

The LOST COMET

- By Ronald M. Sherin -



But with the disappearance of the sun, twilight did not ensue. Instead, a weird, phosphorescent brilliance took its place. The awful proximity of the cometary mass was now fully apparent. It occupied over a quarter of the entire sky. In the center, the disk of the nucleus could be clearly discerned, while the glowing coma shot out by the expulsion of light seemed nothing less than the fiery breath of some dragon of antiquity.

I.



IN the library of a small observatory, two men were seated before a table. Before them was spread out a huge chart, upon which rested several large and well thumbed star catalogues bearing various dates and titles. The elder of the two men, whose strikingly intellectual countenance indicated a mind of no ordinary capacity, and whose age might have been anywhere between forty-five and sixty, was busily engaged in drawing geometrical diagrams and comparing his results with a row of figures which lay before him. His companion, a tall dark man, still in the prime of life, was gazing anxiously at the outspread chart, apparently endeavoring to satisfy himself upon some point of which he was uncertain. Anyone possessing an elementary knowledge of astronomy, would at once have recognized it as a chart of the solar system drawn upon a large scale; and if his knowledge of celestial mechanics extended a little further, he would have known the curious wavy lines about the central part of the diagram to have been the orbits of more than a hundred comets which had at some time in the past visited the solar system.

Presently the mathematician drew a mark upon the chart, dropped his pen, and for a moment gazed at his companion in amazement and wonder. The latter spoke at last: "It is true, then, this thing which we had both expected, and yet dared to hope false. Are you sure there isn't still some possibility of error in our calculations?"

"My friend," replied the other suddenly rising from his chair with an air of impatience, "the result of tonight's work cannot be in error unless the new science of mathematics to which I have devoted twenty years of my life, is false. But perhaps you doubt the truth of my new system of cometary geometry?"

"No," said his companion eagerly, "I shall never doubt that, professor; for although an unbelieving world refuses to recognize the greatest mathematical genius that has lived upon this planet since the time of Newton, I, Jean Bourget, humble star-gazer and visionary though I am, salute you in the name of Urania, the immortal muse of astronomy. Never, since the first demonstration, have I doubted; the laws of the new geometry have appeared to me as inexorable as those of nature herself. In short, dear master, you have only to speak. My part shall be to listen, to believe and to obey."

"Attend, then, to what I am about to relate," replied Professor Montesquieux, for such was his name. "You of course know that Biela, an officer in the Austrian army, accidentally discovered a new comet on the evening of February 27th, 1826. This comet was carefully observed by contemporary astronomers, and it was soon assigned a period ranging between six and seven years. Between 1826 and 1845 it made two regular appearances, but in the

latter year it was seen to separate into two distinct parts.

"True to its old period, the comet returned in 1852; but this time its components were over a million miles apart. Then it disappeared. But in 1872, after it had twice failed to reappear, there came from the very region of the cometary path one of the most brilliant meteor showers ever recorded in astronomical history. Klinkerfues of Berlin assumed this display to be due to a direct encounter between the disintegrated comet and the earth; but, strange to say, the mysterious visitor was shortly afterwards observed to be retreating towards Theta Centauri in the southern heavens.

"Now the question was, what had become of Biela's comet? Where had it gone? Astronomers with but the most crude and elementary mathematical science at their command, naturally were obliged to accept a simple answer. In fact, all they had to say was that the comet had conveniently disintegrated. This explanation was simplicity itself, and who would be the wiser? Assuredly not the public; for were not the public always delighted with that which least taxed their power of comprehension? Consequently, the memory of Biela's comet has died, except in the minds of a few observers who understand the meaning of the late November meteor showers, which occur at regular periodic intervals coinciding with the former period of the comet."

As Montesquieux paused, Bourget asked: "And these showers do not explain everything? Do they offer no proof of the comet's disintegration?"

"Ah, my friend," resumed the professor rapidly, "I perceive that you are but little acquainted with the deeper mysteries of cometary geometry, even though your intentions are excellent. Proof indeed! What does the November meteor shower prove except

that this miserable fragment of the great comet continues to follow the path of its ancient ellipse, showering the earth with a few infinitesimal particles during perihelion? But I tell you that is not the real comet; for the principal part of Biela's comet never disintegrated! And our learned geometricians, with their

play circles, their hyperbolas, their parabolas and their curved planes, what do they know about the laws of cometary geometry? Do they think that nature must necessarily follow their childish lines? I, Alphonse Montesquieux, denounce them all. They have scorned, ridiculed and rejected the laws I have revealed, but the day of reckoning is close at hand.

