



A SCIENTIFIC ROMANCE.

By GEO. C. WALLIS.

Illustrated by R. W. WALLACE.

I.—SIGNS IN THE SKY.

"IT'S queer," said Harrison, resting his elbows on the table meditatively. "The scientific world has been living for years in the comfortable belief that Kepler's and Newton's laws were inviolable, and that predicting the places of the planets at any instant was only a matter of correct calculation—and all at once some of the planets get hundreds of miles out of their track. Either Kepler and Newton were wrong, or something very strange has happened to the poor old Solar System."

We were in Harrison's private observatory waiting for the sky to clear. I lit a cigar carelessly.

"Let's hear the details," I said. "I must confess I've been too busy with other things lately to have time to read up the technical papers. Seems to be a big fuss about things, anyhow."

"Big fuss! I should think so—and there will be a bigger one still if this sort of thing goes on. When the Solar System begins to get behind schedule time, it's serious. It's been going on for over a week now. Only last night Saturn was about a whole degree behind his proper place. Uranus was even more, and as for Neptune we've had to re-discover him. To tell you the truth, Milford, I'm getting a bit scared. According to all long-established mathematical law, any such perturbation of the planetary movements would have a great effect on the orbit of the earth, would perhaps—nay, almost certainly—so upset the balance of the Solar System that it would go to everlasting smash. But the earth hasn't budged an inch out of her way, nor Mars, nor Jupiter—at least, we gave him the benefit of the doubt over the last observation—and here

are the outer planets slowing down. Why, with their loss of momentum, they don't fall into the sun, I can't make out. And everything else, so far, seems as per usual. It looks to me as though we were being held back from chaos by a bond that might break at any time. And now you know as much as I do, and I hope you'll get to sleep to-morrow."

"Daresay I shall," I answered. The news did not seem so terrible to me as to Harrison and the other astronomers, who saw its significance with scientific eyes. "The sky looks pretty much the same to us ordinary mortals, and will do to the end, I expect, no matter what extraordinary things are going on. But it's getting clearer. Let's have a peep. What's on view?"

"There are hundreds of telescopes at work now," said Harrison, thoughtfully, unscrewing a cap as he spoke. "We've arranged a plan of campaign between us—a sort of bureau of celestial information—and I'm one of about twenty who have been deputized to watch Mars. If he varies a millimetre from his expected position, I have to wire it to the exchange. He's in the field now, and both moons are just visible. Bend down."

I placed my left, and strongest, eye to the bright dot of light at the end of the long tube, and saw the ruddy planet with its two small moons. I saw the familiar cloudy markings, the well-known snow-patches at the poles, and fancied that I detected, even as I looked, the movement of rapid Phobos—that active little satellite which contrived to get round Mars in less than eight hours. I was very interested at first, as I have always been in telescopic views, but soon grew tired of the constrained position, and

made way for Harrison. He was busy with observations and calculations for some time, and at last he looked up with something like a sigh of relief.

"Mars all right, then?"

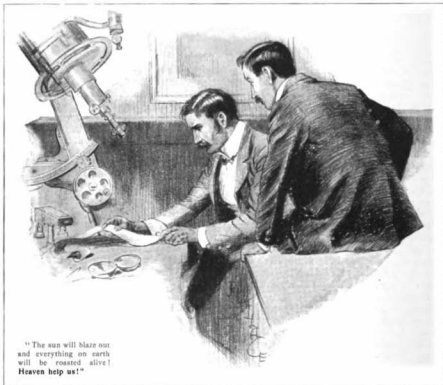
"Yes. He's exactly where he ought to be. I'll wire to the exchange now, if you don't mind waiting, and see if they have any news of Jupiter."

The clicking of the Morse code was very distinct in the dim observatory, as I bent

had time to speak. "Jupiter is three minutes of arc behind his place, and the principal Asteroids are slowing down. What did you say?"

I told him briefly. He looked eagerly up the tube. The light of a great fear—that fear which was so soon to come into all faces—shone in his eyes.

"Good heavens, Milford, what next? This is no mere cause for wonder, it is something strange and terrible. Some unknown,



down and peered through the tube once more. Active little Phobos was at that moment at greatest elongation. I had been looking perhaps a minute when the tiny moon suddenly blazed out with an intense white light. Thus luminous, it lasted several seconds, then it incontinently and utterly disappeared. I gave a startled exclamation, and at the same moment Harrison turned from the telegraph with a scared and puzzled expression:

"It's worse than ever," he said, before I

stupendous influence is at work in the Solar System, and God only knows what will be the end."

