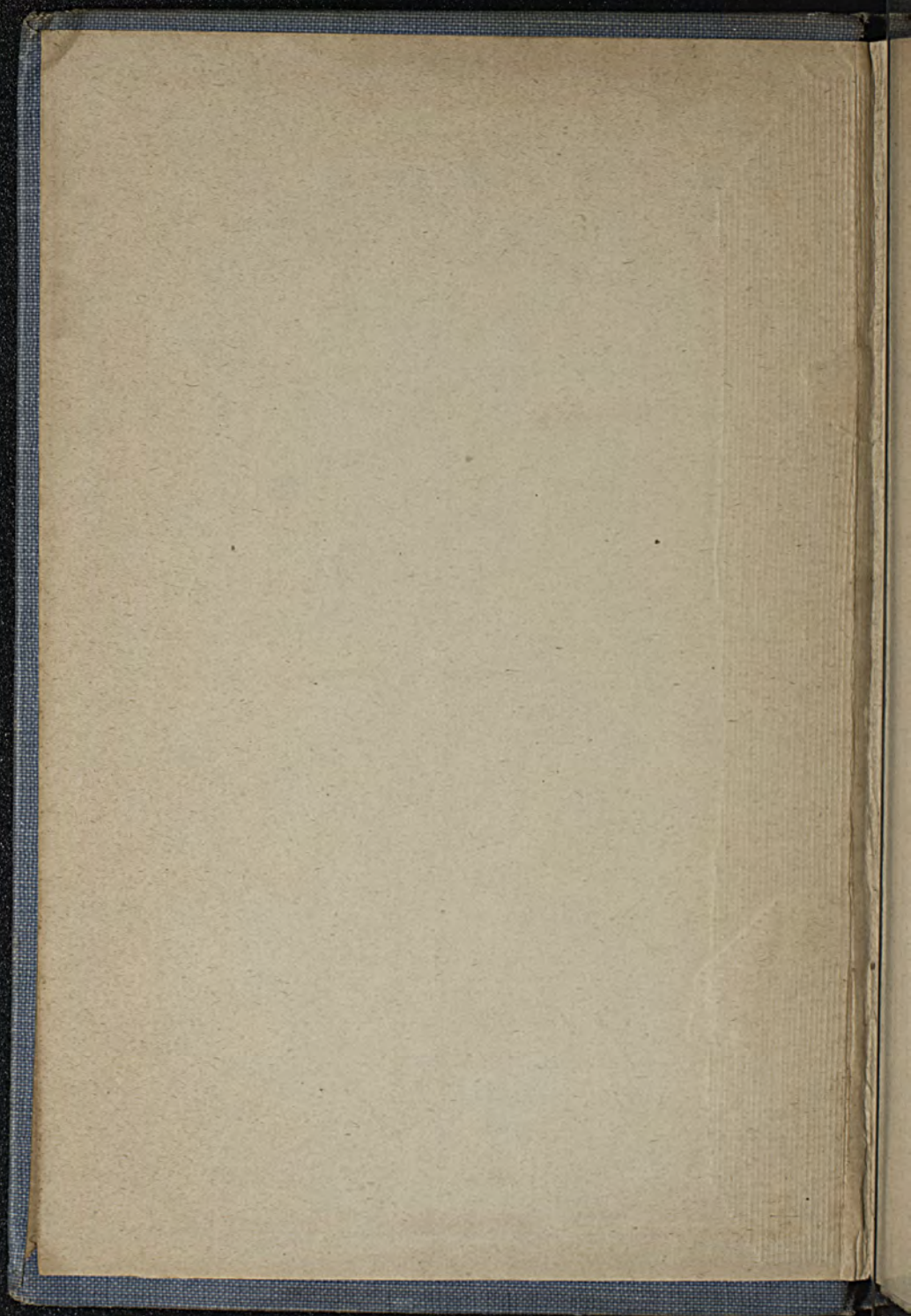


THROUGH THE SUN
IN AN AIRSHIP

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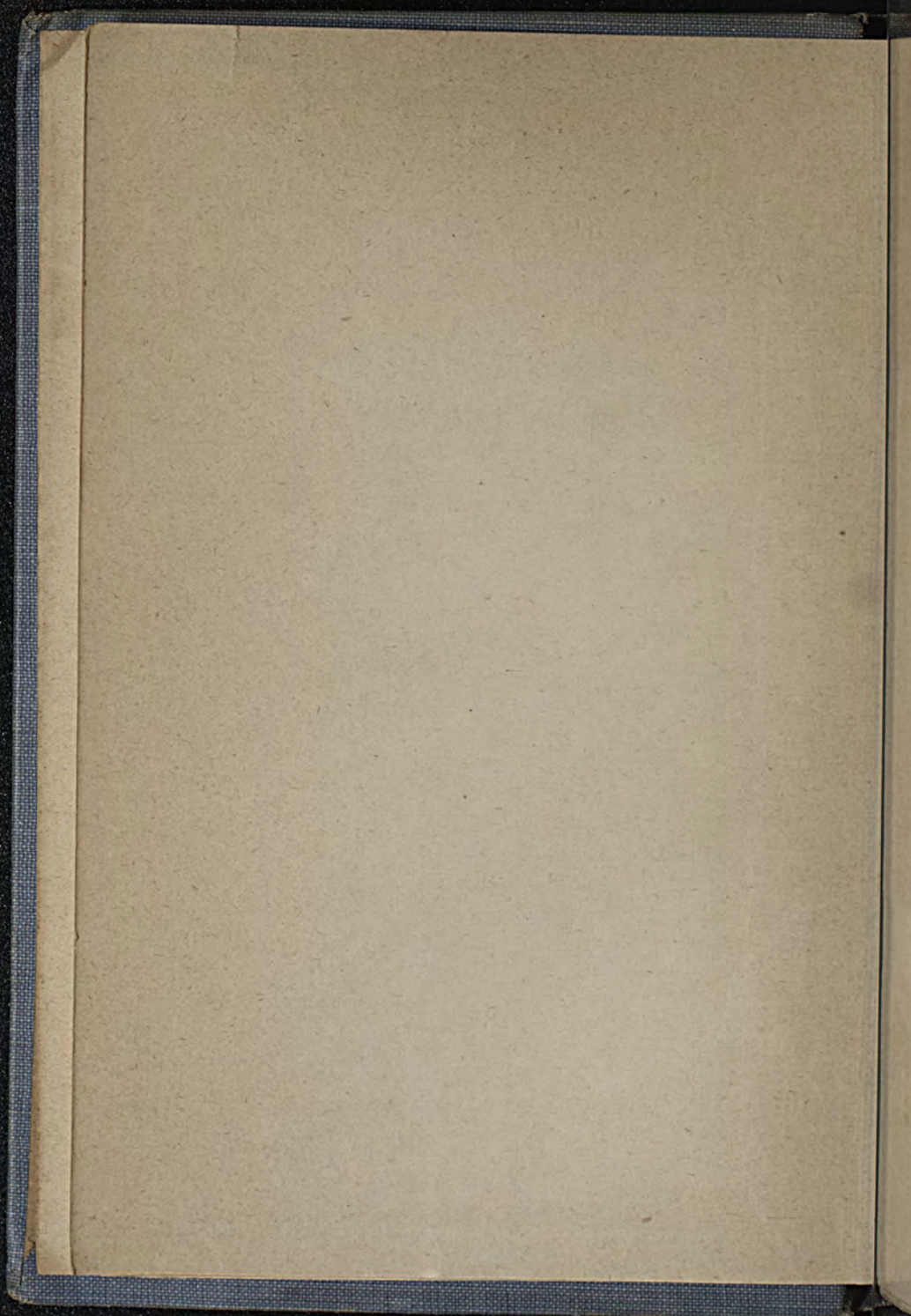
JOHN MASTIN





Bert Lewis.

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Bert Lewis

THROUGH THE SUN
IN AN AIRSHIP

"This I hold

*A secret worth its weight in gold
To those who write as I write now ;
Not to mind where they go, or how—
Through ditch, through bog, o'er bridge and stile ;
Make it but worth the reader's while,
And keep a passage fair and plain,
Always to bring him back again."*

CHURCHILL.

THROUGH THE SUN IN AN AIRSHIP

BY

JOHN MASTIN, F.S.A. Scot.

F.L.S., F.C.S., F.R.A.S., F.R.M.S., R.B.A.

AUTHOR OF

"PARASITES OF INSECTS," "THE TRUE ANALYSIS OF MILK,"
"PLATE-CULTURE AND STAINING OF AMCEBÆ," "THE
STOLEN PLANET," "THE IMMORTAL LIGHT,"
ETC. ETC.



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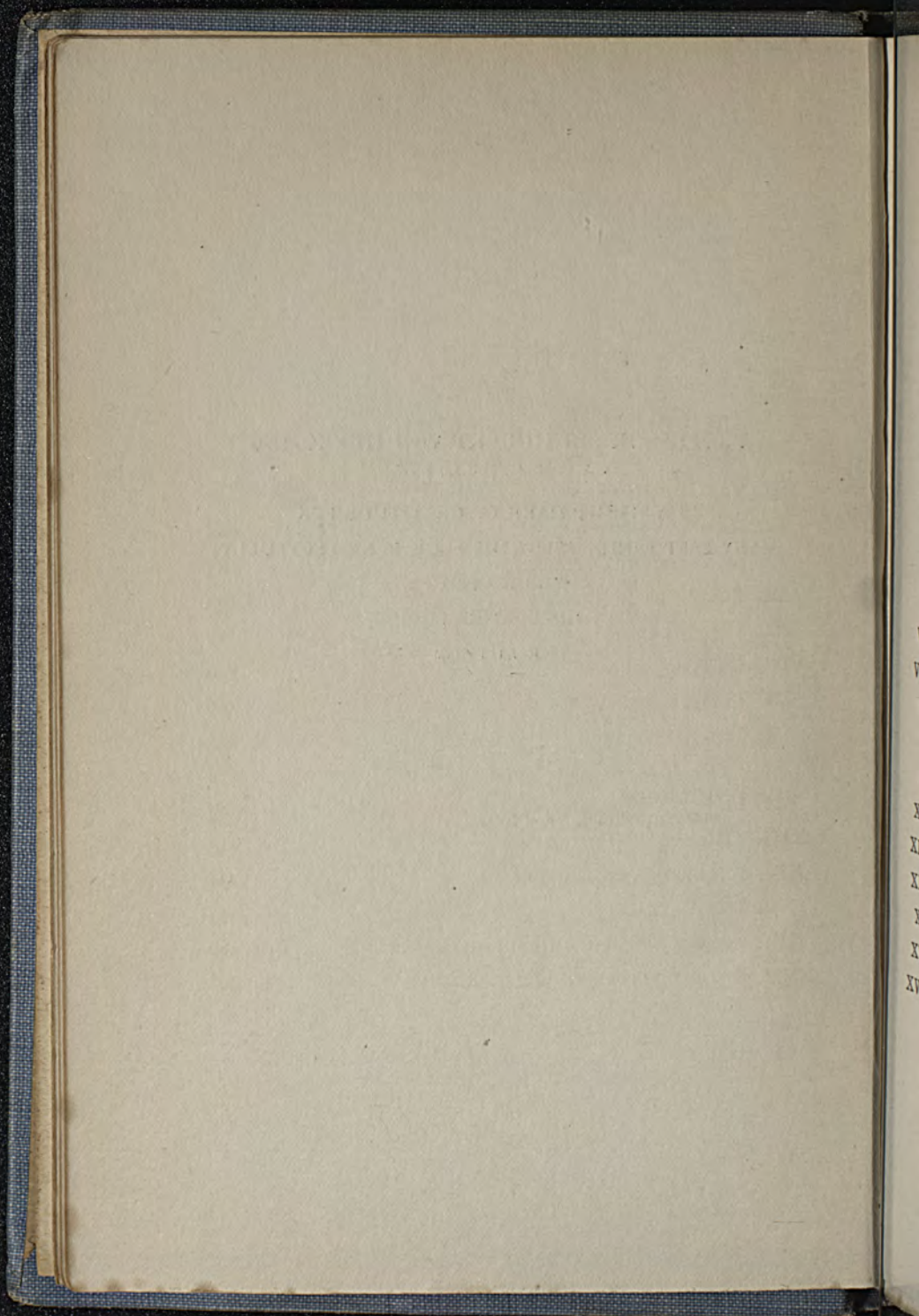
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TO
PROFESSOR SIR HUBERT VON HERKOMER
C.V.O., R.A., D.C.L., ETC.

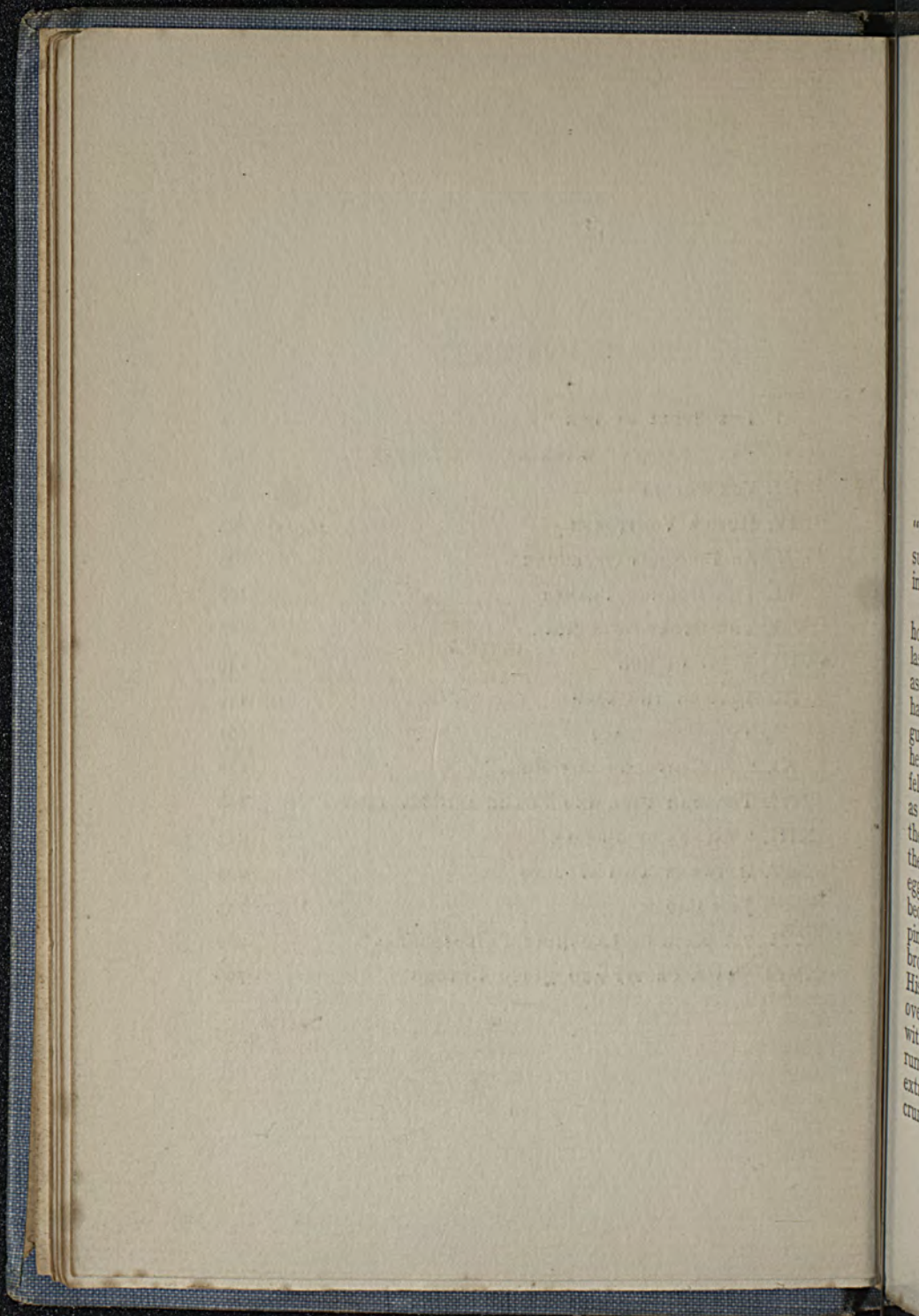
AS A SLIGHT MARK OF GRATITUDE FOR
MANY PAST KINDNESSES THIS BOOK IS RESPECTFULLY
DEDICATED
BY HIS FORMER PUPIL
THE AUTHOR

TOTLEY BROOK
near SHEFFIELD, *June* 1909



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CHAPTER I

THE STORY OF THE *REGINA*

" . . . 'Tis a ditty
Not of these days ; but long ago 'twas told."

(KEATS.)

" WHAT's that for, Gilbert ? " asked Ross Ainley, in surprise, as his chum, Gilbert Eastern, flung an egg into the stream which gurgled past them.

" It's rotten, old chap, rotten as a man's word of honour," replied Gilbert. " Thank goodness it's the last of the batch, and I get no more from Flatters. He assured me he had manufactured every one and all had stood Government tests, therefore he could guarantee them. I don't want to spoil our little picnic here at the North Pole or I'd go back and make the fellow eat the thing ; see, even that fish discards it ! " as a fish rose to the surface, nosed the egg a little, and then darted off. " No wonder ! " he commented, and then without further remark he reached for another egg and, cutting off the top of the capsule, at once became absorbed in extracting the contents—a peculiar pink-coloured paste, which he spread on a cake of brown meal and commenced to eat in silent enjoyment. His friend Ross, who had just finished his meal, leaned over the mossy bank and half filled a drinking vessel with water from the stream ; after sterilising it he rummaged in the basket, and bringing out a small box extracted a pellet, which he placed in the vessel and crumbled with his already sterilised fingers. Instantly

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the water became turbid, and, a second later, opaque-white as the powder entered into solution, and he drank off what appeared to be fresh milk. Having satisfied his thirst, he sprayed some antiseptic liquid on his hands and the glass, threw his pulp serviette away, and leaving the other things till his friend had finished also, lay down on his back full length, with his elbows up and hands clasped under his head, gazing in silence into the blue sky overhead between their two airships which were riding at anchor, their vanes gently moving in the wind just sufficiently to maintain them at an altitude of about twenty feet. They were in a small clearing in the heart of a magnificent forest which extended for miles in all directions and was, perhaps, the finest and most picturesque portion of all that beautiful district of the North Pole which was appropriately called 'The Garden of the Earth.' After passing through miles of moss and peat and bog, the river Pole entered this forest some ten or twelve miles distant as a gurgling brook, tumbling and twisting and twining amongst the boulders in its bed ; but other streams, longing for closer companionship, drew nearer and nearer till they joined it, and together they all came flowing down in noisy happiness, whilst the rushes which were swept by the lively water, now a river, bent their nodding heads lower and lower till they kissed the sparkling wavelets and reared themselves again in their joy at having stolen such sweetness. Thus the river Pole swept onwards, an ever widening and deepening stream, spreading its fragrant influence around till the trees, shrubs and underwood became almost intoxicated with the luxuriance of their growth, and expanded their limbs in the ecstasy of being alive. And in the twilight of the green woods occasional lovers would be found, walking in its cool recesses and talking of the future, or perhaps merely walking together oblivious of all save that they were in love—love too deep for words, too strong and

holy for expression in anything but silent thanks to heaven for the love which *is* heaven ; such are passed, they unnoticing and being unnoticed,

“ For in love’s domain
Silence must reign ;
Or it brings the heart
Smart
And pain ”

and here and there the trees grew more widely apart and clearings were formed by nature almost specially for picnics and *alfresco* meals, for the grass was thicker than any carpet and softer, having a deep bed of peat, whilst the murmuring stream and the faint hum of insects, and that delightful and peculiar sound of thousands of branches being gently swayed by the wind, lent a delightful accompaniment to the pleasantry and laughter inseparable from young and healthy hearts which, like the air and sky, are clear and sunny.

To one of these clearings had Ross and Gilbert come for a little relaxation, because they knew that nature is always ready and able to give health and vigour to all who seek her, and they made a point of spending at least one half-day in each week in some spot on the beautiful earth where they could talk and revel in nature unalloyed, and after Ross had been looking for a few minutes into the throbbing ether, where the blue was flecked with streamers of ‘mares’ tails’ which floated in one of the higher strata, he suddenly rolled over to face his friend and said, seriously,—

“ Has it ever struck you, Gilbert, what a wonderful age this is ? ”

“ The age is all right, Ross, so far as I can see,” answered Gilbert, indifferently.

“ I don’t think so,” replied Ross, argumentatively.

“ It seems to me too matter-of-fact.”

“ What else would you have it ? all fancy ? ” asked

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Gilbert, still indifferent, being hungry and absorbed in his meal.

"No, of course not," replied Ross, musingly, "but it seems to me that if a little of the past could be worked into the present it would leaven things a bit." Here he paused, and as Gilbert did not offer any remark, he continued,—

"Take that egg, for instance. Natural eggs are never eaten now, any more than swans and peacocks, yet I don't see why they shouldn't be, though at the bare suggestion of eating a real egg every one would recoil with horror; but why should they be kept for broods only? They are wholesome enough, or they used to be, anyway, and if they were taken from the fowls and other egg-laying creatures, more eggs would be laid and there would be plenty for all."

"Probably," said prosaic Gilbert, "but the real eggs had to be boiled, and cooked in other ways, and beaten, and goodness knows what, and all that sort of thing must have been a shocking waste of time. Besides, the shells are brittle, and if you should by chance sit on a basketful of them, they would, of course, explode and break and make a nasty mess, to say nothing of the perfume of a bad one. There is not one of those objections in a modern egg, and they are wholesome, nutritious, of fine flavour, will keep for years in these capsules, and if you jump on one you will merely alter its shape and flatten it; no cooking is necessary, they are pure and sterilised, and exert an antiseptic action on the stomach, counteracting any tendency to undue acidity, ulceration, cancer, and lots of other things—ergo, I say they are better than the natural article, and not one in a million is faulty, except by deliberate fraud." And Gilbert, after this tirade, continued his meal with renewed vigour, as if to make up for lost time.

"But in this age it is supposed that there is no fraud," observed Ross.

"Just so," replied Gilbert, with a kind of 'I'm busy' air; "but ever since man was created some dispositions are and always will be treacherous."

"Probably," assented Ross, plucking a blade of grass and breaking it into short lengths, "but everything in this world is so cut and dried, so trite, that I am weary of it."

"Poor fellow!" said Gilbert, banteringly; "you need your diet changing; you're secreting too much bile and it's giving you the blues. Just talk and let off as much as you can whilst I finish my dinner; I was bothering with my anchor while you were feeding; the blessed thing wouldn't suck. Now, fire away, and talk yourself into a better humour—I'll not interrupt."

"My humour is all right," answered Ross, laughing; "but as I lay here on this beautiful turf and saw our ships riding at anchor, as much under control as if on the sea, I could not help thinking of all the past."

"Think away, old man, only think aloud," said Gilbert, as his friend paused.

"You think I'm not serious, but I am, really and truly!" said Ross. "I was thinking of the changes this district of the North Pole has undergone. Hundreds and hundreds of years ago it was as it is now—a beautiful, warm climate; then came a time when things changed and all turned to ice, and the trees were covered with snow, all approach being cut off by an impassable barrier of ice, although even then many explorers believed that at the Pole it was not all frozen; and in 1878 or 1879, when the explorer Nordenskiöld was locked in the ice in Northern Siberia, and this ice extended as far as he could see, he proved that here at the North Pole no ice existed; and another explorer, Admiral Wrangell, I believe, when he was journeying north from Siberia, found the ice getting thinner and thinner as he advanced and the climate becoming warmer until he actually got to unbroken and unfrozen sea and a temperate climate. This was

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confirmed later by such authorities as Anjou Hedenström and others. And still later, between 1905 and 1910, mammoths, stacks of peat, *living* but frozen trees, were found by explorers; then a few years later, the conquest of the air began to be felt as a practical possibility, and science generally made enormous strides—the time from 1900, or say from 1850 to 1950, was a century of the greatest scientific triumphs of all time, and electricity became so much used that the climate of the world altered and the terrible barriers of ice at the poles became no longer impassable. Then followed, in actual reality, the conquest of the air, which caused a complete revolution in mechanical progress. After this came a period of intense scientific research, and about a hundred years ago was made the great ‘discovery’—which had been expected centuries before—that *life originated* at the North Pole (from whence its germs were wafted all over the world by air and water), and the South Pole saw its passage to higher and more noble existences.

“About the opening of the twentieth century morality in business had sunk to a very low ebb; every one was possessed by a craze for making money—in what manner was quite a secondary consideration—consequently the richest people were almost invariably the most unscrupulous. At last the working classes revolted and by sheer force of numbers sent a majority of working men to Parliament, and by such means obtained Old Age Pensions. Still they groaned under the dishonest and callous actions of the moneyed people and employers, and in course of time they rose up in revolution and swept the country clean. From that time everything has improved, and though we have in some minor matters, such as modes of expression and what not, reverted to the style of our forefathers of about the twentieth century, science has progressed by leaps and bounds, until now we have got almost to the other extreme, and everything is science:—we

eat, drink, live, move and have our very being on scientific lines, till one gets tired and weary almost to death at the mere word."

"You'll certainly have to change your diet, old fellow!" put in Gilbert, laughing, "but go on!"

"I am really serious," continued Ross, smiling at the sarcasm. "I don't believe this world was ever intended for man, and it's my opinion that we came here by accident from some other planet."

"Really!"

"Yes. Just think! where intellectual man is not, vegetation grows to magnificent luxuriance; so do wild animals, insects, birds and flowers; all these are made and suited to the world by nature, but directly the so-called 'lord of creation' comes, one of two things must happen—he must either open out nature and bring it into line with his life and habits, or he must gradually acclimatise himself to his surroundings by various doses of malaria, swamp fever, orchid-poisoning and the like, and by the time he has become immune from these evils and can live, he is not so healthy or so useful as were the scarecrows of ancient fame. And wherever numbers live together, so many hygienic matters have to be considered that healthy living in numbers is, and always will be, a most serious problem. No, man is about the only animal on the earth that upsets nature, or is upset by nature.

"Wherever he lives the country suffers, and the rare and beautiful birds and creatures fly from him as from a pestilence. Take the present era, for example. Where are all the beautiful birds and beasts our forefathers wrote about, and all the insects that used to keep the air sweet and fresh? Man has frightened them away. He kills every insect in the ground by electricity, and then finds that worms, moles, and other such creatures aerate the ground and make it healthy, and he gets the land to stink with rottenness

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ere he decides to see it, when he could have seen it before with half an eye had he not been blind ; then he goes to the other extreme and, finding that worms are healthy and good for the land, he kills every blessed bird lest a single worm should be destroyed. By that time he gets a little overdone in worms and wants his birds back. Then the constant use of his electrical appliances and forces so upset the atmosphere that the moving life in it has to go higher into purer air, and the airships passing and repassing at enormous speeds drive the birds still further away and higher, gradually altering their habits, so that now it is a very rare thing to see them flying, or even coming down to rest. They do rest, of course, but only in the forests where people seldom enter, for every one has a ship of some sort and is always in the air, as if this glorious grass, this beautiful water, and these shady, magnificent trees were not good enough for man to enjoy, but he must needs go tearing round the whole world on every half-holiday. I call it a sin ! ”

“ What an excellent mood you’re in this afternoon ! ” remarked Gilbert, as he made a pellet of his napkin and threw it at a darting fish. “ I have finished my meal, and have enjoyed it so much that I am inclined to look on the world as it is now as being very beautiful, and on the science of to-day as being the most useful in the world’s history. It is true the climate of the whole earth has changed, and with it manners and customs, perforce ; but now, every man works at the trade for which he is best fitted, physically and mentally, and receives guaranteed Government wages on fixed scale for the work he does. If by learning and application he can do more intellectual work, he receives the higher pay, and every one can have his fair trial and none are oppressed. All shops are under the control of the Government, and no one can undersell, or buy to better advantage than his neighbour, nor can there be undue competition, and if any licensed

manufacturer supplies an inferior article, like my first egg, he must return its equivalent on proof, and he is a loser.