"Now listen to this: when Biela's comet divided in 1845, the smaller fragment continued in its old course; but the main body was deflected and changed its orbit. A real mathematician would have perceived this during its last appearance in 1852, when the two nuclei were already over a million miles apart. But Biela's comet is at last coming back, and it will strike the earth exactly upon

MOST of us have heard about comets, but very few of us have ever seen one. As is well known, there has been a great deal of superstition about comets in the past, and the most dire things have been predicted, when one of them approached the earth sufficiently near to become visible to the naked eye. In the past, comets have been associated with pestilences, wars, and other great calamities, much of this, of course, being based upon superstition. The present story by our new author is excellent for any one who wants to brush up his knowledge of comets in general with a quantum of good fiction thrown in for good measure.

the vernal equinox, six months from today! My calculations cannot err: I have mathematically deduced its greatly elongated orbit and proved the point in which it must appear within a second of arc. Taking into account the speed of the earth's orbital revolution around the sun and the point where the approaching comet must intercept the terrestrial orbit before reaching perihelion, I find that a collision is inevitable. The earth, which has revolved unmolested in space for perhaps a billion years, is at last to receive a sudden visitor!"

"And the result of this collision," inquired Bourget, "will be what? Many astronomers have held that a comet's mass is not sufficient to cause serious damage to the earth. But even if we were to proclaim this news from the press, we should be doubted, for as we have demonstrated this evening, the highest telescopic power is inadequate to reveal the comet's presence, even though we know its right ascension and declination with certainty."

"True," replied Montesquieux thoughtfully, "and the public would not remember the 'wonder comet' of 1843, which Boguslawski observed to possess a tail 600,000,000 miles in length and traveling at the rate of 100,000 miles per second, thus approaching the speed of light itself. Neither would they remember the remarkable comet of Lexell, which missed the earth by scarcely 1,500,000 miles on July 1, 1770. Do you know what would have happened if this comet had crossed the terrestrial orbit twenty-two hours sooner? The earth travels nineteen miles per second or 68,400 miles per hour. A period of twenty-two hours therefore represents approximately 1,500,000 miles—a narrow margin to say the least—but with my comet, or Biela's comet, whichever you prefer to call it, there will be no such escape. And do not think that comets are so harmless as optimistic astronomers teach. The density of comets, like that of planets, varies with age and chemical constitution. The coming comet possesses a nucleus of considerable density, as its attractive power and gravitational resistance clearly prove. All comets contain carbon, hydrogen, nitrogen and oxygen, but the relative proportions in which these elements are compounded are not known; consequently there can be no certainty regarding the effect of cometary gases upon terrestrial atmosphere and organisms. My opinion, however, is that these elements, combined with a new substance which I strongly suspect to exist within comets, would be absolutely fatal to organic life based upon amorphous carbon. The conclusion, therefore, is evident: terrestrial humanity is about to come to an end, even though the earth itself is not totally destroyed."

Bourget gazed at the professor for a moment in silence. Finally he spoke: "I believe you; I cannot doubt. But what is to be done?"

"Our duty," resumed Montesquieux, "is to do all that lies within our power to warn the public. If chemists could only be made to believe, perhaps even yet there might be time for the discovery of a means of protection against the cometary gas. However, I shall advise the press of my conclusion tomorrow, and in the interests of humanity I shall again risk humiliation by applying for a hearing before the National Academy of Science. With your assistance, I shall at once draw up my report,

which must be presented at the next meeting of the Academy ten days from this date."

A few moments later Professor Montesquieux was rapidly dictating, while Bourget, who acted in the capacity of secretary, wrote hurriedly upon a paper which lay before him.

II.