Then with a sudden change of manner he hustled round the room, put his paraphernalia back into their place, and said we had better go indoors and get some sleep. He talked wildly, and not a little incoherently, I thought, as we walked up the silent drive and across the lawn. I was not sorry when I found myself dozing off to sleep in bed. There was a sense of practical security between the

white sheets. Yet I often thought afterwards of his talk that night as almost prophetic.

For a week things went on as usual. The scientific world was distraught with wonder, and a multiplicity of hypotheses to account for the action of the outer planets and the burning-up and disappearance of Phobos, but the average crowd went about their business without much concern.

Then the message from Mars came, and theory gave way to fact, and the popular indifference to a reign of terror that shook the fabric of civilisation to its base.

II.—THE MESSAGE FROM MARS.

By what means the Martian intelligences despatched their tiny projectiles across the abyss of space with such accuracy we shall never know, nor shall we ever know what those intelligences were like. We only know that they must have been thousands of years in advance of us in knowledge and in power, almost god-like in the latter, and altruistic to a degree which our lower minds cannot comprehend. We only know that their message came in a number of small, metallic balls, which fell to earth like meteors on the night of August 5th and the following day.

So accurately timed and speeded were these messengers of the peril that they fell at nearly regular distances apart, and with such motion as to bring them to the ground without being fused by the friction of the atmosphere. Many, no doubt, fell into the seas and rivers and deserts; many have been found since in all kinds of out-of-the-way places; but one and all contained similar contents. These consisted of a tightly-rolled drum of a substance not unlike parchment and a few grains of a greyish powder.

Many of these metallic messengers fell into scientific hands on the morning of the 6th, and the whole world knew their purport on the 7th. Every telegraph wire carried the dread news; every paper had articles upon the subject; it was everywhere the chief topic of conversation. One fell into the lane at the back of Harrison's house, and was found accidentally by Harrison himself. We deciphered its meaning together the same afternoon, and wired it to the Press Agencies.

The day before I should have been amused at the idea of any ultra-terrestrial intelligences communicating with us, seeing that we could have no common basis of

agreement as to the meaning of signs, but the Martians compelled me to confess my dull wit. The method used was at once simple and convincing.

The first thing that came into view as we unrolled the drum of parchment was a marvellously accurate map of the Solar System, so intricate in detail as to force an exclamation of wonder and praise from Harrison at first sight. On this map Mars was marked with a peculiar sign, resembling a Maltese cross. A number of lines were drawn from Mars to the earth when each were at different points of their orbits—points which Harrison quickly marked with their respective dates—and, on the date on which we had witnessed the disappearance of Phobos, a line was drawn from the surface of Mars to the place of its small satellite, and for the satellite itself was substituted a splash of pale blue colour.

"Then it was the Martians who destroyed Phobos by some terrible projectile or exercise of force?" I cried.

Harrison nodded gravely.

"Yes. Evidently to attract our attention or to make an experiment. But look at this!—look at this! Do you see what it means?"

The unrolled drum now disclosed a map of much larger dimensions, on which the sun and some of the nearer stars were represented by tiny dots. We knew the sun again by the recurrence of the mark attached to it in the former map. Between the star α in Cassiopeia and our own sun, a small cloud of tiny objects (marked with a sign identical with that used to denote the Leonids and other meteor-streams of the Solar System) was shown, whose indicated orbit was directed straight to the sun. This cloud of meteors was marked with two distinctive signs.

"It means, I expect," said I, "that a large cloud of meteors is coming towards us from the direction of Cassiopeia, and so—but don't look scared, man—an extra grand display of celestial fireworks will be a compensation for the disappointment of two Novembers ago!"

My friend pulled himself together with a visible effort, but his voice trembled a little as he said:

"You don't see all I see in this. Do you think the Martians would have taken all this trouble just to warn us of the approach of an ordinary meteor swarm? No—this is a

warning of world peril—so far as I can see, a sentence of death for all humanity."

He paused a moment; then continued, growing calmer gradually:

"You will notice that the orbit of this meteor cloud does not start in Cassiopeia but is prolonged indefinitely beyond. This suggests that in order for the Martians to have traced its backward way so far it must be of a size and density unparalleled within our knowledge. Here is the next map conveying that precise information. Here is the Solar System again, bounded by a circular line; here is the meteor cloud with a circle of the same size drawn *within* it. Here is part of its orbit, marked off with a succession of regular ticks, each tick representing, I think, the distance travelled by the stream in a Martian year. A little calculation will settle that point. . . . Yes, I am right. And here is the last Martian year period marked off into ten minor divisions—they must use the decimal system on Mars—and this tells us that in six weeks from to-night the great stream will be passing our system, scorching us all to death by the heat evolved by the impact of its mass upon the sun. The sun will blaze out like the famous star in Corona Borealis did, and every living thing on earth will be roasted alive! Heaven help us, Milford!"

