

PITTSBURG: A CITY ASHAMED

MCCLURE'S MAGAZINE

 MAY 

LINCOLN STEFFENS'S exposure of another type of municipal grafting; how Pittsburg differs from St. Louis and Minneapolis.

THE END OF THE WORLD, by Professor Newcomb. A powerful story, yet a scientific prediction; pictures by the famous French artist, Henri Lanos.

IDA M. TARBELL on the Standard tactics which brought on the famous oil crisis of 1878.

SIX SHORT STORIES

McCLURE'S MAGAZINE

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OPENING CHAPTERS OF HENRY HARLAND'S NEW STORY

AN OCEAN GRAVEYARD. By P. T. McGrath. A splendid, stirring account of the wrecks and rescues on the terrible Newfoundland coast. Dramatically illustrated by M. J. Burns.

THE LOOKING GLASS. A love story by Alice Brown. Illustrated by Corwin Knapp Linson.

Another of **JOHN LA FARGE'S** important and delightful art essays—this one on Delacroix, Decamps, Diaz. Illustrations in tint.

A LITTLE MATTER OF REAL ESTATE. Another of Myra Kelly's stories of the public schools of the New York East Side. Illustrated by F. Y. Cory.

THE SWIMMING HOLE. A humorous and reminiscent sketch of "the good old days." By Eugene Wood. Capitably illustrated by A. B. Frost.

Another chapter in **MISS TARBELL'S** masterful History of the Standard Oil Company. A full-page portrait (hitherto unpublished) of John D. Rockefeller as he appeared in 1880—the time of his indictment for criminal conspiracy (the subject of this chapter)—will be a feature.

And many articles, stories and poems—all handsomely illustrated.

McCLURE'S MAGAZINE

VOL. XXI

MAY, 1903

No. 1

THE END OF THE WORLD

BY

SIMON NEWCOMB

PROFESSOR OF MATHEMATICS AND ASTRONOMY IN JOHNS HOPKINS UNIVERSITY;
AUTHOR OF "ASTRONOMY FOR EVERYBODY"

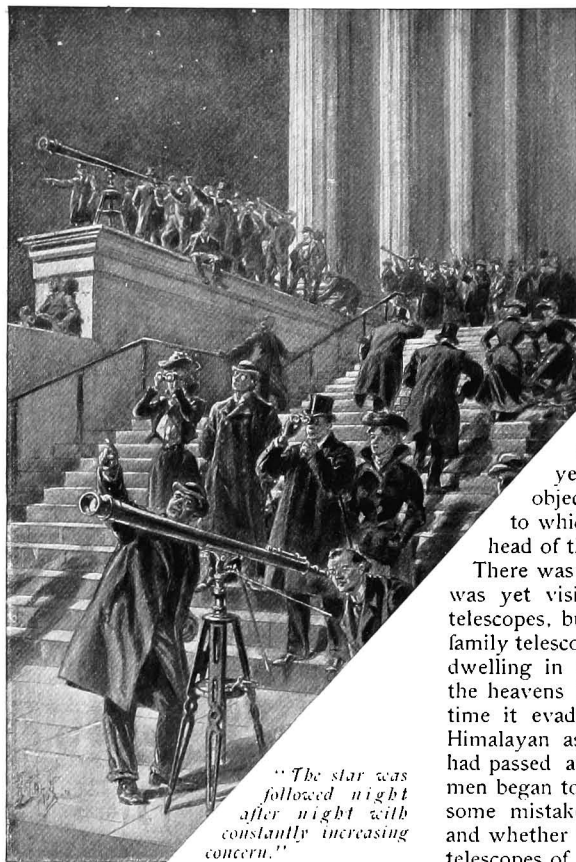
ILLUSTRATED BY H. LANOS

MARS is signalling a dark star."

The world to which this news was flashed from the Central Observatory on the Himalayas had long been dull and stagnant. Almost every scientific discovery had been made thousands of years before, and the inventions for their application had been so perfected that it seemed as if no real improvement could be made in them. Methods of conducting human affairs had been brought into such good shape that everything went on as by machinery. Successive Defenders of the Peace of the World had built up a code of international law so complete that every question at issue between nations was settled by its principles. The only history of great interest was that of a savage time, lying far back in the mists of antiquity, when men fought and killed each other in war. The daily newspapers chronicled little but births, marriages, deaths, and the weather reports. They would not publish what was not worth talking about, and a subscriber often found at his door a paper containing little more than the simple announcement, on an otherwise blank page — "Nothing worthy of note has happened since our last issue." Only one language was spoken the world over, and all gentlemen dined in blue coats with gilt buttons, and wore white neckties with red borders. Even China, the most distant nation of all, had fallen into line

several thousand years before, and lived like the rest of the world.