TWO days after the interview described in the preceding chapter, the following account appeared in the morning edition of *La France*, a leading Paris daily:

**"SAVANT PREDICTS END OF WORLD
Claims Lost Comet Which Vanished in 1852
About to Return and Destroy Earth;
Scientists Pay No Attention
to Warning"**

"Paris, Oct. 23.—Professor Alphonse Montesquieux, long known as an eccentric mathematician and astronomer, has announced the startling news that the earth is due for a sudden collision which will occur upon the exact date of the vernal equinox, March 21, 1931. The professor's amazing theory is based upon the division of Biela's comet, which occurred in 1845. Records show that the comet reappeared in 1852 with its component parts already 1,200,000 miles apart. It has never been observed since that date, although some astronomers believe that it was seen disappearing shortly after the brilliant meteor shower of 1872.

"The accepted theory has been that the comet had disintegrated, and this explanation is apparently borne out by the meteor showers that are regularly received when the comet's return is due. Montesquieux, however, believes that the larger portion of the comet was deflected and changed its orbit into an elongated ellipse with a period of seventy-eight years, and by the aid of his new 'cometary geometry' (a creation of his own), he claims to have demonstrated that the cometary path exactly coincides with the earth's position at the vernal equinox.

"We hasten to add that no corroboration of this wild theory has been received from scientific authorities. Upon receipt of the communication, reporters were immediately sent to interview several well-known astronomers residing in the city, who were unanimous in pronouncing the whole affair to be either a crudely planned hoax or the creation of a madman.

"It is said that Montesquieux's collaborator in this investigation is one Jean Bourget, an astronomer of doubtful standing, and that the pair have actually had the presumption to apply for a hearing before the National Academy of Science. Those acquainted with the professor's previous activities inform us that he was once accorded the privilege of reading a paper upon his new geometry to the same assembly; but the whole proceeding was so ludicrous that his hearers could not restrain themselves until the reading was over, whereupon Montesquieux retired in disgust, vowing never to enter the Academy again. There is little doubt that his second request will be refused, and there are already serious doubts regarding the professor's sanity."

THE day following this learned announcement, which was repeated in substance by the press all over the continent, Dr. Beauvais, president of the French Academy of Science, received the following communication:

Montesquieux Observatory
October 24, 1930.

Sir:—

I address you, not as one colleague to another, but in the name of the French nation and humanity. No other incentive could have moved me to the step I am taking. Two years ago I was publicly insulted by the august body which you represent. I then vowed never to return, but now I appeal for a hearing. Biela's comet is returning and the destruction of humanity is certain if preventive measures are not taken immediately. Your duty is clear. There is no time to lose; the proofs are in my possession and I shall expect an answer without delay.

Alphonse Montesquieux.

Now Dr. Beauvais had already seen the announcement in the daily press, and there was only one sentence that had made a strong impression upon his mind,—that regarding the professor's sanity. Consequently, when he had finished reading the extraordinary letter which had just been delivered to him, his countenance assumed a thoughtful expression. But his thoughts were far away from Biela's comet; for he was thinking only of the professor. "Strange man," he reflected, "a valuable brain gone mad and forever lost to science. But with his undeniably great scientific ability, what terrible destruction might he not be capable of doing should his deranged fancy take another turn. Should he be disappointed in his present hallucination, I fear he might take revenge by doing incalculable damage to the nation and even to humanity itself. Clearly, something must be done, and a refusal would only augment his insanity and leave him at large. No, he shall be admitted to the Academy; but I will be prepared. Fifteen minutes before a committee consisting of myself and the leading astronomers of the nation will be sufficient to test his absurd claims and show his derangement. And then I shall have a special council of alienists prepared to examine him. If the result be as I expect, I will see that he is immediately confined in an asylum for the insane, where he may propound his theories in safety, without danger to the public peace."

ONE week later the National Academy of Science was in session. True to his determination, Dr. Beauvais had called together the leading astronomers and mathematicians of France, and Professor Montesquieux had been granted fifteen minutes in which to present his theory to the learned assembly. The last speaker was just finishing his paper; when he was done, it would then be the professor's turn to speak.

Dr. Beauvais was fully prepared. Upon his right was seated Henri Valière, director of the Paris Observatory; upon his left was René Beauchamp, the leading mathematician of France. In an antechamber of the building a selected group of mental

specialists was waiting. Professor Montesquieux, accompanied by Jean Bourget, was seated in a conspicuous position in the upper end of the hall.

At length the speaker concluded. There was silence. The president rose, fixed his eyes upon the professor, and proceeded in his most majestic tone: "Alphonse Montesquieux, you have applied for a hearing before this assembly. You have been granted fifteen minutes in which to state your case. Proceed."