A half-jesting doubt of the truth of his deductions was upon my lips, but I looked at the maps again and saw that he was right, read thereon the sentence of death in indisputable language. The silent but eloquent dots and lines and marks seemed to dance before my eyes like fantastic figures of fire. I did not speak, and we unrolled the drum of parchment to the end.

III.—DAYS OF DESPAIR.

The twilight shadows were creeping across the floor of the study when we re-wound the parchment and looked straight into each other's haggard eyes. The further maps and diagrams confirmed and reiterated beyond dispute our worst conjectures, besides being an evident attempt to convey some more information to us—information which, at that time, we completely failed to comprehend.

On a series of Solar maps a great quantity of lines were drawn from Mars to the outer planets, at times and distances easily calculated to be those of the retardations which had so exercised the wonder of the astronomers. That these retardations had been

purposely achieved by the Martians, with a definite object in view, we had no room for doubt; that the Martians had solved the problem of the nature and control of gravitation, we were compelled to believe. All the indirect evidence of their existence and intelligence which had been so suddenly thrust upon us, enforced these points. But what bearing this knowledge, or the knowledge of the coming death, was expected to have upon earthly behaviour, we could not even dimly guess. That something more than a mere warning was intended, we felt sure; what it was, we had no idea.

We found our knowledge and our ignorance alike shared by all the competent students into whose possession the message came. One curious point was noted by all of us, though none then divined its true significance. On the map which represented the meteor stream infringing on the Solar System, the earth, Mars, and the four great outer planets, were shown to be in a direct line between the sun and centre of the great stream.

I parted from Harrison quietly—we felt that ordinary, commonplace sentences were all we dare use just then—and made my way home. It was a clear, warm night, already glowing with faint stars. They seemed to me as still, as steadfast, as prophetic of long endurance, as they have done to man for countless years, though I knew their seeming steadfastness was but a mask of mockery. As I turned the handle of the garden gate I remembered that I was due out that evening, and had no time to spare if I would be punctual. And hitherto I had been punctuality itself where Ethel was concerned. I hurriedly made myself fashionable, and went.

There came an interval in the evening's mirth when Ethel and I found ourselves alone on the balcony we knew so well. The stars were more numerous now, and shone radiantly. A few clouds were creeping up out of the west. The landscape spread out before us down to the river was covered with overlapping shadows. For a few minutes I debated with myself whether or not I should tell Ethel the awful news that would blight for her eyes, as it had done for mine, all the beauty of this quiet scene. If I did not tell her, she would read it in the papers to-morrow.

"Well, Jack," she said at last, breaking the thread of my unpleasant cogitations, "have you turned miserably ill at once?"

'Silence is golden' you know! It must be something *very* serious to make *you* so solemn!

"That is true enough"—with the ghost of a smile—"I am frivolous enough, I admit, in a usual way. But 'tis nothing that concerns you—at least—that is, you will hear of it soon enough."

"Hear of what, Jack? I shall not be friends until you tell me all about it—whatever it is—that's troubling you."

"I'd better not," I began, weakly; but a moment later I was launched upon the strange recital. I told

her the whole story, omitting nothing, and grew marvellously scientific, even eloquently philosophical, with the intensity of my emotion. As I spoke I looked at the stars and the dark landscape, and when I finished and turned to Ethel I found her gaze fixed upon my face with a very curious expression. She took the tidings calmly.

"If this is true, Jack," she said. "I mean, if you and Harrison are not the victims of a dreadful joke—or the originators of one—it will be confirmed by the great scientific men of the world to-morrow or the following day. Then we shall know; until then, let us dismiss the subject. We have heard so many predictions of universal disaster that have come to nothing."

There was no getting the better of Ethel in an argument of this sort, so after a feeble protest I gave way. I even felt a sense of relief in the temporary casting-off of the yoke of terror. "Sufficient unto the day" seemed to me a very good maxim just then. Yet when we parted at the door Ethel grew serious.

"If it *should* be true, Jack," she said, holding my hand tightly, "will you come on and see me as soon as you can? And will you let me see one of these dreadful messages?"

I gave her the required promises readily, a thrill of pleasure running through the sighings of despair, and went home strangely placid. I had been engaged to Ethel for over a year, but until that night I had never known the depth of her love for me. It was strange. I, one of the few sharers of the secret of universal and imminent doom, was glad because a girl, one of the doomed—a mere ephemera who had not seven weeks to live—was more in love with me than I had thought.