"If, in times past, a man robbed his employer of twenty shillings he was imprisoned for five years with hard labour, whereas if the theft was of twenty thousand pounds he was merely cautioned not to do it again, or at the most imprisoned for a few months without labour, and the quiet, restful time of serving the sentence invariably set him up in health at the country's expense; but nowadays, a man stays in prison and must earn his keep and expenses, and in addition, enough to pay back every farthing to the person robbed, who receives an instalment every month until the loss is made good, or until the prisoner dies. Thus, not only are the prisons self-supporting and a profit to the State, but the 'punishment fits the crime,' and under the present business methods anything beyond petty frauds is altogether impossible. Then there are no poor, no really destitute; and there is no institution in the world that is not self-supporting, whilst the excellent system of our finances makes wealth, if not an impossibility, of little value—for wealth formerly meant power and oppression, but now the comparatively so-called poor are not poor enough to be oppressed, consequently the rich have none to oppress, and in most cases people spend their surplus wealth in scientific research, in inventing and discovering that which will make life brighter, easier, and happier to their fellow-men by lifting higher those who chance to be less fortunate than they themselves. For what use is wealth to a right-minded man when every man must work and earn enough to keep himself comfortably, and he knows that when he gets past work he will receive a pension according to his deserts. Nor can he marry till he receives a certain salary, and even then his family must not exceed the calls on his income for their maintenance, clothing and education,

suitable to their station. If he errs in this respect, or is unfaithful, or betrays any one, no further offence is made possible to him. Why! formerly, in the twentieth century, so far as some of the working men of that period were concerned, one who earned what would have kept half a dozen families in comfort would drink and gamble his earnings away, have an unconscionable number of children, and if he were but half a day out of work he was destitute. With a blissful selfishness, he would neglect work to go drinking and gaming, to the utter disregard of the needs of his wife and family, knowing his neighbours would not let them starve; nor did they. If he were sent to prison he did not care, for the burden of the maintenance of his numerous family had to be borne by others who by self-denial had saved and yet who, for humanitarian reasons, had to deny themselves still more to help the idler. All that is now an utter impossibility, and yet you long for the old times, Ross! I don't. I like, too, to know what I'm eating, to have everything made under rigid antiseptic conditions, to have everything condensed and excluded from air, and to know that what I am swallowing is good and wholesome, anyway."

"That's all very well," replied Ross, flinging fireneedles into the stream, "but it's very much overdone. Compression is all very well, too, but when you come to certain foods and salts which, to begin with, are indigestible and often quite insoluble in the stomach, and you compress them to so small a compass that they are as hard as steel, where are you? One swallows a good dinner, as one thinks, yet most of it has gone; no stomach, not even that of an ostrich, could digest it. One tries to realise what a delicious dinner it was, yet no stretch of imagination can overlook the fact that one gets desperately hungry quicker than one should. Now, notwithstanding all the science displayed on my recent meal, I am sure I could eat, enjoy, *and* digest, a thick, juicy steak from that

salmon there which is just turning a somersault. Oh yes, hold up your hand in disgust! I'm not going to fly in the face of custom, because I'm quite aware that the salmon's great and much revered ancestor might at some time have swallowed a fly or a worm that had on it a parasite or some injurious microbe, and therefore, because of this awful occurrence to its great grandparent thrice removed, it cannot be eaten without being first dried, sterilised, compressed, and enclosed in a little antiseptic capsule in which it is guaranteed to remain, if need be, fresh and pure till the crack of doom, when it may joyfully rise and meet its family as a pure and wholesome fish. I am tired of it all! and as I said before I think science, hygiene, and all the other aids to existence are so much overdone that there will soon be a reaction, or my name's not Ross Ainley," and disgusted Ross rolled back again and lay looking up at his ship, a beautiful aluminium vessel, dipping and curtsying to the rippling breeze as if she were breasting an incoming tide.

Gilbert laughed and exclaimed, "You're like old Alexander of ancient fame—paying the penalty of an inordinate desire for conquest. You are on the top rung of the ladder and because there is no higher rung to step upon you are disgusted with everything. But who's that coming?" he suddenly broke off to exclaim, at the same time pointing to a sparkle on the horizon caused by the sun's glinting on an approaching airship.

Instantly the blues and banter vanished, and they watched with interest the new-comer fly over their heads at great speed, then seeing their vessels below, immediately pull up, and a man looked over the side and shouted, "Hallo! Ainley; how are you?"

"Splendid, Oakland. Come down and have a chat; I've not seen you for many a month!" answered Ross.

"All serene!" was the reply as the ship was brought round and lowered between the two others, an anchor let down which sucked on the turf, and a pleasant-looking young man was soon standing beside them, to be cordially greeted by Ross, who introduced him to Gilbert as Dennis Oakland of electrical fame, and turning to Dennis, continued, "and this is Gilbert Eastern, the eminent physicist; you know him by repute, and I am much pleased to make such great men acquainted with each other."

"And here's Ross Ainley, the greatest electrician of the day—barring yourself, of course—the world's expert!" mimicked Gilbert.

"Oh, I've known him some time," responded Dennis, laughing; "let me grasp arms with you," he continued, in high pleasure, and they each laid a hand on that particular portion of the other's sleeve which is specially reserved for cordial greetings, and which is situated on the upper arm over the biceps; every one being required by law to keep this part highly antiseptic. This very friendly greeting over, Dennis resumed,—

"What a lucky dog I am to run across you here in this way. I never miss an opportunity of making friends and having a chat with every one I meet, but I never dreamed of such luck as this when I saw your two ships chumming together like a couple of love birds!" and Dennis went gleefully on till they all felt as if they had known one another for years.

They passed from ship to ship, their respective owners explaining the chief features and special appliances that each possessed, and thus several hours wore away. Twilight came long ere they had finished and Bona shone with a fitful light owing to the clouds which had been slowly gathering, but as she rose in the heavens the sky became clearer and the country was flooded with her brilliant beams,

the three ships, now almost motionless, casting dark shadows on the ground.

"I see it is Bona's night out," said Dennis, looking up at the large and brilliant disc on which with the naked eye could be discerned continents and seas, the latter showing like white enamel.

"I prefer it to old Luna myself," said Gilbert, "although many folk swear by Luna yet. It must have been a tremendous shock to bring Bona where she is."

"Yes," agreed Ross. "Eastern and I, Oakland, were comparing the past with the present when you joined us, and he maintains that the present times are unequalled, but I consider that we have arrived at such a stage of ultra science that there must be a reaction."

"I agree with you," replied Dennis. "It is always so. There never has been a perfect equilibrium in the affairs of nations and never will be. We peg away at one scale, filling it till it goes down with a bump, and then it dawns on our woolly brains that we have overdone it, so we let that scale severely alone and work away at the other till that goes down with a bump too. Then we empty both and begin again, to repeat the blunder."

All three laughed and Ross remarked: "That is almost precisely what I've been telling Eastern, but he does not see it."

"No! I don't," said downright Gilbert. "I don't see that we have drawn near to the time of a reaction by any means, considering that there are many things which have been commonly known at different periods and yet with all our ultra science are now a sealed letter. So science is evidently not at its zenith yet."

"In the natural course of events things do die out as the use for them declines, or the phases of life alter, or those with secrets fail to commit them to

writing, or they are lost, but there is nothing abnormal in that," answered Ross, lightly.

"But don't you think that if science is as much advanced as you say, these secrets would not be lost? Don't you consider it want of brain, rather?" objected Gilbert.

"No, not by any means," said Dennis, "I think it is mere chance."

"I differ with you both," argued Gilbert, unconvinced. "I think these things come in cycles. Take stained glass for instance—not the fired and coloured glass of to-day, but the real old-fashioned stained glass that admits the passage of sunlight, the sunbeams remaining untinted by the glass they pass through, and which gives strange reflections in a mirror. This was discovered in the seventh century and made in several countries, proving that the secret was not entirely limited, yet the art was lost for many centuries, rediscovered in the fourteenth century and again practised in several countries, and soon afterwards again lost, to remain so till the twenty-first century, when it was again in vogue in various places for a short time, soon to be again lost, and, as you know, thousands of pounds are now being spent daily in experiments in the hope of the secret being rediscovered, yet it is as elusive and far off as if it had never been. Now if this is, as you say, the most scientific age of the world's history, why the failure? To my mind, the answer is that the cycle has not yet returned and when it does, the secret will come out itself, whether it is in the manufacture, the firing, the glass, or the colours used. Surely you cannot call such a singular occurrence a mere coincidence!"

"I grant there are unargumentable facts," replied Ross, "but I am rather inclined to believe that if the experts in that line were intensely serious, they would solve the problem, for I think what

has been done can be done again by earnest application."

"It's all very well for you to talk like that," said Gilbert, with energy, "you've always been lucky in succeeding with everything to which you set your hand, but I myself firmly believe that no amount of luck will enable things to be done till their time comes round, and you have taken up the phases of science which were ready to be solved."

"What about yourself then," asked Dennis, smiling. "Have you also hit upon the phases that were ready and waiting?"

"In a great measure, yes," responded Gilbert. "I have found—as you have found, too—that there are times when no amount of work does any good; it is entirely unproductive; and then nature suggests to all minds a certain course. If the mind is sufficiently receptive, these ideas are followed and what lay hidden for ages before, perhaps, is now revealed and may appear wonderful; but I see in it merely the working of an unchangeable law, a cycle of sympathy of the mental faculties with material and natural forces."

"Then I wish some cycle of mental sympathy would come my way," exclaimed Dennis, "for I have the hardest nut in the world, and cannot crack it, so I suppose it must wait till the cycle of fate brings the sympathetic mind to solve the mystery," and Dennis laughed banteringly. "But there is no such luck, so I expect the nut must stay intact till doomsday."

"Oh! what mystery is that?" asked the others, at once interested.

"My vessel, the *Regina*," replied Dennis, nonchalantly.

"What!" ejaculated Ross, spinning round and grasping him on his greeting-band. "Great Bona! and are you the very Dennis Oakland, the present owner of that ship?"

"I am, worse luck!" was the rueful answer.

"Why didn't you say so before?" inquired Ross, surprised. "I had no idea that the Dennis Oakland who tied with me in the electrical exam. last year was one and the same person as the owner of the famous *Regina*. I thought you lived in London."

"No, only for the time of the exam."

"Had you mentioned Derwent I should have recognised the connection."

"We are more pleased than ever to meet you," broke in Gilbert, and once more the three grasped arms, and from that moment their lives became full of excitement beyond their wildest dreams, and Ross's blues were gone never to return.

"Let us hear all about it," said Gilbert, hastily fetching a damp-proof rug, which he spread over the ground for all to sit upon.

"There is very little to tell, if anything, that is not known by every one, for the history of the 'Stolen Planet,' written by an ancestor of mine, Jervis Meredith, to whom the ship eventually belonged, explains everything. For many generations the blessed Queen has reigned over our family and cost us no end of money. In the natural course of events she has been bequeathed to me, the sole surviving descendant of the first Jervis Meredith, and I have spent some thousands on her till I gave it up; I am tired of spending and working to no purpose, for she became a real nightmare to me, till I got my back up, and I don't spend another farthing. She may go to Jupiter, or Sirius, or to any other spot in creation for all I care!" and Dennis puffed vigorously at his sterilised cigar.

Instantly his two companions were alert. All thought and desire to return had vanished, although time was getting on and the stars were beginning to dot the sky. The river Pole, now in the full light of the risen moon, Bona, lay before them dazzlingly

white, its placid surface unbroken by so much as a ripple, except when a leaping fish set in motion a series of circles which spread their dark rings to each bank. Behind and around in the clearing lay the wood, now black with shadows, and as they looked before them beyond their vessels, on which silver lights were chasing ebony shadows, as their gentle movement made the moonbeams ripple along their surfaces, several belated travellers slowed up at sight of three standing ships, to ask if they were stranded and needed help, but to each the trio telepathed a message that all was well—and soon they were quite alone.

"You should get Ainley, here, to help you," suggested Gilbert; and before Dennis could reply, Ross broke in— "I have often thought of writing to ask if I could see it, Oakland, and had I known you were the owner I should not have hesitated. If you would permit me I'd take it as a great favour; I have heard and read so much about the ship that I'm curious in the extreme."

"By all means, old fellow," replied Dennis, heartily, "by all means. Although I can promise you this, that you'll know very little more about it after than you do now; all that is to be known is common property."

"I only know what the historians wrote about—the wonderful discovery of gravity-control—and what the newspapers tell us," said Ross, "let us hear all about it from you yourself, will you? and then we shall know everything."

"What! to-night?" queried Dennis. "It would take a long time and it is getting very late."

"Never mind!" said Ross and Gilbert together. "We can get back to England in an hour, less if we use top speed, and the sky will be free now. But, perhaps you wish to return?"

"I? No, any time will do for me," replied Dennis;

so the three settled themselves into comfortable positions and Dennis commenced the story of the greatest wonder of the world :

"Before the great crisis of the world's history, for many generations there had been so excessive a use of electricity, that the climates had become seriously disturbed and the whole earth and air so unduly 'charged, that there had followed a succession of terrible earthquakes of so violent a nature as to shake the earth to its very centre. Then a wonderful thing happened which at first threatened the whole of creation on this earth—from some cause or other, even yet not understood, the earth's gravity became slightly increased. All the scientists raved at the calamity, as they called it, saying that the rains would damage the fruit and vegetation, that the sap in trees and plants would not be able to rise, that muscular exertion would not be possible, and that all mankind would become too heavy and weary to live, while the air would become unbreathable. Very soon, however, they found all as usual, for all being in the same proportion, everything in nature, animate and inanimate, was just as perfectly adjusted as before, and many scientists asserted that no increased gravity had taken place—for as the increase was exactly proportionate throughout, a pound still weighed a pound, of course. For long the debate continued, serving no purpose, for even if walking had not been possible it would have mattered little, for the time was approaching when, all forms of work coming under government control and wages being paid according to the work done, almost every one could buy a motor-vessel of some sort for land or aerial traction, and walking became less and less indulged in—and probably in a few generations from now humans will find their legs transformed into wings.

"But to return to actual facts. The strangest

change of all, which drove people to a perfect frenzy and caused not a few to become insane, was the gradual approach of a second moon; no one knows how, or why; probably it had been wandering in space and would not have been influenced at all by earth, but for the increased gravity. Be the cause what it may, there it was, revolving in the solar system round the earth half a circle behind Luna, thus lighting up earth when Luna was hidden, as she is now, and consequently, every night is more or less moonlight.

"People recalled the records of the wondrous approach of the planet stolen by the great airship *Regina*, now owned by me, and many thought the ship had made a secret journey and brought back a second planet, or perhaps the same as before, but no—the 'seventh moon of Jupiter' which she had created was still attending that planet, and so the new world must really be a new moon."

"Had the vessel attracted it, do you think?" inquired Gilbert.

"No one knows," continued Dennis; "that is a point on which there is much controversy even to-day, as you know. Anyway, the thing was a real miracle, for all predicted and feared universal disaster, and prayers were offered in all places of worship, and a miracle *was* performed, either in answer to the prayers or in the setting up of some unknown laws in defiance of all existing known laws, for in direct contradiction to every expectation, no disaster of any kind occurred—nothing but good; and as time wore on and the planet's influence became felt in the steadying of the tides, and in scores of other unexpected ways, it was proved to be a heaven-sent blessing and therefore was named 'Bona.'"

"Then followed another phase of great interest in the *Regina*, for scientists longed to possess the means of visiting Bona and of finding out all about her, for the most powerful telescopes revealed little beyond the

facts that there were mountains, seas, deserts, and peculiar vegetable growth, all of which can be seen faintly with the naked eye, and the spectrum analysis shows many metals, some familiar and some strange to us, together with an atmosphere similar to ours, but drier. It is, as you know, considered that Bona is peopled, but so far no people have been seen or recognised by us as people, for we, of course, look for beings such as ourselves. The *Regina* would have solved all these difficulties, but she was still quiescent, still the enigma of science, as she has been since she was built and as she always will be, I fear. And this brings me to the vessel herself and how she came to be mine.

"Apart from fiction, only one vessel in the history of the world has ever actually sailed into the limitless space outside the earth's atmosphere, and that one is the stately *Regina*, which has been unapproachable since the death of the last-surviving inventor, Jervis Meredith, and the secret of her power to overcome gravity died with him. It is not necessary for me to tell you the details of this, as you know them, so I will pass on to later things, for I have already gone over well-known ground at too great a length, and time is flying."

"Never mind that, Oakland," exclaimed Ross, deeply interested, "proceed"; and Gilbert followed—"It is all so different, somehow, coming from you; there is a personal note in it which is far better than history, so tell us all you know, as though we were ignorant of the whole matter."

"Yes, do!" begged Ross, and Dennis took up his story.

"Since the time when the *Regina* made her first serious voyage to the dog-star Sirius, and brought back the planetoid to the consternation of the whole earth, and then, shooting the planet back into space, sent it within the orbit of Jupiter, she had made many

voyages ; but you will recall that the secret of the power to overcome gravity and successfully to manipulate the vessel was committed to writing and placed in the *Regina's* safe previously to that first long voyage recorded by my ancestor, ages ago. This document was never disturbed, as the details were firmly fixed in the minds of the two inventors, Fraser Burnley and Jervis Meredith, who never divulged the secrets.

"These two friends willed their whole interest in the vessel to the survivor of them absolutely, and it is a matter of history how Meredith, my ancestor, became the sole owner. Another long voyage had been arranged—the seventh or eighth since that to Sirius—and both went to the shed where the magnificent silver-like Queen was housed, in order to enter for the voyage. Behind them followed the crew and a number of other people, for the public had been admitted. Fraser Burnley opened the door, and at the moving of a switch the great roof slid aside. Evidently forgetting the current was still on, he impulsively jumped on the ladder and that instant he was annihilated, even before the cry of warning could form itself on Meredith's lips.

"Every one round the great doorway saw him, in the twinkling of an eyelid, de-atomise into vapour and vanish. Not a trace of him was left ; he was completely volatilised.

"Of course the journey was postponed ; later on, Meredith, now the sole owner and the only living person who knew the secret, made another and many subsequent ascents.

"As age advanced, he felt unequal to the strain such voyages entailed, falling as it did on him alone—and he would not take any one, even his son, into his confidence—so he decided to make no more journeys until he became a little stronger ; therefore he housed the *Regina* in her shed with all the fittings intact, also placing around it the well-known protective current

of de-atomising force. In the hope of wooing health and strength to return to him, he spent his days in quietly studying, with the strange scientific instruments brought from various worlds, the forces of nature on earth and the limitless space beyond. However, instead of growing stronger, as he had anticipated, he became gradually weaker, and less and less able to bear any excitement, but still he would not give in, trying heroically to defy the old age which was slowly and surely drawing him to his long home.

"At last he felt the unmistakable grip of the kind and friendly hand upon his heart-strings, gently deadening their vibration, so he thought he would like to take one last voyage to glorious Venus, his favourite planet, to which he often went for short visits, and die there ; so he called his son Dennis, after whom I am named, and told him of his intentions.

"'But you cannot work the *Regina*, father !' remonstrated his son.

"'No, Dennis, I cannot, but you can and shall. Carry me to the shed and I will tell you what to do to board her, and how the gravity is overcome, and how to guide her safely, for we'll go up together ; you the head this time, and instead of being under my care, my lad, I must come under yours, for I know you'll look after your feeble old father, as I have looked after you. And promise me, Dennis, my son, on your word of honour, that come what may you will never divulge the secret of the *Regina* to any living soul unless your end is near, and then only to prevent its being lost.'

"'I promise, father !' replied Dennis, much overcome.

"'Thanks, my boy, thanks !' his father uttered, feebly. 'Now move me gently, for I am very weak, Denny, very weak ; your father's on his last legs !' and he held out his hand to his son ; but before Dennis could grasp it he exclaimed,—'Oh, Dennis, Denny, my dear, dear boy, I am dying. Stoop down and I'll tell

you how to get on the vessel. All details are in the safe and if . . . all is so dark, Denny, and I am so very cold . . . closer . . . closer . . . Dennis, where are you ?

" 'I am here, father dear !' cried his son, brokenly and in tears. 'I am close beside you.' And he took his father's hand in his own and came very close. 'See, I am here.'

" 'Thank you, Denny. Don't leave me.'

" 'No, father, I am close beside you.'

" By this time the dying man's voice was scarcely a whisper. 'Denny'—and there was a painful silence—'Denny, when . . . you . . . open . . . the shed door . . . you . . . must . . . '—and with this effort his voice failed ; then he gave a faint sigh and fell back dead, and the secrets of the *Regina* were lost.

" Dennis spent all the rest of his life trying to solve the mystery, and his son did the same, and for generations my ancestors have made electricity their life's study, as I have made it mine, in the hope of elucidating the mysterious force that could defy time and the elements, even the blasting force of lightning—for many and many a time have I and other people, too, seen the vessel struck by lightning which has devastated the shed, but the flash has been met by an answering flash from the vessel ; and often have the whole forces of heaven's electricity been drawn to the magnificent ship, and there has started from the *Regina's* sides a series of incessant flashes—curtains of blinding flame—and her silver sides have seemed to ripple electric fluid, in sparkles and drops of rainbow-coloured fire, like the dripping of water from a salmon leaping through a sunbeam. And in the very centre of the storm the brave vessel has seemed to enjoy the uproar ; wave after wave of crackling lightning pouring over her in a flood of livid fire, awful to see, and, always victorious and unharmed, she seems to take on her whole surface a smile of derision at nature's puny

and childish attempts at injury. So has she stood through all the years ; defying time, apparently defying eternity, and not even her timber supports affected or disturbed.

"Time after time have the authorities in succeeding generations made determined attempts to blow her up, notwithstanding the fact that she is private property, but all to no purpose. No one knows how many times the walls of the shed have been rebuilt, for storms, dynamite, gun-cotton, rystosol, scores of other explosives, lightning and what not, have levelled them to the ground, too often for record, but she still remains perfect as when last used and altogether unapproachable by person or thing. In her safe lies the greatest secret the earth has ever known, the secret that can play with gravity, and yet it is as far out of our reach as is the most distant star."

Here Dennis paused a moment to select a fresh cigar, but his listeners were too deeply interested to say a word which might break the thread of his story, so he resumed,—

"Until this annihilating force can be cut off, any thing or person brought within twelve inches of any part of the vessel's surface or projections is volatilised. As I have said, my ancestors have devoted their lives to the subject, and after all these years of toil and enormous expense, the mystery is as impenetrable to human minds as is the occupation of the dead—and yet what wonders have been, and still could be, opened out if this secret could but be found !

"In weird and awful majesty the *Regina* rests on her blocks—impregnable, unapproachable, indestructible ; and so she can remain so long as this world lasts, aye, to all eternity ! Although within sight and touch, nothing has been known to pass the protecting current. The shed has to be kept well secured lest any one should inadvertently enter within this invisible zone, and enter eternity at the same moment."

Here Dennis paused, and Gilbert asked: "What has been done recently—say in your father's time?"

"My father spent all his life in trying to find some switch or other controlling force, without success."

"But there must be some wire or secret switch near the door, or the inventors could not have controlled it," argued Ross.

"And it must have been a very secret switch, or they would not have gone into the shed intending to use it before all the people," urged Gilbert, "else the vessel would not be safe if the source of its control were known."

"So it was thought," answered Dennis, "and my father, when I was a youth, gradually took down the whole of the wall, piece by piece, in the hope of finding some wires, but nothing was seen, and I myself have done the same thing with a like result."

"Have you tried the floor?" inquired Ross.

"Yes, certainly, that has been up, too," replied Dennis.

"Have you gone deep? Have you tried tunnelling under the vessel?" asked Gilbert.

"Yes, and a remarkable thing happened," said Dennis. "The floor and foundations of the walls can be taken up and have been up many a time. I dug down to a great depth, leaving that portion on which the vessel rests and plenty all round it, so that she should not fall, going so deep that she stood as on a monument. Nothing resulting, I felt desperate and told the men to tunnel underneath and blow the lower rock and earth away from below, so that she should topple over. They blew all the earth away, but she would not come down, nor did she move so much as a hair's-breadth—her gravity and that of the earth were in equilibrium. There she remained, suspended in air, resting on her blocks, with a foot or so of earth below them, and a pick, or indeed anything else, brought within a foot of the earth below the blocks,

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or the vessel, over or beneath, was at once rendered vaporous. The whole thing was so uncanny that it was months before I could get the pit filled in and then I had to pay well. So far I have spent the best part of my life over the problem and have failed, so I built up the shed as before, fastened it securely, and I do no more ! ”

“ That is a pity ! ” said Ross, musingly.

“ Why should I spend all my substance on what cannot be discovered ? For years many of the first electricians and scientists of the day have spent thousands on her and all to no purpose ; all in turn have had to acknowledge themselves beaten.”

“ It need not cost you anything, you know, for the Government gives grants for such things,” remarked Gilbert.

“ No, thank you, Eastern,” replied Dennis, decisively. “ You will recall that my much-esteemed ancestor and his friend obtained a warrant signed by his Most Gracious Majesty, King Edward VII., by which they retained the right of keeping the secret unmolested for ever. Now, if I received any Government aid, I should forfeit my right—or it would be forfeited if some Government-paid scientists found it out. They could not in fairness refuse to tell those who had financed them, nor could I under similar circumstances. No, my people have always paid for everything and so do I. I am not going to run any risks of the Government getting hold of my ship, notwithstanding my love for science.”

“ Would you mind if I try ? ” asked Ross.

“ Would I mind ? ” repeated Dennis, highly pleased.

“ I should be delighted ! Only I must make this stipulation, that if you succeed you tell no one except me.”

“ Not our friend Eastern, here ? ”

“ We’ll see about that later,” replied Dennis, laughing.

"Oakland," exclaimed Ross, earnestly, "I promise you faithfully that I will reserve nothing from you that I may discover, and all from every other soul so long as I live; if any one else is to know, you shall tell them. I am deeply interested in this, for it is a matter after my own heart."

"Then commence when you like and I will pay for all that is necessary," responded Dennis. "When can you start?"

"At your convenience, Oakland," answered Ross, aglow with zeal.

"Then we'll make a beginning to-morrow. Both of you come over to Derwent and we'll go into the matter. And now we must be off; we have talked Bona to her setting and old Sol is just rising."

The trio of new-formed friends then entered their respective vessels, and a few minutes later three airships were swiftly flying to England and home.

CHAPTER II

THE REGINA GIVES UP HER SECRET

"And now I will unclasp a secret book,
And to your quick-conceiving discontent,
I'll read you matter deep and dangerous."
(SHAKESPEARE.)

THE day following, the three friends met at Dennis's home, and at once proceeded to the shed in which the stately *Regina* was housed. On entering, Dennis moved a switch and a revolving steel shutter slowly descended from before one side of the shed, the whole of which was lined with thick glass; at another movement a similar shutter slid from above the glass roof, and a third movement caused this roof to fold itself up and slide aside, leaving the top open to the sky throughout its entire length.

Both the visitors uttered an exclamation of delight at sight of the stately vessel, the lines of which sent them into raptures of pleasure and wonderment.

"You are a lucky dog, Oakland, to have a creature like that all your own!" said Gilbert, enthusiastically. "What is the material?"

"I don't know," replied Dennis; "no one knows beyond that it is some untarnishable alloy, probably from the fact that no one can examine it. See, I throw this hammer at it and you will see it de-atomise," saying which, with a fine disregard of tools, he lifted up a heavy steel hammer and flung it at the vessel, but when it came within about a foot of the side it suddenly

vanished and there appeared a little puff of faint, thin vapour—the gaseous atoms of the missile—which became mixed with and lost in the air of the shed.

“There’s an enormous force there,” observed Ross, amazed. “What generates it? Batteries?”

“No one knows,” answered Dennis, “that is one of the mysteries. If it came from the engines or dynamos on the vessel, they would have been run out or worn out ages ago; we should also hear motion of some kind, but you will notice everything is silent as the grave. Listen!” and they all remained mute and motionless for a few minutes, but not a sound disturbed the vault-like quietude.

“Batteries would be equally out of the question,” remarked Gilbert; “apart from the quantity needed to give a constant current of that strength, they would require recharging and replenishing, and perpetual motion has not yet been discovered.”

“That is so,” agreed Ross. “I think we must seek some other cause, some means by which the force is spontaneously extracted from the air or earth around. You know our airships have no engines to drive the motors; we gather the necessary power for this direct from the air by the aid of certain metals which, when alloyed in given proportions, attract electricity to any desired volume and under perfect control, and I think some such force is here. Have you tried any of the active metals?”