To find a time of real excitement it was necessary to go back 3,000 years, when messages had first been successfully interchanged with the inhabitants of Mars. To send a signal which they could see required a square mile of concentrated light as bright as the sun, and experiments extending through thousands of years had been necessary before this result could be brought about by any manageable apparatus. Signals from the plains of Siberia had been made nightly during two or three oppositions of the planet, without any answer being received. Then the world was electrified by hearing that return signals could be seen flashing in such a way that no doubt could exist about them. Their interpretation required more study than was ever expended by our archaeologists on a Moabite inscription. When success was at last reached, it became evident by a careful comparison of the records that the people of Mars were more successful watchers of the stars than we were ourselves. It was found that a row of four lights diminishing in intensity from one end to the other, and pointing in one direction, meant that a new star was showing itself in that direction. Some object of this sort had been seen every two or three years from the earliest historical times, but in recent times a star had often been signaled from Mars before even the sensitive photographic plates and keen eyes of our Himalayan astronomers had discerned it.



"The star was followed night after night with constantly increasing concern."

Ordinary comets were plentiful enough. More than 25,000 had been recorded, and the number was still increasing every year. But dark stars were so rare that not one had appeared for three centuries, and only about twenty had been recorded in astronomical history. They differed from comets in not belonging to the solar system, but coming from far distant regions among the stars, and in being comparatively dark in color, with very short tails, or perhaps none at all. They were found to be dark bodies whose origin and destination were alike unknown, each pursuing its own way through the immeasurable abysses of space. It had been found that a certain arrangement of five lights in the form of a cross on the planet meant that one of these bodies was flying through or past our system, and the head of the cross

showed the direction in which it was to be looked for.

After a dozen generations of men had passed away without seeing a body of this kind, it goes without saying that the news from Mars of a coming dark star excited universal interest. Where is it? What does it mean? What is a dark star? The Himalayan astronomers were nearly buried under telegrams asking these and other questions without numbers. They could

only reply that they had not yet succeeded in finding the object, but that the constellation to which the signal pointed was the head of the Dragon.

There was no likelihood that the object was yet visible, even through powerful telescopes, but this did not prevent the family telescope being brought out in every dwelling in the world, in order to scour the heavens for the new star. For some time it evaded the scrutiny even of the Himalayan astronomers. When a week had passed and it had not been sighted, men began to ask whether there was not some mistake in interpreting the signal, and whether it could be possible that the telescopes of another planet were as much better than ours as this failure would seem to indicate. The conviction began to gain ground that the signal had been misinterpreted, and that there was no dark star or anything else unusual coming. But when interest in the subject had about died away, it was suddenly renewed by the announcement that the object had been photographed very near where the signals had indicated it. It was about half-way between the head of the Dragon and the constellation Lyra, moving very slowly toward the East and South.

The problem now was to determine the orbit of the new star, and for this purpose the astronomers began to make the most accurate observations possible. Owing to the slowness of the motion, several days, perhaps two weeks would be required. While waiting for more news curiosity was excited by a new announcement:

"Mars appears to be in a state of extraor-



"Everything combustible . . . burst into flame, stones were crumbled by the heat, towers and steeples fell as if shaken by an earthquake."

dinary excitement. The five signal lights which have been seen from time to time ever since the dark star appeared are flashing in a way never before recorded. We cannot imagine what it means."

Our world could only ask: "What can it mean?" and wait patiently.

The astronomers were much puzzled about the orbit, and a month passed before they could reach a decision on the subject. Then Himalaya sent out an announcement more startling than any that had preceded it:

"The dark star has no orbit. It is falling straight toward the sun with a speed that has already reached 30 kilometers a second, and which is continually increasing as it falls. It will reach the sun in about 210 days."

The first man to see the possibilities suggested by this announcement was the Professor of Physics. Although all the scientific discoveries had probably been made, a single great physical laboratory had been established in which experiments were conducted with a faint hope of something new being learned. The laboratory was placed near the southern end of a peninsula, the site of one of the greatest cities of the ancient world, known as Nee-ork, the ruins of which, buried ages before by an earthquake, were known to extend over many square miles. To the north now stood the city of Hattan, the mighty city of the world, whose well-paved streets, massive buildings, public institutions, and lofty towers extended a day's journey to the north and west, whose wealth was fabulous, and whose sights every man in the world wanted to see at least once during his lifetime. Most of the investigations to which the laboratory was devoted had to be carried on where the temperature was the same from one year's end to another. To bring about this result an immense vault hundreds of yards in extent had been excavated at a depth of more than a hundred feet under the ground. Here was stored what one might suppose to be every piece of apparatus that human ingenuity had invented for making physical researches, and every instrument that men could make use of.

