the exploding sun. Nothing more except a few blurs and flaws occasioned by static during transmission. Even these short radio waves coming out of the unknown were not entirely immune to the interference of the tremendous electrical storms that raged over Tyblani.

Kor Situ was extremely puzzled, but still he could attack his problems in a logical manner. If he radioed an impression of the picture back into space again, not just as he had received it, but in such a manner that the spiraling lines that composed it would run approximately at right angles to the original lines, the entities who had tried to communicate with him might not only pick up his broadcast, but they would see,

too, that he had been able to assemble the impulses they had sent out, forming them into the picture they were meant to create.

To put this idea into operation was not at all difficult. Our own modern science could have accomplished the same thing easily. Kor Situ took the paper, on which the picture was traced, from the cylinder, turned it so that its lateral edges were now its bottom and top, and then wrapped and fastened it into position again. Next, he replaced the stylus with a tube that could throw a tiny, threadlike beam of light on the revolving roller, which bore the picture. Finally, he placed an opaque hood of metal over the entire apparatus. In the top of the hood was a sensitive photo-electric cell.

The latter could detect the quantity of light from the tube which each portion of the picture reflected. The cylinder rotated as during the process of reception, the tiny thread of radiance tracing a spiral path around it, just as the stylus had done before. Dark parts of the picture passing beneath it reflected less light to the photo-electric cell than did those which the stylus had not shaded so deeply. Thus the diagram of unknown origin was unraveled for re-broadcasting.

Light impulses became electrical impulses; and the latter, in turn, were amplified, and converted into radio impulses by Kor Situ's powerful transmitter. The picture was being sent out again, but according to a different pattern than the one by which it had been received. The Tyblanian was sure that if his hidden friends were able to detect his wireless waves, they would be able to reassemble them according to his new plan. If they did so they would know that he had received their communication as it was meant to be received—as a picture—and such knowledge, to them, should be important.

THE TASK FINISHED, Kor Situ waited, meanwhile busying himself with a few routine laboratory matters. Maybe the hidden ones would send another picture that would carry on from the point where the first had left off.

After thirty minutes the sound diaphragm of Kor Situ's receiver buzzed briefly, and a strange, incomprehensible voice spoke from it. Uttering a few equally incomprehensible words. Then silence returned, and was not broken again.

Nevertheless, the great slug continued to wait hopefully. Why didn't they, who shared the grim knowledge he had wrested from the sun, continue with the attempt to communicate intelligently? Why—when there was so little time left, and when they had made but a bare beginning?

The scientist hissed what was the equivalent of a curse in his language. Yet he did not give up his vigil, and he knew that if nothing more came to him from the unknowns from out of the mute ether, he would still be keeping watch at the end.

And his brain worked on unchecked, all through that horrible night of wind and rain, and crashing thunder and lightning. The scientist's mind seemed to draw a keener power and scope from the yammering elements that suggested a dozen Thors gone raving crazy.

He thought of a thousand things of scattered origins. Maybe it was some ancient noval outburst that had hurled the planets from the sun. This was, as far as he was aware, a new theory of the birth of worlds. Was it possible? All the planetary orbits lay in approximately the same plane. But who knew? Maybe that vast, creative explosion had been mostly along the sun's equator, projecting the fiery droplets of the planets outward in a disklike pattern. Who could be sure that this was not the way it had happened?

Crouching there with the lurid flares

of the storm flickering on his ghoulish body, and on the weird equipment around him, Kor Situ thought of the things that had been in ages past, and of the other things that now could not be, in the future. There was much in the geologic history of Tyblani that he could not comprehend. He remembered, with a vague puzzlement, a perfect little cylinder of black carbon, reposing now in a museum. It had been found in a deep mine, far below the strata of organic limestones.

Thus his thoughts rambled on, and before he realized it the dawn came. The solar disk, smaller but brighter than the one we know, shone through red streamers of wind-torn cloud. For an hour Kor Situ was busy making observations of it, trying to determine more accurately just when the titanic forces straining within it would burst their bonds. Then, exhausted, he slept.

Eight days passed. During this time storms became increasingly frequent and violent. The atmosphere bore terrific charges of electricity, so that, as Kor Situ had predicted, there was deadly danger in venturing from the protection of buildings not equipped with metal pinnacles and cables to conduct the charges into the ground. The moment of doom was near.

On the eighth day the folk of Tyblani took refuge in the deepest cellars and vaults. Only a few learned ones, knowing that the end was inevitable, whatever they did, stayed on the surface to observe. Kor Situ was, of course, among this bold minority.