“Yes, all; everything!” replied Dennis. “She is a strange anomaly; she has engines and motors which are necessary for her flight in some way, and yet there is a continuous current, as you see, which apparently comes from nowhere. And one would think that if such a force is self-generating, engines and motors would not be necessary. The whole thing is a mystery; especially when you consider that one might almost imagine her to be alive, or that some demon is on board who manipulates the forces, for if any electric energy

or metal comes in her vicinity, she seems to get her blessed temper up and literally fights. At the mere approach she crackles all over and throws out sparks of fire and lightning that have more than once blasted the shed to the ground, and everything has had to be strongly insulated, or there would be an electric storm;" and Dennis drew their attention to the building, saying, "You will notice all the tools are insulated and the whole interior of the shed lined with sheets of thick glass cemented together, the masonry and shutters being on the outside."

After examining the building, Gilbert remarked,— "You mentioned last night, Oakland, that the gravity of the ship and the earth were equal; consequently she possesses no weight and could be floated off. Have you tried strong blasts of air? Theoretically, a breath would waft her."

"I have had fans and blowers, but the strange force around her stops everything. I have even made fires underneath, thinking to sink her by rarefying the air (and so causing her to settle as the air became thinner), but she did not move. It is exasperating when one knows she would divulge everything if one could but get aboard. She is also such a source of danger and terrible care to have on one's mind, that if you cannot win her it is possible you may find some means of destroying her; I really don't mind which! But there she stands in the most aggravating fashion, quietly defying everything and everybody," and Dennis's annoyance was evident and excusable.

"As you say, Oakland," remarked Ross, "she's a tough nut to crack, full of apparent anomalies and impossibilities and, while uncontrolled, dangerous in the extreme. Have you tried to register the strength of the current?"

"Yes, but it is unregistrable. Nothing, no matter how strongly insulated, can pass the zone, in which there is no demarcation. The dial shows no current

at all till it reaches the protecting belt, not even when moved by micrometer screws working in gear, and there is a point when nothing is recorded; the next turn forward, even of a two-millionth of an inch, and the whole apparatus is vapour. I have used some scores in this way, but these are expensive experiments.

"I have thought several times of encasing myself in an exceedingly effective insulating suit and making a dash for the ladder, or dropping on deck from above, for then I might get below to the safe, but when I tested the suit first, filled with sawdust, by dropping it from the roof, it never reached the deck but became vapour, so I was glad I had experimented with a dummy."

"Not a bad way of getting rid of rubbish," said Ross, laughing.

"Yes, but a little too dangerous," replied Dennis, "especially if it had been me instead of the sawdust," and he laughed boisterously, when, seeing the others looked slightly mystified, he stopped abruptly and continued soberly,—“Do you think, Ainley, that you could do anything to crack this nut if Eastern helped you?”

"We will try," Ross replied, speaking also for his friend. "The secrets of the pyramids and the sphinx have been laid bare, and maybe this beautiful creature shall float again," and his voice took upon itself a more serious tone as he continued,—“Oakland, it is often said that the whole current of lives and destinies of persons and countries may be changed in a moment as if by chance, and, with your permission, we, Gilbert and I, for we talked it over last night after you left us, will give up our present work and devote the rest of our lives if need be to cut this Gordian knot, and if we fail, we may pave the way for others to bring this treasure under control again."

Before Dennis could reply, Gilbert said, eagerly, "I will stand by my friend Ross and you, Oakland,

in this work all my life, if I may, and if we do not succeed we can die at our unfinished work ! ”

“ Thank you, my friends ! ” responded Dennis, somewhat overcome ; “ you shall not regret it. Let it be so. I had not intended spending another moment on her, but your enthusiastic devotion to science has warmed my blood, and from this moment I will work with you and we will all devote our lives to this one object, whether it demands little or the whole of them, and our interests shall be united.”

All were deeply moved, and the whole of that and many subsequent days were taken up in going through papers and books containing particulars of the work done in previous years. Ever since the death of the first Jervis Meredith, the succeeding generations had recorded all the details of their work, and had dealt with the problem in such a masterly manner as appeared to leave nothing to be tried that had not been done already. After the three had gone through everything together, weighing each step of progress carefully, the enigma became more and more puzzling. For weeks they spent every moment working and discussing, bringing all the latest science to bear on the previous work ; and month followed month till at the end of two years they had to acknowledge themselves hopelessly vanquished, for there seemed nothing more to try.

During this time several storms had occurred in the neighbourhood, and they had witnessed the whole interior of the shed, to the insulating glass casing, as one mass of awful lightning and electric discharge, which had left the vessel serenely victorious. In one storm they were watching through glasses at a safe distance, the peculiar form the discharges took gave them an idea upon which they acted, after careful discussion together.

Two months later the solution seemed solved ; but was it ?

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Like three schoolboys they approached the airship in great trepidation ; up to a few minutes previously, for centuries everything brought near its surface had been instantly volatilised, irrespective of its substance and chemical composition ; and in the first flush of excitement, they had joyfully flung their hats at the ship and they had struck the hitherto defiant Queen, now docile and manageable again, for the hats were resting on the supporting stage on which they had fallen—the first time for centuries that anything had passed that awful zone of destruction. Would *they* pass, or become vaporous ? Dennis insisted on being the first to venture, saying he could not allow others to do that from which he shrank, and amidst great emotion he grasped sleeves with both his friends, bade them good-bye, and one second later he was standing on the ladder top, where no living creature had expected to tread. The instant the anxious watchers saw Dennis touch the ladder they rushed for it and ran up like a couple of monkeys, reaching the platform almost as soon as he, and tingling with excited enthusiasm, the three passed through the vessel to the safe.

Dennis knew from his papers where the keys were, and unlocking the desk drawer, the key of which had been handed down to him through the past generations as a sacred heirloom, he obtained the *Regina's* safe-keys, and soon the sheets of drawings and details were lying on the table, all three almost devouring them in their eagerness, for now the greatest secret of the world was about to be disclosed. Their scientific matter-of-factness gave place to boyish and exuberant delight which could not be repressed. They took the precaution to reconstruct the protecting force to prevent intrusion—although the shed had been locked before putting their discovery to the test—and then they became so absorbed in the study of the minute descriptions of the mechanism and forces now at their disposal that twelve hours passed unheeded.

"This is stupendous!" at length exclaimed Gilbert. "There is enough force here to destroy the world! And now we have gone through everything and know the principle, it is easy enough to work it blindfold, almost. But what's the matter?" he asked, looking at Dennis, who stood perfectly still, listening.

"I fancied I heard voices in the shed," he replied, "but I am sure we locked the door, I went back to see."

"It would be awkward if any one came too near the ship," said Ross; "although every one knows the danger. I'll just look outside." He stepped up to the observatory and was astonished to find the door down and the shed crowded with people.

Calling the others up, the three stood and watched, and, gently opening the door a mere chink, they heard every word spoken below.

The crowd was greatly excited, and one man, Richard Howett, the chief personage in the town, said,—

"My friends, it is with extreme regret that we learn of the deaths of our townsman, Dennis Oakland, and his two friends, Ross Ainley and Gilbert Eastern, all men of high standing and renown. It needs no proof to convince us that they have shared the fate of all the foolhardy people who previously have ventured too near this magnificent but fatal vessel, for they were seen to be working here yesterday and have not returned. The door was locked on the inside and you see there are no hiding-places, and they could not return except by means of the door which we have just broken down, so that the calamitous fate they have met is most deplorable."

Here the three listeners chuckled, unconscious of which the speaker continued,— "As soon as the news of a possible disaster reached me, I obtained the permission of the authorities to break open the place and blow up the vessel, as a danger and menace no longer to be tolerated."

"That has been tried many a time, and no explosive has ever been able to touch it," objected some one in the crowd. "When I worked for Dennis Oakland, some five or six years ago, he himself tried to blow up the ship, but he only brought the shed down."

"What explosive did he use?" asked the first speaker.

"We bored under the ship and he used rystosol, which blew the whole place down and the foundations also, but the vessel stayed where she was, hanging on air, and none of us would work at it again."

"That is strange; nothing has ever been known to withstand it. However, we will try a very heavy charge. All of you except three volunteers go outside to a safe distance."

As they made a movement for the door, and about twenty volunteers stepped forward instead of the three asked for, Dennis, remembering one of the early experiments of his ancestor, told his friends to look out for some fun and instantly altered the de-atomising force to one of protection only, so that any one touching the vessel would receive an electric shock of sufficient strength to teach him caution, but not to prove injurious. He then moved a switch, gently at first, as he was not sure if the power really was as much under control as the instructions stated. Very slowly all the people in the shed became lighter; one man, his former workman, taking a stride towards Richard Howett, stepped right over his head, landing with one foot on the *Regina's* outer deck. With a yell of fright he slid down her sloping sides, but long before he could reach the ground he was so light as to be floating about like a butterfly. In a panic the whole company made a dash for the doorway, but ere they could reach it Dennis made them sufficiently light to float about in the room a few feet above, their vain efforts to jerk themselves downwards low enough to pass out causing them to look like living corks bobbing up and down in

water, and to the three watchers it was indescribably funny to see the consternation on the faces of the floating citizens, who could not comprehend the situation. After they had taken the edge off their mirth, the three all stepped on the outer deck, which they insulated—for any part of the vessel and surroundings could be insulated or brought in circuit at will—and the sudden sight of the supposed victims in the very zone of death caused several of the floating people to give an exclamation of terror, thinking they were spirits. Dennis saw this and addressed them, tragically,—

"Ye floating spirits, what would ye! Come ye to this abode of death to attend our apotheosis? Why come ye to disturb our repose?—Gently, gently, my friends!" he interjected, as he wafted off, with a wave of his hand, a few of the people who were drawn towards him with the air disturbed by his movements. Then the laughter of his two companions broke the spell, and many of the people laughed and cried, for all were hysterical and frightened, and some called on him in terror to spare their lives.

"We've gone far enough, Dennis!" remonstrated Gilbert. "Let them down gently, or they'll faint with fear!"

Wafting and blowing away a few more who came too close, Dennis resumed, this time speaking in his usual tones,—

"My friends, do not be alarmed! We are not ghosts, but real flesh and blood and very much alive—excuse me!"—as he blew off a couple clinging together for protection. "My friends and I have discovered the long-lost secret of my ship, the *Regina*, now *our* ship, for my two friends, Ross Ainley and Gilbert Eastern, join me in the ownership from this moment, and in order to prove to you that we really have found the secrets, the chief of which is the one and only scientific method of adding to and overcoming or

depriving of gravity, we thought we could not do better than give you an actual demonstration of the fact, in return for your kindness in breaking down my door—our door, I should say—in order to favour us with this visit, the object of which is now frustrated, though you may be sure we appreciate your good intentions none the less. You will perceive—pardon me ! ” as he sent a few more away with a wave of his hand—“ you will perceive that you have been made lighter, and were it not for the retaining walls of the shed, you would float away and for ever remain as far off the ground as you are now, and if weighted down you would inevitably rise on the weight being removed ; also if you were made lighter still you would float upwards through the roof. For some reasons this would be an advantage, for in this age of aërial navigation it would be pleasant to know that in case of disaster you could never come crashing to earth, but would only fall through the air till you arrived at your equilibrium, or correct specific gravity, and the lower air would make your descent like that of a high diver in water, and you would have always a deep, soft cushion of air to fall upon on which you could take no hurt. Some of you, however, have business on the ground, and as some sage once suggested, if the ground will not come to you, you must perforce come to the ground—steady ! ”—as another citizen floated too near. “ I notice several of you have already lost your tempers, which is bad for the nerves ; you see we are quite placid and cool, though you have damaged much of our property, and had we not appeared in time, you would have blown the whole building to dust. For this you must forgive our joke ; we do not bear malice, neither must you, and those who are not prepared to take this as a jest—and you can see it is perfectly harmless—I propose to float upwards just within the walls, with their heads only above the top till they are willing to see it in that light. I see several are looking

alarmed, but I can assure all those who want to go up that they will come to no hurt ; they cannot fall, and will be so light that they could not injure themselves, even wilfully, by bumping against the walls. To those who are convinced of the *Regina's* power, we will restore their former weight, and after we have had an hour to prepare the vessel, they shall be conducted by us through the ship, where no foot has trodden for centuries till yesterday, and they will see that after this lapse of time everything is as perfect and dustless as if just new, for the protecting force that has caused the death of several people has preserved the vessel from damp, heat, and even dust. We want that hour to cord the way, for the mechanism cannot be shown you and whoever goes beyond the cords will pay the penalty with his life. We do not anticipate throwing the vessel open to general inspection again and you only shall have this privilege. Now, all who desire to forgive and forget, please raise a hand ! ” Dennis looked round and proceeded : “ I am much pleased to see there is not a single dissentient, and that smiles have replaced frowns. In a few seconds’ time you will be restored to your personal comfort and weight.” Here Dennis nodded to Gilbert, who entered the vessel and slowly removed the switch back to zero ; as gradually did the people fall.

When they knew there was no danger and that they had not been suddenly transformed into angels—which many had often expressed a desire to become—they could see the humorous side ; who could not ? for who could remain serious and see sixty or seventy people of all ages and conditions bobbing up and down light as feathers, actually blowing one another away ? Even before they reached the ground tears of laughter were on all faces as they struggled to congratulate the three owners, in the best of good humour. After the preparation they went round the vessel and saw what even in that enlightened age were hitherto incon-

ceivable wonders, and finally the vessel was cleared, the outside protected as before, in proof of which several missiles were hurled within the zone and all present saw them vaporised. Willing hands helped to fix up the door as before, and the shed was closed and locked securely to shelter the gigantic Queen, still a deadly enigma to all in the world except three persons, but to them a kind and gracious mistress, ready and willing at any moment to do their bidding and to carry them to the utmost confines of creation, to open out wonders and mysteries hitherto beyond mortal ken.

Weary as they were, they sat talking the matter over for several hours, and then retired to rest, feeling that life was indeed worth living and work a blessed privilege.

Needless to say, the instant the people had got outside the shed news began to travel far and fast; before nightfall it was telepathed all over the world, and airships by scores came to Derwent; the sky was full of them, almost every stratum of atmosphere having hundreds of ships jostling one another, each hoping to catch a glimpse of their wonderful rival; but the *Regina*, in her protected and armoured shed, was safe from all observation and theft. The door, which had only been partially fastened when the crowd broke in, was now thoroughly secure and in electric circuit.

Twice the same night Dennis's house was broken into and the three friends were roused by the alarms, which at the same time frightened the would-be thieves, who no doubt thought the papers might have been brought away for examination, notwithstanding the self-evident fact that no place in the world could be more secure than the *Regina* safe.

The following day a deputation from the Government with the State authority and seal waited upon Dennis and asked for the *Regina* and her secrets to be

handed over to the Government. On this being refused, they demanded it, then threatened, trying to bluster the secrets out of the discoverers by force and threats, but at every outburst they were referred to and shown a copy of the warrant of absolute protection granted by H.M. King Edward VII., of blessed memory, and his Parliament, centuries before. Eventually the deputation had to return foiled, for not even the Government could go beyond that warrant.

Untold wealth and high positions were offered, but what is wealth when all have enough and none can be oppressed? No, the *Regina* should not be bought, she was too precious to be sold; she should be the sweet, lovely and gracious Queen to the end, and *give* her power for the cause of science, for the good of the whole human race; she should benefit the people and lead them to the contemplation of higher and nobler things, and be really and truly in everything their Queen—not for any personal gain to her supporters, but to unfold before all men, as only she could, the wonders of creation which would otherwise be hidden.

CHAPTER III

VOX POPULI

"In my morning's walk I culled a handful of flowers, some with thorns, which I found made the smooth stalks easier to carry."

(GIRANOLI.)

FROM time immemorial it has been the custom to celebrate every special occasion with a more or less gorgeous feast, at which, especially from the eighteenth to the twentieth century, men drank to intoxication, and not only those who had over-indulged but the majority of those who were sober, were not considered sociable or properly educated if they could not narrate coarse, trivial and lewd stories, and turn every innocent expression to obscenity during the whole course of the evening; but in these times, when everything is chemically made and repasts partaken of under hygienic conditions both as regards morals and intellect, the food is wholesome and sustaining, and the conversation, instead of leaving a sear on the minds of those obliged to sit and listen to it, is good and elevating, and leaves no objectionable taste and feeling. Thus, when Dennis, Gilbert and Ross followed the usual custom and celebrated the discovery by a banquet, at which all the subjects of the harmless joke in the shed were present, the gathering was a great success and those who sat down rose again afterwards with thoughts and lips as pure as before dining, and the event re-

called nothing but pleasant and wholesome memories later.

In all the years of the world's history human nature has on the whole gradually improved, but there are certain traits which are embedded in the hearts of men and do not reflect happily on an otherwise enlightened age. One of these quickly asserted itself. Directly it became known that the lost secrets of the *Regina* had at last been found, many people belittled them, and though they knew how important was the discovery they held up the matter to the most unseemly ridicule. Even when faced with the question of the proof in the validity of history, they averred positively that gravity could not be overcome; that nothing could travel through limitless space and be under perfect human control, and because these cavillers had no part or share in the discovery, they sneeringly declared there was neither discovery nor honour in the resuscitation of the ship, and they had many followers, for people are like sheep and must be led; such as these cast slights and doubts on the honours and attainments of others as being beneath their notice till perchance similar honours come within their own reach, to be grasped with delight and paraded before all men as being exclusive, difficult of attainment, and having the hall-mark of high honour.

Thus it came about that sceptics innumerable rose up and discounted all proofs of the *Regina's* power. No proof could be sufficiently strong to convince them, short of making them a present of the vessel, for which they could not very well ask though they wanted it all the same; others also professed incredulity unless the whole of the secrets were laid bare before them, and when this proposal was treated with derision, they said the owners were afraid of the consequences, knowing the matter would not bear investigation.

In former times—particularly about the nineteenth and twentieth centuries—the British government dealt with matters so slowly that in many cases the need for action had passed long before the decision to act had been arrived at, and when this action was by time rendered unnecessary or perhaps impossible, further consideration was indulged in to countermand the previous decision, the pros and cons of which took up so much time that when the fiat had gone forth that no action was necessary, the time had then come round for a decisive move to be made. All this used to please the heads of the government in those days, for they gloried in what was then called 'red tape,' which was a term understood to mean refusing to grant what was needed when wanted, and compelling acceptance when neither wanted nor necessary. This was the essence of parliament in times past and business of world-wide importance would readily be put aside indefinitely, in order that some hundreds of members could debate at length on more urgent questions, such as "When expecting friends to tea on the Terrace, are members compelled to take a parliamentary bath first, and are towels a suitable costume in which to vote or entertain?"

Fortunately 'red tape' had rolled away with the old order of things; the government was now alive to the country's interests, and the officials were almost always first in the field, often before the ordinary people had realised the necessity for action. This was proved by the hurried meeting that was called after the discomfited deputation had left Dennis, when one of the chief officials was deputed to go alone, on the assumption that one might find out more and be more confidentially treated than a deputation. Solomon Magson was therefore selected because he was one of the smartest of officials, though he suffered from *caput inflatum*, which is a disease especially pre-

valent amongst the young though it has been known to attack those of maturer age, as in this case.

Solomon at once called upon the friends at the shed and introduced himself, demanding full particulars or forbidding the use of the vessel. At this Dennis laughed derisively, saying, "My dear Solomon Magnuson, as you put it that way we can only point out to you that not all the opposition in the world could prevent it, as I will prove to you. Will you kindly take hold of this bar?" and he handed a bar of steel to his visitor and asked Gilbert to de-atomise it; instantly the bar dropped like a melting candle and became a pool of liquid steel. The visitor was visibly astonished, but remarked, loftily, "Ah, yes! gentlemen, but that is a trick; it is, of course, steel specially prepared for the experiment; it is very pretty!"

"No, it is the ordinary best steel, as you will find if you analyse it. Take a bottleful of it; you will notice it runs like quicksilver, but there is this difference, that neither by heat, cold, nor anything you can bring to bear on it will it alter and become solid again; till we give it the power of cohesion," said Dennis, "it will remain fluid as water."

"You say so, but it is obvious I cannot test it here," and he gave a superior smile.

"You are still unconvinced?" asked Ross.

"I have seen no substantial proof as yet," he replied; "gravity is not affected."

"Here is another bar," said Dennis, "we will cut this in two and make one half light and the other heavy," saying which the bar was broken and the roof being open, it was placed on end, instantly to shoot up like a rocket with a whizzing scream, to become white-hot and fall into dust; the other portion was placed on the same spot and the current reversed, when the bar sank into the earth like water and vanished. Again the supercilious official smiled

and observed: "Very entertaining, very! I see you have plenty of pretty experiments for visitors."

"Not convinced yet?" asked Dennis, brusquely.

"I fear not!" the visitor smiled.

"Just stand here, please, opposite the vessel," said Dennis, drawing him from the end of the shed, at the same time giving a nod to Ross, who passed up the ladder and inside. "You shall have full proof," he continued, as he walked away.

Instantly the visitor rose like a lark half-way up the shed, when several vessels passing in the air slowed up in curiosity, so Ross closed the roof and steel shutters and then sent the sceptical Magson up to the top, where he floated about gently, bobbing his head against the glass after the manner of a gas balloon.

"How dare you take such a liberty!" he cried, angrily.

"You asked for proof, and you've got it!" replied Ross, now on the outer deck, where Gilbert and Dennis joined him.

"I will have your vessel destroyed!" Magson shouted, shaking his fist towards them in a fury, which exertion brought his back up to the roof and he narrowly escaped turning upside down. With a struggle, he got the right way up again, and the effort to keep so absorbed most of his attention.

"You must see, Solomon Magson," said Ross, "that if everything and every living soul approached the ship, one and all could be made so light as they came within its zone, that they would float off into space or, if we reversed the current, so heavy that they would be disintegrated or de-atomised into powder with the shock, and sink through the ground. We don't do that to you as it would kill you, whereas we only wish to give you the positive proof you ask for, and if we made you lighter still and opened the roof, you would continue to rise until we had sent you out of the earth's atmosphere, long

before which you would be asphyxiated, as you are aware."

"Let me down, instantly!" he bellowed.

"And as it is," continued Ross, ignoring the interruption, "we have merely altered your specific gravity by scientific means and unless we restored it you would remain that distance from the ground all your life; even when you were dead and your body became less buoyant, you would have to be buried on the top of a monument, or it would be difficult to keep you down."

"I insist on coming down!"

"You do not understand me. I was trying to prove that you cannot insist on anything."

"But I will come down!"

"You still fail to grip the point of the argument," said Ross, imperturbably; "you cannot insist, you have no will, you are powerless."

For some minutes there was no sound save the slight tapping of Magson's head against the roof, as he bobbed up and down and felt his way all round the shed, floating like a swan. Ross was quite unmoved, and his two friends were enjoying the situation too much to make any remark, and wondered what Ross would do next, for he was not the man to submit to insolence. However, after waiting a few minutes he descended the ladder and resumed his interrupted work, Dennis and Gilbert doing the same, all apparently unconscious of their floating audience of one, who was obtaining a splendid bird's-eye view of everything.

"Please let me down!" at length came a submissive voice from above.

"That's decidedly better!" commented Ross, stopping work and looking upward; "and you are quite convinced that the *Regina* has some semblance of power, and that notwithstanding your dictum?"

"Perfectly!"

Ross did not reply, but went inside and a few

moments later, Solomon Magson was standing beside them, a milder and wiser man, and by tacit consent the escapade was not alluded to, but a very different representative of the government was now present; the new Solomon Magson paid the three owners considerable deferential respect.

"What do you intend doing?" he began; "you surely will not let such a beautiful vessel be unused."

"By no means," replied Gilbert, "we have already arranged a voyage aloft."

"You will give the results to science, of course?"

"That is our intention," replied Gilbert.

"Have you decided on your destination?" asked Magson.

"We thought that after being unused for so long, it would be best to take only a short voyage this time," replied Dennis, "so we have decided to go to Bona."

"Would it be too much for me to ask permission to be one of the party?" inquired Magson, eagerly.

"I fear it would not be possible," said Dennis.

"We shall make a few trials in the earth's atmosphere, but that will necessarily limit the speed, or we should suffer from the heat of friction, but in the journey beyond there might be danger. We cannot be sure that everything will be in working order for rapid transit outside the atmosphere, so we three are taking our lives in our hands and risking it, but we dare not endanger others."

"I will gladly take my chance with you," said the former sceptic, all his resentment gone and now as enthusiastic as they.

"We dare not," answered Dennis.

"Three are few to negotiate a vessel of this size; I should be useful," he persisted.

"I am very sorry, but it would not be possible," replied Dennis.

Magson was deeply disappointed but accepted the decision and continued,—

"When you start you will make it known, I suppose, as many people will follow your course with glasses."

"And many will say we have not been, but have merely hidden ourselves," laughed Ross, scornfully, instantly regretting having put it that way, fearing Magson might perhaps take the remark as personal; but the latter responded, "No doubt of that. It would be better if you could state your course first and then by adhering to it, you would substantiate your statements."

"We shall do that, certainly," assented Dennis; and after a little more conversation Magson left, feeling that his visit had not been entirely unprofitable in that he had added to his circle of friends and also considerably reduced the swelling in his head.

The three friends discussed the projected journey at great length, referring to the papers in the *Regina's* safe in order to compare the arrangements made and the stores required on the previous expeditions, but these did not help them very materially, for since that time many of the things taken had become obsolete, and many improvements had been made for curtailing labour.

The engines having been built for petroleum would answer for the newer 'breezol,' which is made from waste products and has an enormous explosive force, with the advantage of being non-explosive and non-inflammable under the ordinary conditions of storage. The older compressed petroleum was taken away and cubes of 'breezol' substituted; these cubes were very small, each representing one gallon, which was equal to twelve or fourteen gallons of petroleum, and sufficient cubes were stored to give ten years' continuous work on all the engines, even with extravagant use.

In the cuisine of the vessel several alterations had to be made, for cooking was now almost obsolete, so the ranges and other former appliances and fittings were taken out to adapt the galley to the present

wants, the modern food requiring little or no preparation, being composed almost entirely of the chemical constituents necessary to maintain the body in full health and vigour. Few people, therefore, need the same kind of food, each person's formula being in the hands of a medical man. The doctors are responsible to the public, each practitioner having a limited number of patients in a certain district, in which he must reside, each person paying him an annual fee regulated by statute. For this the doctor has to examine the person at fixed periods, and analyse his blood when necessary in order to supply the lacking chemicals to re-establish his health. Both doctor and patient have their obligations; if the patient becomes worse the case can, if desirable, be reported to a referee who, if he finds the illness is not running its course but has been aggravated by a wrong formula, gives the patient an order to deduct a certain amount from the doctor's fee. On the other hand, if the patient is at fault, by neglecting his doctor's orders, or by such actions on his part as tend to bring on avoidable illness, or reduce his mental or physical strength, or minimise his chances of recovery, or in any way make him an unhealthy citizen, he is fined and put upon a rigid course of living till he recovers, during which he has to pay his doctor an extra heavy fee. By these means doctors understand their patients, who work so well with them as a rule that serious illness is now unknown, for toxins are met with anti-toxins, and chemistry has become such a fine art that at the first sign of failing health chemicals can be given to counteract the illness and restore the normal conditions, and doctors can cure almost everything short of actual dissolution.

These chemicals are given in the place of food, in the form of wafers or flexible capsules which are easily swallowed, or if actual meals are wanted, these are supplied chiefly in various kinds of chemical

eggs, meat, fruit, vegetables, etc., all in air-tight capsules which are only broken just before use.

All goods formerly of linen, being now made of wood pulp, very soft yet exceedingly strong, and white, and capable of great compression, are burnt when soiled, and three or four changes of this highly antiseptic clothing can be carried in a small, thin, very light box in the vest pocket. Each member of the expedition, therefore, carried his own food, toilet and wardrobe about with him, all suited to his own particular taste and requirements. Consequently, after getting their formulæ corrected, our travellers-to-be laid in a store of such things as they needed, which left much unoccupied space in the vessel. They did not require a crew, as the vessel was now capable of being controlled by one person if necessary, and their united knowledge was such as to enable them to keep everything in excellent order with little expenditure of time and labour.