Of course the Professor of Physics, like all the rest of the world, heard that a dark star was going to fall into the sun. His proceedings after this announcement would

have excited curiosity had it not been that the thoughts of men were too much occupied with the celestial visitor to notice his doings. He proceeded to supplement his immense stock of physical apparatus by a kind of supplies never before known to form the outfit of a laboratory. These consisted of flour, fresh wheat, edibles of every kind, and a supply of the seeds of almost every plant known to Botany. The few people who noticed what he was doing gave the subject no attention, supposing that he was merely extending his experiments into the vegetable kingdom. Having got his supplies all stored away, he called his assistants around him.

"I have something to say to you, and the first condition I impose is that it must be kept an absolute secret. Those who are not willing to pledge themselves to secrecy will please retire."

None retired.

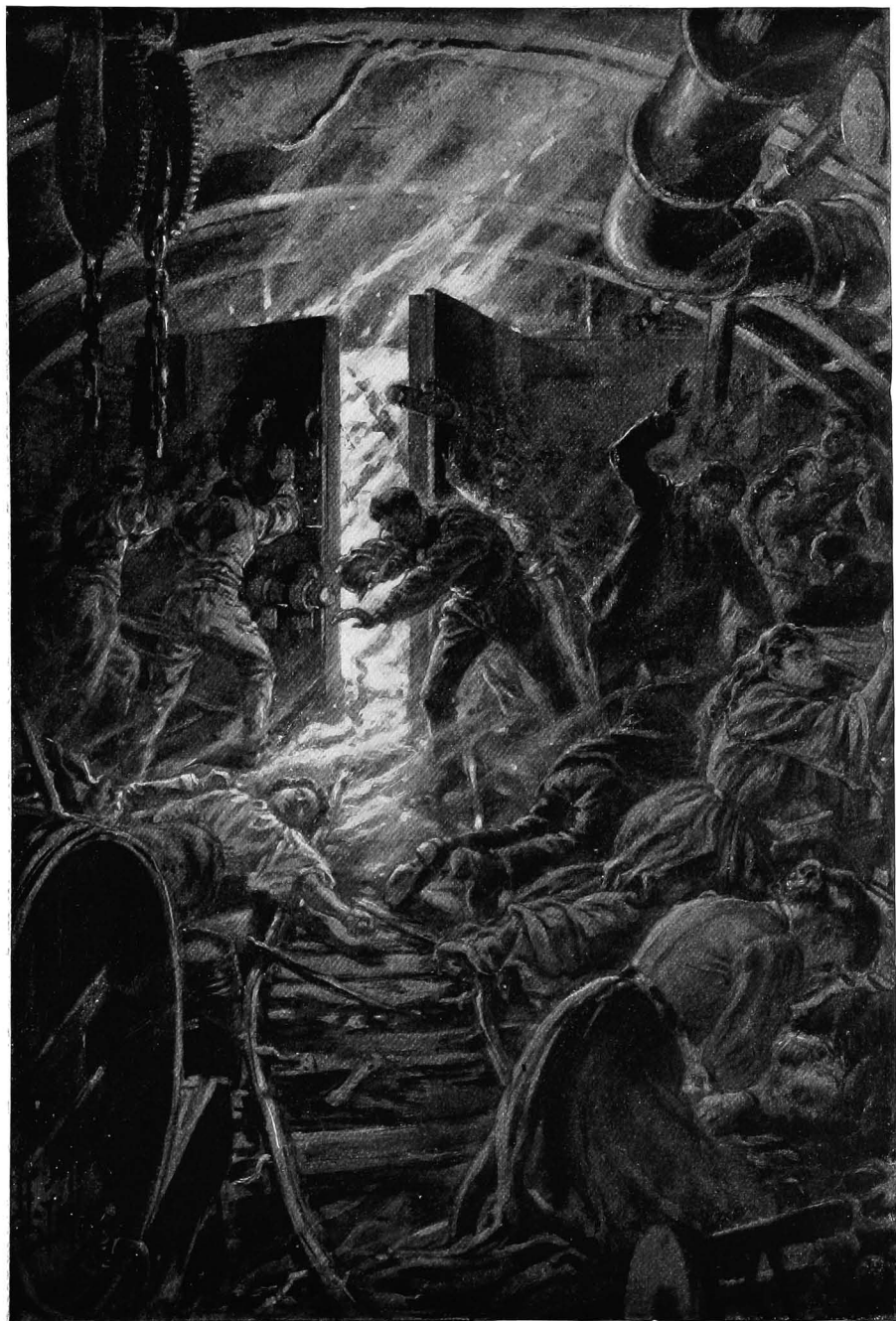
"Will you all hold up your right hands in evidence of your adherence to the pledge which I exact from you?"