Professor Montesquieux arose, and without wasting time upon formalities, began:

"Gentlemen: Assuming two celestial objects whose common parent moved in an ellipse to be the results of an internal explosion, what orbits would they be most likely to follow? You will remember that, in mathematical researches upon the orbits of asteroids, it was universally assumed by astronomers that in case the minor planets were the remaining fragments of the ultra-Martian planet required by Bode's law, their orbits would, at some time in the past, have intersected the point where the explosion occurred. However, as investigation proved that such intersections had occurred only in relatively few cases, the existence of the hypothetical planet was considered disproved.

"In the point which I wish you to consider, I appeal to the same inexorable law of celestial mechanics. When Biela's comet divided in 1845, the same principle was involved. In 1852, when the comet reappeared, it was evident that the orbit of each nucleus had been changed; for the twin comets were already 1,200,000 miles apart. Further proof of this orbital change was furnished by the earth's collision with the disintegrated cometary fragment in 1872. We may assume, however, that as regards celestial distances, the orbit of this minor nucleus continued virtually the same, showering the earth with its debris at regular periodic intervals.

"But what became of the major nucleus? And, above all, what would have been the nature of its orbit? Some of you already know that, so far as celestial phenomena are concerned, I conceive both the parabola and the hyperbola to be physical and mathematical impossibilities. Cometary geometry allows of only one orbit,—the ellipse, so long as the nucleus is free from serious gravitational perturbation. Now, in accordance with the theorem first adduced, it follows that the divided fragments of Biela's comet must eventually pass through a common point of intersection. Let A'A represent the diameter of the original ellipse; let X be the point upon the orbit where the comet divided into the fragments B and C, and you will find that C, which has the more elongated orbit, must finally intersect the path of B at X'. X', gentlemen, is the precise point in space this planet will occupy at the vernal equinox next March. A collision is inevitable. The mathematical proofs of this catastrophe are here available for your inspection, and I strongly urge that suitable measures be taken to discover a means of protecting humanity against the poisonous gases which the impending collision will produce. My time is up. I thank you."

At this point, Professor Montesquieux walked to the president's chair, handed him the report which he had prepared, and quickly resumed his seat.

The impression produced upon the assembly by

ths discourse they had just heard would be difficult to describe; but upon every countenance the same expression was visible. Stupefaction, wonder and amazement were written clearly upon the face of each member. Dr. Beauvais slowly took up the paper, and, after a momentary glance, handed the sheet to the mathematician at his left.

This learned gentleman, after scrutinizing the professor's calculations with a puzzled air, leaned confidentially toward the president. "Mad," he whispered, "these insane scribblings can be nothing else than the creations of a madman. I refuse to consider the matter further. If your measures are prepared, I advise that you proceed with them immediately."

The professor had made a fatal error, which could hardly have been avoided even if it had been foreseen. Being a mathematical genius, he had for years scorned the applied mathematics of his time and had evolved a new and revolutionary system from the realm of pure mathematics. Consequently, his symbols, although relatively simple, were intelligible only to himself and Bourget. Indeed, the conclusion which he had reached by the new method could not have been deduced or even expressed by ordinary mathematical symbols. It was, therefore, hardly surprising that a mathematician of the old school should utterly fail to grasp the meaning of the calculation. Professional pride, however, would not permit this fact to be recognized, and so like many another innovator, Montesquieux was to pay dearly for his temerity.

The president's features assumed a determined expression. Rising and beckoning to the professor, he said: "Monsieur Montesquieux, this matter must be discussed privately and at greater length. Will you have the kindness to follow me into the adjoining room?" Without suspecting the plot which had been laid against him, the professor rose from his seat and followed Dr. Beauvais out of the hall.

Two hours later the name Alphonse Montesquieux was officially registered in a secluded institution for the insane which was located a few miles outside of Paris.

III.

IN the latter part of February the astronomical world was on the "qui vive." On the twentieth of the month an English amateur astronomer named Huntington, had observed, while walking home during the late hours of the evening, a sight which caused him to stop short and gasp for breath. In the constellation Cassiopeiae, within three degrees of the spot where Tycho Brahe's famous temporary star had appeared in 1572, was a brilliant nova, already of the second magnitude. Realizing that his long desired opportunity to make his name known in astronomical history had arrived, the young man had rushed to the nearest telegraph station and hurriedly written the following message to the Greenwich Observatory:

LONDON, FEBRUARY 20, 1931
 "SECOND MAGNITUDE NOVA JUST AP-
 PEARED NEAR KAPPA CASSIOPEIÆ."
 HUNTINGTON.