In this instance it was fortunate for science that none of the three was married, or unforeseen difficulties would have arisen, for it is doubtful if their wives would have consented to their hubbies jaunting off to other worlds, and it is equally doubtful if they would have accompanied their partners, in which case this story would never have been written. Women are not the meek, down-trodden creatures historians would have us believe they had been some decades back. Long ago they had risen as one woman in revolt at their so-called slavery and subjection to man. Demanding and obtaining an active part in the government of the country they had, to some extent, lost much of that womanliness and feminine loveliness which had formerly been considered amongst the chief attributes and attractions of the sex.

They had also so strongly resented the relinquishing of their own names for that of the men they married

that few of them could be persuaded to marry at all. The men, however, insisted, and sought help from the state, and it was made an indictable offence for a woman to refuse to marry the man she loved if he offered her marriage. Even that did not answer, and the whole world was agitated; men became frantic whilst women stood by, pensive, longing, loving and lovable, but resolutely refusing to hear the voice of the charmer, charmed he never so wisely. Finally, the difficulty was to a certain extent overcome by the men owning that for the woman to sink her name in that of a husband on marriage really *did* show a marked inferiority to him and was a gross libel on the universal belief that she was in every way the 'better half.' From this time matters improved, and on the passing of a special law entitling wives to retain their maiden names, a few of them here and there were induced to marry, mostly against their will, when a fresh difficulty arose which stopped all further marriages. The wives declared they were the better halves, and that married couples should be named "wife and husband"; their partners as firmly contending that as they were by nature constituted bread-winners the expression should be "husband and wife."

It often happens that when disputants are right, yet both at opposites, and neither will give way, the only bridge is a compromise; so in this case the difficulty was bridged by the husband saying "husband and wife," whilst the wife referred to a married couple as "wife and husband."

This important matter settled, all went amicably, and the terms "Mrs." and "Mr." were dealt with in the same manner, though these have now fallen almost into disuse, whilst the mention of man—as a mere man—being the "lord and master of creation," was attended with so much angry discussion as to have sunk into oblivion long ago. Formerly also,

for ages, every newspaper and book was filled with stories of how poor, deluded, unwilling and powerless men were dragged by women to the altar, but for some time past the true statement of things has prevailed—as truth always will prevail eventually—and instead, it is painfully evident every day how deceitful men are, and how they get women so into their toils as to marry the men out of sheer goodness of heart, merely to put an end to their manly importunities.

As our three heroes were ignorant of the joys of running in double harness, they were reckless of their lives, no one would have them, so what happened affected no one; they did not shrink, therefore, from risking themselves in the *Regina*, which had already absorbed all their affections. So one night, without any public warning, they entered the shed, fastened the door and slid aside the roof; boarding the vessel, they made all secure, and amidst great excitement, the switch was moved and in uncanny obedience the vessel slowly rose.

Several airships had for some days been hovering over the shed in the hope of finding out how the vessel was manipulated, and now, as she rose silently and steadily like some majestic thing of life, these watching craft drew nearer, telepathing the news that the *Regina* had at last risen as though from the dead. Quickly others approached, but nothing was to be seen on the outside save her well-known form, her silver-like plates glistening in the moonlight. Higher and higher she rose, the other vessels also rising till they reached their limit and the air became so rarefied that their vanes could no longer meet the proper resistance. Then a strange thing happened, about which all the people had heard and read, but which needed to be seen to be appreciated fully; the great ship remained quite stationary, uninfluenced by gravity. Then she came a little lower and stopped;

then again lower, as the owners were testing her condition.

All the ships around were kept in position only by the full power of their motors, many slowly sinking, unable to sustain the high altitude; yet here was the *Regina* actually repeating before their very eyes what had made her famous in history; actually playing with gravity, silent as a bird on its nest.

Throughout all creation there seems to be instilled a dread of that which is not understood; and this awful stillness in mid-air quickly spread a great fear and dread amongst the craft around, and the watchers became first nervous, then alarmed and finally in a panic, when their motors suddenly stopped and the ships slowly sank, gradually becoming heavier till they nearly reached the earth, when each occupant received this message, telepathed from the *Regina*: "We are proving to you that the *Regina* can overcome gravity, and we could force you disintegrated through the earth to your destruction. In one minute from now, your weight will be made normal, so prepare your vanes and motors for the plane you are now in, lest your machinery break and you shoot upward to the plane you left on the release of pressure."

True to promise the ships found themselves released, and most of them sailed away to what they considered a safe distance, but they were brought back by the *Regina*, then let go again, as her repulsive forces were reversed and became attractive.

Then the *Regina* put on her whole six search-lights, almost blinding every one by the sudden glare, and soared upwards, shedding long trails of light like a meteor; smaller and smaller she grew, then vanished. Then again the light was seen in the distance and then darkness; and again the vessel was seen travelling outside the earth's atmosphere like a falling star and was gone; round she came again and then encircled the earth within the atmosphere, then traversed the

length and breadth of England, finally hovering over Derwent for a few moments, lighting up the whole city with a blinding glare, and, with her lights still on, she slowly settled into her shed. For a few minutes the brilliant lights shot upward for miles into the sky through the top of the building, when the roof slid over and all was hidden from view.

Ten minutes later the three occupants came out of the shed to be received by crowds of curious folk who, late as it was, had been drawn to the spot and who asked all manner of questions, and as they looked upward they saw fast-racing airships gathering from all quarters of the sky, their lights forming a miniature milky-way.

This flight had been anticipated by the government, who had whetted everybody's curiosity, for with commendable business despatch, the instant the news of the discovery became known, the whole history of the *Regina* was set up in type and printed in pamphlet form, the brochures being on sale within twenty-four hours, and enormous quantities were disposed of by the government booksellers, the later ones containing Solomon Magson's official report, which was so eulogistic that people purchased fresh copies and the printers could scarcely keep up with the demand.

Even before the flight, almost every child in the street knew the story, yet to find the vessel had actually departed and was already in space, kept people up to watch and roused those already sleeping to excited wakefulness, for every one wanted to see the actual exploiting of the wonder of ages.

Almost overcome by their experiences, the three men of the hour made their way with difficulty through the throng to their home, giving instructions that none were to be admitted, for though no one could enter the grounds by the gates, many airships had deposited their occupants inside and all wanted to

have a few words, but once in the shelter of the house, the three were safe from the crowd of inquirers.

"My dear friends," exclaimed Dennis, with much feeling, "what a lucky day it was when we entered on this business!" and he could say no more.

"What an awful power there is in that ship! it is overwhelming to think of!" said Gilbert, fervently. "And how awe-inspiring to travel outside this blessed earth and air, where angels are supposed to dwell. Oh! Dennis, it is good to live and I thank you from my very soul!"

"And I, too, Dennis!" concurred Ross. "I thought I should have died with awe or fear or joy—I don't know which it was—to see our own old earth revolving, and the atmosphere throbbing and moving like a sea. I can never be sufficiently thankful!"

"Nor I!" agreed Dennis. "It has been the dream of my life! and to think that generations should have been passed over and that I should be the one to see the long-lost secrets laid bare. We have a good deal to be thankful for, our present sanity even, and we ought to thank Him who made us and all creation, for giving us the privilege of seeing outside this wonderful world and bringing us home again in safety with our reason unimpaired, for this last is perhaps the greatest blessing of all!"

"I feel as if I had been dreaming!" exclaimed Ross; "it is difficult to realise that the *Regina* has really taken us so far; it is not yet morning. How beautifully she acts! a child could work her, once the force and switches are understood, thanks to your revered ancestor—may his bones rest in peace—for writing all down so clearly."

"Yes," agreed Gilbert, "now we have got it at our fingers' ends we can keep the description in the safe where it was, for we could manipulate her blind-fold. It was a capital idea of yours, Dennis, for us to take turns at everything, because we are able to

fit in anywhere in an emergency and relieve each other."

"It is much the best, I think," assented Dennis, "for as our interests are now one, we are bound, in justice to ourselves and each other, and in view of our united safety, to be able each to manage the whole business right through."

"We must have gone through the atmosphere at a great speed," said Gilbert. "I tested the casing and it was not even warmed, so we are fairly heat-proof. We will have the ship stored with food for a long time and then sail off to Bona. Shall we risk ourselves straight there, or have a few shorter flights first in order to get our heads a little?"

"I should say, go straight away," said Ross, eagerly. "I think we can work her in perfect safety and she is as good and manageable a ship as could be."

"I think so, too," agreed Dennis, "and we are all almost childishly anxious to go off again."

"I am, anyway!" said Ross, laughing, "so we'll turn in and sleep the sleep of the just, if not too tired and excited, and begin preparation to-morrow."

With that they all retired to rest; but the experiences of the evening had been too sensational for quiet slumber, and the following morning each had to confess to having had but fitful sleep.

The arrangements went on apace, and a few days later, the stores being packed safely, all was ready for the flight to beautiful and beneficent Bona.

"I think it would be a good plan to use ether-wave every day, say at six o'clock p.m., and let all our messages be sent to every wave-apparatus on the whole earth," said Dennis, when discussing final arrangements.

"But we shall have them all sending to us, and that would be a nuisance," objected Ross.

"That won't do!" replied Dennis. "We can have a set earth-time for general news, and the instru-

ments so arranged that only Greenwich and the chief government newspaper can communicate with the ship, between which and these two points there should be facilities for news at any time if necessary. The *Times* would therefore be able to publish such of the special information as they and Greenwich might consider of interest to the general public."

This being arranged, a special photograph was taken of Bona in order that the adventurers could decide as to which portion of the planet they should alight upon, so that their progress could be watched from earth. After much consideration it was decided to aim straight for the valley called the "Kidney," because of its shape. This was unmistakable, and according to careful calculation, the airship should be visible in London till some time after they had landed on Bona, for they would go straight, uninfluenced by the earth's rotation, and thus, providing glasses could distinguish what would in comparison be a speck on Bona's disc, her flight and settling might be seen by almost every one in England.

It was decided that plenty of notice should be given, so that those who wished to note the flight should have opportunity for preparation, and the 13th of June, fourteen days later, was fixed for the journey, particulars being at once sent all over the world by the ship's wave-apparatus, the code used being that issued by the government for universal use.

By the 10th of June, air-craft began to assemble from all parts, and large as Derwent was, the whole resources of the city were taxed to the utmost to provide for the visitors.

Most of the modern ships are, of course, adapted for remaining in the air at various altitudes if anchored, their vanes revolving at sufficient speed to keep them fairly stationary. The anchors are of various forms, the more usual being attached to a flexible steel cord, giving a fine line of enormous strength; the anchors

being small tubes which give out their air on contact, thus instantly creating a perfect vacuum; atmospheric pressure on the outside of the tube and an automatic grip inside, pin the tube with very great force to the ground or any other object on which it falls, more than sufficient to restrain any airship from straying; a light current transmitted on the wire moves a slide, allows air to enter the tube, and instantly the whole is released without injury to the object on which it has been allowed to fall.

On the 12th of June, so many ships had arrived in Derwent that the business of the city was seriously incommoded; there was scarcely a free stratum of sky-space left for traffic, the sky was so wedged with ships of all forms and sizes that the city beneath was completely darkened, and scores of anchor-lines were constantly snapping by the moving ships below cutting them, and there was heard on all sides the twang of breaking wires, some emitting deep, sonorous tones, whilst others gave out a shrill scream. Often would come fresh arrivals on one of the higher planes, and on all sides the little suction-tubes were sinking, to be pushed aside by the vigilant owners of other ships, when they would sink still lower, perhaps to settle on another vessel, when the tube would be immovable. If not noticed in time and the line cut, a second later it would be drawn taut and the double strain would snap the line of the lower ship, when both vessels would be set adrift. It was important that some one should be momentarily alert, for tubes were constantly descending and tubeless lines hauled up to be refitted, any one of which might injure another craft.

Below the effect was even worse, for the taut wires rose from the ground every few feet, and in the vicinity of the shed passage between them was impossible. Hundreds of the aeronauts descended to sleep in the houses in Derwent and found it impossible to return

to their ships, then too closely packed to descend, and hundreds wished to come down but were unable to do so and had perforce to stay aloft.

On the morning of the 13th, all traffic in Derwent was stopped, the lines forming such a network in the streets that passage between them was actually dangerous, for many of the owners, in order to protect themselves and their craft from being cast adrift, or providing anchorage for some other vessel, had placed their lines and steel decks in electric circuit of sufficient strength to fuse any other line or tube touching them; and if any person below touched such a line, certain electrocution followed, and their removal from it was equally dangerous to those who went to their assistance, so the authorities 'waved' to the shed, asking for the *Regina* to be cast off, the three friends having taken the precaution of removing there a few days before, which was a piece of admirable forethought, or the *Regina* could not have sailed to time, for all approach to the shed had by then been cut off for twelve hours or more.

It was just before dawn on the 13th, when the message arrived and a few minutes later the first 'wave' was emitted from the *Regina*, telling all the people that the ship would sail five minutes later. Instantly all anchors were released and there commenced such a crush in the air as had never been seen before and, for humanitarian reasons, it is to be hoped will never be seen again. All rules of right of way, passing, and air-plane laws went by the board; some powerfully electrified vessels fused all others that touched them, throwing the weaker vessels out of action and precipitating them on the vessels below, which in turn were rendered impotent by the crushing weight and broken gearing, or by being thrown in sudden contact with others by the shock. Fortunately only two lives were lost in this dreadful crush, but the damage was terrible; all but the most power-

fully electrified vessels were scraped clean and smooth as unpainted ships.

In four minutes came a message to clear all space above the shed ; but so tight was the pack that none could get away laterally, and many of the ships over the shed were already at the highest altitudes to which their engines had power to lift them, so that they were unable to go over the others, and the lower ones, though capable of doing so were equally unable to pass above those wedged higher ; but they were soon to see a demonstration of the *Regina's* power which made the aerial navigators blanch with fear, seasoned to danger as they were.

Punctually to time the roof of the shed slid back, and in the dim twilight there streamed aloft a blinding light.

In these days of high-voltage electricity, brilliant lights are common enough, but no one in that vast throng had ever seen so powerful a glare as that which belched upwards from the shed. It lit up the keels of the lower vessels, sending their shadows, black as pitch, for miles into the sky, as it penetrated the higher planes where an opening permitted, blinding everybody with its awful glare. Nothing could be seen as yet of the source of light, which was below, and this gave the shed the semblance of being the opening to the bottomless pit, or as if a damper had been drawn from the flue of some awful subterranean furnace.

For a great height above the shed there lay a solid mass of airships in a closely wedged belt. Over this living, throbbing pack, spotted with innumerable lights like diamonds, the stars were paling for the dawn and a faint streak of light showed itself on the eastern horizon. Below the stratum of ships lay the country, fields and trees made blacker by the throng of vessels above. Blackest of all was the enormous shed, the steel-covered walls of which rose up sheer

and menacing to a great height, but now this dark and forbidding-looking building was rendered doubly black by the awful glare pouring out of its roof.

The message to clear the way not being complied with, the people held their breath and clutched tightly at one another, or the first thing which gave them substantial grip, for all the ships' motors stopped as though magnetised, whilst the vessels remained perfectly poised and steady, in their exact positions of the moment. Scarcely had this been realised when it was seen that all the ships over the shed were rising bodily, without their relative positions changing by so much as a hair's-breadth; becoming lighter and still lighter they rose still higher as from a well, leaving all those outside them in a solid wall like a shaft.

Several tried to sail out and rise in the shaft to a higher plane, but their ships were still immovable, their engines and motors unable to make a single revolution. Those who were sufficiently near to look up the shaft could see the vessels rise and then float aside over those of the highest plane, leaving the shaft clear to the sky.

The fact that the *Regina* had not yet appeared made this demonstration of her power all the more eerie, for all felt that some awful influence, more mysterious because unseen, was using the natural force of gravity with wonderful and irresistible strength in some simple yet secret manner, and the steady and certain way in which the forces of nature were used made thousands of the watchers nearly frantic to find out by what means it was done.

The course clear, very slowly the glittering vessel rose above the roof of the shed, as steadily as if on wires, and when just above the building, the roof slid back automatically; up the shaft of ships the *Regina* rose, sending out a light so blinding that all the people were dazzled by it, yet they could see that

she had no machinery outside, and save for a dome and an outer deck round it, her sides were smooth and free from anything which could hinder her swift passage through the air.

Not a sound was heard from the vessel, not a tremor disturbed her poise, as she rose gently and regally like the Queen she was. When at the top of the shaft she paused, and in forced obedience to her silent will, the vessels that had previously occupied the shaft re-entered it and took up their former position exactly, their previous gravity being restored. The instant the last vessel had floated into place, all the ships were relieved of that mysterious tension that had stopped all movement, and there was heard the din of the screams of hundreds of motors, as the vessels started from where their movements had been arrested. As those on the upper planes rose and separated to follow the *Regina* the lower ones were set free, and sailed out of the dangerous crush. A few minutes later the *Regina* was surrounded by scores of inspecting ships, and as her lights were now out, her beautiful lines were the admiration of all. Still she stood, motionless as a dead body, so still and stately, with not a throb or tremor on her gigantic form, that the people became awed by the uncanny silence and the strange, mysterious power of gravity-control which she used so perfectly.

So she stood, silent and dignified, her sides dazzlingly white in the paling twilight. Suddenly, the sun, which had not yet risen to those on the ground below, came into view at that high altitude, and a ray of sunlight caught the *Regina's* dome, and that same instant, as though it were the good-bye kiss from earth she had been waiting for, and was now satisfied, she rose; so slowly that she had gone above them before those around noticed it. Higher and higher she went, the ships gradually falling back as their utmost altitudes were reached, till at last only one

remained and watched the *Regina* mount higher and still higher till she became a mere speck, then was lost to view in the rapidly brightening sky, and the solitary attendant commenced its descent. At that moment a sheet of paper fluttered down from the *Regina* close to the ship and there remained perfectly still, gently floating on the air as on water. Securing it they read,—“Good-bye! good luck. Keep an eye on us if possible. This is a souvenir of the *Regina*; may you be able to keep it!”

Of course they could keep it! what an absurd thing to write about! and it was handed round as they descended, but just as the owner was passing it to his wife it slipped out of his hand and went fluttering upwards, then suddenly stopped and remained floating, as before. Elevating the vessel again they took it in and descended, and again it floated back the instant the close grip on it was relaxed. Again they secured it and this time took it into the cabin to examine more closely, but it flew up to the ceiling and getting in the current of air there, was wafted out of the window and they saw it float up to its former position. This was most annoying, and the owner was not going to trouble further when his wife, recalling the chief secret of the *Regina*, suggested that the gravity of the paper had been altered to coincide with the particular pressure of the atmosphere at which it was found. This being the case, and his being the highest ship afloat, it was no longer a mere slip of paper, but a precious souvenir. He therefore rose, and just when he could rise no more he saw the paper a few yards away, floating as before. This time he placed it under glass, which he screwed to his table and, descending, proudly exhibited it to his friends.

In the meantime, the *Regina*, once away from her audience, increased speed rapidly, and in a few minutes was outside the earth's atmosphere, when she shot

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forward straight at Bona, watched by thousands of eyes; and through the most powerful telescopes she was seen to settle down as a tiny spot of light, like a mote in sunbeam, in the very centre of the still-luminous Bona, in the 'heart' of the "Kidney."

CHAPTER IV

MUSCÆ VOMITORIÆ

"I saw three insects alight . . . and after careful consideration I classed them as *Musca Vomitoria* (blue-bottle flies) . . . of exceptional size."—*Insect Life*.

"How is the air, Gilbert?" inquired Dennis, as Gilbert emerged from the laboratory where he had been testing a collected sample.

"Excellent," he replied; "about the same as ours but a little drier, though not much; it will suit us admirably."

"What about the gravity?" observed Ross, at the same time walking across to the gravitometer. "I see it is almost the same as Earth has now and exactly what she used to have. It measures a speed of thirty-two feet per second of a falling substance for each second of motion."

"That makes a unit force of half an ounce, then," remarked Dennis.

"Roughly, yes," replied Gilbert, "about one-thirty-secondth of a pound, so it will be rather better for us than Earth."

"Then it is no use waiting any longer, we might as well land," said Dennis.

"Right you are!" exclaimed Gilbert, at the same time moving the ventilator-switch and closing the artificial air apparatus. "We may as well save our

breath," he observed. "What about our meeting any possible people?"

"We had better be fully armed," counselled Dennis; "and then we'll explore."

Accordingly, they each armed themselves with a brace of noiseless revolvers, containing fifty needle-like capsule-shots apiece, fired by compressed air; on striking, they flatten against the body and burst, emitting a powerful corrosive acid which instantly bites through every known substance to the skin, in which it at once becomes absorbed, and in the same second the whole of the blood is solidified. No cure or antidote has been found, and so certain is it in effect that death is inevitable.

Having made the vessel immovable and secure, they stood at the foot of the ladder wondering which way to go. They were in a great clearing, carpeted with beautiful green grass as even and close as if freshly mown. On this grass were clusters of shrubs bearing reddish leaves and brilliant yellow blossoms, the whole forming a perfect, harmonious scheme of colour. Encircling this was a dense wood, and the visitors could not help noticing the strange fact that though the grass was as brilliantly green as any on Earth in spring, all other vegetation, such as trees and shrubs, was a russet-brown, here and there tinged with red, like the colours on Earth in autumn. Their attention was also forcibly drawn to the grass, which on Earth grows thin and sparsely under trees and in all places where light cannot reach it, but here was, in such situations, as thick and velvety and as luscious as in the open, proving that this vegetation was not so dependent on light as that on Earth. Almost immediately they had stepped on the thick, mossy turf they felt all their doubts needless, and there came over them a feeling of serenity and confidence that altogether disarmed suspicion of evil.

Passing along this velvety carpet, they approached

the bordering wood and entered its delightful shade. Here were thousands of flowers which on Earth bloom only in certain seasons, all growing together—the primrose, violet, daffodil, rose, chrysanthemum, fuchsia, snowdrop, and countless others in splendid profusion, giving the air a ravishing perfume. A few yards further on was a long, untrimmed hedge of sweetbriar, and as the breeze bore its exquisite fragrance towards them, they could not withstand the desire to sit under its pleasant shade, quietly to enjoy the beauty of their surroundings.

From the elevation of their approach in the ship, this Bonian "Kidney" had seemed to them an ideal place; the country waved in undulating stretches of land and water—here a sea, there a lake, and running between and beyond were many silver streaks of river, narrowing and fading into seeming strands of silver wire. As they lay beside the deliciously scented hedge, they saw beyond them a long level stretch of grass like a well-kept lawn, ending in a glimpse of blue sea.

"Let us go to the shore," suggested Dennis; and looking round, continued,—“isn't this a glorious country! I feel the mild air invigorating me so much that I glory in being alive!”

"I never dreamed of anything so delightful!" exclaimed Ross, drawing in a full breath of the sweet air, almost chewing it in his enjoyment.

"Come along then!" cried Gilbert. "I feel like a boy again, and I'm going to have a swim in that sea, if I get sharked!"

Across the moorland they went, and soon came to a cliff of earth down which they scrambled to the beach—a stretch of beautiful sands. Some two miles distant there jutted into the sea a long, flat rock with deep water around it; Ross pointed this out and suggested bathing from there, so in order to get a better view they reclinced the cliff and walked along the edge of

it to the spot indicated. The walking here was as easy and soft as on the richest carpet; the grass was thick and mossy, and below this were several inches of peat. The cliffs were most peculiar in shape, some sharp at the top like a long knife-edge, others pointed like needles, and all of a soft, red sandstone. Very soon they came to the outer edge of this promontory, which divided two bays and ran into the sea like a long and attenuated letter V, and they stood lost in delighted wonderment, for the coast beyond was opened out before them in a mighty sweep; in and out the line went, bordered with an edging of sand and rocks and seaweed and splashing, sparkling foam from the broken waves, as if a long piece of diamond-trimmed lace had been laid open to view. Below them, the sea had hollowed out great basins in the rocks, forming gigantic pools of immense depth, and rocks innumerable were scattered about, giving plain evidence of the power of the Bonian sea. These rocks were spread open and piled upon each other, their peculiar square shapes resembling enormous toy bricks.

Full of the vigour of life and joyously exhilarated with the beauty of the scene, the explorers raced down the cliff and bathed in one of the pools, to their great enjoyment. After running about in the sun till dry, they dressed and retraced their steps, but had not proceeded far before they began to feel very uncomfortable. The sea-water had been somewhat sticky, and though they were quite dry before they dressed, their skin and clothing were now united, and their hair also was matted into one solid piece like a shell, all shrinking in the sunshine to a painful extent. Their clothing not being quite so elastic as their skin, considerably impeded their progress, so much so as soon to stop it altogether, and at last they could walk no more but had to tumble down as gently as their stiffened limbs would permit.

"Now we're in for it!" groaned Dennis.

"It's glorious!" said Ross, ruefully. "I feel like a capsuled herring! And here we shall be, in full view of Earth telescopes!"

"I never thought of that!" exclaimed Gilbert, trying to laugh, but his stiffened face refused to bend into a smile, and the laugh turned into a kind of choke. "But I doubt if they will be able to pick us out, though if they can, we shall have been giving them an entertainment to some tune!"

"I am afraid we shall have to roll down the cliff into the sea again and stay there till this gummy stuff has softened," said Dennis, through his teeth, for it was next to impossible to move his lips without cracking his skin.

"And if we do, we shall be in the same state again," mumbled Ross, with closed mouth. "Besides, how could we swim? We should just flop over with a smack into the mouth of the first fish that chanced to be waiting. Oh, my nose itches terribly! Could you reach it with your elbow, or knee, or foot, or anything, Dennis? I positively can't bend my arm! My limbs are held as if in a vice." And he rolled over like a semi-animated mummy and rubbed his face in the grass, which made him sneeze. "I believe that's split my face off; I felt it crack! And my nose is worse than ever. It's awful!" he spluttered. "How is it that when you can't or daren't scratch, some inaccessible place itches and tickles till one gets frantic?"

"For the very same reason that if you forget your pocket-handkerchief, you don't need it till you recollect it isn't there, and then you want it urgently," said Gilbert; and then suddenly,— "didn't we pass a stream in coming? I believe we are close by it; let us roll in and soak till we get limp."

With that the 'expedition' rolled over and over painfully for a hundred yards or so, when they got to the bank, down which they tumbled into the narrow

and shallow stream which flowed from a spring a little higher on the hill. Down they went, one after the other, all in line, the head of one to the feet of the one higher, which was accomplished with considerable pain and difficulty. Their bodies dammed up the narrow stream, and in a short time the water was raised sufficiently high to flow over them.

"We shall soon soften now," observed Dennis, painfully trying to brighten up the spirits of his companions.

"I hope we shall, for my only object in life just now is to kill a beetle which is stuck on my eyebrow, and he won't be worked off, the brute!" exclaimed Ross, irritably. "I believe he is either plucking it out or biting it off!"

"Keep calm, old man!" said Gilbert, soothingly, "it shows his appreciation of you, and you ought to feel flattered—Great Bona! A gnat or something is biting my nose, and I can't wash him off!"

"Keep calm, old man!" repeated Ross, mockingly, "it shows his appreciation!"

"That's all very well, Ross, but——" and Gilbert broke off to laugh, or rather, he attempted to do so.

With jest and banter they whiled away the time, but in the course of about half an hour they were chilled to the bone, though they were limp again. The first to get up was Dennis, the lowest, who, with stiffened joints, painfully knelt, then turned round, saying, "How do you feel now, both of—— Great Bona!" he suddenly ejaculated, at the same time remaining with one knee in the water, as though turned to stone, his eyes starting with astonishment, the while his two friends stared at him in wild alarm. They did not remove their gaze from his face for an instant, whilst he gazed at them as though bewitched. Still looking at Dennis, Ross scrambled up and approached him, in doing which he had to pass Gilbert, who was in the middle. In the act of passing, he

glanced at him, then stood still, staring first at him and then at Dennis, as if transfixed, whilst Gilbert, at sight of him, was too surprised to make any further effort to rise, but sat where he was in the stream-bed, the water pouring past on each side of him.

"Am I mad, or are you?" blurted out Dennis.
"I swear you are both as blue as blue-bottle flies!"

"I?" queried each of the others, in one breath.

"You two are!"

"Do you mean to say *I* am the colour of you two?" exclaimed Ross, in amazement.