All did so.

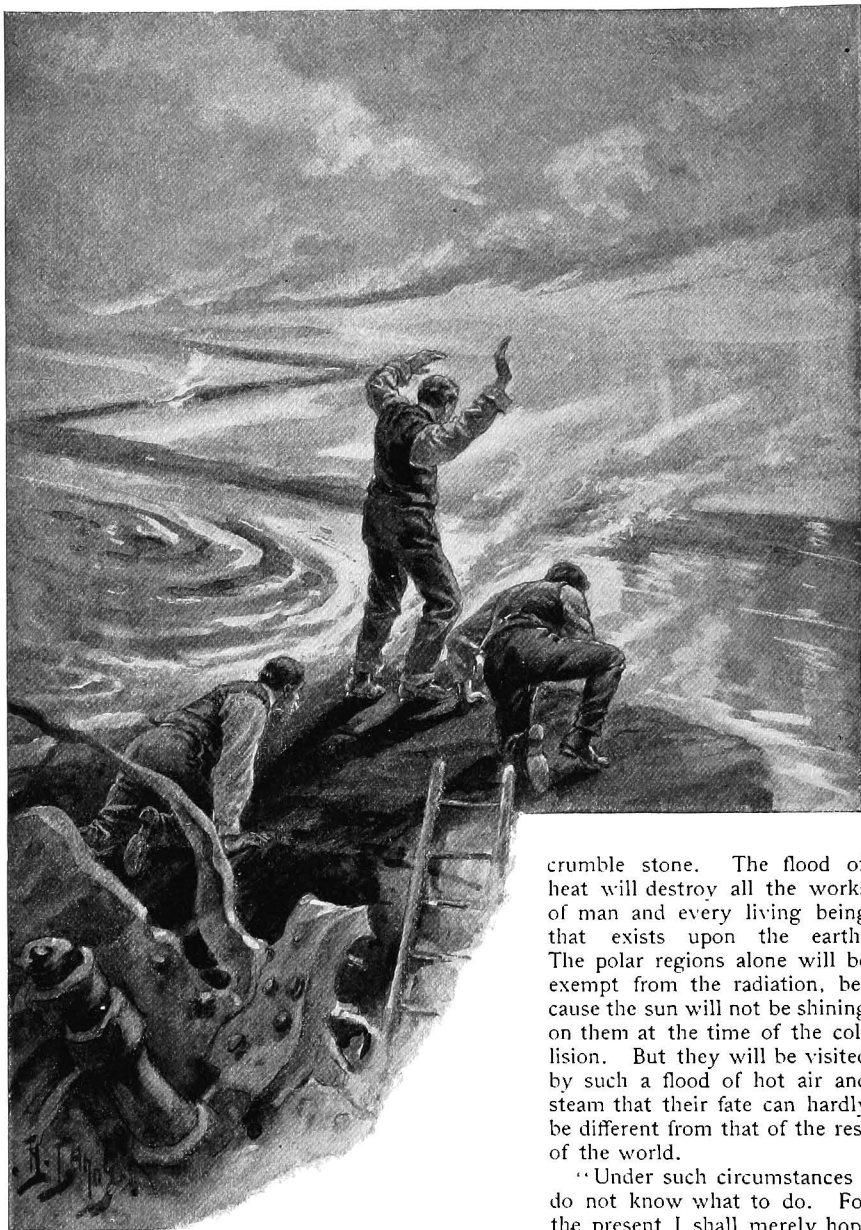
"Now let me tell you what none but ourselves must hear. You all know that from the beginning of recorded history stars supposed to be new have from time to time blazed out in the heavens. The scientific men know that these stars were not really new. They were simply commonplace stars which, through the action of some cause that no one has yet brought to light, suddenly increased their heat and light thousands of times. Then, in the course of a few months, they faded away into their former insignificance, or rather, perhaps, turned into nebulae.

"We have also known that dark bodies many times larger than the earth are flying through space like the stars themselves. Now, my theory is that if one of these objects chances to strike a star it bursts through its outer envelope and sets free the enormous fires pent up within, which burst forth in all their fury.

"Next December one of these objects is going to fall into our sun. Now I do not want to frighten you unnecessarily, but I think we may as well look this matter in the face. If my theory is correct, the light and heat of the sun will be suddenly increased thousands of times. Should this result follow, can there be any doubt as to the consequences? The whole surface



"Crowded together in the confusion of despair."