HE REMAINED in his laboratory. Almost at high noon on the ninth day, the real catastrophe began at last. At that moment, Kor Situ was crouching directly beneath a window in the roof, through which he could see a large portion of the sky. The sun was directly overhead, faintly visible through the

milling clouds. Things happened very abruptly.

Through the veil of clouds the scientist saw curious, irregular upjettings, like thick, fiery fingers, projecting outward from the solar photosphere. They lengthened, and spread at the extremities, with a motion that was visible, but seemingly slow at this vast distance. The sun appeared to rip open at the center, and through the jagged, widening rift glared an intolerable blue incandescence that the clouds above could scarcely obstruct at all. The radiated heat and light increased with the abruptness of a tidal wave.

Kor Situ, singed and blinded, scrambled out of the path of the sunshine beneath the sky window, and blundered to a lesser window in the wall.

After several seconds his vision was restored enough so that he could see the foliage of fantastic trees, in the city and on surrounding mountain slopes, bursting into flame. The fine filaments which were his ears, detected an ominous hissing. Everywhere, wisps of angry steam were rising from the wet ground.

It was the beginning of the end—only the beginning. What was yet to come would be inconceivable. The gases thrown from the sun had by no means achieved their maximum velocity as yet, and it would be some little time before their first fierce wave of tenuous hell reached outward as far as the orbit of Tyblani. Yet Kor Situ could feel the temperature of the atmosphere around him mounting rapidly. The tingle of electrical discharges made his flesh pucker, as if pricked by a million tiny needles. Kor Situ was prepared for death.

And then, all at once, he noticed an entirely incomprehensible waning of the intolerable solar glare. Blue flames, like monstrous electric sparks, were spurting up from the mountain peaks in the distance. He thought at first that this

phenomenon was nothing but lightning of the kind that had riven the world for weeks; but now he saw that there was something strange about it. Where it vanished in the sky, a blue veil of mysterious fog seemed to thicken and spread. The substance of the fog—if substance it may have been said to possess—grew swiftly denser and more opaque. In a matter of minutes the fearful blob of the exploding sun had faded to but a dim, silvery ghost.

Then it vanished altogether. But there was still light. A soft, milky luminescence, which must have represented only a tiny percentage of the fierce solar rays, sifted through the screen of strange mist that now enveloped the entire firmament, and hung at an indefinite distance above the natural clouds.

What was this miracle that had happened? How had it been brought about, and by whom? Kor Situ crept dazedly to his radio. He moved switches and controls. Generators which he had thought would never be called upon to work again, whirred out their song of power. In a moment Kor Situ was talking with his fellow scientists in various parts of the world. Questions and information flew back and forth amid the growl of static.

Everywhere the same thing had taken place. The strange mist, born of blue flame that leaped from the ground, was world-wide, shielding Tyblani, on its daylight half, from blazing catastrophe, and hiding the stars from view on its darkened hemisphere.

THREE DAYS brought little change in conditions. Destructive storms became less and less frequent, with the waning of the electrical charge in the atmosphere. That was all. Scarce daring to hope, yet optimistic, the inhabitants of the planet took up once more the normal threads of their lives. Theories were formulated as to the na-

ture of the screening mist. It must be something that reflected most of the sun's light back into space, at the same time repelling the rarefied but tremendously heated gases of the solar photosphere.

Kor Situ did not mention his brief contact with outside intellects, though intuition told him that they must somehow be involved with the amazing phenomenon that had saved his kind. But he remained patiently beside his wireless apparatus, keeping his receiving instrument constantly tuned to the wave length which the mysterious ones had employed. That nothing came of his devotion was surely not his fault.

Understanding was brought to him in a different manner. No one saw the arrival of the visitors from the underworld, for the car that bore them penetrated to the surface of Tyblani in a deserted gulch, several miles from the city.

They had no trouble in locating Kor Situ, however, for their direction finders had long ago enabled them to determine exactly the position of his laboratory by means of the radio waves that came from it.

He dropped senseless before the numbing impulses of their weapons, before he knew that his sanctum had been invaded.

They carried him into a slender flying machine. The craft winged its silent way from the roof top of the building in which he dwelt, back to the gulch from which it had come. There, poking its blunt nose up from the ground, was the great drill-like car that had bored its way up from below.

Once more aboard the metal mole, the visitors thrust slender needles deep into the unconscious Kor Situ's flesh. Since the instruments were sterilized and very carefully handled, the injury they caused was negligible. Thus the godlike ones located the Tyblanian scientist's brain. Delicate mechanisms came into play, and

the deepest secrets of Kor Situ's mind were unmasked to his captors.