That night telegraph lines and cables were kept

busy by communications among observatories all over the world. Telescopes and spectroscopes were immediately turned upon the nova. And then a startling thing occurred. When the first large telescope was directed toward the new star, the astronomer rubbed his eyes in bewilderment; for instead of showing as a mere bright point of light as stars generally do, the diameter of this strange object increased tenfold when viewed through the telescope. An examination of the nova's spectra revealed another puzzling peculiarity. The majority of novae are either of solar type A or B—that is to say, white or blue stars of small density. But the spectrum lines of *Nova Cassiopeiae* seemed to indicate a solar type of class F or G, although there were many features which did not correspond with the composition of these stars.

Was the new visitor comet, planet or star? This was the question which astronomers were everywhere endeavoring to answer. Although some of the spectrum lines suggested a cometary nucleus, no definite coma or tail had been visible, and in consequence this explanation was abandoned. The theory of a new planet was entirely too fantastic for consideration. Consequently, the nova must be a new type of star, closely analogous to Nova Persei of 1901, which was surrounded by a luminous ring nebula. When, a few days later, the object was observed to be increasing in size and encircled by a nebulous halo, this explanation was greatly strengthened, for did not the nebula in Nova Persei expand in radius almost three seconds of arc per day? This theory was universally accepted by the entire scientific world.

In the meantime some amateur astronomer of a religious turn of mind had started the rumor that the celestial visitor was nothing less than the Star of Bethlehem returned to announce the coming of the Millennium, which millions of eager souls had so long been anxiously expecting. It was, in fact, the famous star seen by the Magi 1931 years before, and which had been observed in 945, 1264, and again in 1572 by the astronomer Tycho Brahe.

As the sensational always travels fastest and makes the best news, this wild rumor was given wide circulation. Religious sects founded upon the speedy approach of the Millennium were in the greatest excitement. In such communities all work was abandoned, ascension robes were prepared, and frenzied prayer and exhortation became the order of the day. Crowds of wild-eyed men and women began to roam the streets, chanting weird psalms and entreating passers-by to repent, fast and pray in preparation for the approaching Day of Judgment.

THE effect of all this upon the public mind soon became noticeable. Even conservative persons were at last becoming nervous, for the nova was undeniably increasing in size and brightness. In spite of the cold, large crowds of people could be seen watching the strange star on every clear evening. Nearly three weeks had passed since the discovery of the nova on February twentieth. Within a few days it had passed from a second magnitude star to a brilliance far exceeding that of Sirius. Astronomers were frankly puzzled. Each night they expected to find a decrease in the nova's mag-

nitude, in accordance with the usual fluctuations of novae. However, instead of declining, its brilliance steadily increased. To obtain an accurate parallax of the star required some little time, and although a few rough attempts had already been made, the results were far too startling to admit of serious consideration.

In London, the sky had been heavily overcast for several days, and the interest created by the phenomenon had almost disappeared in the ordinary course of human affairs. Only the astronomers were aware of the nova's progress, and they had no desire to arouse what they considered needless anxiety in the public mind.

But on March sixteenth, a most extraordinary thing happened. A sudden wind had sprung up early in the morning, and as all London was going to its daily occupations, a rift occurred among the flying cloudbands. And there, in broad daylight, shining brightly in the northern heavens, was Nova Cassiopeiae! City dwellers do not often waste their time in contemplation of the heavens, and for a few moments the sight was unnoticed. But a laborer who was obliged to lift his gaze in order to view some work being carried on in a building overhead, was the first to see it. For a moment he did not move, staring blankly. Slowly, without uttering a sound, he pointed toward the north. His companions, attracted by his strange attitude, gathered around him and looked in the direction he was pointing. Many who doubted the testimony of their own senses, rubbed their eyes and looked again. The Star was still there, its radiance causing it to appear a veritable miniature sun.