"Vainly their eyes looked for the great city."

of the earth will be exposed to a radiation as intense as that in the focus of a burning glass, which, you all know, will not only set fire to wood, but melt iron and

crumble stone. The flood of heat will destroy all the works of man and every living being that exists upon the earth. The polar regions alone will be exempt from the radiation, because the sun will not be shining on them at the time of the collision. But they will be visited by such a flood of hot air and steam that their fate can hardly be different from that of the rest of the world.

"Under such circumstances I do not know what to do. For the present I shall merely hope that my theory is all wrong.

At the same time I invite you to be in readiness to bring your wives and families here at the critical moment, so that we can all take refuge in our vaults. If nothing occurs, well and good. Nobody

need know what we have planned. It is not likely that we shall feel it worth while to live if the rest of the world is destroyed. But we cannot decide that question until we face it. Keep in readiness and say nothing, that is all I have to advise for the present."

During the month that followed the Professor was very much perplexed as to whether he should make his fears known. Against doing this was the consideration that the world could not help itself, and it had better go on to the last moment in ignorance of what was coming. Physicians make it a point of honor not to inform their patient that he has a fatal illness, why should the race be apprised of its inevitable doom? The mental suffering endured in the mean time would be useless, no matter whether they were saved or lost. Why make them suffer to no purpose?

But, in spite of this reticence on his part, the world was much concerned, especially by the signals from Mars. These, instead of ceasing as always before, after one or two nights, now flashed out incessantly night after night. The Martians must be trying to tell us something of unprecedented importance. What could it be? The Professor of Physics was loudly called upon to know if there was not really some danger from the dark comet falling into the sun. The calls became so pressing that he was forced to make some sort of a reply.

"While it is impossible to state with certainty the effect that will be produced by the fall of the dark star into the sun, it is only right to say that it may possibly be followed by an increase in the sun's radiation, which will have reached its height in two or three days, and may continue abnormally great for some weeks. It will therefore be prudent to guard against the possible consequences of an increase in the sun's heat. The roofs of houses, and all combustible objects exposed to the sun's rays, should, as far as possible, be protected by a non-combustible covering. Food and clothing liable to be injured by the heat should be protected by being stored in cellars."

The Professor of Logic in the University of Hattat put all the data bearing on the subject into equations which he proceeded to solve, and then announced his judgment on the view of the Professor of Physics.

"Ten thousand years of recorded experience has led to the conclusion that the sun is one of the most stable bodies in the universe. During all the years through which meteorological records have extended there has not been a change of a single degree in the annual amount of heat radiated to the earth. In favor of the view that a sudden change will be produced by any cause whatever we have only a doubtful physical theory, sustained by no experience whatever. It is, therefore, not logical to be frightened by the prediction of the Professor of Physics, especially when he is himself in doubt about the correctness of his own view. Yet, in view of the magnitude of the interests involved, the prudence of the suggestion made by the Professor cannot be questioned. No harm can be done by taking every possible precaution."

A torrent of dispatches now poured down upon the Professor of Physics from every part of the world wanting to know whether his mathematical theory of the case was really well grounded. After all, was not the Professor of Logic right, and was it not unreasonable to suppose that an order of things which had continued, probably, for millions of years should be so suddenly changed? He could only reply that his theory had never been verified in any known case. He was glad to find his view in doubt. The main fact on which it was based—that the new stars which blazed up every few years were not new, but old stars which had suddenly burst out from some inscrutable cause—he purposely kept in the background.

While this discussion was going on, the terrible object which was darting toward our sun remained for some time invisible in every telescope but the great one of the Himalayas. In a few weeks, however, growing brighter as it came nearer the sun, it could be seen in smaller and smaller telescopes, and at last was clearly made out by every watcher of the heavens. Two months before its occurrence the time of the catastrophe was predicted to a minute by the Himalayan astronomers. It would be in the afternoon of December 12th, after the sun had set in Europe, and while it was still shining on all but the northeastern portion of the American continent and on most of the Pacific Ocean. The sun would have set to regions as far east as Labrador,

and would be about an hour high on the middle portions of the Atlantic coast. The star was followed night after night with constantly increasing concern. As each evening approached, men indulged in a vain hope that the black star might prove a phantom—some ghost of the sky which would disappear never again to be seen. But this impression was always dispelled when night came on, and the telescope was pointed. The idea of an illusion vanished entirely when the object became visible to the naked eye, and was seen night after night without any telescope at all.