"If *my* face is as yours," uttered Gilbert, despairingly, "I shall die with grief!"

"Look at our hands and clothes!" exclaimed Ross, so ruefully that Dennis burst into uncontrollable laughter, sitting back in the stream without noticing it, his friends joining in the mirth till they could laugh no more, and then they all stripped only to find they were dyed from head to foot a brilliant and magnificent blue—hair, skin, nails, as well as clothing.

"Well! this *is* a glorious picnic!" laughed Dennis, boisterously.

"It's all very well to laugh," remonstrated Ross, himself at the same time laughing heartily, "but the honour of Britain is at stake, and if we meet any natives here, they'll think us humans a bright lot with this sample before them."

"Oh, don't! Ross," pleaded Gilbert, holding his paining sides tightly. "Don't! don't, I am sore. I can't laugh any more, I really can't!"

"Bright lot!" gasped Dennis, in jerks, for speech was painful with excessive laughter; "we *are* a bright lot, polished like mirrors. For Bona's sake tell me if my tears are blue, or if they've washed any blue off my face! No? Then we are permanently and beautifully blue." And they had another fit of laughter.

"How are we to dry ourselves?" asked Gilbert;

"by the time this coating has dried we shall perhaps be stiff again."

"Oh, don't trouble, Gilbert, old man!" replied Dennis, airily. "We'll find another stream and soak ourselves red, or green, or something; one or two colours more won't matter much now!"

"I say, you fellows, be serious!" panted Ross. "Think a bit, if you can! Don't you see that this is beyond a joke? If we come across any folk here, what *will* they think of us?"

By dint of each insisting on the others taking it seriously they began to talk the matter over, and could only conclude that one of the waters must have contained some substance similar to potassium ferrocyanide, but non-poisonous, and the other some ingredient like a ferric chloride, and the long immersion had precipitated prussian blue—dyed them blue. What the substance really was they could not tell, for though they got samples of both waters later and analysed them, they could find no chemicals with which they were acquainted, and none of the reagents known on Earth revealed anything in either sample except H_2O , leaving a considerable quantity of unknown substance—and always each was harmless alone, yet when the two were mixed together, though the water remained perfectly transparent, any substance of Earth placed in the mixture became dyed a fast blue.

"Let us get back to the ship," said Dennis; "it is only prussian blue, and we can get it off in the lab."

"And let us hope no natives will see us till we are ourselves again," rejoined Gilbert. "Ross is in a sweat about his complexion!"

Laughing gaily, they made tracks for the *Regina's* laboratory, where their troubles would soon be at an end. After proceeding about half-way to the vessel, they were both surprised and annoyed to see several people step out of the wood and cross the open to meet them.

"Drat it all!" ejaculated Ross, exasperated. "Why couldn't they have waited a little till we had got this wretched stuff off."

"'In for a penny, in for a pound,' as the old saying is," said Dennis, laughing, but feeling much embarrassed.

By this time the Bonians had met them, expressing no surprise at sight of their visitors, whom they saluted by placing two fingers on their foreheads. Then they talked fast and long in a language quite unintelligible to the explorers, who themselves were not understood.

"Here's a treat!" said Gilbert; "we know about a dozen languages between us and not a word they can understand." Then turning to the natives, he pointed to where the Earth was and, utterly oblivious of the fact that talking was no use, he continued, with pointings and energetic gesticulations, "We have come from there," pointing to Earth, "in that ship," pointing to it, "to see here," pointing downwards and embracing the whole country with a wave of his arm, and speaking very loudly and distinctly.

Whether they thought he was mad or not is doubtful, but they drew apart and talked together, looking in turn at the strangers and their ship. At last one of them ran swiftly to the wood, the others still standing silently apart, and Ross said, "Let us get into the ship and take this stuff off, we can talk with these people after," at the same time stepping forward.

Immediately these innocent-looking people advanced to bar the way, and held across the path one of some curious thin rods they carried and which the visitors thought were wood, but which were really highly magnetic steel, for instantly the three travellers became rigid, unable to move a limb, and experiencing all the tingling sensation of a galvanic shock.

For a few minutes they stood thus, with the rod before them held at each end by one of the natives, when from amongst the trees came about fifty others,

all similarly armed. One, evidently the chief, stepped out and signed for the rod to be removed, and with its removal, the power of speech and motion returned to the visitors. Gilbert, who was a little peppery, drew his revolver, more for show than anything, but whether his expression gave him away, or they suspected danger, movement was again made impossible by the holding before him of one of the rods.

Again did the king, or leader, sign for the rod to be lowered, and for the second time the strangers were free, and they were now more cautious. It was, however, impossible to understand or be understood, so Dennis tore a leaf out of his pocket-book, but as he could make no visible impression on the deep blue paper by his equally blue pencil, he pointed to the sky and drew lines on the ground to represent the solar system, with leaves for the planets, which they at once recognised. For as a great portion of the atmosphere is practically devoid of particles by means of which sunlight could be reflected, the stars and the solar system are distinctly visible in the broad daylight on a dark sky—as is the case on Mars and on Luna. The Bonians instantly corrected Dennis in the position of their planet, fixing the satellite where she was at that particular moment, proving they were *au fait* in the science of astronomy. By this means they comprehended the situation and immediately, by signs and tokens, showed their friendliness and laid down their weapons.

The visitors also put down their arms, which excited much curiosity, and Ross explained their action by shooting at a stone, but they were primitive compared with the rods, which instantly stopped all movement and rendered anything impotent; when necessary, these rods would fuse stone and bring steel to a white heat; they were not used to take life, for the Bonians never killed or tortured any living creature.

The three visitors had forgotten about their shining

complexions, until one of the natives pointed in comparison to his own white skin and to the face of Ross. Poor Ross nearly died with mortification, for he was fair and clear-skinned—that peculiar clearness which often accompanies chestnut hair—and of all these things he was vain. It was his only weakness, and to be suddenly recalled to fact by so personal a reference humiliated him terribly. He tried to make them understand, and in part succeeded by rousing their curiosity without convincing them; so thinking he would be in good company, he, by signs, persuaded several of them to bathe in the sea, which was not difficult, seeing they were fond of it. Ross then managed to make them comprehend that they had to dry in the sun, which they also did willingly enough, little thinking of the surprise he had in store for them in the change that was coming, for he determined they should repeat his experiences and get blued, but he was a little disappointed to find their linen to be still soft and not at all sticky, nor were the people stiffened in their clothing as the visitors had been, and to the touch their hair was still soft and loose. However, these matters were mere details and Ross proceeded with his joke, grimly determined to blue his victims as effectively as he and his friends were dyed. When they came to the stream he tried to persuade them to lie still in it, in their clothing, but they did not see this at all, and only the desire of the chief personage to please the visitors caused them to comply with Ross's request, and there they stayed, minute after minute, in their clothing, for about half an hour, at the end of which time their skins were undyed and their linen was white as before.

At last they got up and squeezed the water out of their clothing, feeling that it was a funny sort of joke, the point of which neither they nor their companions could see—nor could the visitors, and poor Ross, who had run the whole entertainment, both looked and

felt foolish and, if possible, bluer than ever, especially when the people seemed to ask for an explanation of his joke and evidently considered the strangers a true specimen of those living on Earth.

It was plain the Bonians were not of the same substance as Earthy folk, and therefore only the laboratory could restore the Terrestrians to their personal comfort and, in Ross's case, good looks, for the other two didn't mind much, not having so much to lose. So off they started straight for the ship, like three enormous blue-bottle flies walking upright, sans wings, with a crowd of fair, English-flesh-coloured people in their wake. Telling them by signs that they would soon come out again the same colour as the natives, they rushed to the laboratory and bathed themselves first in one thing and then another, but nothing would make the slightest impression on their blueness. They were well and truly dyed and polished with a very fast colour, and at the end of their exertions, with blistered, sore and cracking skin, they had to face the fact as it stood, and trust to time to bring them to their normal condition. Meanwhile the Bonians were free to consider all people on Earth like the sample submitted, which was felt to be a severe blow to England's pride and glory as represented by the three explorers, and to Ross in particular, for apparently never more would his clear skin and chestnut hair be admired by any one unless they were predisposed to take the blues.

"We've got to stay here till we pale again, that's clear!" declared he, emphatically. "I shall never go back to England this colour, if I never go at all!"

"And I have no ambition to be one of the first blue men on the face of the Earth!" agreed Gilbert, ruefully.

"We'll see!" said Dennis, cheerily. "It may wear off in a day or two."

"That's all right; the people here think we are

naturally blue, and we cannot undeceive them, worse luck ! But I am certainly not going to give any others a sight of myself just yet !” retorted Ross, saying which he set about preparing their simple meal, it being his turn.

“We have not attempted to telepath with these people,” remarked Dennis, after their meal. “Thought is universal and knows no language, and we might be able to exchange ideas that way as conversation is not possible.”

“Certainly !” replied Gilbert. “We can try it anyway, and if successful they may perhaps tell us how we can get rid of this dreadful metallic blueness, and ease Ross’s mind. I see they are waiting for us.”

The three then descended, and by telepathy they soon found a ready means of communicating thought, and all difficulties were at an end. Seeing their skins cracked and blistered, the Bonians gave them some kind of ointment which, when applied, proved both soothing and healing, and on hearing the story of their adventure at the spring, were considerably astonished ; as such a change of colour was unknown to them, it could only come from a peculiarity in the Earthian skin and clothing, which combined with the chemicals in the water to produce dye, and after some little experimenting by the natives, a lotion was made for their visitors which gradually dissolved the blue pigment on the skin. In the course of two months desquamation commenced over the whole surface of the body, and a week or so later, after the scales had fallen, the travellers were flesh-coloured once more, for which they were devoutly thankful.

In the meantime they had learned enough of the new language to make themselves understood and to understand conversation, which, added to telepathy, made them feel very much as if with friends, as they were. They found the Bonians much more advanced in some things than the people of Earth, whilst in

others they were not so capable. They were in constant communication with Venus, Mars, and all the planets of the solar system except Earth, which alone seemed to be cut off from telepathic influence. Messages could be sent by all to Earth, but they were not understood, nor had any communication ever been received from there by any of the planets. The Bonians were unable to say definitely where the fault lay—whether the atmosphere surrounding Earth was not favourable to telepathic messages from and to other worlds, or if the perceptions of the Earthians were not sufficiently sensitive to other influences; they thought the latter, and they were probably right, for it transpired that at the first meeting by the spring, finding speech impossible, they had earnestly telepathed, to no purpose, and though but a few yards distant, the desire to use transmission of thought had not suggested itself to the visitors till several hours had been spent on the planet, whereas the desire should have been coincident with their own; and while the natives telepathed easily, the three visitors could only do so with difficulty though accustomed to it on their own world, and when the people were not actually present, the Earthians could not telepath to them or receive their messages, proving the inferior mental perceptions of the Earth people.

It was most remarkable that no reply could come from Earth to the Bonians, yet the three visitors could hold communication at all times, and at the first thought it seemed to point to the superiority of Earth, but not so when it was remembered that the travellers were obliged to use special and elaborate 'wave' apparatus in delicate sympathy with those on Earth, whereas the Bonians and all other inhabitants of the solar system conversed by pure telepathy—transmission of thought—alone, without instruments.

Dennis and his friends determined to put Bona in direct communication with Earth by making another

'wave' apparatus like their own for the natives, and after considerable time and trouble they succeeded and, proud of their achievement, sent the first message from actual Bonian soil. What was their astonishment, however, to find all their work useless, for although the messages were really sent, Earth did not receive any of them. They could 'wave' from the *Regina*, but not from the planet; and after several weeks of most assiduous experimenting, they were compelled to abandon the project and bow to the inevitable—Earth and Earth alone was the one out-cast in the system over which old Sol ruled.

Disappointing as was the failure, it added considerably to the already unique powers of the vessel, which, by some mysterious affinity in its control of gravity, was alone enabled to hold communication with the instruments on Earth, with which its own were in sympathy.

"Can you tell us, positively, what was the cause of your planet's coming into the Earth's orbit?" asked Dennis, *àpropos* of the subject of gravitation which was under discussion.

"We do not know exactly," was the reply; "according to the records we were at one time beyond the star you call Neptune. We were even then in the solar system as we are now, but had a double orbit, one round a subsidiary sun as one of the members of a small solar family, and the whole system of which we were a part revolved round our present sun, but far outside the orbit of Neptune, and altogether invisible to your Earth. The sun round which we revolved became cold, too cold to retain its system, and we were more closely drawn into that of the greater sun."

"We on Earth know very little indeed of the limitless space beyond Neptune," said Ross; "our instruments reveal little to us beyond space after space, and stars and more space *ad infinitum*."

"It is, of course, the same with us now," replied the

Bonian, "but on our former charts which you see here"—showing a collection—"you will observe our original position, from which our present sun shows in the photograph as an exceedingly fine spot—a star of the twenty-seventh magnitude, as you would class them. Our world and its former sun would then be quite invisible to you, as you say the limit of your instruments is about the twenty-seventh magnitude. From the position shown here we very slowly approached your orbit, for you will see from these various photographs that Neptune was too far away to influence us, as was Uranus, and we crossed the orbit of Saturn at this point, when the planet was here"—showing the position on the map—"Jupiter was far away here with Mars opposite—as you see—and as we were progressing in this direction, you will notice by the position of your world in this photograph that we were travelling straight for it, and the voluminous records of the time state the terrible catastrophe that seemed imminent. However, as opposing forces when equal repel one another, we did not approach near enough to collide, and your somewhat stronger gravity retained us, and we described a new orbit round your Earth which does not seem to have affected our world in any way beyond a slight alteration of the climate, to which the people became accustomed along with the change, which was, of course, gradual."

"We supposed some such cause must have effected the approach of your world," said Gilbert, "and many theories have been given by Earth scientists, but we are indeed glad to have the matter placed beyond doubt, strange as the explanation seems."

The Bonians were so generous as to give the travellers copies of all the photographs shown them, together with many celestial photographs of the unthinkable space beyond Neptune, which were taken centuries before, when the planet revolved in a different system; also a copy of the ancient records. These constituted

priceless gifts, and were of inestimable benefit to the whole world of Earth, giving, as they did, a verified account of the annexation by Earth of a moon.

They discovered that the Bonians were highly skilled in botany, and that they were to a great extent responsible for much of the vegetation on the planets belonging to the present solar system, as they had been in the previous system, and therefore the friends aptly named them the "spirits of vegetation." On Bona were millions and millions of varieties of trees, plants, flowers, herbage and grasses, which they cultivated, sending the germs of their life on ether in the form of microscopically fine dust, which travelled to certain of the planets in such measure and variety as the individual worlds required, where they fell more or less abundantly as the climatic conditions were favourable, and it devolved on the Bonians to keep the worlds supplied; otherwise, should the seeds fail to be propagated by birds, insects, or by other plants, the variety would then die out. Here then would seem to originate the first germs, or the early forms of vegetable life, and by careful guarding and cross-fertilisation they obtained endless varieties, some suited to extremes of heat and cold. During one of the conversations, while the explorers were watching some luxuriant blooms which would probably, they thought, become parasites on Earth, perhaps some new order of orchid, the question was raised as to how some similar plants would grow—as they eventually would—on warm lava, and the natives told them that the plants were inoculated with a grub of a certain bug which would withstand any heat, even fire. Gilbert and Ross appeared a little incredulous, when Dennis observed,— "That is not so very extraordinary, if you come to think it over, for many parasitic forms of life in flesh-meat will withstand continued cooking and then develop in the body of the eater, which is one of the reasons, as you know, why our food is sterilised, com-

pressed and enclosed in hermetically sealed and germ-proof capsules. Microbes also may be frozen in meat and remain inactive for years, yet be full of life and grow on the meat being thawed."

"Of course," responded Gilbert; "now I come to think of it, Ross and I bought a mummy to experiment with some years ago, and when we had finished we set it on fire, and the gums and spices and seeds used in embalming burned furiously. We then threw the ashes on the garden and a dozen or more of the seeds took root and grew, although they were over three thousand years old and had passed through fire, so burning does not always destroy life."

"No, it does not," assented Ross, "for I myself obtained plants from some seeds which I found embedded in lava, when I was unearthing some buried ruins. I had forgotten it for the moment." He then sank into silence. Shortly Dennis asked him a question, but he was thinking so deeply that he did not hear; instead of answering he turned to a native and asked,—“Will this microbe, or grub, or whatever it is, stand actual fire, like hot lava, or burning gums?”

"Certainly," was the answer. "It is sent over to us from a certain place in Jupiter. They cultivate it there and may give you some if you wish it. I will inquire, but I must leave you to be alone;" saying which he left them to transmit the message, returning shortly to say, "I have a reply. If you go to Jupiter, and travel round the planet till you find a large mountain with a crater like a flat cross, the people will meet you there."

"Could you not give us some of yours?" inquired Dennis, "and so prevent the risk of our getting wrong?"

"No, you would have to get them from the animal direct and breed them on your Earth to do any good. Ours are reared here, and would die if they were taken away."

All were considerably excited, and determined to take a few specimens of this extraordinary creature back to Earth as a curiosity, but in discussing the matter, a daring scheme occurred to them which this bug might be the means of accomplishing. The Bonians advised them to enlist the services of a clever microscopist and bacteriologist, in order that they might deal with the creatures scientifically from the outset. This, of course, necessitated a journey back to Earth, and as they were now their normal selves there was no reason for delaying their departure; they therefore decided to return home the following week, which would make a three months' stay on Bona, so this news was 'waved' to Earth, in accordance with the prearranged custom; for at the close of each day they had carefully 'waved' their doings in detail—all except the blueness and the object of their return; the former seemed unnecessary, and it would be soon enough to publish the latter when the bug was within their grasp.

"Now about the expert. Who will be best? Godfrey Spenser?" asked Ross, in the midst of their preparations for departure.

"Most decidedly!" responded Dennis; "but we must look after him, as he is a bit of a crank."

"Very much so," agreed Ross, laughing. "In his own line he is a genius, but strange to say, he has a fixed idea that his special forte is in electricity, about which he knows just enough to kill us all if we don't mind."

"Oh, he'll be all right on board," declared Dennis. "Once get him on the grub and microbe tack and he'll forget to meddle."

"We must hope so, anyway!" answered Ross.

"I only know him as a microscopist," said Gilbert, smiling.

"In that he stands alone," said Ross. "Shall we have him if he'll come?"

"I think so, if Gilbert is agreeable," replied Dennis; and on Gilbert assenting, he continued, "I am sure we couldn't do better, and as for coming, he'll be only too glad; he pressed me to allow him to come here with us, but I thought it best not."

A week soon passed, and with many a good-bye and promise of speedy return they entered their vessel, and a few minutes later were slowly soaring upwards from the strange and beautiful Bona. Once outside her atmosphere, they made straight for Earth, and when nearing home, long lines of ships, flying electric bunting, honoured their home-coming and sailed with them to Derwent.

This time the aerial regulations were perfect and the *Regina* settled into her shed like a falling feather, her passengers coming out a little later to receive their hero-worship.

CHAPTER V

AN INNOCENT OFFENDER

"Mischief that may be helped, is hard to know,
And danger going on still multiplies ;
When harm hath many wings, care comes too late.
(LORD BROOKE.)

"I KNEW you'd have to send for me, Dennis, old man!" exclaimed Godfrey Spenser, as he flung open the door, threw his coat on a seat close by from which it fell unheeded to the floor, and sat down amongst the three friends, all in a rush; "and here you are only back two days and you're stuck."

"Yes, Godfrey, we're stuck, as you say, and want your assistance," replied Dennis, smiling. "Can you go back with us?"

"When?"

"As soon as you like. It is now mid-September; can you go in a week?"

"I told you, Dennis, and you too, Ross, you'd never manage that ship alone; with all your theoretical knowledge of electricity, you need a practical hand; I will undertake that and help you out. I never expected to see you again, and when you stuck on the Kidney so long, I told folks it was very doubtful if you would be able to work her back, reversed."

"It was very good of you, Godfrey," replied Dennis, laughing, as did the others. "Very good indeed, but I think that between us we can manage the working

all right—anyway we have done so far. What we want you for is not that at all."

"Oh!" ejaculated Godfrey in surprise.

"While we were on Bona," resumed Dennis, "the folks there told us of a microbe that would stand fire of any degree of heat, and we have been thinking you could help us to cultivate some for a little scheme we have."

"Microbe? Rubbish!" snapped Godfrey.

"We think it's a microbe," said Ross.

"Tell me all you know," ordered Godfrey, now keenly interested.

"Tell him, Ross," said Dennis.

"No, you," said Ross; and Dennis began,—

"You are aware, from our 'waves,' that the Bonians supply the solar system with vegetation of all kinds, even that which grows in hot climates and, in some places, on volcanoes, for which purpose they import a microbe from Jupiter, which in some way fertilises the plant, or does something else——"

"That's extremely lucid," interrupted Godfrey; "we shall come to something at this rate!"

"This microbe goes through several metamorphoses," continued Dennis, smiling, "and finally winds itself in a cocoon and then——"

"Microbe, did you say?" asked Godfrey, incredulously.

"Yes, certainly!"

"Why certainly? not grub, for instance?"

"Perhaps; microbe, or grub; they're the same thing," answered Dennis, lightly.

"Are they? It's about time you had a tutor, young man!" said Godfrey, severely.

"Why! what's the difference?"

"Poor fellow! get on with your story!" said Godfrey, wearily, and Dennis proceeded,—

"Briefly, Godfrey, what we want is this. You are to go with us to Jupiter—not to help us, or do any—

thing at the vessel ; you'll have to promise us that—but to lay in a stock of these microbes, or grubs, or whatever you call them, and feed them up so that they'll cocoon for us ; then you'll unwind these cocoons or deal with them so as to give us some material to make into fine gauze, or cloth, or net—we shall have to experiment with it to see which form is best, and if things turn out well we will all go to the sun ! ”

“ The sun ! ” almost shouted Godfrey, in amazement, sitting bolt upright with a jerk. “ Are you mad ? ”

“ Not at all,” said Ross, calmly ; “ and you are coming with us, Godfrey. We can't do without you.”

“ But the heat ! You would all be burnt up ! ”

“ If our experiments are successful,” said Gilbert, “ we shall not be more than warm. The idea is startling at first, it startled us ; but if what the Bonians told us is correct—and we have no reason to doubt it—this cocoon should not admit the passage of heat and flame ; and we thought that if the net really would withstand heat and was also sufficiently strong to withstand passage through air, we would envelop the whole ship in it and be proof against any heat, even that of the sun.”

“ But you might want millions and millions of grubs and cocoons, which would probably take years,” broke in Godfrey, still incredulous.

“ That's why we want you, Godfrey,” replied Ross ; “ you see we don't understand these things.”

“ Cela va sans dire ! ” observed Godfrey, drily.

“ You must come with us,” pressed Dennis. “ The folk in Jupiter will tell you all about them, and you've got to provide us with enough net or gauze to cover the ship. For doing this we'll take you to the sun as a specially privileged passenger. Now, is that a bargain ? ”

“ If any one else had asked me that question but you two,” returned Godfrey, looking at Dennis and Ross, whom he had known for many years, “ I should

have said they had gone stark, staring mad. You, sir," looking at Gilbert, "I only know by repute; I never met you before, so I have no means of gauging your mental balance, but if it is anything like as far gone as theirs, there never was such a foolhardy, crack-brained project as we four idiots will be engaged in."

"Then you're going with us?" exclaimed all three excitedly.

"Of course I am! I've said so all along," replied Godfrey, quietly, "and if we come back in an uncremated form I shall be surprised."

"Of course we shall test the thing severely first," said Gilbert. "When can you start?"

"Any time. Where's Jupiter now?"

"I looked it up to-day," replied Gilbert. "He is due to reach his meridian about midnight, and will be visible all night. As seen from here he will be opposite the sun—that is 'in opposition'—on the 15th of October, or a month from to-day, and at his best time for approach. As viewed from here he will be moving towards the right in Aquarius, and Luna will pass over him on the fourth and thirtieth of next month, October."

"And how will that fit in?"

"Excellently, if we start in a week, better still in four days."

"Right!" said Godfrey. "And is the whole thing to be kept quiet?"

"As the grave!" replied Dennis. "We want to be off without any fuss this time, and have decided to go on a cloudy night, and not show ourselves till well away."

"Then I'll be mum," said Godfrey, "and get off to find some apparatus; we shall want a tidy pile of things. I'll send them to the shed to-morrow or the next day and be here myself the day following, that is three days from now, and you can start the first cloudy night you like after that. How will that fit in?"

"Splendidly," they all cried, delighted.

Ten minutes later Godfrey's airship was waiting outside a wholesale store, the proprietor almost overcome at the magnitude of the orders given.

On the nineteenth of September the night was very black and stormy, with lowering clouds and a strong drizzle of rain. Very few ships were out and none near, for no one suspected the *Regina* would stay but four or five days after being away three months, so that nobody thought it worth while to commence a systematic watch on the shed so soon, and on such a night those aloft were in their cabins, making themselves as cosy as possible with nothing exposed to the elements except the regulation guard and location-lights.

The four travellers, therefore, reached the shed unseen by any one, and this time very silently, like a silver spirit, the *Regina* rose in the cold and pitiless rain. Every light in the vessel was concealed, and in the saloon the only lights were a few hooded lamps over the switch-board, at which stood Gilbert, directing the movements of the vessel. Godfrey was standing at the other side of the room, his face pressed close against the window, his nose flattened out like a piece of rubber, quite unconscious of the grotesqueness of his appearance, so absorbed was he, for he had, of course, never been up so high before.

"I say, Ross, she's a beauty!" he exclaimed, as Ross came and stood beside him. "She travels as sweetly as a swan, and I don't feel the least motion or vibration in the engines. It was a good thing you joined Dennis, though I'd have found the thing out myself, if he'd asked me. Just fancy such a fine ship being unapproachable for centuries! Great Bona! what is that? She's struck!" he cried, in horror, as an enormous cloud that they had just cut through burst with an awful simultaneous flash and roar; the same instant the *Regina* became a mass of living flame

which seemed to set fire to the whole heavens, and the clouds around them became one solid sheet of electricity.

"Now, how would you deal with that, Godfrey?" queried Ross, quietly.

"Say my prayers!" replied Godfrey, briefly, decidedly frightened, though somewhat reassured by the general indifference of his companions who, he saw, were paying no attention to the furies outside, so he turned to Ross and inquired, "Is there not danger?"

"Not a bit!" answered Ross. "Every flash that strikes calls out the same, or more, power from the ship to resist it. She has her repulsive force on now, and no matter what force she is passing through, that force is repulsed—unit for unit—and even more, so that it merely amounts to splutter on both sides, and the forces being always equally opposed, the result is nil, for the ship not only takes no hurt, but proceeds in spite of everything."

"It looks frightening enough, anyway," observed Godfrey, considerably awed by the sight which so engrossed his attention that he did not notice Dennis letting out a small cup-shaped object which he caused to fall, when it sank some distance on a flexible wire which ran off its roller at enormous speed. All at once he saw it and asked what it was, and its object.

"It's a floating light," replied Dennis; "it will fall till it is a quarter of a mile over the shed, when it will meet its equilibrium and remain poised—see, it is slowing up; now it has stopped and there is slack, for its weight sank it too low and it has now risen and is floating in perfect poise. I fire it through this switch on the roller, which at the same time releases the cord by fusing the soft connecting-wire, and you see the cord is rewinding; the shed and a mile round it will be lit up with a red light for thirty hours. That's our good-bye signal."

"But they can't see us, I suppose?" asked Godfrey,

looking down and seeing a glow come through the clouds below them like the effulgence of a rising sun.

"No," answered Dennis, "the clouds are too thick, but all will know by the light that we are here, and Gilbert is 'waving' soon, so there'll be a fine scramble for the disk afterwards."

"Really!" said Godfrey. "I read of that paper business the last time you went up, but I thought there was nothing in it."

"You unbelieving sinner! you're as bad as the rest!" laughed Dennis, and having wound the last of the cord, he attached another soft-wire terminal so that it should be ready for any similar purpose at a moment's notice, and passed on to another part of the ship, leaving Godfrey examining the wire reel. Whilst he was standing there Gilbert passed on his way to the 'wave' apparatus and cautioned Godfrey, "Don't touch that, old man, or there'll be trouble!"

"Oh, I know all about these things, Gilbert. I shall come to no harm," responded Godfrey, smiling confidently, and walking away.