But next morning the flood of gloom was upon me again, and upon all who believed.



"But our duties and our love remain the same, Jack."

After a brief call at Harrison's, I was at Ethel's home. It was early, but she met me in the drawing-room, a newspaper in her hand, a pallor on her sweet face.

"It is true, after all," she said.

"Yes," said I, "it's true. And what's the good of anything now? What does anything matter? Only a few weeks, and all the world, and you, and I, will be wiped out of existence as thoroughly as wrong figures on a schoolboy's slate."

"Yes, but our duties and our love remain the same, Jack. Whether we die to-morrow or fifty years hence does not matter at all. Whether we live well *now*, whether we love well *now*, matters everything. It is only weak souls who are slaves to time. You know the lines:

We should count time by heart-throbs, not by
hours,
By feelings, not by figures on a dial."

"Of course you are right, Ethel," I said, gloomily, "but I am a mere, prosaic, modern man, unable, I fear, to soar to the heights of your transcendentalism. There is something unspeakably terrible to me in the thought of what is coming—that in seven weeks from now the world will be a scorched and lifeless ember; that all that men have striven after, and achieved and hoped for through countless generations, will be utterly wasted and lost."

"It is terrible to me, too, Jack, but we must not let it overmaster us. We must work. There will be plenty to do for all who can keep cool heads, and we shall face the end better if we do not anticipate it."

She spoke bravely, firing with enthusiasm. I felt a little cheered for the moment, but once out in the street again despair settled over me the deeper. And as the days wore on and the awful truth—confirmed by another corroborative message from Mars—gradually percolated through the meshes of ignorance and doubt, reaching to the lowest substratum of society and to the most remote corners of the earth, that despair settled over most men. But for the almost automatic instinct of law and order that upheld the Governments, and the heroism that the peril called forth from many natures such as Ethel's, civilisation would have gone to ruin long before the fatal day.

Who that was not forced would work against his will, with that dread shadow ever creeping nearer? Who would save, who

respect any law but the law of strength, who paint, or write, or speak, or strive for fame or honour when in six weeks all must die?

The first days of the dread suspense have well been called the days of desolation. Many went mad in them, many died of fright or by self-destruction, many made fortunes at which their neighbours laughed, many lost their all and lived on charity, caring nothing. But many were mentally sober yet, and worked on.

IV.—A CLEFT IN THE CLOUDS.

At the end of the first week mankind was divided into three factions—those who believed in the approaching catastrophe and were afraid; those who believed and were not afraid; and those who did not believe. The latter faction was a very small one, although it included some clever men. They spoke and wrote eloquently and scoffingly of antecedent improbabilities, universal experience, illusions, gigantic hoaxes, and the like. Their jests fell on heedless ears. One faction was too terrified to reason, to refute, to prove; the other was too feverishly intent upon the daily work that casts out fear. And some, gay and reckless, were too busy making the most, in a frivolous sense, of the short time that remained to them.

You heard many grim jokes as you went along the streets. You saw men, for once, in their true colours. The churches and chapels and mission rooms were crowded nightly with fervent and trembling audiences, listening now to the preacher with an attention before unknown. And now the preacher had a theme that appealed to all. As in the days of old, he pointed his perorations with a fiery moral, this time drawing from science his picture of the end of the world. The drum of the Salvation Army rolled incessantly in the streets, and at nearly every corner and crossing you heard the cries of modern Solomon Eagles: "Repent, repent, ere it be too late, generation of sinners!" Faces blanched with terror as the once unheeded words fell on their ears: "The earth shall be melted with fervent heat and the heavens be rolled together like a scroll." And on the other hand you heard the calm, dispassionate reasonings of the Rationalists and Determinists. Their arguments penetrated the fever heat of fear as icicles of impersonal logic. They strove to drive home the lesson that here was one more proof of the fact that the inexorable workings of Nature give

no sanction to man's anthropomorphic imaging of the Unknowable God.

The air was full of strange theories and queer suggestions. The intellect of all humanity was at work on the one absorbing problem. Up at Harrison's one evening, whither I had taken Ethel to see the Martian messages, we were talking of these things.