Every night it was a very little brighter than the night before. Yet there was nothing in the object itself that would excite alarm. Even in the most superstitious age of the world people might never have noticed it, or, if they had, would only have wondered how the star happened to be there when it had not before been seen. Now, however, the very slowness of the increase inflicted a slow torture upon the whole human race, like that experienced by a Chinese prisoner whose shaved head is made to feel the slow dropping of water. What is hardly noticeable at first gets farther and farther beyond the limit of endurance. The slowness with which the light of the star increased only lengthened the torture. Men could scarcely pursue their daily vocations. Notes went to protest on a scale that threatened universal bankruptcy. When December approached it was seen that the fall toward the sun was becoming more rapid, and that the increase in brightness was going on at a greater and still greater rate. Formerly the star had been seen only at night. Now the weird object, constantly growing larger, could be seen in full daylight, like some dragon in the sky.

As December approached the thoughts and sentiments of their remote ancestors, which had been absent for untold ages, were revived in the minds of men. They had long worshipped the invisible, beneficent, and all-pervading Power which informed the universe and breathed into its atoms the breath of life. Now this power became a remorseless Judge, about to punish the men of the present for the sins of ancestors during all time.

December forced its way in, and now the days were counted. Eleven days—ten—to-morrow nine only will elapse before the

fate of the world will be decided. It required nerve to face the star; men shut their eyes to it, as if the unseen were non-existent. Those who dared to point the telescope saw it look as large as the moon to the naked eye. But the mild and serene aspect of our satellite was not there—only a fierce glow, as that of the eye of a beast of prey.

Seven days—six days—five days—fiercer glowed the eye which in waking hours belonged to a being breathing naught but vengeance. Even in sleep men still in imagination saw the eye and felt such terrors as might be inspired by the chase of malignant and pitiless demons of the bottomless pit. They lived over again the lives of their ancestors who had been chased by wild beasts.

Three days—two days—reason began to leave its seat. The insane rushed madly about, but the guardians of the peace heeded them not. In the streets men glared into each other's eyes, but no word was necessary to express the thought.

The last day dawns: to-night—what? Calm and still was the morning; mildly as ever shone the sun, all unconscious of the enemy ready to strike him. His unconcern seemed to calm the minds of men, as if he meant to assure them that nothing was to happen. They plucked up courage to look with eye and telescope. The sun, unmoved as ever, advanced toward the West, the hours were counted—now the minutes.

At every telescope some watcher found the nerve to see what would happen. Every minute the malignant eye grew brighter and glared more fiercely; every minute it could be seen nearer the sun. A shudder spread over the whole city of Hattan as the object seemed to touch the sun's disc. A moment of relief followed when it disappeared without giving any sign. Perhaps, under the fervent heat of the sun, the star had dissolved into the air. But this hope was speedily dashed by its reappearance as a black spot on the sun, slowly passing along its face. Those who considered the case now knew that we were merely looking at the object as seen between us and the sun, and that it had not yet fallen into the latter. For a moment there was a vague hope that the computations of the astronomers had, for the first time in history, led them astray, and that the black object would continue its course

over the sun, to leave it again like the planet Mercury or Venus during a transit. But this illusion was dispelled when the dark object disappeared in a moment and its place was taken by an effulgence of such intensity that, notwithstanding the darkness of the glass through which the sun was being viewed, the eyes of the lookers-on were dazzled with the brightness.

No telescope was necessary to see what followed. Looking with the naked eye through a dark-glass a spot many times brighter than the rest of the sun was seen where the black object had just disappeared. Every minute it grew larger and brighter. In half an hour this effulgence, continually increasing and extending, was seen to project away from the sun like a fan or the tail of a comet. An unearthly glow spread over the whole landscape, in the light of which pebbles glistened like diamonds. By the time the sun had set to the Eastern States its size seemed to be doubled and its brightness to have increased fourfold. Before it set on the Pacific coast the light and heat became so intense that every one had to seek the shade.

The setting of the sun afforded a respite for the night. But no sooner had it grown dark than a portentous result was seen in the heavens. It happened that Mars, in opposition, had just risen in the East, while Venus, as the evening star, was seen in the West. These objects both glowed—Venus like an electric light, Mars like a burning coal. Every one knew the cause. Shining by the reflected light of the sun, their brightness increased in the same proportion as the sunlight. It was like seeing a landscape by the light of some invisible conflagration. Its very suggestiveness added a new terror. The beholders could imagine what results were being produced on other continents by the rapidly increasing conflagration, and awaited in calm despair the result when our central luminary should again come around to our longitude.

The earth, continuing its revolution, exposed the oceans and continents in succession to the burning rays. When the sun set at San Francisco the heat was still not unbearable. But from Asia and Europe came the most portentous news through the period of what, for them, was day, while

on the American continent it was night. In China and India men could only remain out of doors a few minutes at a time. In the afternoon all had to flee from the heat and take refuge in their houses.