The news spread quickly, as if carried by a hidden electric current. Entire streets were blocked; in many sections of the city all traffic had suddenly come to a stop. The cries of excited and hysterical women mingled with the clanging of tram-cars and the roar of motors. The windows of the great buildings were filled with thousands of heads. On the morning of the sixteenth business was paralyzed, and it was not until well into the afternoon that order was restored and men could continue their work. And even then, things were far from being normal. A strange feeling of uneasiness was in the air, and among the authorities some concern was felt lest the morning's excitement might result in a panic during the night.

In order to allay the nervousness of the public as much as possible, a statement was drawn up and signed by the Astronomer Royal of England. This proclamation, of which several thousand copies were immediately posted in conspicuous places, informed the people that although the size and brilliance of the new star were certainly unusual, many novae had been known to act strangely in the past and there was no cause whatever for alarm. It also announced that the object must be at least two or three hundred light years distant, so that the light they saw probably left its starting point during the days of Queen Elizabeth. In short, everything was explainable upon purely natural grounds, and there was, therefore, no possible danger to fear.

With the exception of a few sensational sheets, this notice was printed by the evening papers, together with other remarks of the same nature. Thus reassured, and the clouds having reappeared,

people went home to their dinners feeling rather sheepish over their previous anxiety.

But another surprise was in store for them; for that evening the sky completely cleared, and behold! the nova's light exceeded even that of the moon. The city was illuminated almost as brightly as during the murky London day. Despite the assurances of the astronomers, the effect was ghastly. That night millions of the city's inhabitants stood gazing at the strange phenomenon and speaking to one another in subdued and frightened tones. The effect of the proclamation had worn off. The people were not so certain of the astronomers' infallibility.

What had occurred in London had happened in nearly every other city in the world. Paris, Vienna, Berlin, Leningrad, Rome and New York had all been shaken by the sight of the new star. Observatories, colleges and weather stations had been flooded with inquiries. Each day the press contained some new note of reassurance from the authorities.

The authorities, however, were no longer very sure of themselves. In all of this time, no one had thought of Biela's comet or Professor Montequieux's prediction; but now that the date of the vernal equinox was almost at hand, an astronomer of the French Academy who had heard the professor's warning, voiced the opinion that the nova *might* be the predicted comet. This suggestion, which was at first ridiculed, gradually gained ground, and by the nineteenth of March, two days before the vernal equinox, the scientific world knew with certainty that the visitor was actually a comet approaching perihelion at a rapidly increasing speed.

It was at first intended that the news should be confined to scientific circles and not be made public, but as such news usually does, it soon leaked out and was made known to an already badly frightened world. Business was suspended. The evening of the nineteenth and the morning of the twentieth saw the most startling scenes ever witnessed among civilized people. Sleep was unthought of. Even the necessity of eating and drinking was forgotten. Churches, newspaper offices and centers of learning were filled and surrounded by fear-stricken mobs, eagerly snatching at the most wild and impossible rumors.

Early on the morning of the twentieth, the French Academy had hurriedly assembled at a notice from its president. As the scientists took their seats, their faces appeared drawn and haggard; yet there was no sign of fear. These men, who realized more fully than the crowd outside the real nature of the peril, were nevertheless calm and attentive. Dr. Beauvais slowly rose to address the assembly. His face was pale and deep circles were around his eyes, but his calm and self-assurance were perfect. Never had he appeared more worthy of the high position which he held.

"Gentlemen," he began, "at this, which is perhaps our last meeting, I have only one sentiment to express,—regret. I have failed in my duty, and the fault is solely my own. The only man capable of predicting the impending catastrophe was too great a genius for us to understand. Only one thing remains for me to do,—to make what restitution I can to the man I have so greatly injured. I go,

gentlemen, to the side of Alphonse Montesquieux, the world's greatest mathematical genius and the glory of the French race. Those who wish may follow."

IV.

PROFESSOR Montesquieux had taken his confinement quite philosophically, for he was given complete freedom in the establishment and he was certain that in a few months his prediction would be fully vindicated. Jean Bourget had been the professor's constant companion during the latter's retirement, and the two had spent many pleasant hours in perfecting the new mathematics and watching the approach of Nova Cassiopeiae after it had become visible. The professor had, moreover, followed the trend of events through the columns of the daily press, and while he was naturally moved to compassion at the panic caused by the approaching collision, he was nevertheless intensely interested in the results which this collision would produce. This sense of agreeable expectation at the approach of an impending catastrophe is peculiar only to the genuine man of science, and would be wholly unintelligible to the man of the world. The professor would have gladly given his life or done anything else in his power to avert the collision and save humanity, but as he could do nothing further, and as the catastrophe was no fault of his own, he felt a lively professional curiosity in the coming event.