"Have you heard Schiaparelli's latest?" enquired Harrison, picking up a copy of the *British Mechanic* and glancing at a paragraph. "It's a daring idea, but has its merits. He calculates the sweep of the meteoric orbit from the portion shown to us on the Martian maps, and together with that, and the rate at which the stream is travelling, deduces the conclusion that it completes a circuit once in 20,000,000 of our years. That being so, the meteors must have passed through our system and enriched and superheated the sun 20,000,000 years ago, and at similar periods for who knows how far back? And you know Kelvin's estimate of the sun's present age—20,000,000 years. If Schiaparelli is right, the sun is constantly cooling and yet continually being revived by the impact of this immense stream of matter. This also suggests an argument in favour of the meteoritic origin of the Solar System, as against the old nebular hypothesis."

"It is a clever thought," said Ethel, "but then, you know, Kelvin's estimate is not a proved fact—it was seriously questioned by Proctor—and the ascertaining of a 20,000,000-year orbit is a very delicate matter indeed."

"Yes," said Harrison. "And' another thing. The theory requires a very large body at or near the centre of the alleged orbit, and no visible star happens to be there. Of course, there may be one of the dark, burnt-out suns in that position—and equally, of course, there may not."

"Just so," said I. "And after all, it does not matter, because we shall never know."

"Of course not," said Harrison, gravely. "But if Professor Belmont's idea is right, that will matter a great deal."

"And that is — ?"

"That the Martians intend to ward off the catastrophe by some means," my friend replied. "I will read you Belmont's summing-up from the *Scientific American*: 'That the Martians intended to convey to us more than the mere fact of the approach

of the meteor-stream, no one who has seen the messages doubts. That this something more is an intimation that they will endeavour to prevent the disaster, seems to me equally beyond dispute. We know that they are retarding the outer planets—and now the earth and Venus and Mars itself—so as to bring all the planets in a right line between the centre of the sun and the centre of the meteor-stream at the time it will pass through and around the Solar System. On the map which conveys this information we find lines drawn from Mars to the outer planets, each line marked with a sign, and terminating in a sign, identical with the signs on the map marking the destruction of Phobos. The one spectroscopic observation of that destruction which we possess shows that a mass of pure hydrogen of immense volume was suddenly fired. This cannot have been sent from Mars; we can only account for it by supposing that the Martians—who, we know, can control gravitation—know the nature of the primeval element out of which all our so-called elements are formed, and can transmute these "elements" at their will; that, in fact, by means incomprehensible to us, they dissolved the whole mass of Phobos into incandescent hydrogen.

'The conclusion seems forced upon one that at the instant of impact they will similarly dissolve Neptune, Uranus, Saturn, and Jupiter, thus opposing the central portion of the meteor-stream with a succession of flaming hydrogen shields, in passing through which the meteors will be fused, and dissipated into cosmic dust. That the grains of grey powder in the Martian messages were intended for us to prove their accuracy with, seems convincingly shown by the fearful explosions which have taken place in the laboratories, because after each explosion the presence of a large body of hydrogen has been detected in the vicinity.

'Thus much appears certain. It is too daring to go further and affirm that the last map of the series suggests the possible self-destruction of Mars (and of the earth also, we being supposed to have learned the nature of the grey powder) should the hydrogenising of the outer planets prove insufficient? With the Martian message before me, I affirm that such is my belief."

"Feasible, is it not?" added Harrison.

"Quite," said I, "except the last suggestion. That seems too terrible, unless we

suppose the Martians to have reached such a pitch of intelligence as to feel no repugnance at the idea of a world-suicide."

"May there not be another explanation?" asked Ethel, quietly. "It is evident that they are aware intelligences exist here. May not their intentional destruction of their own planet make the last flame-shield necessary to save us from death? May it not indicate a contemplated act of supreme self-sacrifice on the part of a race—a world?"

We sat still awhile, silently digesting the strange, new thought. Then Harrison cried: "That shall be in all the leading papers to-morrow!"

V.—THE FLASHES OF FLAME.

Some other pen than mine must write the full story of those days of waiting, those days of drawn and agonised suspense. I lived my life in a very narrow sphere. Excepting at the house where I lodged, Ethel's and Harrison's, I spoke to very few people. Yet what I saw and read impressed upon me so vivid and terrible a picture of a world under sentence of death,

gone mad with fear, that even now it colours all my dreams with a nameless horror.

But for the hint of hope conveyed in Belmont's theory and Ethel's now famous suggestion, I believe that mankind would have gone mad *en masse*, wrecked every institution of society that makes for order, and reverted to barbarism. As it was, the strain of alternate hope and fear showed itself in all faces, in all words, in all acts.

Politics and business, peace and war, love and sport, travel and invention, all sank into sudden insignificance. Towards the end of the last week of security all supplies except the staples of life fell off alarmingly, even at panic prices. No one travelled except those who must, or those who hurried home from distant places. The cry of every human heart was for the presence of those dear to him in the last, dreaded hours.