A few minutes later, a blinding flash of light went across the room, accompanied by the peculiar crackle of a powerful short-circuit, immediately followed by a yell of pain and terror from Godfrey.

"You idiot!" shouted Ross, "why can't you keep your fingers out of mischief? Didn't you promise us faithfully that you'd touch nothing?"

"I'm awfully sorry, Ross, I am indeed!" said Godfrey, contritely, but whether from the broken promise, or from the pain he felt, only he knew, as he turned away nursing his badly blistered hand. "I only moved that switch on the roller to see what it would do."

"Well, you've seen now! and if you do any more of your monkey tricks we'll put you in a cabin and keep you prisoner. You don't know what you're doing when you move switches here, and you might kill us

all. Now don't let it occur again!" and highly incensed Ross attached another terminal on the wire, and the other two running up gave the culprit a few forcible admonitions; after which Godfrey humbly apologised, saying he would not transgress again, at the same time protesting they were throwing his kindness in his face, when electricity was his forte and he wanted to assist in order to relieve them.

Tranquillity being restored, Godfrey strolled to a window to look out, and very shortly he cried: "Oh! do look here, 'triad'" (which word he used when referring to the three), calling his friends to the window, where they saw far behind them a great dark mass, getting slowly smaller as they left it in the distance. "What is it? It has a halo of light round it," he cried, excitedly.

"It's our Earth," said Gilbert, quietly.

"That!" vociferated Godfrey. "Do you mean to say that we are now, so soon, outside the Earth's atmosphere?"

They all laughed at his surprise, and Gilbert went on, "At this moment we are about fifty thousand miles distant from Earth, and what you see is the illumined atmosphere of the further side. If you go to the end window, you will see we are going straight to Jupiter."

"Why straight?" queried Godfrey, staying where he was.

"Because we always travel in a straight line."

"But can you not turn aside?"

"Certainly, but after turning, by our own desire or the force of some other body, the original normal position—the straight line—will be resumed and maintained till again altered."

"Really!" exclaimed Godfrey. "But how about speed? How do you get it?"

"We get our repulsive force from the gravity of a heavy body," answered Dennis; "and in the old days

when the ship was first used, the inventors could not control a greater attractive or repulsive force than the gravity of the object from which they obtained it ; but that was long ago, and since then science has made great strides. Adding the science of to-day to the secret of the ship's power, we can get a force equal to the force of the gravity of any particular source multiplied some thousands of times, which makes the *Regina's* power irresistible. For instance, we could exert more than a hundred thousand times the power of Jupiter's gravity, or the sun's, and could displace both if we wished."

"I should just like to see the sun go the other way round," remarked Godfrey, musingly. "Would it make much difference?" and as the trio laughed, he continued, "Here, Gilbert, you're the physicist! Give me some particulars about this heat business, so that I can be thinking things over by the time we get to Jupiter, to enable me to recognise this fire-eating grub when I come across him. Give me his life-history if you can; it will save a lot of trouble."

They all laughed, and Gilbert replied,—“You've got to find all that out for yourself, old fellow; we know nothing more than you know already.”

“But what *is* heat? What temperature has the cocoon to stand, and how and when and all the rest of it? You see, I'm working in the dark. Is it heat as matter it must stand? And what is the effect of heat in non-atmospheric space?”

“That's a big order,” responded Gilbert. “To begin with, until we get the web we cannot tell how heat will affect it. As for what *is* heat it is difficult to say. We cannot take touch as a criterion, as we might say a certain substance ‘feels’ hot or cold, such as wool being classed amongst the hot and metal amongst the cold. Some scientists say heat is ‘ponderable’ and others consider it ‘caloric’—a form of ‘matter,’ but to me both are wrong.”

"How do you make that out?" queried Godfrey.

"The fact that it is *imponderable* is fully proved in that it cannot be weighed, for it is well known that a cold substance does not increase its weight on receiving heat, but remains the same weight as before being heated, and it cannot by any possibility be considered 'matter' or its 'quantity' would remain unchangeable so far as human means could influence it."

"How can that be?"

"Because there are innumerable instances in which heat can be and is regularly produced without either flame or combustion, such as raising the temperature by friction, and you know that if several materials of different degrees of heat are placed in the same room they will all become eventually of the same temperature; thus, if a bucketful of iced water is placed in a hot room it will itself be warmed and the air in the room cooled till both are equal. This, therefore, disproves the 'materiality' of heat."

"But the laws of heat are constant, are they not?"

"Not at all," resumed Gilbert. "In some cases it is governed by certain laws; in others it seems to set the same laws at defiance, giving strange contradictions. Take water, for instance; most substances expand by heat and contract by cold, but in water there are strange anomalies, the scientific causes of which are mere hypotheses, though their utility is well known. Only to a certain degree is water contracted by cold, when a further increase of cold expands it instead of causing a greater contraction; thus water cooled will contract to 40° F., and if further cooled it expands till 32° F. is reached; it then becomes solid, or ice, when it again expands, frequently bursting the pipe or vessel in which it is contained."

"But that serves a good purpose in the physical economy, I suppose?"

"Certainly; this departure from the general law of nature is wise and providential, for as the water

cools below 40° F. it increases in buoyancy and rises, to float on the surface, and when ice forms below it soon comes to the surface, on which it rests, protecting the water under it from freezing and preserving the lives of fishes and insects, for it is obvious that if rivers and seas were frozen to the bottom all life in them would be destroyed. Many of the seas would become nothing less than a constantly changing and unchartable conglomeration of sunken rocks of ice, and would be altogether unnavigable, for all the bergs would sink where no sun could get at them to melt and reduce their bulk."

"Go on, Gilbert!" said Godfrey, encouragingly, as his friend paused. "I have nothing to do, and this is deeply interesting to me; besides, I have for some time been experimenting in freezing micro-organisms."

By no means loth to ride his pet hobby, Gilbert proceeded,—“An even more wonderful anomaly lies in the fact that if we take, say, a pound of hot water at, say, 100° and mix it with a pound of cold water at 0° , we get two pounds of water at 50° , the temperature of the hotter being reduced and the colder increased in equal ratio, but if one of them is ice, the temperature of the whole is that of the colder.”

“I am afraid I don't follow you there.”

“Suppose, then, we take a given quantity of ice and melt it over a fire, it is utterly impossible—no matter what amount of heat is applied—to raise the temperature till all the ice has been melted; thus a pound of ice at 0° and a pound of water at 100° cannot possibly be raised higher than 0° , but will remain two pounds of water at 0° till the ice is melted, irrespective of the heat applied. And if we take the same two pounds of water in experiment further, and bring it to boiling-point, converting it into steam, no amount of heat given to it will raise the temperature of the steam a fraction of a degree till *all* the water has become steam; but when all of it is steam, we can then, by

the application of more heat, get superheated steam, to an explosive point of enormous force. These are but a few of the complete violations of the ordinary laws of nature, and they answer their purpose well in the economy of creation, for you will see that did heat but raise the temperature of the ice in an equal ratio to its addition, the ice would melt in a moment, and thus the first warm day, or the first ray of sunshine, would cause every particle of snow and ice on the hills and in the valleys to melt instantly, and the mighty glaciers and bergs would also become almost instantly liquid, and a general inundation of many parts of the world would be the inevitable result; whilst in the case of steam, if that formed in equal ratio with the heat applied to water, the water would immediately become *all* steam and would at once be superheated and explosive. The useful and harmless saucepan, kettle, or boiler, would produce such a deadly explosive as to require special apparatus and precautions to manufacture and manipulate steam, or even hot water, and the mere drinking of a harmless cup of any warm beverage, or eating steaming food, would have more disastrous results and blow us to atoms more effectively than drinking 'corpsogen' and then falling down."

"Then what do you consider heat to be?"

"I think it is only possible to consider heat as 'energy,' as discovered by the experiments of Rumford and Davy in 1798 and 1799, the latter's experiments on the melting of ice by friction being too well known to be detailed, and the same Davy, about 1812, discovered that "the immediate cause of the phenomenon of heat is motion, and the laws of its communication are precisely the same as the laws of the communication of motion." I consider this the only true idea, notwithstanding the modern tendency to discard these old theories for newer. I can only conceive of heat as particles in motion, and it can only be measured

satisfactorily by the speed or energy of the disturbed particles, which in many cases causes a distinct vibration in them, and in the case of gases a direct dashing and pressing of the separate particles, not only against each other, but against the sides or walls of the vessel in which they are confined, in their efforts to expand by separation ; and bearing all these things in mind, Godfrey, if the idea on which we have embarked and in which we want your help is successful, we can make some gauze, fasten it on the outside of the ship, and instead of it and the ship setting up a fresh series of *their own* moving particles in the presence of heat—such as we shall encounter when in close proximity to the sun—and becoming destroyed by the energy or the intense vibration of their own particles, this net will so far *itself* resist this vibration and thus protect itself and the ship within it. This resisting power will be considerably augmented by the *Regina's* own repulsive force, which will be incalculable, being obtained from the sun and capable of enormous augmentation, and this will also assist and give great repulsive force to the net, thus more than counterbalancing any tendency to its becoming heated by so much as a degree. If this theory works out, as we feel sure it will, assuming that the cocoon *is* fireproof, while all around may be molten in the terrific heat, the *Regina* and all in her will be cool as a cucumber, literally ; for if the net acts as we have reason to hope it will, the protecting force will de-atomise and repel anything and everything—heat included—for at least a foot beyond the ship, and covered with our net, we shall still be able to see what the sun really is, go through his atmosphere and photosphere, which even our telescopes have not been able to penetrate, and do excellent work for science, and that whilst we ourselves are in no way inconvenienced.

"And now, Godfrey, you have our whole scheme complete, and whether we are successful or not depends

on you and you alone. It may be a wild-goose chase we are on, but we believe the Bonians, and trust you to bring the whole scheme to a successful issue, as we are sure you will. What do you think ? ”

“ Think ! ” cried Godfrey, enthusiastically, “ think ! I think it is great—very great—and that you are a triad of very clever—idiots, shall I say, for going to risk a flight to the sun ! Never mind, if there is any truth at all in what you have been told about this bug, it shall succeed ; I tell you it *shall* ! and we four will test the net on old Sol himself. But I’m going too fast, I’m losing my reason. I must not be carried away with enthusiasm ; as yet I’m in my right mind, so I’ll not go further than that, or talk about settling on the sun till we see how my grubs turn out.”

During the whole of this conversation all had been so interested that they had not paid any attention to the vessel, for there was little danger of chance collision, as the great repulsive force would keep any ordinary world or planetoid from her path, and in the case of a more powerful world, any deviation from her straight flight, or any strong attractive force which she might enter, would automatically signal itself, and show the strength on the gravitometer. Also the *Regina* was, to a certain extent, self-adjusting, and would thus go round, or away from, any large and powerful object, and after the influence had ceased to be felt, she would resume her original straight course, for it is evident that if the force of A equals the force of B, they are both equal, consequently neither can be drawn to the other, and the nearer they approach the greater will be the repulsion which drives both away, for the gravity and repulsion of both are equal. The *Regina*, therefore, now she had been perfected as far as modern science permitted, could never by any possibility collide with anything, no matter how powerful, for her force would now always equal the opposing force. In the case of landing, this

could be effected in two ways: by increasing the *Regina's* gravitating force, by converting some of her repulsion into gravitation (or attraction), and thus drawing the other world to her, because of her greater attractive powers; or by retarding her repulsive force, and thus bringing her within the attraction of the world on which she wished to settle. This latter was the usual method of alighting, as the former would most certainly have upset the fixed orbits of the worlds displaced.

Suddenly the needle on the indicator swerved, giving its familiar tinkle, which signified the nearness of approach to a world or object having gravitating force. Ross, who was nearest the observatory door, rushed up and then called Dennis and Gilbert, who ran up the steps and looked out of the dome, which gave them a view in every direction except vertically downwards.

Behind them lay the stars in strange and almost unrecognisable positions, for the various constellations and stars seen on Earth as of fixed shape and position on a dome-shaped setting, were not now on a setting at all, but all in different planes vast distances apart, some viewed 'end on,' others at all degrees of angles, and their constellatory shapes no longer distinguishable. Wherever the travellers were, it was plain they were not going to Jupiter, for they were leaving him far away on the left and were heading straight for some strange, dark object which was looming before them in a wild confusion of what seemed to be caverns, craters and mountains, and the gravitometer-needle was slowly moving, already showing forward resistance to the repulsion of the ship, proving the object had gravity at that distance of about 0.10 compared with Earth as 1.

"What is it?" exclaimed Dennis, "and why have we altered our course. Look, there is Jupiter in another direction altogether!"

It was inexplicable. None of them had moved the steering switches since Gilbert had aimed for Jupiter after leaving Earth, and Godfrey was not allowed in those parts of the sanctum and observatory where the controlling switches were fixed, which parts were guarded. They had not heard or read of the ship ever having gone wrong, and their knowledge of the working principle made an accidental swerving seem impossible, yet already the world they were approaching blotted out the whole of the forward heavens in a dense mass of dark shade, save for a halo of light which came from the sunlight on the opposite side, and in its penumbra of diffusion into the deep shadows showed mountains and plains and a dreary waste of country.

"Suppose we pull up and travel with it for a while," suggested Gilbert, "and then we'll call up that idiot downstairs; he'll perhaps tell us something."

"Certainly," replied Dennis, who shouted Godfrey, and up came their friend two steps at a time. Gilbert made the necessary alteration and joined the others, as Dennis said, "Have you ever passed this barrier, Godfrey?"

"No, not this one. I went behind that downstairs; I expect they're the same; they look it," replied Godfrey, nonchalantly.

"When was that?"

"Just after we left Derwent."

"Before you burnt your hand?"

"Certainly. You made me promise then on my honour not to touch anything, and I have left all those things severely alone and have not even stepped behind that rail since, which is hard lines on a fellow, considering that electricity is my forte, and you are unnecessarily busy when I could relieve you; but volunteered kindness is never appreciated!" and Godfrey looked very much injured. "Can I help you now?" he asked, brightening up.

Ignoring the question, Dennis asked, "Did you

move anything whilst there? Did you touch *anything?* ”

“Well,—no . . . yes—not to mean anything, though. I just moved a switch off and on and looked round to see which lights it controlled, but nothing happened, so I did not bother any more with it, but came out and tried that reel thing immediately inside the barrier rail in the saloon and burnt my hand, worse luck ! ”

“Would you mind going downstairs, Godfrey? We’ll be with you in a minute,” said Dennis, politely, and Godfrey descended, surprised at this unusual deference and wondering why they all looked so solemn. When he had gone, Ross exclaimed, “Now what can you make of a fellow like that! He means well and is mad on helping, but if this goes on he’ll kill us all ! ”

“I don’t think so,” said Dennis; “he has kept his word, and will continue to do so. I don’t think he will give us any further anxiety or transgress again; however, we must not let him off lightly, but so frighten him that he will never step on prohibited ground again. It will not do to let any one go behind the barrier.”

“We will have everything in contact from this moment,” said Gilbert, severely, “and run no risks either of accidents or of any of the secrets leaking out. If any one except ourselves comes up to the rail he will be held there till we come.”

“Yes, that will be best,” said Dennis; “we must, for the sake of our general interests and safety, exercise every care, and from this moment one of us at least must be in charge in turn.”

“The switch he moved must have been the one directing the steering, and the vessel turned accordingly and kept the new course when he brought the switch back to ‘block,’ ” said Gilbert; “had he understood the mechanism, he would not have used that switch only and then we should have resumed

our original line, notwithstanding the deviation. As it is—there is Jupiter! and here, in front is—what?”

“Let’s go down and deal with Godfrey,” proposed Ross, and they all descended to the saloon, where the delinquent was whistling to himself whilst curiously watching the great mass now below them. He turned at their entrance, inquiring, “What is that? Is it Jupiter?”

“No one knows. We are lost!” said Dennis, gloomily, “and it is your doing!” And then the three of them proceeded to frighten the poor microscopist almost out of his wits, with suggestion of the fearful doom they would have met, had not their position been noticed in time to prevent the ship crashing to destruction. They succeeded in instilling into him such consternation as kept him away from the barrier ever after, nor would he come near that part of the saloon or observatory again, though he often begged to be allowed to ‘drive’ the vessel, for he said it only needed a switch moving and she’d go on for ever, which opinion only drew a benign and soothing smile from his friends, which he could not quite understand.

Godfrey disposed of, Dennis turned to Ross and said, “Just test the atmosphere, Ross, will you?” and in a short time he returned saying the atmosphere was variable, and he thought they had better go across the world to get several samples before they thought of landing. Accordingly, the *Regina* shot ahead till she came into the sunshine forward and then back into the sunshine at the opposite side, about half a dozen bags being filled with atmospheric air at different points easily located. Whilst Gilbert and Ross were testing these samples, Dennis took measurements of distances, gravity on surface, speed travelled, etc. They had come about 245,000 miles, but having altered their course, it was probable that this measurement was in excess of the actual distance of the object from Earth, as measured on a straight line, which is,

of course, the shortest distance between two points. The diameter would be, roughly speaking, about 2160 miles, and the total surface was, as near as could be ascertained without going all round, about 14,500,000 square miles or a little over, or 0.074 of Earth, and its volume about 5,300,000,000 cubic miles; its density was about 3.57 of Earth-water, or 0.63 of earth, reckoning earth as 1; it was travelling in its orbit with a velocity of 2273 miles per hour, and had an equatorial velocity of rotation of a little over ten miles an hour.

Just as these calculations were complete Gilbert and Ross came in laughing, and asked Dennis, "Where are we, do you think?"

"On the shady side of old Luna," replied Dennis, "or I'll eat her!"

"Right!" said Ross; "we can't be anywhere else. You, Godfrey, have shot us to Luna instead of Jupiter, and now we know where we are, the positions of the other planets can be fixed also."

"Luna! and after all those elaborate calculations!" exclaimed Godfrey, sarcastically. "What remarkable brain-power there is on board, triad, to discover it at last—but better late than never!"

No one on Earth has ever seen the dark side of the moon, owing to the illuminated or convex edge always being turned towards the sun; there is, therefore, continual light on one side of the moon and constant comparative darkness on the other, the crescent altering in shape by becoming increased or diminished as we on Earth see more or less of the illumined side as the moon changes its position; consequently, the dark side is hidden from Earth in almost every phase except occasionally when, owing to libration, it is possible to see those parts beyond the edge, or border, of the lunar disc, which alternately come into view and are hidden. It was, therefore, perhaps not unprofitable, whilst they were there, to gain a little

information on several points about which the scientists of Earth had been in dispute for centuries.

So the travellers sailed round Luna and once for all set at rest all disputes by actual observation. It was proved beyond the shadow of a doubt that the planet did possess an atmosphere of extreme variableness. On the bright side, towards the edges, or what would be the edges seen from Earth, this atmosphere was extremely transparent, but capable of supporting life as we know it. There were no mists, clouds, or vapour, consequently the sight penetrated through the atmosphere without the softening effect of that delicate and beautiful variety of colour of terrestrial scenery. On the shadow side, the atmosphere was much more dense, and this darker hemisphere was palled in a faint twilight, in which could be seen considerable stretches of morass, peopled by strange beings who became frantically aggressive when the *Regina* swooped down amongst them in order to land. Gifts were let down from the ship, and every known effort was made to show the inhabitants the friendly spirit of their visitors, but without avail; the self-deluded Lunians worked themselves into rage so violent and impotent as to cause many to become cataleptic. This was repeated at all parts of the surface, so that in kindness to them the *Regina* sailed round to the sunny side, where she was again seen by the astronomers on Earth, and noted on the bright disc of the full moon, not as a flashing shadow as at her first encircling of the satellite, but this time as a tiny, floating cloud of fluttering light and shade and brilliant iridescence, as her bright sides alternately were shaded and then reflected the rays of the sun to Earth in dazzling spots.

Having traversed the whole surface of the moon Luna, they then waved this message to Earth,—

“We are investigating Luna, and while on the spot we can clear up all those points on which Earth information is at present uncertain.

"That surface of Luna which is illumined by the sun is rock, sand, stone and earth, covered in places with rich and beautiful vegetation, both wild and cultivated, but all the trees are small and bush-like, the colour a peculiar russet-brown and gold, which on Earth seems like bare rock or ice; on a few of the highest peaks snow and ice are seen, though not in great quantity. The people on the two sides are entirely different races of beings, but all extremely unfriendly to us, so we are not landing. The atmosphere is exceedingly dry and clear, with no clouds and very little vapour. The ramparts and waterways which we see from Earth are not natural but made by the people, and the quays and locks are now almost generally being constructed and repaired. At present there is little water on the illumined portion, though it seems plentiful on the dark side; there are also many springs, and the people are certainly preparing for a rainy season, or some other source of irrigation; they seem intelligent, and all work proceeds on highly scientific lines.

"With regard to the so-called seas and lakes, the *Mare Crisium* is a plain of dark vegetation, oval in shape and situated near the edge of a new moon, as seen from Earth. The irregular, dark plain, *Oceanus Procellarum*, is thickly wooded with the small and dark brown trees already mentioned. It has open places of rock, thickly covered, and veined with metals which are exceedingly abundant over the whole of the planet, and can be seen lying on the surface and in rich strata everywhere, as volcanic action has exposed them, so that they reflect the sun's rays like mirrors and are dazzling to view. We should say these are the cause of the strange, bright lights and flashes often seen through telescopes, for, of course, on the moving moon they are always changing. Luna is exceedingly rich in all kinds of metals, including gold, much of which is on the surface. What we have

been accustomed to consider marsh, we found to be grass-land, plentifully spotted with darker grass and earth and some peculiar loose earth containing unknown minerals in fine grains. An old lake bed, as we expected to find it, is now used, apparently, as an amphitheatre for games and sports. The broad white 'rays' which have been a mystery to astronomers of all ages, and which diverge from many of the lunar ring-plains, comprise seven distinct systems, each composed of many hundreds of rays. They pass over the surface of the plains and mountains parallel to the configuration of them, thus partaking of their shape and, as seen from Earth, differ from them only in brightness; they vary from eight to fifteen miles in breadth and many are of enormous length. Perhaps the longest are from Tycho, but instead of being two thousand miles, as measured on Earth, we find these, from actual measurement, to be two thousand six hundred and twenty-four miles in extent. These hitherto inexplicable streaks are caused by peculiar effects of refraction.

"Most of the country is highly volcanic, and there are numerous mountains, volcanoes and craters of all sizes. On many of these the greater part of the surface is covered with metallic deposits which throw upwards the strong reflections of the sun's rays; these reflections are caught by the atmosphere which is in perceptible layers not seen from Earth. These layers maintain the same height above the ground, regular or irregular, the lower being about two miles deep, the next being a shade more dense, unlike the atmosphere of Earth, which is more dense as it approaches the ground. The reflection, therefore, readily penetrates the lighter and more transparent layer and, on striking the more dense, becomes refracted by it and is carried along in enormous streaks at the junction of the two, as from the surface of a mirror or from a silvery cloud, thus forming great rays which follow the curvature of the ground at a height of about two miles, and, partaking

of the colour of the sun and being transparent, so colour the ground below them that on Earth there appears little difference except in brightness. We are just now sinking through that proceeding from Tycho, and you will be convinced that this explanation is correct by noticing that we cut off all the rays from beyond us on the shadow side. Now we are in the lower stratum, and you will see the rays proceeding for thousands of miles as before—we see them over our heads like a transparent golden cloud on which is a faint shadow of our vessel, though not sufficiently strong to be distinguishable from Earth. Now we have left the lower plane and are rising again; our dome has just cut through the rays, casting a long shadow like a triangle, the apex of which is our dome, and this shadow may appear to you as a faint line or pencilling of shade. In this place we have also measured the depth of the stratum from the ground and find it is exactly two miles, as elsewhere, so will you correct your present measurements to this. Earth-sighted instruments are in error because they must first penetrate through the fifty miles, or thereabouts, of Earth's atmosphere, then travel through the thousands of miles of space minus the atmosphere, and have then to penetrate another and altogether different atmosphere, and Earth measurements at best are only comparative. It is impossible for you on Earth to see, measure, and understand as we do here, for you cannot allow for unbounded vacuum and these strange atmospheres without coming into them, especially as Earth measurements *in vacuo* must necessarily be made through the flask or vessel bounding the vacuum, and consequently are not strictly reliable. We give you only what we verify by actual measurement and experiment made on the spot, and you may rely upon all details being correct.

"We are now leaving Luna without landing and are going straight to Jupiter. Good-bye!"

CHAPTER VI

THE DOOMED PLANET

"A hopeless darkness settles o'er my fate ;

My doom is closed."

(COUNT BASIL.)

FROM the moon Luna the good ship sailed straight for the brilliant Jupiter, the giant planet of the solar system, passing Mars and numerous planetoids on the way. It was almost overwhelming to be flying through space as silently and as steadily as if standing, and to see the various worlds suspended in the black heavens, each turning more or less rapidly and at the same time travelling in a fixed orbit in the race round its governing sun. Words cannot describe the feeling of vastness which seemed to crush the travellers with its awful solemnity and power. As far as the powerful observatory telescope could reach, and beyond that, myriads and myriads of stars ; stars everywhere ! all lost in the immensity of space. Space and stars ! each vista opening out still more stars and still more space, up and down, to right and left, every space bounded by still greater space. And the natural thought came into their minds that if anything went wrong with the ship, what would become of them ? where would they go ? for they and their puny ship were not of so much moment in that infinite vastness as is one of the thousands of microbes on a pin's point in comparison to the size

of the whole Earth.™ And ever as they flew through space a large world or planetoid would glide swiftly past them—stately and silent as a ghost—so near that through the glasses they could distinguish on its surface moving life, apparently unconscious of the enormous speed at which the world was spinning and travelling through space ; people who, perhaps, as a whole, could not realise that such simple laws as gravity and motion and a thin atmosphere kept them in safety on what might be likened to a single speck of dust floating in a sunbeam. And as the adventurers had all these things impressed upon their hearts and minds by their unique position, they felt that but for the Divine Love, combined with the blessings of mental and physical strength, their intellects must have given way at the mere thought of their littleness amongst so much grandeur. They were seeing something of the Mind of the Creator, and they were compelled to exercise the greatest self-control to prevent hysteria or insanity, as all this glorious mystery was unfolded before them, as they rushed with enormous speed across the vast expanse of heaven, every hour the mighty Jupiter becoming larger and larger as they approached him.

Roughly speaking he is about 490,000,000 miles distant from the sun and his periodical revolution is about twelve Earth-years, his enormous bulk is about 1400 times greater than Earth and his day and night about ten Earth-hours. He travels in his orbit at over 29,000 miles per hour, and the equatorial parts rotate at 28,000 miles an hour. At the time the *Regina* was christened, in the old days, the days of King Edward the Seventh, Jupiter had six moons—the *Regina* gave him another, the one she had stolen—making seven : since then six more had been discovered, and the travellers saw there were four others, making in all, seventeen ; this alone was worth coming for. Also as they drew nearer they

saw that his equatorial velocity of rotation, compared with Earth, was so great that if they landed they would be so light as to be flung off into space and it would be necessary for them to be made heavier, but if this were done, would their physical strength enable them to bear the increased weight, and would the extra atmospheric pressure so oppress them as to cause congestion of the brain, or in other ways be fatal? However, the risk had to be taken, otherwise it would be difficult to get the insects they had come so far to obtain, if they were unable to leave the vessel.

Whilst they were discussing the point they were drawing sufficiently near to elucidate several controversial matters. For centuries it had been thought that the belts of Jupiter were vapour or clouds and nothing more, but now the voyagers distinctly saw what would be hidden and probably unknown to the Jovians themselves, who from their position on the underside of their atmosphere could not be aware of its appearance as seen from the outside. It was unmistakable that the belts were caused by millions of fine particles, like dust, which were constantly coming through the atmosphere, being of too little gravity to remain on the planet, the rapid revolution of which flung them off into space by centrifugal force, and reaching the outside, they revolved round the planet's atmosphere at a distance of over a thousand miles; these particles were coming from all parts of the planet, eventually to become attracted to one or other of the belts on which they settled. These belts were consequently slowly widening, though they remained isolated and distinct by their own force of gravity and repulsion and were visible to Earth, with an addition of but a few inches in each century.