Professor Montesquieux had expected a last moment visit from his scientific colleagues of the Academy, and in consequence he was not surprised when he saw several motor cars draw up in the driveway outside and his old enemy Dr. Beauvais step out of the foremost machine. In view of his victory and the approaching destruction of them all, the professor had lost all feeling of rancor toward his old enemies; indeed, he experienced a sort of professional pity for their ignorance. It was, therefore, with a smile of welcome that he met Dr. Beauvais at the door of the apartment.

"Alphonse Montesquieux," said the president simply, "can you forgive me?"

"Yes," replied the professor with some emotion, "I do forgive you most freely. The fault was mine as much as yours, for had I been less stubborn and put my calculations in more understandable form, the present situation might never have occurred. However, it is now too late for regrets. Let us lose no part of the mighty spectacle about to be presented to our eyes. I have a small telescope installed here which will serve for any observations we may care to make. Paris, I understand, is panic-stricken. Undisturbed observation would there be an impossibility. Let us remain here undisturbed, where science may observe. If the disaster is not complete, our observations may be of great value to the future."

The setting sun was just disappearing over the western horizon, its golden rays showering the earth for perhaps the last time in its history. But with the disappearance of the sun, twilight did not ensue. Instead, a weird, phosphorescent brilliance took its place. The awful proximity of the cometary mass was now fully apparent. It occupied over

a quarter of the entire sky. In the center, the disk of the nucleus could be clearly discerned, while the glowing coma shot out by the expulsion of light seemed nothing less than the fiery breath of some dragon of antiquity.

The professor had calculated the comet's speed when near perihelion at not less than 100 miles per second. His observations showed that the nucleus was now approximately 2,500,000 miles distant from the ecliptic, its course being in a direct line with the earth's position at the vernal equinox. As the comet was traveling at the speed of 6,000 miles per minute or 360,000 miles per hour, it would strike the earth's orbit in about seven hours. The earth, moving at the rate of 68,400 miles per hour, would traverse the remaining 478,000 miles separating it from the equinox in exactly the same time. The collision, therefore, would be due at one o'clock in the morning, when the vernal equinox would have been reached.

The scientists watched through the long hours in almost unbroken silence. Awe and interest were mingled upon their faces, yet even now there was little fear. Trained in the observation of nature for years, they were not to be terrified by her manifestations.

By midnight the whole northern sky seemed to be on fire. The few first magnitude stars which had been visible in the early evening, had long since faded from sight, and the earth was now illuminated by a ghastly radiance apparently exceeding even that of sunlight. The atmosphere had at first felt sultry, and this had given place to steadily increasing heat.

In a small church located a short distance away, the bells were tolling. Inside devout peasants were lying paralyzed with fear. Heroic priests, upheld by their faith, were administering the last sacraments. But there was little response. As usually happens in cases of extreme fright, panic had been succeeded by temporary paralysis of the nervous system.

At five minutes to one, Professor Montesquieux and his companions witnessed the most striking spectacle ever recorded in the history of the world. The sky was now one complete ball of flame. Due to the intense heat and noxious cometary gases, the air was suffocating. Swarms of red and yellow meteors were everywhere striking the earth. Two minutes later the professor was blinded by a thousand brilliant streaks of light, and the heavy building reverberated as if it were undergoing a severe bombardment. Suddenly a terrific concussion was felt. The scientists were thrown violently to the floor. In the mind of Professor Montesquieux, everything turned red and then changed to blackness. He lost consciousness.

WHEN he awoke the first object of which he was aware was the bandaged head of Dr. Beauvais, who was leaning over him in eager solicitude. The room was illuminated by the feeble rays of a flickering wax candle. The majority of the men were still reclining where they had been thrown by the shock.

"And the comet?" inquired the professor as soon as he was able to speak.