The churches throughout the world announced that they would hold services with open doors on the last day, and two-thirds of the literature that poured from the world's printing presses consisted of sermons, exhortations, warnings, and words of supposed comfort put forth on behalf of the various religions which sway humanity. The Buddhist spoke resignedly of the peace of Nirvana (for even to India's millions the truth had reached); the Moslem, kneeling barefooted in the mosque, grew fervent over the joys of Paradise; the Catholic told his beads and prayed to the Holy Mother; the Protestant foresaw the nearness of the



"Repent! Repent! Ere it be too late."

Second Coming; the Theist and Rationalist, with ideas broadened by the great conception of the vastness and unity and incomprehensibility of Nature, preached only courage and calmness, pleading that men should act a man's part even in the darkest hour, no matter whether a further lease of mortal life, or glory inconceivable, or death eternal, awaited all.

And there were some who rushed into

more violent excesses of frivolity, debauchery and crime than even Rome knew in her most degenerate days. The lower class of theatres and music halls were filled nightly with reckless crowds; and despite the efforts of the military and police, forcible robberies and other worse deeds were enacted daily in the dark corners of great cities and on desolate country roads.

Fortunately the great mass of the people, especially in the stolid, English-speaking countries, contained themselves admirably, neither evincing any spirit of superhuman heroism nor of sub-human despair. The sky was black enough, no doubt, but plenty of time for "the panic of wild affright" when the storm burst. There was yet a gleam of hope shining.

The moment of contact between the meteor-stream and Neptune arrived at last. For some nights previously we had fine displays of shooting stars—the advance guard of the great group—which struck fresh terror into the minds of the ignorant, and now was the time to verify Belmont's hypothesis. Harrison and I were alone in the observatory once more, waiting in the small hours for the sign that should confirm what we both believed.

Harrison was at the eye-piece; I was wondering why, on so clear a night, we had seen fewer meteors than on the two previous evenings. Suddenly my friend uttered an exclamation of relief and seized my arm.

"Look—quick! It is true! The Martians are at work!"

I glanced through the dark tube, and saw where the tiny point of Neptune should have shone, a small cloud of intensely vivid light—the light of incandescent hydrogen. Belmont's reading of the Martian message was correct; the intelligences that inhabited the ruddy planet, superior to us in intellect and in power, were fighting the great peril. Knowing by means we cannot even guess that the earth held intelligences also, they had warned us of the peril and of their attempt to avert it. The thought, although familiar enough now, came home to me with fresh force, with an almost staggering greatness—was almost too large for a human brain to grasp, otherwise than as a wildly-impossible dream. Yet it was true.

I moved aside for Harrison to look once more, but in a little over ten minutes the cloud dimmed and disappeared. How many millions of meteors had been fused into

cosmic dust in their headlong rush through that shield of flaming hydrogen? How many millions came after them, with shape and motion unimpaired? How many millions?—how many trillions of trillions!

We busied ourselves with the telegraph as the cloud vanished, sending and receiving news. We learnt that the spectroscope showed the flame of Neptune's destruction to be the flame of almost pure hydrogen, and that it was of immense volume. News of the destruction of Uranus came from the European observatories some days later, with the determination of the speed of the great meteor-stream and the fixing of the dates when it would reach the earth and the sun respectively. Saturn's annihilation was invisible everywhere, owing to heavy clouds, but the hydrogenising of the mighty mass of Jupiter was visible to the naked eye. To Harrison and me, sweeping the sky with the telescope, the sight was one never to be forgotten.

A straggling meteor shot through the field of view a moment prior to the predicted time, and the luminous trail in its wake had scarcely vanished when the huge globe of the giant planet seemed to melt into nothingness before our gaze. A moment's blank. Then, in place of the round orb, a swiftly expanding cloud of flame shone, glowing as with the sustained blast of a furnace, shooting out fierce red tongues of fire round all its jagged and increasing circumference, glittering with a thousand points of yet intenser flame, as though riddled through and through with a torrent of stars.

The cloud of flame endured for more than half-an-hour, and in every second of that time it was swallowing in its capacious maw myriads upon myriads of groups of those restless, hurrying enemies of ours, fusing them with the furnace heat of friction into harmless dust. The grey dawn stole across the sky shortly after the cloud became invisible. We felt a thrill of hope now that we were sure those Martian intelligences were fighting so bravely for us and for themselves. Yet whether we were saved we did not know. The peril was not yet past. The stress of suspense was not yet over.