Yet worse was the case in Europe. For a time detailed dispatches came from London. The telegraph offices had all been removed to the cellars of the buildings in which they were located, and men were trying to store everything combustible where the sun's rays could not reach it. Every fire-engine in the city was called out to sprinkle the roofs of the houses. Notwithstanding these precautions, at eleven o'clock a roof in Cheapside took fire, and soon after fires broke out here and there in nearly every quarter. By noon the whole city seemed to be in flames, the firemen fighting heat above them and around them. It would soon become impossible for a human being to live in the streets.

A few minutes later came the news that sudden relief had been experienced. A violent gale came in from the Atlantic, bringing with it a torrent of rain, which, for the time being, extinguished the flames. But a new horror was now added. The wind increased to a hurricane of unexampled force. Houses were everywhere blown down and roofs were flying in mid-air, exposing everything in the interior to the flood of water.

About 3 p. m. it was announced that the sun, having dissolved the clouds with its fervent heat, had again shone forth hotter than ever, and that the telegraph offices would soon have to be abandoned. Not another word was heard from the European side until night. Then it was announced that the heat had again been followed by a torrent of rain, and that, the sun having set, another respite had been obtained. The damage done was incalculable and the loss of life frightful, yet hope would have survived had it not been for what might be expected on the morrow.

The American continent, forewarned, undertook the most vigorous defense possible. Before the sun rose every fire-engine in Hattan was in place ready for action. Everything combustible in the city was covered with woolen cloth and sprinkled with water. The possibility of doing something occupied all minds, and after the sun rose men fought the heat with the courage of despair. Fiercely

though the sun poured down its flood of fire, an engine was ready to extinguish the flames wherever they burst forth. As in Europe, they were soon aided by floods of rain. Thus passed the day, while the sun shed a fiercer heat with every passing hour.

The scene while the sun was setting filled all minds with despair. The size of our luminary was multiplied so many times that it was an hour after the lower edge touched the horizon before the upper edge had set. When it finally disappeared the place of twilight was taken by a lurid illumination of the whole heavens, which still left the evening brighter than an ordinary day. Cosmic flames millions of miles in extent, rising from the sun, still appeared above the horizon from time to time. Even at midnight a sort of aurora, tenfold brighter than any that had ever been recorded, seemed to spread over the sky in rising sheets of fiery vapor, which disappeared at the zenith. The trained eye of the Professor of Physics watched the scene from the iron door of his vault. He knew the cause. The exploded sun was sending forth its ions with a velocity almost comparable with that of light to every part of the solar system. In the midst of the illumination the planet Mars could still be seen glowing with supernatural brightness, but no word came from the Himalayan Observatory as to any signals it might be sending to us. Communication from other continents had entirely ceased, and the inhabitants of the whole American continent awaited the coming of what they knew must be the last day.

After midnight, although the ions were flying thicker than ever, a supernatural light seemed to spread over the landscape. The very contrast to what was expected to come in the morning added to the depression and terror. If any vain hope was entertained that the sun might, during its course over the Pacific Ocean and Asia, abate some of its fiery stream, it was dispelled when, shortly after three o'clock, the first sign of the approaching luminary was seen in the East. Still thicker the ions flew, as a bright radiance, far exceeding that of the evening before, heralded the approach of what had always been considered the great luminary, but was now the great engine of destruction. Brighter and brighter grew the east-

ern horizon, until, long before the actual sun appeared above it, the eye could no longer endure the dazzling blaze. When, an hour later, the sun itself appeared, its rays struck the continent like a fiery flood. As they advanced from the Atlantic to the Pacific everything combustible which they struck burst into flame, stones were crumbled by the heat, towers and steeples fell as if shaken by an earthquake. Men had to take refuge in caves or cellars or beneath any covering which could protect them from the fierce heat. Old and young, rich and poor, male and female, crowded together in the confusion of despair. The great magnates of commerce and industry, whose names were everywhere familiar as household words, on whose wealth and power all the millions that inhabited the continent had looked with envy or admiration, were now huddled with their liveried servants beneath the ruins of falling houses, in the cellars of their own homes, in the vaults of their banks, or under any shelter which could protect them from the burning of a thousand sins.