"The earth," replied Dr. Beauvais solemnly, "is

saved. By an act of Providence the central nucleus of the comet missed the terrestrial surface by a distance which could not have exceeded 300 miles. The concussion we felt a few moments ago was due to debris emitted by the coma. The danger is now past. Much damage has undoubtedly been done, but nothing has occurred that cannot be repaired within a few month's time. And there, my friend," he continued, suddenly pointing to a broken window, "is the last I hope we shall ever see of this mad comet." And high in the southern heavens, its tail now clearly visible, was Biela's fast retreating comet, plunging headlong into space.

For a few moments the professor was lost in meditation. Finally he spoke. "Gentlemen," he said quietly, "I have made a serious and unforgivable mistake. This deviation in the comet's path is wholly accounted for by the perturbation caused in passing the Jovian orbit. How this could have been overlooked in my calculations I cannot conceive; but I offer both you and the world my most humble apology. And to think of the untold suffering and

panic I might have prevented had I but foreseen this. But let the blame and the humiliation both be mine."

"But my dear Montesquieux," interrupted the president impatiently, "what madness is this? Do you not realize that your prediction has justly entitled you to be considered the foremost mathematician of the world? Think of the glory this will reflect upon France. Alphonse Montesquieux, the French Newton! The new mathematics will revolutionize the world!"

"No," replied the professor gravely, "I have failed. Although I rejoice in the escape of humanity, I cannot return to the world. The world soon forgets, and in reaction from its panic it will claim revenge. I should soon be ridiculed and perhaps even be accused of having caused the panic by my false predictions. No, my friends, I cannot return. I intend to stay where I am. You were right in placing me here, and I shall remain.

And the professor kept his word.

THE END.

THE FATE OF THE POSEIDONIA

By CLARE WINGER HARRIS

(Concluded)

superb figure stood and gazed into the deep velvety blue of the sky, the others following the direction of their leader's gaze.

Involuntarily I too watched the welkin where now not even a moon was visible. Then within the range of my vision there moved a great object—the huge aerial gyroscope,—and beneath it, dwarfed by its far greater bulk, hung a modern ocean-liner, like a jewel from the neck of some gigantic ogre.

Great God—it was the *Poseidonia*! I knew now, in spite of the earthly appearance of the great ship, that it was no terrestrial scene upon which I gazed. I was beholding the victory of Martell, the Martian, who had filled his world's canals with water of Earth, and even borne away trophies of our civilization to exhibit to his fellow-beings.

I closed my eyes to shut out the awful scene, and thought of Margaret, dead and yet aboard the liner, frozen in the absolute cold of outer space!

How long I sat stunned and horrified I do not know, but when I looked back for another last glimpse of the Martian landscape, I uttered a gasp of incredulity. A face filled the entire vaporous screen, the beloved features of Margaret Landon. She was speaking and her voice came over the distance like the memory of a sound that is not quite audible and yet very real to the person in whose mind it exists. It was more as if time divided us instead of space, yet I knew it was the latter, for while a few minutes of time came between us, millions of miles of space intervened!

"George," came the sweet, far-away voice, "I loved you, but you were so suspicious and jealous that I accepted the companionship of Martell, hoping

to bring you to your senses. I did not know what an agency for evil he had established upon the earth. Forgive me, dear."

She smiled wistfully. "My parents perished with hundreds of others in the transportation of the *Poseidonia*, but Martell took me from the ship to the ether-craft for the journey, so that I alone was saved."

Her eyes filled with tears. "Do not mourn for me, George, for I shall take up the thread of life anew among these strange but beautiful surroundings. Mars is indeed lovely, but I will tell you of it later for I cannot talk long now."

"I only want to say," she added hastily, "that Terra need fear Mars no more. There is a sufficiency of water now—and I will prevent any—"

She was gone, and in her stead was the lesring, malevolent face of Martell. He was minus his skull-cap, and his clipped feathers stood up like the ruff of an angry turkey-gobbler.

I reached instinctively for the dial, but before my hand touched it there came a sound, not unlike that of escaping steam, and instantaneously the picture vanished. I did not object to the disappearance of the Martian, but another fact did cause me regret; from that moment, I was never able to view the ruddy planet through the agency of the little machine. All communication had been forever shut off by Martell.

Although many doubt the truth of my solution to the mystery of the disappearance of the *Pegasus* and of the *Poseidonia*, and are still searching beneath the ocean waves, I know that never will either of them be seen again on Earth.

THE END.