Passing between the belts nearest the equator, the *Regina* became involved in the conflicting forces

of the revolving atmosphere and the belts and for the space of a few seconds spun round at awful speed, but all danger—if there really was any—passed as she became enveloped in the atmosphere in which she, of course, ceased to spin as she travelled along with it and the planet, seeming stationary but for the slow descent. She was placed in equilibrium some thirty feet from the ground, well out of reach of an assembled and excited throng and before attempting to leave the ship the inmates decided to speak to the people from the outer deck, lest they should not be friendly. They therefore stepped outside, one at a time, in turn, but though their weight had been adjusted, the air was extremely oppressive and it was with much difficulty their voices penetrated the heavy atmosphere. In a few minutes they had severe headaches and were obliged to retire into the artificial air of the ship, in which they quickly revived.

Finding it impossible to hold converse with the Jovians either by word of mouth or telepathy, Godfrey sketched a few grubs of various forms on a piece of paper and dropped it amongst them, and they seemed to understand by motioning that they would send something up.

"I told you you could not do without me!" he cried, simply delighted, and lowering a thin line. "You see, my friendly triad, you'll never regret bringing me with you. I can manage these people splendidly—Oh, Great Bona!" he ejaculated, aghast, in a tone that brought the rest to the curved window, through which they looked below; "if they're not bringing a hippopotamus, or something like it! this is a species of vertebrata with which I am unacquainted, and if it is a specimen of their bugs, I shall, at any rate, be able to show my Earth-friends a new and wonderful variety of Hemiptera, or Rhynchota, as we style them now. Great Bona! here, triad! don't stand staring at it—do something! that line

is no good ; get out a steel rope, or else float it up ; the bug weighs two ton if he weighs a grain ! If we've to bring a colony of those things aboard, we shall have to sit outside. There'll only be room for three of them in all this blessed ship, if it's emptied to the shell ;" and he energetically hauled up the thin cord while the others, laughing heartily, lowered a steel line and hooked the end to the winch.

In the meantime the folk below had dragged the weird 'grub' to the rope, which they wrapped round its body, but they were either unaccustomed to the work or careless, for when the creature had been hauled about half-way up, the rope slid to one end and he hung head downwards wriggling.

"Just look at the silly folk !" exclaimed Godfrey, in disgust, busily directing operations. "They can't tie a wisp of rope round a thing like that ; it will wriggle out soon and break its neck—what are they running away for ?"

Scarcely had he spoken when the 'grub' fell, and the instant it touched the ground, there was a terrific report, and several people who could not get away in time lay killed.

"So that was their little present, was it !" continued Godfrey, sarcastically. "They intended the thing to explode in here, did they ? we shall have to break the necks of the next lot to see if they're dangerous !" and disgusted Godfrey drew in the short length of rope still dangling and cast it aside. Seeing his friends still looking below in surprise he went on, "That's a joke they'll appreciate better than we do, judging from the mess down there. Now, triad, what's to be done ! I told you it was an idiotic scheme we were on with, and where are my grubs ? It strikes me they're going to be big ones, if that thing there is a young one. I brought dishes and incubators and what-not, for grubs, for Rhynchota, and not vertebrata, they're made for grubs, so don't blame

me if they're not big enough. If other things are the size of that little grub they wanted to give us, the cocoons will have to be done quick and be big, or we shall have to live a few hundred years to get enough to weave a decent net, for we can only look after one of these beasts at once. What is to be done? Unless Jovian bugs are miraculous, that beast can no more make a cocoon than I can;" and he looked so completely dismayed that his friends could not help laughing.

As Godfrey said, what was to be done? They could not understand the people, nor the Jovians them, and after proposing several schemes, and rejecting all as impracticable, they remembered that the Bonians had said all planets except Earth were in communication with each other, and it was known that in the old days the Venusians had told the original inventors of the *Regina* the same thing; therefore they should be able to 'wave' to Mars, so they sent several preliminary messages, asking if communication could be established, without receiving any reply except from Earth, saying that communication was already established; what did they mean? Then they 'waved' the same messages to Bona, again to receive the same questioning reply from Earth, to which all their messages went and to no other planet.

Pleased that they had not given any particulars of their mission, they merely replied to Earth that they were on Jupiter and testing if their apparatus would carry so far. They then decided to go back and visit Mars, which was between Jupiter and Earth, so closing all up and leaving the people below in wonderment, the *Regina* rose till outside the belts, when her course was headed for the planet Mars, to which she shot with terrific speed.

The Martians, they knew, were very clever, perhaps the cleverest inhabitants of the whole solar system.

This, no doubt, came from generations of scientific training, for they were in jeopardy; they knew their ultimate fate and, with a commendable spirit of determination to retard it as long as possible, rose to the occasion and astonished more than one world with their powers of resource.

The planet is very small, and although it has many moons some are too minute to be measured by Earth-means, appearing to Earthians as but tiny spots, the largest not more than ten miles or so in diameter.

The air of Mars is becoming drier every year; less rain falls, less snow forms, and as vegetation must have moisture it ever becomes more and still more difficult for the Martians to preserve water, for though the atmosphere is like that of Earth in its components it is much clearer and drier. The doomed Martians, therefore, have to husband every drop of water; they build reservoirs, lakes, and swamps, and cut trenches and ditches at all angles and of enormous length, many of them from one thousand to two thousand miles long and some many miles wide. This gigantic scheme of canals is but a great national system of irrigation. Snow forms at the poles during the long Martian winter, and melts in the spring, when it is conducted to all portions of the planet along these immense canals; this causes the vegetation to grow, and the people on Earth see the fresh green growth on the belts and oases after the snow has left the mountain tops. Other large tracts of country are a dark red, whilst others, which are seen from Earth to change from yellow to brown, are marshy land which change in colour according to the quantity of water and moisture stored in them.

Notwithstanding all their care, the planet is doomed, and certain as time will come a day when all the skill of skilled Mars will be unable to procure enough water to keep anything alive, and one of the most beautiful little worlds in creation will cease to support any life

as existing on it to-day. Time may change the Martians' physical needs, and they may adapt themselves to altering circumstances so as to be able to live without moisture, as different beings, but from the trend of existing conditions on Mars, life, as we know it, is doomed.

Knowing and appreciating this, the Martians are using every endeavour to obtain a continuous supply of that which is even more necessary to the existence of human beings than bread.

Being aware of the friendly relations that existed between the Martians and the people of Bona, confined, of course, to telepathy, the travellers had no hesitation in settling down on the planet, feeling sure of a friendly welcome, especially as they knew that the Bonians had telepathed the news and particulars of their visitors and the wonderful ship, both to Mars and Jupiter, and from them the Martians had learned much about Earth, and Great Britain in particular.

As the quartette entered the atmosphere of the planet, they again tried to 'wave' and telepath without result, and it was only when they were actually amongst the people that they could interchange thought, though even then with great difficulty.

Alighting from the ship and making all secure, as was their custom, they stepped forward to welcome and be welcomed by the friendly Martians, who had assembled to the number of about thirty, accompanied by the chief of the city in which the *Regina* had settled.

Imagine their surprise, therefore, on being immediately surrounded and suddenly made prisoners, and their property at once taken over by the chief on behalf of the people. Powerless in such deep treachery they were marched off to a prison to be put to death, whilst some dozen or more scientists rushed to the ladder to enter the vessel. The first to touch the ladder vanished into air before their eyes; so

did the second, then the third. By this time the others saw that the matter was not quite the simple thing it appeared, and the next, determining to be very cautious, stretched out his hand to grasp the rail of the ladder, when, with a yell of agony, he saw his hand volatilised to the wrist. In the suddenness of the pain he let fall an electric lamp he was carrying in the other hand, and it rolled towards the foot of the ladder, but when it came near, there was a crackling flash, and that too was gone. The silent suddenness with which their comrades had vanished proved too eerie for the Martian scientists, and they conferred together, agreeing that the prisoners should not be executed till they had explained the matter, when they should share the fate of the Martians. A messenger was therefore despatched in great haste to the captives, offering them their lives if they would explain the secret of entrance and control of their ship, but this they refused to do, and all four were taken to Maraban, the chief town of that district, to be tried as Earth-spies.

The trial was a mere matter of form and all were found guilty; few knew what the trial was about, but that was an unnecessary detail, so that the prisoners were condemned to death. Dennis, Ross and Gilbert all swore Godfrey knew nothing of the working of the ship and was there merely as an entomologist, whilst he—resolutely determined not to part from them—as firmly swore he knew all about it and was in reality the chief expert on board.

Like the people of Earth, the Martians were influenced to a far greater extent by the fabrication than by the truth, which latter they cast aside altogether, preferring to believe Godfrey rather than his more truthful companions, so that though as a race they were superior to Earthians, they possessed the same characteristics in that they only believed what suited their purpose, were it true or false. After a little

discussion the judges sentenced Godfrey to imprisonment for life, during which he would have to do such work as was required of him, they thinking that after his three friends had explained the secrets, and had been executed, he would be at hand to solve any difficulties which might crop up in the future, so he was led away to prison, amidst general satisfaction. Saying nothing to him of the fate they had decided upon for the three others, the judges sentenced them to death, their execution to take place within three days, unless they explained the working of their ship in the meantime, and if they complied with this and explained everything so that the Martians could navigate the vessel, they should not die, but remain prisoners on Mars as long as they lived, their ship becoming the property of the state; for the Martians had an idea that by its means they could eventually settle on another planet when their own became too dry to be comfortable. Even immediately many of the people could be sent to Earth, and preferably England, which they knew from the accounts the visitors had given to the Bonians for ages past had been foolish in allowing herself to be the free dumping-ground for all the refuse of other Earth-nations who liked to come, for though many questions might be asked, they need not be answered, or could be answered very indifferently by proxy.

In this way England had become overrun with an undesirable foreign element, for in the height of her prosperity she gave all a welcome, blind to the possibility that harm could come, and that though she held the zenith of the world there might come a setting. Spain, Greece, Russia, Turkey, and other powers had long sunk below the horizon, and to oblivion, and already many of England's foreign possessions had passed to the stranger, for England had loved the perfumed air and the lap of luxury too much to protest—till the power to protest was lost. Her children

had been pampered and pauperised till they expected all things to come to them without effort, and rather than work for their needs they bartered England's honour for a downy bed; and the time had come when other nations could do just as they liked, if it was done pleasantly and insidiously and caused no inconvenience; so that the Martians knew that England would be the best place in the whole solar system to which the selfish could retire, leaving the weak and the undesirables on their own planet to fight out their doom as best they could.

The three condemned prisoners were isolated, but on asking permission to talk the matter over together, the reasonable request was not refused. They concocted a plan which was put into instant execution, and the Martians were delighted when, a few hours later, the three captives agreed to enter the vessel with several Martian scientists and demonstrate its power, stipulating that their companion should be well treated. This promise was readily given and they were well guarded and brought near the vessel. Although all eyes were on them none saw what they did, but they walked up the ladder safely and entered the ship, followed by the three chosen scientists, and the door was closed.

Dennis asked the Martians to stand in a certain place, so that they should have a clear view of all that was done; Ross, from the switchboard, telepathed: "Notice this switch carefully, it controls great force. I move it ever so little and—you are rigid, in a powerful electric field, unable to move hand or limb."

Whilst he was doing this, Dennis and Gilbert had insulated themselves and quickly corded the three Martians like mummies, Ross protecting the outside of the vessel as before, and then raising it from the ground about fifty feet, the people below thinking it was merely a matter of demonstration before their scientists.

Then the current was broken and the three men were carried to the window, when Dennis and Gilbert lifted one up to throw him out. At sight of their companions bound and helpless, the men below howled with rage and an electric pellet struck the *Regina's* side close by Gilbert's head, just as the man was balanced on the frame. Stopping the figure from falling, he telepathed that if any further hostility was shown, he would kill all three of their captives. His determined manner had its effect and the man was thrown out of the window, but instead of falling he floated about unable to drop. This caused great consternation below, especially when Dennis was seen, not carrying, but almost wafting Number Two out of the window, where he also floated alongside his companion, and then their gravity was altered and they gradually sank. While they were watching these the third Martian, whom they were intending to retain as their interpreter on Jupiter, and whom they had not bound very securely, seeing the opening in the side through which anything could be let down or drawn up, and that it had beside it a coil of flexible wire rope, one end of which was permanently fastened, determined not to be thrown outside and killed like his companions, as he thought, so he suddenly flung aside the door, threw the coil outside, and himself slid down the rope as it fell—all this happening so quickly that he reached the ground before any one had realised what had happened.

With a cry to look out, Ross at once brought the rope in strong galvanic circuit, hoping to hold the man before he let go, but though the fish they wanted had escaped, they hooked another, for at sight of the Martian climbing down the rope several had run to assist, and, just as he let go, a soldier, one of the guard, took hold of the rope to fling it aside, at the same time kicking away the coil on the ground with his unshod foot, when he found himself held.

Instinctively, to save himself from falling, he grasped the rope with the other hand, and both hands and feet were fast.

"Here's luck, Ross!" shouted Dennis, "we've lost one and caught another; float him up quick," and Ross at the switch-board quickly made him lighter and he was soon level with the doorway, when he was drawn in and the door closed, he still fast to the rope with both hands and feet. His gravity being restored, he lay on the floor perfectly helpless, telepathing unutterable things to his three captors, at whom he glared stolidly.

"We only want one man," said Gilbert, "and he'll do as well as any."

"Yes," assented Dennis, as he rolled the man over to see his face and telepath: "We told your people we would take three men in here and demonstrate the *Regina's* power—you make a fourth; now what have you done with our friend?"

No answer.

"What have you done with our friend?" again telepathed Dennis, his face set and hard.

Still no answer.

"Give him a bit more, Ross," said Dennis, and a stronger current was sent along the rope to which the man's hands and feet were still clinging, and the power of it made his wrists bend outwards and beads of perspiration began to form on his forehead and trickle down his face, but bravely he endured the torture and refused to tell where Godfrey was imprisoned. Seeing this Dennis continued: "Give him more, Ross; go on slowly till he tells or dies—one or the other."

The man was now writhing in agony, his limbs twisted all shapes as the muscles became unduly contracted, but still he would not give way. At last nature could bear it no longer; he tried to speak, but his lips were blue and motionless, and he made

an effort to telepath. Slight as the effort was, Dennis felt it and, holding up his hand, said, "He's done, Ross, stop it;" and the current being shut off the poor fellow released the cord and tumbled into an inert, exhausted heap. They revived him, then took him to one of the windows from which position he telepathed the course, and they hovered over the prison. Lower and lower they sank, and then the people saw the second demonstration of great and hidden power, for the *Regina* was slowly reducing the weight of the prisons. The people below had, at the first sign of trouble, telepathed for the Earthian to be specially guarded, and Godfrey had been placed in an inner prison. This was a small square building with high walls having only one door and no window, and though practically impregnable, there was a strong guard completely encircling it.

The first intimation of the matter being serious came when the roofs became so light that the walls could not retain them; they would not be held down, and one after another, with a series of wobbling jerks they tore away and floated off bodily, borne on the wind gently as butterflies. On the removal of that of the central building, they saw the inner guarded keep and Godfrey, who shouted up, "Good old chums! I knew you'd do something, but I didn't expect this. Oh!" he cried, as he rose from the floor, "I'm coming up too, am I! well, I will, as you're so pressing. It will be a little practice for me against the time when I become an angel. Steady!" as he collided gently with the top edge of the wall, and in another second he was soaring like a lark up to the *Regina*, waving his hands in farewell to the people below, telepathing his "hearty good wishes" and regretting he could not "stay to supper!"

Resolved not to let their captive escape alive, the whole of the prison guard below levelled their weapons at him, and scores of deadly pellets came like a shower,

but as they drew near his person, they also became proportionately light and floated beside him, their force being instantly spent; in consequence they were wafted harmlessly away on the breeze.

A few seconds later he was inside the ship, when the de-atomising current was instantly connected outside the whole casing, and not a second too soon, for the military was now out. So well organised were the soldiers, that scarcely had protection been secured than the ground was alive with them, and the martial Martians were hurling a fusillade of shells, containing electric shot, deadly liquids, corrosive and explosive gases confined under enormous pressures, and many other death-dealing missiles in a heavy shower, any one of which would have blown the ship to atoms but for the electric invisible shield which de-atomised everything hurled against it.

Right amongst the fighters swooped the *Regina* like a terrible avenging spirit.

"We'll let them see what the old ship has in her, and pay them out for their treachery," said Gilbert, vindictively.

"Right, oh!" cried Godfrey, "serve them as you did me, and scatter them to the four winds of heaven. Hallo!" he broke off to exclaim, catching sight of the Martian who was lying full-length, white and motionless, beside one of the windows. "Is he dead?"

"No," replied Gilbert, "we had to use a little gentle persuasion before he'd tell us where you were."

"He's not far off being dead, though!"

"Not very, but we couldn't help it, and we want a man, so he'll do."

"He's watching his folks, and the sight will make him respect us as long as he lives. He can tell all we say, I believe, from his face. Look outside!" said Dennis.

Never before had such a fight been witnessed by

Earthians. As the *Regina* settled on the very arms that were projecting deadly missiles, they became de-atomised into vapour and hundreds of the armed fighting men flung themselves bodily on the ship to climb her, instantly to disappear. Slowly she moved along, mowing down the army in battalions; causing the flower of the Martian army to melt away like smoke.

From all directions fresh supplies of men and armaments came pouring up like a flood. This time the *Regina* ascended and sailed above them, reducing their gravity till they rose about three feet above the ground, where they floated about unstable as straw—a mass of raging, impotent humanity, at the mercy of every breeze that blew.

"Let's leave them at that," said Ross, "they've only got it temporarily this time, and the effect will wear off in a day or two."

"Won't they be able to touch the ground till then?" asked Godfrey, concerned.

"No," replied Gilbert; "they'll get gradually heavier as the effect wears off, but if they had got it strong, they would have remained like that so long as they lived, or till we took it off again, and they would have had to be weighted down."

"It's a pretty stiff lesson," commented Godfrey, "but I think they deserved it."

"They'll think twice before they act treacherously again," said Dennis, "and if they or any other people want to fight the *Regina* she's ready."

"I believe our captive does not relish the present aspect of affairs," remarked Godfrey, "see, he's white to the very lips," and they saw the man pale with fear, brave as they knew him to be.

Godfrey went over to him and kneeling beside him asked, by telepathy, if he understood their language, when he responded that he knew all they were saying when they were thinking deeply of it, but when they

spoke lightly, without concentrated thought, he could understand nothing. So Godfrey told him how sorry they were to have caused him pain but it was unavoidable. "Cheer up, old fellow," he continued, "we are all friends here, and all we want of you is to act as interpreter on Jupiter, for we can neither speak nor telepath with them. We'll bring you back as sound as a bell; I'll teach you all about electricity on the way, and you shall teach us your language and interpret for us, so we shall neither be under any obligation. We are just off to Jupiter again, and my friends here will wear a tunnel in the ether where we keep going and coming, if we make the journey many more times. You're pleased? that's good—it looks healthier," and he offered the exhausted man a reviving tablet.

CHAPTER VII

THE STORY OF A STAR

"Methought I saw
Life, swiftly treading over endless space."
(Hood.)

JUPITER now lay before them as they pointed straight for his surface, and the Martian warrior soon recovered sufficiently to walk to the window and watch the great belted mass. His name was Werran, and he was an expert general of high standing, much esteemed for his numerous acts of bravery.

When he looked outside and beheld the countless worlds and planetoids crossing and recrossing in various orbits he became lost in thought. He had seen them through telescopes hundreds of times and knew their courses, recognising many of the globes from their positions and configurations, their distances and progress he also knew; but when he saw them, as from a stationary ship, speeding towards and passing them in a flash, the ship itself overtaking and passing with terrific speed all those travelling in the same direction, he could scarcely realise it. This, however, was nothing to what happened a few hours later.

From somewhere on their extreme right, discernible with the naked eye, came a faint glow like a phosphorescence; going to the glasses it was seen to be a ray of light from some distant star, seen on some floating stratum of dense ether, the star itself unseen

in the infinity of space. Probably for millions of years the ray had been travelling at a velocity of nearly 187,000 miles per second, and they could see it far ahead travelling towards them, the light falling on the denser strata of ether in its path in a broad, straight ray. Adjusting their movements they drew nearer and nearer to this ray till they met and entered it, when they saw strange things—scenes that were travelling on the light beams, scenes that happened perhaps millions of years before, when these particular light-beams left their source. It might be the people had now ceased to exist, perhaps the world itself had now no existence, and no place in creation as a world, but the marvellous light-beams were carrying the record of a bygone time, on and on throughout the universe, showing every world that crossed their path, what things had been done at some infinitely remote portion of the infinite universe in the far distant past.

Thus was the history of a whole world laid bare, too rapidly for the sight to distinguish details, so the high-speed continuous photographic apparatus was at once set in motion. As they shot into the light-ray, with incalculable speed, it sped past them, and later they found that the lenses of the instruments had given them miles and miles of excellent pictures of the distant world, proving that it had been formed physically like Earth, and that all the various periods of its existence till the formation of man coincided exactly with those of Earth, and as the ship entered into and obstructed the light-beams there came the time when out of the darkness that was on the face of the deep there appeared lurid lights of phosphorescence and exploding gases, which became chemically united to form better and purer air and, eventually, an atmosphere; then land appeared, though the azoic rocks and land were incapable of supporting life and the world was small and deadly. Then

followed long periods in which various forms of animal and vegetable life existed, each living its allotted time and dying, its remains resting upon the ground, each epoch in its turn adding to the size of the world and preparing it for the next form of life. First of all came the molluscs, to which the world was principally given over, for these sightless creatures needed no light; then came the fishes, which disturbed and aerated the waters by their movements; then came marine reptiles, and as the land became habitable, though soft, these were followed by every variety of reptiles, and after these had prepared the ground, all forms of animals except man; later came man and all the animals suited to live with him, and as the races of men progressed, their various actions of good and ill were imprinted.

For several days the voyagers travelled in this light-beam, unable even with the powerful instruments to penetrate the distance to its source, and at last they turned aside to resume their flight to Jupiter.

Eagerly running the films through the reproducer, they were almost overwhelmed to see the wonderful sights being presented to them as in a book. Although well known in theory, it seemed miraculous to prove by actual sight that the light was carrying on its beams the whole history of a world across the great infinity of space, unfolding it silently and swiftly to all who had eyes to see.

"That was the most awesome sight I ever beheld!" said Ross, deeply impressed.

"Had we gone forward," said Godfrey, "we should have come to the world itself and seen what lives the people are leading to-day. If the world exists now!"

"Yes," assented Gilbert, "but we might have gone on for years and then not have come to the source of light," and then he continued, laughing, "if we get lost and can't find Earth again, we can hunt up that beam and eventually locate the world it came from!"

It is so like our own that it would just suit us to settle on."

With that began a general discussion on the probability of losing Earth and the possibilities that would open out in that case, for in the immensity of space where every point can be the centre of infinity, direction seemed of no account. But there was little danger of such a calamity, for so long as they did not travel beyond sight of the sun, or some member of the solar system, they could always return and locate themselves, for the movements of the planets were doubly clear to them by actual sight and not as diagrams drawn on a flat surface.

Rapidly they approached the mighty Jupiter, looming before them like a giant golden ball, and they all stood at the windows fascinated by the glorious sight of one of the moons passing before him as a dark, semi-opaque object with an iridescent border.

A few hours later the *Regina* was again in the heavy atmosphere, and Godfrey inquired, "What are you going to do with these people for the trick they played us when we came before?"

"We will see," replied Dennis. "If they are friendly now, we will be friendly too and let bygones be bygones;" and Ross, whose turn it was at the time to pilot the vessel, caused her to settle to within twenty feet of the ground, and connected the protecting current to the outer casing to prevent possible damage being done by the Jovians.

Of course they landed at a different part of the planet this time, and below them the people came running up from all directions. These people could not have been of the same constitution as the Terrestrians, for considering that the specific gravity on the surface is more than double that of Earth, the inhabitants might reasonably be expected to be proportionately larger and heavier. Heavier they must

have been, but they were of the average Earth size and slighter in build.

They crowded below, gesticulating and talking volubly, but in the ship their combined voices could not be distinguished by Werran, so the current was switched off as the Jovians appeared friendly, and Werran stepped outside and held up his hand for silence, which is a sign understood on every planet, apparently. In a few seconds all was quiet, and in his commanding voice the interpreter asked them to give him and his companions every assistance during their visit, at the same time requesting to speak with the principal personage. Whether they understood his language or the concentrated thought of it was difficult to say, but at once the governor of the town approached under the escort of an armed guard, and asked if the visitors were friendly—from whence they came and for what purpose?

Werran gave the desired information, then, feeling his head beginning to swim, he stepped inside the vessel and translated all that had passed, he speaking in Martian language, as he had done from the start, for soon after his forced imprisonment he had unthinkingly spoken in his own tongue, forgetting his hosts were ignorant of it, whereas they replied in English, equally oblivious of the fact that English was a dead letter to their captive. This was not noticed till some time had elapsed because, in his near presence, the serious thought accompanying the words on both sides made the actual speech a mere matter of form, so that they conversed with Werran in English, he speaking the Martian tongue, though he alone was able to converse with the Jovians, either by thought or language.

In the meantime, the Jovians were busily discussing the situation, and whether it was that the people were different from those they had first met, or that the presence of an interpreter gave an air of 'quality'

to the expedition, the Jovians seemed disposed to give the travellers every assistance. They appeared to know little about the grub asked for and talked over the question with Werran at great length, till all in the ship grew impatient. At last Werran came inside and said, innocently, "They don't seem to understand what grub it is you want, so I have asked them to bring all the animals they have and you can take your choice."

"Oh, Great Bona!" gasped Godfrey, in dismay, while the others roared with laughter. "There will be a Noah's Ark soon! We shall have to stay here for years to go through every variety of living thing on the face of Jupiter!" and he sat down quite overcome, glaring round at the laughter of his companions.

Werran could not understand it, but then he never could understand laughter, for the Martians do not laugh. It seemed to him so strange that the Earthians should crease their faces and make noises and hold their sides when they were pleased. He kept his face perfectly serene under the influence of both pleasure and pain, for it was considered bad form on Mars to alter the expression in the slightest degree, no matter what the circumstances. Consequently, he was amazed that his companions—who seemed to him refined and educated—should occasionally lose all self-control and give themselves up to peculiar contortions of the features, often ending in tears and a holding of the sides. Nor could he understand why they seemed non-plussed at his request to bring out *all* the animals. They had none on Mars, and his idea of what an animal was seemed very vague.

"There's nothing for it but waiting to see what they'll bring us," said Ross, laughing.

In a few hours the Jovians brought some hundreds of animals, native to the locality, but it was impossible for Godfrey to make a selection, as not one of them bore any resemblance to Earth animals, and there

were no grubs or any form of caterpillar amongst them. They were of all sizes, from that of a mouse to a mammoth, and of endless variety ; all seemed extremely friendly, looking trustfully at the strangers in passing, and Godfrey averred he saw one of them deliberately wink at him, but when the others looked, the creature's eyes were filled rather with sadness and reproach than with frivolity, though it seemed to brighten up when Godfrey was charged with maligning it, but this might have been fancy.

"There's your Noah's Ark, Godfrey, my boy," said Dennis. "All the varieties of animals in the kingdom are at your feet, take your choice, only get a little one ! that frisky one there would fill the saloon."

"It's all very well for you fellows to stand there and chaff," replied Godfrey, shortly. "It's a great pity three great hulking fellows like you cannot employ your time to better advantage ! If these are specimens of Jovian bugs we'd better get back home again, for there are no apparatus here to deal with any of that lot."

"Werran !" exclaimed Gilbert, laughing, "just ask them if they've any nice little grubs to trot out for our friend here, there's a good chap ! tell them these insects are too full-grown for him, and not the right kind."

Werran delivered the message, but the folks had done their best and could do no more, so matters were at a dead-lock. In a fit of desperation, Godfrey turned to Werran, saying, "We want a grub that will stand fire, Werran, old chap. Ask them to burn the whole lot, and then we'll take those that live and thrive on it."

The message was duly and seriously given, but the Jovians had no sense of humour as propounded by Terrestrials, for they refused to do anything more and seemed rather huffy at the ingratitude of their visitors.

"You three are running this show," said Godfrey, with an air of disclaiming all connection with the business. "What are you going to do? Take the lot, or none?"