The Professor of Physics, with his assistants, could only look through a crevice in the covering of his vault and see the fiery radiance which was coming from the East. When the covering grew so hot that he felt refuge must soon be taken in the lowest vaults, the sun was suddenly cut off by a rising cloud of blackness coming in from the Atlantic. The whole ocean was boiling like a pot, and the rising steam was carried over the land by a gale produced by the expansion of the air over the ocean. Moving with inconceivable velocity, the gale passed over the continent, sweeping before it every vestige of human work that stood in its path. Even the stones of the buildings, cracked and pulverized by the heat, were now blown through the air like dust, and, churned with the rain, buried the land under a torrent of mud. The lightning played incessantly everywhere, and, if it did not destroy every being exposed to it, it was only because no living beings survived where it struck. Constantly thickening and darkening clouds poured down their storm of rain upon the ruins. But no relief was thus afforded to the mass of cringing humanity which remained protected in vaults and cellars. The falling flood was boiling hot, scalding to death every one upon whom it fell. It

poured through cracks and crevices, flooding cellars, saturating the ruins of buildings, and if a living being remained it scalded him to death.

The Professor and his official family were, for the time being, saved from destruction by the construction of their subterranean chambers. The heat and the wind had effaced every structure at the mouth of the cave, and driven them into the lowest recess of their vaults. Against the iron doors which walled them in the flood pressed like the water against the compartments of a ship riven in two by a collision. The doors burned the hand that touched them, but the boiling water leaked through only in small streams.

The few survivors of the human race here huddled together could only envy their more fortunate fellow-men who, in the sleep of death, had escaped such an imprisonment as they now suffered. Had the question of continuing to survive been put to a vote, all would have answered it in the negative. Hope was gone, and speedy death was the best that could be prayed for. Only the conscience which had been implanted in the race through long ages prohibited their taking their own lives. They had provisions for two years, and might, therefore, survive during that period, if the supply of air and oxygen should hold out. For producing the latter both material and apparatus existed in the vaults. The reflection that such was the case was painful rather than pleasurable. While they did not have the nerve to let themselves be smothered to death, they felt that the devices for prolonging their lives, to which instinct compelled them to resort, could only be the means of continuing their torture. Electric light they had in abundance, but by day or night nothing could be done. They were in the regions of eternal night, except when they chose to turn on the current. From time to time one or another, moved more by the necessity of doing something than by any real object, examined the doors of the cave to see what changes might have taken place in the pressure of the water against them. Long after the latter had ceased to trickle through the cracks the doors continued hot, but as time passed—they could not say whether days, weeks, or months—they found the doors growing cooler.

They at length ventured to open them.

A sea of mud, knee-deep, but not quite at a scalding temperature, was found in the passages outside of them. Through this they were at length able to wade, and in time made their way to the open air. Emerging, it was impossible to say whether it was day or night. The illumination was brighter than anything ever known in the brightest day, yet no sun could be seen in the sky. The latter seemed filled with a nebulous mass of light, through and over which the clouds of ions were still streaming like waves of fire. The temperature was barely endurable, but it was no worse than the stifling closeness of their subterranean abode.

The first effect of the outer air was to produce an impression as of waking from a dream. But a glance over the landscape dispelled this impression in a moment. What they saw must be reality, though awful beyond conception. Vainly their eyes looked for the great city. No city, not even a ruin was there. They longed in vain for human help; not an animated being was in sight. Every vestige of man and his works—it might even be said every vestige of the work of Nature was gone. On three sides were what seemed great rivers of slime, while, toward the North, the region which had swarmed with the life and activity of the great world-center was a flat surface of dried clay, black sand, or steaming mud, in which not even an insect crawled. In the thick and vaporous air not a bird warbled its note. To return to their dungeons was like a prisoner returning to his cell. Farther they must go in a search for some familiar object or some sign of humanity. Is there no telegraph to send a word of news? No railway on which a train may run? No plow with which the furrow may be turned? No field in which wheat can be sown? These questions were asked in silence; had they been asked aloud not even an echo would have answered. When the Professor had stored seeds and provisions in his vaults it was with the thought that, if the worst should happen, he and his companions might repopulate the earth. But now every such prospect dissolved away.

As their strength ebbed, a holy calm spread over the souls of all. The Professor found words:

"Such is the course of evolution. The sun, which for millions of years gave light

and heat to our system and supported life on the earth, was about to sink into exhaustion and become a cold and inert mass. Its energy could not be revived, except by such a catastrophe as has occurred. The sun is restored to what it was before there was any earth upon which it could shed its rays, and will in time be ready to run its course anew. In order that a race may be renewed it must die like an individual. Un-

told ages must once more elapse while life is reappearing on earth and developing in higher forms. But to the Power which directs and controls the whole process the ages of humanity are but as days, and it will await in sublime patience the evolution of a new earth and a new order of animated nature, perhaps as far superior to that we have witnessed as ours was to that which preceded it."