VI.—THE SUPREME SACRIFICE.

It was late in the afternoon, and the whole sky was growing dull with the approach of twilight, when Ethel and I walked together to my friend's house. She could not rest at

home, she said, waiting to know the end, and I was more than willing that she should be with me in the moment when the nature of that end should be known for good and all. After that supreme moment, whether the verdict was life or death, I had promised to return home with her. In the last hours we would be together.

On our way we met and passed many people. Their faces reflected all the shades of fear, from dim doubt to wild terror. Some walked defiantly, some furtively, some with affected unconcern, but we did not see one face that betokened real carelessness or suggested real composure. One group we passed at the corner of a street were indeed singing and praying and preaching loudly, and called to us to join them, but the scared expression in their eyes—red with want of sleep, with long and anxious vigils at bedroom windows, repeated studies of the dangerous sky—belied the complacency they professed and offered. Sadly shaking off the nervous hands that one zealot laid upon us, we hurried on.

Harrison and his wife greeted us briefly but sincerely, and the four of us went straight to the garden seat near the open door of the observatory. If the calculations of the astronomers were correct, we should receive news of the great issue from Greenwich in a quarter of an hour. As Greenwich time is about five hours in advance of American Eastern time, we should have to wait that period for a distinct observation of Mars ourselves. As the minutes were counted off and the telegraph instrument gave no sign, the tension drew its cords tightly around us.

Save for a few drifting clouds, the sky was dark and clear and cold; the air was still; the whole world about us seemed plunged into waiting silence. We were each loth to break the spell of that hush, and sat apart, busy with our own thoughts. I remember that I was thinking something like this: The Martians, besides having control of gravitation, must have means of knowing the total amount of matter in the meteor cloud. Knowing that, and how much of it they have destroyed already, they will know whether what yet remains is sufficient to raise the sun's heat beyond the point fatal to life. They must also know if the hydrogenising of their own planet would avert the calamity, and so save the earth and the inner planets. If Mars is hydrogenised, it will mean that such is the case; if he

is not, it will mean that even Martian intelligence is beaten and that only universal death remains. I also remember wondering whether any of the Martians would try to escape from the ruin of their world and come to earth, as Wells's Martians did.

I was roused from my reverie by Harrison shutting his chronometer with a snap. The time had expired and the wire had not spoken. Mars yet existed.

"We will wait a little longer," said Ethel, very quietly, but with pale face. "The calculations may be in error or the sky cloudy in Europe. Until we have seen Mars with our own eyes we will not go home. And it may be that the danger is really past—that the meteors have already been reduced in number below the danger point."

"That might be so, but I do not think the Martians, knowing the approximate mass of the meteors, would have sent us any message in that case. For my part I go further than Belmont now. I believe that they foresaw the need of self-sacrifice and contemplated it from the first, only sending us the message to suggest the same self-destruction to us, in the event of their calculations proving in error or the hydrogen shields not fusing sufficient of the meteors. The balance of mass between death and life for us may be—I think it is—very fine now, and we may yet see what we want. They may be delaying their own destruction because of a concentration of the meteors in the tail of the stream. We will wait, as Miss Holroyd suggests, until we have seen Mars himself."

We waited, and the sky darkened swiftly. An hour later a brilliant meteor shot across the sky. After a short interval it was followed by another, and they by others, until the heavens seemed riven by myriads of lances of fire.

"The meteors—the harbingers of death!" cried Ethel, her hands locked in silent prayer. We looked at each other for a few moments, then back at the sky. It held us fascinated. The meteors—evidently a portion of the great stream which had escaped the hydrogen shields—came scattering to right and left from that point on the horizon where Mars would rise. East and west, north and south, they spread; the sky was full of their brief shinnings. It has been said by those who remember the great Leonid showers of 1866-7, that those displays were almost as nothing compared with the terribly grand vision of a hurricane of stars that blazed

through the heavens on that never-to-be-forgotten night of fate.

The number of the meteors was simply incalculable, and as their radiant point rose slowly to the horizon, the light of their intense incandescence grew hurtful to our weary eyes. Sheer exhaustion of the optic nerve drove us into the house, and the calm of an abnormal excitement bade us to the supper table. Then, after a short rest, back to the observatory. The meteor storm still swept in fiery violence through the silent sky.