"Interesting," said one of them mildly. "We should have investigated these folk of the surface centuries ago."

"Now is soon enough, Gorg Willam," another replied. "They have nothing that we want. Their intelligence is of no higher order than that of our ancestors of the first cataclysm, and their science is even inferior to that of the forefathers of our race. Interfering with these simple creatures in any way, or maintaining any permanent contact with them, would doubtless do them more harm than good. It is best that each race or species develop its civilization independently, and on its own initiative. Doubtless an ice age will come to this world when the nova has passed and the sun is readjusting itself; but I think these beings have sufficient intelligence and ingenuity to meet and master any new conditions they may be required to face."

"Perhaps you are right, Fran Anroo," the first speaker replied. "But this individual we have taken for scrutiny—he knew of the approaching solar explosion even before we radioed him our warning diagram, which he interpreted so cleverly and sent back to us in a different form. We need not have troubled with the diagram at all; for, working entirely on his own judgment, he pointed out to his people the danger there would be—the certainty of destruction, rather—for he did not know that the result would be otherwise. As a result, his kinfolk took cover, which was necessary during the first moments of the sunburst. It is a healthy sign of mental progress here on the surface, Fran Anroo. The whole story is written in the memory of our subject."

"You are correct in all that you have said, Gorg Willam," Fran Anroo answered. "Yet you prove my claim of long standing that these creatures are at their best when left alone and un-

guided as much as possible. Of course, I am sympathetic. Of course, I am glad that in protecting our homes from possible annoying circumstances, we also saved these queer, aspiring animals. In many ways they are so like our ancestors of the past. Still, I suppose, it would do no harm to give our specimen here a chance to learn about the older history of his planet."

When Kor Situ of Tyblani regained his senses, he saw bizarre, monstrous bipeds, with gentle eyes, standing around him. Their bodies were muscular, their heads huge and bulging. When they spoke he understood some of what they said, for with their marvelous magic they had stamped a portion of their language into his brain.

FOR SEVERAL HOURS they kept him with them, though they seemed to pay him scant attention. But he could listen to their conversation. Among other things still more miraculous, he learned that far beneath him was a Utopian world of artificial caverns wherein they dwelt. There, now, colossal machines were throbbing to maintain the protective screen around Tyblani. Those machines would be busy for several months at least, until there was no longer any danger from the blasts of the nova.

Kor Situ watched from a window of the metal mole, while these wizards, from a region lying close to the internal fires of the planet set up intricate instruments on the seared soil of Tyblani and took tests of the invisible sun above. Somehow these demigods, though they lived in a buried realm, had discovered the titanic solar threat, even as he. What sort of apparatus had they used to make this discovery through vast distances of solid rock? Or had they testing stations located close to the surface? Or had they some way of predicting, by mathematical means, just when a new nova of the sun would take

place? Humble with awe, Kor Situ ceased to speculate.

At dusk, those of the visitors who had ventured from the subterranean car reentered it, bringing all their equipment with them. Kor Situ was gently pushed from the vehicle. The doors clanged shut behind him, making him feel curiously outcast. A minute later the great mole's propulsive machinery began to grind in reverse. Its nose retreated beneath the surface. The adventurers from below were returning home. Perhaps never again would they visit the outer shell of Tyblani.

Kor Situ, awed, weary, a trifle disappointed at his ejection, yet happy to the point of ecstasy, began his slow, crawling march through drizzling rain, back toward his native metropolis. It was almost dawn before he reached the edge of the city, and secured a two-wheeled cycle on which he rode the rest of the way to his laboratory.

EXHAUSTED though he was, there was one thing which he must accomplish before he could think of sleep. Much incredible information must be made known to the world.

Crouching before his radio microphone, he began to speak.

"Friends, everywhere," he said, "Tyblani is far older than we thought. Today there is life on its crust that is incredibly ancient. But before its time there was other life, antedating, by countless ages, that of our oldest known fossils. That first life thrived, and it produced a race of beings equal to us in intelligence.

"Then came a nova, like the one of now. Warned soon enough, a few of those people of the past bored far down into the planet's crust, and managed to survive the first cataclysm. Every other living thing that was not under their protection perished. The world became as new again, on its exterior. Dust from that other solar explosion settled to its surface, burying all evidence of ancient glories. Then our known biological history began. Here we are the dominant species.

"But the children of the rulers of the past still live in their wondrous, buried cities. Their knowledge and their brain power are beyond our comprehension. Yet they still call themselves 'men,' and their name for Tyblani is 'earth.'"