The hours passed. Now voicing what scraps of



"I beheld a charred and blackened earth—a world in which there was no life—a world of darkness and utter desolation."

forlorn hope we could find, and now relapsing into a stillness that seemed prophetic of the world as it would be in the lifeless days to come, we four sat in the observatory, waiting for a glimpse of Mars. Once or twice I went to the doorway and looked out across the quiet garden, thick and dense with the night shadows, illuminated only by the pulsing light of the meteor-riven heavens. The trees stood mysteriously grey and still, not a twig moved, nor a leaf upon the evergreens of the hedge. Away over the dim housetop, outlined as the horizon of the falling stars, the old Park Hill rose, a smudge of indistinguishable darkness, with one solitary house-light betokening the presence of humanity upon its desolate slope.

As I stood in the doorway the last time, thinking of time and space, and life and death and destiny, and love that is greater than all, yet ephemeral as those tiny bodies that were lighting the sky with their evanescent radiance—thoughts that one can *think*, but can neither write nor speak—Ethel

touched me on the arm. She then drew me within, closing the door softly after me.

"You will catch cold, Jack," she said. "And as the sky is clear of clouds, and the number of the meteors is diminishing, we shall soon have Mars in the field of the telescope."

I laughed, rather bitterly. With a grim sense of incongruous humour, I remarked that there had never been a finer chance of ignoring the laws of health, especially with regard to chills, as we should all, no doubt, be hot enough soon. Ethel put her hand over my mouth without answering, and I sat down. I shall never forget her calm courage in those nerve-straining hours.

Then Harrison slowly swung the tube round and adjusted the eyepiece according to calculation, and for a few minutes peered at the field of view. In silence his wife and then Ethel succeeded him at the instrument; in silence I, too, received upon my optic nerve those waves of ruddy light, which, having traversed forty-million miles of vibrant ether, told me Mars yet lived. Mars lived—the meteor stream was then too vast for even Martian intelligence to reduce to impotence. Mars lived—and therefore it and Earth, with the minor planets that yet remained to the relentless sun, must on the morrow die. Was this, then, the end of all—the Purpose of the Ages?

At that moment I heard, though faintly, the sound of feet on the road outside, then voices pitched in the key of despair, then a woman's choking sob. All suddenly the horror of it struck me as it had never done before. With a sharp cry I left the telescope and staggered to a chair, and out of the dim shadows under the galvanised dome my imagination fashioned a vision of the World's Death.

I saw the countless meteors still shooting, incandescent, through the air, and knew that when one fell to earth in dust ten billion billion more sped on towards the all-compelling, all-consuming, superheated sun. I saw fierce spots on his golden disc, and new red-flaming prominences around his rim, as though, insatiate, he reached out greedy arms towards the stricken planets. I saw his colour change to a fiercer red, and felt the scorching flood of his heat grow more and more intense, from tropical dawns to noons in which no men could live, save in dungeons and cellars and caves. I watched the temperate zone, fast followed by the tropic

as that was pursued by the *burning zone*, recede to north and south, even to the shuddering Poles. I saw the Alpine hills grow moist, and the late snow run over and down them in warm, black torrents; saw the glaciers sweat and slip and slide, and, melting as they slid, descend with roar and ruin into flooded valleys. I saw grass go brown, and drop in dust where it did not burn. I saw the sea bubble and boil, and rise in clouds of scalding steam.

Finally, I beheld a charred and blackened earth—a world in which there was no life, neither of man nor beast, nor creeping nor flying thing, nor tree nor herb of any kind—a world of heat and darkness and utter desolation.

And then the vision passed; it could not have lasted many seconds. All was still and cold in the observatory. Ethel was looking at me, but not curiously. Harrison and his wife were looking at each other. Feeling that I must do something, that inaction would be dangerous, I once more put my eye to the telescope. I had not been watching Mars for twenty seconds when the ruddy planet melted away into the sky around him, showing again swiftly as a vast, expanding cloud of flame, shotted through and through with a myriad points of yet more vivid fire. A minute longer I remained at the tube, to make sure my eyes had not deceived me; then I told the others.

The cloud of consuming hydrogen lasted long enough for all of us to see it several times. After it faded, and whilst we three talked wildly and gladly, like doomed prisoners suddenly set free, Harrison's fingers were busy with the telegraph.

It was true, after all; quite true. Mars had died so that the earth *could* live. Those unknown intelligences who had warned us of the peril had made the last supreme sacrifice to avert the full fury of the great assault. It is a thought that even yet passes human comprehension, yet it is true—that a world has sacrificed itself for a world, a race of intelligent beings has blotted itself out of existence in order that another and less-intellectual race might live.

I need only add that the meteor display continued one night more and then ceased abruptly: that the approaching winter was very mild and the succeeding summer almost tropical: that the earth is now the largest planet of the Solar System; and that I married Ethel within the month.