"No! we're letting you run it, old man! you know you said you could manage the people splendidly," remarked Ross, laughing, receiving a glare from Godfrey as a reward for his too-ready memory.

"That's just where we want your advice as an expert," said Dennis, banteringly. "We'd like to have the lot, so as to give you every encouragement, but the ship won't hold them;" then turning to Ross, he asked, "*Had* we come to *Jupiter*? and what part of him did they say? I forget."

"Upon my word, I've completely forgotten!" said Ross.

"So have I!" chimed in Gilbert, laughing.

"Great Bona!" cried Godfrey, with a start, "you are a brilliant triad, I must say! you undertake two journeys, hundreds of millions of miles, to say nothing of a war or two by the way, and the only address you have is — 'a grub, Jupiter' — and Jupiter is about fourteen hundred times larger than Earth. And I give up all my important work on Earth to play dummy to three idiots! Let us go home again till you grow a bit older! I'm surprised at you!" he continued, sarcastically. "I said I should have to look after you, and upon my word you need it. If any one had told me that you three scientists could come all this distance and bring me with you, like a toy on a string, without knowing what you want and where to find it, I'd have — eaten 'em. A grub on Jupiter! upon my word, it does you great credit and I feel quite proud of you. A grub on —" and Godfrey, following the example of his three companions, gave way to long and uncontrollable laughter.

Their mirth so affected Werran, that after staring hard first at one, then another, he found himself

following their example, first smiling, then laughing like his companions, which surprised him so much and was withal so comforting that he continued to laugh long after the others could laugh no more, but sat looking stolidly at one another with tear-streaming faces. It thus fell to the lot of four Britons to have the honour of causing the first Martian laugh.

"Can none of your fuzzled brains remember?" asked Godfrey, in gasps.

"Don't! Godfrey," begged Ross. "I can't laugh any more; my sides ache as if they were raw."

"We shall have to spin round the planet's surface till something recalls the instructions," said Dennis.

"Ay!" agreed Gilbert, and turning to Werran, said, "Will you tell those folks down there, Werran, please, that we are much obliged—we did not want to look at their stock for ourselves, but for a friend, and we'll call again!" and he stepped towards the switch-board as unconcerned as if he had been walking out of a shop.

Werran gave the message, though it is to be hoped he wrapped it up rather more daintily, and a few minutes later they were wandering over the surface of Jupiter in search of the forgotten locality. The landscape that unfolded itself below them was as unlike Earth as it was possible to be. There was a great deal of water, both salt and fresh, but the strangest feature lay in the vegetation, for all the grass was long, broad, and thick in the blade, and the trees had heavy, leathery leaves covered with stiff, bristly hairs and as strong as the giant cactus of Earth. The explorers were constantly stopping to collect samples of this strange vegetation and specimens of the geology and mineralogy of the planet, and to hold converse with various inhabitants.

Terrestrial history shows that in times past Earth had been given over to engines, carriages, and cars, and trains running on rails which lay upon the ground

and bridges and entered tunnels in the hills, and many of the beauty spots on Earth had been covered with these unsightly lines and wires for transmitting electric current and sending messages from place to place. All these things had long ago disappeared and the Earth had been much improved thereby; but here, in certain districts, were lines on which goods were sent, but what was the motive power could not be seen, except that it was of enormous strength, for when the force of the *Regina* was directed to resist one of these loads in order to test it, the dial registered a force of over one thousand horse-power. There was an entire absence of pneumatic tubes for transmitting luggage, but perhaps this unseen force and single guide-line would be as effective as Earth-methods, or more so.

The Jovians spoke of Earth as "Gorok," which to them signifies 'small'; Mars they call "Lazak," or 'ruby,' because, as seen from the surface of Jupiter through his atmosphere, Mars appears blood-red, which recalls the fact that Jovian blood is colourless, and contains few red corpuscles though rich in hæmoglobin and, consequently, possesses great power of absorbing oxygen, the people, therefore, being healthy and strong. Their own planet is named "Milak," which signifies 'beautiful garden'; the sun they call "Kulik," or 'learned'; and it was noticed that most of the proper names terminated with the explosive sound of k.

Suddenly, as they were flying over a village, Gilbert shouted, "Now I remember! the Bonian told us we should get what we wanted beside a mountain with a crater like a flat cross."

"So he did!" agreed Ross, "he said the people would meet us there."

"I remember it, too, now!" also assented Dennis.

"Do you really!" broke in Godfrey, ironically, "blessed memory! and is this haven of rest at hand?"

"Yes!" replied Dennis, laughing, "it is close before us and we shall be there in a minute!"

Slowly the vessel skimmed over a city, then a village, and then a few straggling houses, and beside the crater of an extinct volcano lay a long building having a roof of some glittering metal which was unknown on Earth and which shone strangely in the peculiar light cast by two differently coloured moons.

Coming to a stand above the building they saw many people gathering together on the ground below, and Werran, as usual, spoke to them. It was plain that they were expected, and after a brief conversation Werran returned to tell them that they had at last reached their goal and their difficulties were now at rest, for here, the only place on the whole surface of Jupiter, were cultivated the germs which were wafted on ether to Bona, the floral paradise of the solar system.

Godfrey was now a different being; all banter was put aside for the nonce in the seriousness of the work he had undertaken, and full of his subject, he kept Werran busy asking and translating innumerable questions and answers relating to the life-history of the little creature he had come to cultivate. He and Werran then landed and entered the building, but the air was too oppressive for a long stay, and after a matter of ten or fifteen minutes they were obliged to return to the ship for recovery and rest, after which they resumed their work, Werran becoming quite as interested in the small organisms as Godfrey himself. This caused them to be constantly entering and leaving the ship, and Godfrey soon enlisted the services of the three others, so that before very long all five were working, each with fixed duties, and matters progressed so well that Godfrey was in high spirits. Fortunately, also, as the days wore on, they became more and more accustomed to the air until

they were able soon to remain in it for several hours at a time, although, remembering the adventure in Mars, the vessel was never left without one or other of the owners in charge, well-disposed as the Jovians appeared.

In the garden of this place, called "Kulametik" was a strange beast, like the one that had caused the death of so many of the Jovians, and, on inquiry, they gained much information about this curious animal, which made them feel sorry they had imputed wrong motives to the natives they had met on their first visit.

They learned that the particular insect, the germs of which are sent to Bona, is a variety of remarkable habit. Although living in distinct colonies, they are symbiotic, and do not grow to perfection unless there is a certain beast living near them. Such an instance is by no means isolated, for there are, on Earth, many forms of bacilli, for example, which, to arrive at perfect development, must be placed side by side with amœbæ; if they are thus placed on culture-plates and both fed, the samples taken from them for independent culture must also be symbiotic, and contain both bacteria and amœbæ so that both may grow together, if results are to be depended upon. For this purpose the people at Kulametik imported an animal of enormous bulk from a distant land called Carakulak, in which district alone it was bred.

On Jupiter there is only one language, which is spoken in all parts of the planet, and telepathy is in universal use, consequently, when the Bonians sent their message, all the people on Jupiter on the same 'waves' disturbed by the Bonians received the same message. It so happened that the people at Carakulak received the message, which was the cause of their excitement when the *Regina* settled in their midst, for they had been expecting and hoping to see the ship which had travelled so far in so short a

time. Understanding what was wanted, and knowing they sent the large animal to Kulametik for the same purpose, they no doubt considered they were doing the Terrestrians a kindness in presenting them with one of the beasts that were necessary to the full development of the insects at the farm at Kulametik, where the naturalists in charge would not have one to spare.

These great beasts were perfectly harmless, living or dead, provided death came naturally, or in any other way than from a broken spine; for when the spine was fractured, especially near the throat, there came from the spinal cord or marrow, if exposed, an oozing which was exceedingly volatile, and instantly became converted into a gas so deadly as to cause immediate death to every living thing within a radius of fifty feet of the carcass. When the natives saw the beast slip through the rope and hang head downwards they feared it might slip away altogether and break its weak and brittle neck; this explained why they had run helter-skelter at the first sign of danger.

This great risk made the travellers dubious about taking so dangerous a creature on board, lest it should inadvertently come to grief against something, and end their careers suddenly whilst in space; but it was found, fortunately, that the variety of grub that needed the close presence of such a beast would not suit Earth, so they felt considerably relieved. They stayed on Jupiter a little over a month, during which time Godfrey gained all information possible with regard to the life-history and culture of the strange and interesting creatures, the rest of the party rendering valuable assistance. In a special room which had been made out of what had originally been three cabins, they fixed up apparatus and dishes and some strange boxes given them by the people of Kulametik, in which colonies of over fourteen million eggs or germs were coming forward. These would produce some millions each in the course of a year or so, and

when Godfrey felt confident in proceeding with them and understood what to do in each phase of their existence, the visitors took their leave, full of gratitude to their kind hosts, and sailed away to Mars in order to return the borrowed Martian. Werran was quite overcome at the parting, as were they all, for in their close and friendly companionship and their intimate association in the realms of space they had all become like brothers. They tried to persuade him to stay with them, but his friends and family were in Mars and he would not hear of them being taken to Earth, which had not a very good reputation on the planet, though many were anxious to risk going there, or indeed anywhere, to escape the threatened doom, foolishly forgetting, as Werran had himself strongly pointed out at the time of the attempted seizure of the *Regina*, that the end could not come for many generations hence; the present inhabitants were, themselves, in no immediate danger, and there was certainly no necessity to be hysterical in the matter. He longed to go back to his native country, nor could they blame him, for there seems ingrained in the soul such an intense affinity with the land of one's birth, that however far one may be removed from it, and no matter how happy one may be, there is felt such a strong yearning and love for one's native land as makes the return to it the subject of many a longing headache.

Treacherous as the Martians might appear in their fervent desire to save their posterity when the chance seemed suddenly to be placed before them, they were Werran's own countrymen and Mars his native soil, and nothing would induce him to leave it, and as the voyagers sought out and hovered over the locality from which he had been kidnapped, the natives again congregated in crowds. They still appeared antagonistic, but bearing past experiences in mind they were not aggressive, but stood sullenly watching the ship's

every movement as Werran was gently floated down. Then the *Regina* rose and over the house where Werran lived a dark object was seen to fall and then rest. A few seconds later there was a blinding flash, and, brilliant in the glaring sunshine even, there shot downwards a powerful red light. Then the *Regina* soared upward like a giant bird, becoming smaller and smaller till lost to view. Still the light poured down its powerful ray, continuing to illumine Werran's house for three days and nights, and when this faded and finally went out in a series of fizzles and splutters, still the metal cup, inverted like a mushroom, remained perfectly poised, floating over the house as a further reminder to him and his warlike compatriots of the *Regina*, although they needed no souvenir to keep her memory green, for as long as doomed Mars holds sensate beings, so long will the story of the *Regina* figure in Martian history.

CHAPTER VIII

A JOVIAN BUG

"The wise and active conquer difficulties
By daring to oppose them."

(ROWE.)

HAVING arrived at Derwent the four wanderers dedicated a few rooms at Dennis's house for use as a laboratory. By this means the project could proceed without exciting notice and remark, for they wisely concluded that it would be soon enough to let the public into the secret if and when the experiments were successful and not before, so that in case the venture did not bring the result anticipated they could laugh at each other without the public joining in.

Accordingly Godfrey took up his quarters there, and arrangements were set on foot for the immediate commencement of the cultivation of the wonderful grub which they called by its Jovian name of "Gorokakak," signifying 'small fire-eater.'

According to Linnæus, this strange creature would have been included in the sub-order Homoptera in the order Hemiptera, or Rhynchota, and it lives on plants as a parasite. This necessitated bringing from Jupiter a quantity of the twigs and leaves on which it thrived; fortunately the insect devoured both dead and living leaves, or the difficulty of transplanting Jovian trees to terrestrial soil and keeping them alive would have been almost insurmountable. Although

they brought as many leaves as they could, it was doubtful if they would have sufficient, as the insects were exceedingly voracious, but if not they would be able to return for a fresh supply.

These twigs were most peculiar in shape and form, being infested with gall-gnarls, and having a hard, horny bark, rough and covered with gleaming white spots about the size of a drop of water; the leaves were long and fibrous, with long spines and serrated edges, from the points of which projected numerous long, silky hairs of such scintillating iridescence as to look as though spangled with mica or bright minerals, each leaf seeming edged with long and magnificently jewelled lace of charming colour. The leaf itself was blood-red like our Virginia creeper in autumn, while the lace near the stem was a deep violet, gradually and imperceptibly varying through all the gamut of browns, greens, reds, purples and the like, to a rich and brilliant yellow at the apex, and as these filaments were long, flexible, and in constant motion, each leaf was a kaleidoscope of exquisite colour—a dream of colour harmony.

To Earth-ideas, the appearance of these bushes and shrubs surpasses all description, being a paradise, a heaven of beauty; every movement of air causing the filaments to quiver and the light to strike on different metallic surfaces, changing the whole scheme in the twinkling of an eye. So delicate and fragile are the leaves that when holding one between the thumb and fingers, however lightly, the mere pulsation of the blood flowing through the hand is more than sufficient to keep the whole curtain of coloured metallic fringe in a state of constant and ravishing motion.

No such plants have ever before been seen or known on Earth, and in the *Regina* rooms of the ancient British Museum may be seen one of them, perhaps the most wonderful of all the marvellous mineral and botanical specimens collected during the ship's

travels in other worlds. A 'botanical' specimen it has been proved to be, yet when portions of the bark, leaf, and silken hairs have been submitted to experts, they have one and all declared them to be specimens of excellent metal-work of some minerals at present unknown.

How reasonable is this conclusion may be gathered at the Museum where, in the "A" room, in a large glass case, stands a complete bush exactly as growing, and although it is labelled "Gorokakak tree from Jupiter"—after the insect feeding upon it—many of the leading metallurgists consider it a magnificent specimen of Jovian metal-work. Strange to say, the leaf, living or dead, undergoes no change, and the hairs will successfully withstand a very high temperature, but are not entirely fireproof, for after sustaining long-continued heat, eventually they blaze and burn quickly, then subside to a glow which remains for a short time and becomes brilliantly white, with evolution of dense smoke, and then they fall to powder, like magnesium-ribbon.

The life-history of the gorokakak is extremely interesting. First of all there are the winged male and female, incapable of flying more than a few inches, and both these male and female parents have sucking mouth-organs which attach themselves to the undersides of the leaves. After mating the male dies and the female spreads her wings over her body like a shroud, and these becoming fast there by the interlocking of a hook, or spine, on the inner side of each wing-tip, she flies no more but, her mouth taking the nutriment from the leaf to which she is attached for the short time she has to live, commences laying her eggs on the under side of the leaf in circles of about a quarter of an inch in diameter and about half an inch apart, in order to give them space to develop, the sheltering leaf affording shade and protection from the weather and enemies. Then she dies, and in the course of a

few weeks the ova develop into both males and females, but these have no sucking and piercing mouth organs, and being wingless, progress slowly towards the stem of the plant, eating the leaf as they proceed, leaving but the skeleton with the silken fibres or hairs attached. On reaching the stem, each female, having selected her mate, lays two eggs, neither more nor less, on the tender part of the bark, and these minute grubs, which are always females, pierce their way under the bark where they lie dormant for several months, when they emerge and crawl to the stems and roots and lay parthenogenetic eggs, which form galls. These eggs develop again into young females, which also lay parthenogenetic eggs, forming more galls, and so on for ten parthenogenetic generations. All this causes the roots and stems of the plant to become gnarled and knotted and the leaves all skeleton. The eleventh of these generations crawls to the leaves to devour the skeleton fibres and the long, silken filaments, leaving nothing except the deformed and knotted roots and stem-sticks. After the fibres and hairs have undergone certain processes in the viscera, the insect spins a cocoon which it covers with a hard, heat-resisting substance like mica, leaving open a small hole at one end into which it creeps; then it exudes more of the mica-like material and joins up the vacant space, spins more silky substance to complete the cocoon under the outer coating, and, after thus hermetically sealing itself in a heat-resisting capsule, inside which is a beautifully soft cocoon, it prepares to undergo its metamorphosis, which keeps it dormant for seven weeks, when of the silk it has formed wings and other appendages. It then exudes some colourless liquid which sinks to the bottom of the capsule and dissolves it, when the winged male and female with which we started appear, and the same life-history is repeated.

Godfrey left many of the cocoons undisturbed in

order that the stock should be kept up, the remainder being taken and made into threads, which were again twisted into long strands and placed on rollers or bobbins, and stored ready for weaving.

Prolific as the insects were, all this occupied a considerable time, and over eighteen months passed before sufficient material was obtained for the actual weaving to be commenced. In the meantime, experiments had been conducted with the cocoons in all stages, and it was found that the best results came from those taken about three weeks after the sealing. These strands resisted all temperatures, even that which volatilises steel; but again did a difficulty arise. The strands were perfectly opaque, even to the intense brilliancy of the sun, consequently, if woven so tightly as to present a close web of fibres, though the object could be achieved by the production of a heat-resisting material, it would be defeated in its attainment, for nothing would be visible through the cloth. It would therefore be necessary to have a net of sufficiently wide mesh to enable the travellers to see plainly through it, yet not wide enough to admit heat.

This compelled a further long series of experiments in order to ascertain how far the strands were effective outside their own substance in certain temperatures. These experiments were the most delicate and elaborate of all, for the heat of the sun is beyond terrestrial calculation, all Earth-knowledge ending at the fact that all metals known on Earth and many others undiscovered by science exist there as thin vapour, and temperatures of metals become unregistrable at their volatilisation. Allowance had therefore to be made for temperatures thousands of times greater than the highest obtainable on Earth, and even when this was done, the result might prove altogether inadequate to the heat that would be encountered—a terrestrial estimation of which could, at the best, be nothing more than a wild guess.

It was ascertained by actual experiment that the strands were effective in transmitting their properties of withstanding the passage of heat to a considerable distance around their mass, and when cords a line thick (one-twelfth of an inch) were placed half an inch apart, phosphorus and other elements, which are self-igniting in a dry atmosphere, covered with such a mesh received no added heat and remained unconsumed, though the net was subjected to a temperature of over 3000°C .

The experiments were a brilliant success, and in order to make assurance doubly sure and so avoid all risk of danger to themselves and their ship, the friends had the net woven with fine strands in so close a mesh that they could but dimly see through it when placed before one of the vessel's powerful search-lights. It was nearly two years after their return from Jupiter before they were in a position to commence the work of weaving, which was to be conducted under their own supervision in a windowless building specially erected adjoining the shed, and not till the web was finished could they let their object be known. To all inquiries they had returned smiling and evasive answers. It was guessed that something wonderful was afoot, or they would not have remained busy yet closed up for two years. All kinds of rumours were circulated, not the least of which was that something had gone wrong with the *Regina*, and the owners, unable to use the vessel again, had built another shed and were constructing a second ship, making a mystery over it to cover their incompetency. Every movement was closely watched and publicly reported; every time they went to either of the sheds dozens of watching craft 'waved' the news to the whole earth, and so great a nuisance did this become that the secret workers built a covered way from one shed to the other. This privacy, together with the knowledge that from the house to the new shed was an underground passage,

all in electrification, but added fuel to the fire of public curiosity, and the four friends could not step outside the buildings for their daily exercise, which they always took in the grounds, without being besieged by correspondents from airships overhead, who pressed for interviews in the hope of gleaning more information than the little already known.

One evening all four were coming out of the shed, when the instant Gilbert, who was first, got outside the door, a cable-tow with a running noose was slipped round his neck and any attempt to retreat would have been fatal. Whilst he was struggling with it to escape being strangled, it fell across his shoulders when it was drawn tight and a second later he was being hauled up into a powerful airship overhead. So well had the noose been dropped and manipulated that his companions were unaware he was being kidnapped till his body rose from the ground, dragged upwards by means of an electric winch, as the powerful ship set off at a tremendous speed. The people in the ship must have been mad, or else have believed the rumours that the *Regina* was a hopeless wreck, to have attempted such a crime, but they soon became wiser, for before they had gone a hundred miles the *Queen* rose from her shed like an awful Nemesis, with her search-lights full on, sweeping the earth and sky in all quarters, then started in the direction taken by the fugitive. In a few minutes the quarry flew round at a dangerous speed towards the north, taking an upper plane where were few ships, and soon saw that the *Regina* had still some life in her. Her attractive force was switched on gently and the airship suddenly pulled up to a dead stand with a terrific shock which shot the driver through his glass cage a distance of twenty yards ahead, when he fell to the ground, giving an awful shriek and turning over and over in his descent. Very gradually, so as to cause no further damage, the ship was drawn to the *Regina*,

the two mechanics in her white with fear, and bringing Gilbert forward, they begged for mercy. Gilbert shouted hurriedly, "Let them go! the owner is dead and these were but obeying his instructions."

"Come in, all three of you," said Dennis, now on the outer deck, "leave the ship, she'll travel with us."

All three entered and the two men were placed in what had been a cabin for one of the crew, when the door was electrified, and with the two prisoners and the fine prize in tow, the *Regina* sailed back to Derwent. Within fifteen minutes of the abduction they were over the shed again, to find dozens of air-craft in various planes, and in the gathering darkness could be seen the lights of scores of others coming from all directions, drawn thither by the news. The four friends decided to make an example of the offending craft as a public warning, so the *Regina* rose upwards, causing the captive to float below in the full glare of her lights; the ship was then drawn to the *Regina*, the outside of which was now put in de-atomising field, and just as a moth rushes to the light and falls, so did this valuable but fated craft hover in the glare for a moment, then rush towards the upper vessel, instantly to fall in a shower of myriads of atoms which, sinking to the ground in the beams of the search-lights, appeared like a sheet of falling fire.

The two men were floated downwards and were free, for the vengeance was complete; a little later the *Regina* was housed and the government notified of the accident, with full particulars.

This time the four left the shed, they were not molested by so much as an inquiry. All the same, the incident, while filling every one with a fear of taking strong measures with so powerful an adversary, capable of such relentless and successful pursuit, did but whet the general curiosity which now rose to fever-heat. 'Wave' messages and other communications arrived every moment, far too numerous

to be dealt with, so all were treated with the same silence, one message only in government code being sent all over the world intimating that at present no information could be given.

That was all very well, but the public wanted to know what was afoot ; why the *Regina*, when in excellent condition and under perfect control, was allowed to rest unused, and why so much secrecy ; and dozens of air-craft waited at various hailing distances, ready to flash the news by 'wave' to their various centres directly anything was discovered, by accident or design. Weeks passed, then months, yet not a word the wiser was any one. At last, nearly three years after the return from Jupiter, an announcement was made which almost caused the hair of every scientist to stand on end, and set every thinking being aghast with astonishment and incredulity. The message was short and to the point ; every wave apparatus received the words,—“The *Regina* will sail within ten days into the Sun.”

CHAPTER IX

TESTING THE WEB

"Let's keep them
In desperate hope of understanding us."
(CARTWRIGHT.)

No bomb could have been more startling than the simple statement from the *Regina*. Surely there must be some mistake, or the men were mad, for who in their senses would think of going into the *sun*! Various instruments were compared but all gave the same word "sun." Had the adventurers been any other men they would probably have been derided, but it was evidently a case of *non compos mentis*, and though to a certain extent they could act as they pleased in all that concerned themselves personally, in the interests of science they should not be allowed to destroy the *Regina* in attempting such an insane act as that contemplated. No one could understand it. Mental aberration occasionally plays tricks with the best, but surely such scientists could not for a moment have overlooked the fact that the terrific heat of the sun would shrivel up the ship and all she contained long before they could approach his surface; and how could anything live—even the *Regina*—in the sun's atmosphere, which the merest child knew would convert the ship, powerful as she was, into the most tenuous vapour.

So every one argued, from the highest to the lowest, and the government was petitioned to prevent such

an inevitable catastrophe, but the government replied that they had no control whatever over the vessel, and though the owners should be requested to abandon the scheme, pressure could not be brought to bear on them, and again were the conditions of the original deed printed and made public, and all could see that even if the owners arranged to go elsewhere, they could still go to the sun and no one could hinder them. As a matter of fact, the government was afraid of doing anything to stop them; history had recorded what the *Regina* had accomplished in the past, and the grant of perpetual protection was too serious lightly to be set aside.

The people then clamoured for Dennis and his companions to be imprisoned for destroying the pirate air-ship and causing the death of its owner, but again those in authority refused to move, merely pointing out that the grant gave unlimited power to protect the vessel in the best way possible, and so long as they used that power within due limits, the law would and must uphold them. The man who was killed had only himself to blame, and the owners, in reporting the occurrence, which was proved to be a pure accident, had done all the law required. Foiled at every turn, the populace became furious until the first flush of excitement had passed, when they began to consider the matter more calmly, and what had been anger gave place to an intense curiosity, for they felt that some mysterious secret was withheld from them and that the contemplated voyage must be possible.

This excitement grew as the days passed till folk spoke of very little else, each greeting the other with the question whether any news had been received, for all wanted to be the first to know and carry the information with respect to the means by which the heat was to be overcome, but these particulars were not to be divulged till the day of starting, though in view

of the great curiosity the owners sent a 'wave': "In four days we sail to the sun covered with a heat-resisting net. *Regina* in net will be on view before starting."

This set all doubts at rest, but if anything it caused more excitement than ever, and Derwent became the gathering-ground for all ships that could make the journey. So great faith had the people in the *Regina* and her owners, that thousands of 'wave' messages were forwarded from scientists and others all over the world asking for the privilege of making one of the party. In vain did Dennis and his friends 'wave' a refusal, saying they four only were going—applications still came in, and the government suggested that in the interests of science it would be well to take the presidents or other officials of the chief societies, so that each in his own special line could investigate the branch he represented, and by this means gain more real knowledge on every subject than would be possible with four only. This wise suggestion was gladly adopted and invitations given to twenty representatives of all branches of science, who were to be under rigid restrictions not to trespass. The decision was received with great delight by the fortunate few, who made their arrangements and hurried to Derwent with all speed. This influx of visitors made it necessary to have a few attendants. While the four were alone, they rather enjoyed being so, taking it in turns to attend to meals, there being very little cooking necessary under the present system of tablet and pilule form of food; and reliable mechanical servants, dusters, etc., worked by motive power, rendered human help of any kind superfluous. Up to the present no repairs had been needed in the machinery or the vessel beyond easy adjustment *en route*, and automatic cleaners kept the engines and all parts of the ship in a condition bordering on newness. But easy as it was for the three owners and Godfrey to

regulate their work and actions to fall in with these accurately timed automatic servants, as they are called, which, when once started, perform their allotted duties with a regularity no human being could emulate, they could not expect twenty visitors to be entirely without some human attendants, for the work undertaken by each would be exacting, both as regards time and energy, so two good men were obtained and the original men's quarters not already disposed of were altered for them, and re-arrangements made in the ship so that all requirements could be supplied automatically and instantly, far better and more quickly than would have been possible by human agency, and a movement of the zero switch closed everything, and returned everything. Moreover, as in the original design of the ship, so now was every cabin electrically connected with those of the owners, and contained a secret sehen-microphone, telephone, and 'wave' apparatus, and, if necessary, each cabin could be electrically closed should any occupant have to be kept prisoner from any cause, in which case, though in solitary confinement, he would still be able to enjoy the delights of the table, the pleasures of books, a constant view outside, and other comforts; also conversation, but with the owners only, who alone, by means of the sehen-microphones, could make themselves acquainted with his every movement by sound and sight, although such a contingency was extremely unlikely to arise. The owners' quarters and those portions of the saloon and observatory containing the controlling-switches were so protected as to render approach by any one except themselves impossible.

Probably the greatest stock required would be water, which, up to a few centuries ago, had not been thought capable of more than slight compression, but about that time some explorers entered an underground city named the "City of Earth" and were

shown by the governor, Antistes,* how to compress water into the form of a cord, when, like twine, it could be coiled into balls and stored for an indefinite length of time if in air-tight cases. When a small piece of this is cut off and subjected to the movement of friction, it rapidly becomes liquid, a piece a few inches long providing several gallons of distilled water. Thousands of these large balls were stocked so that each person could have an abundant supply during the whole of the voyage. This was not expected to be of longer duration than a year, or two at the outside, but sufficient provisions were taken for a seven years' absence, so that if any unforeseen delay should occur there would be ample food for all.

These arrangements were soon finished, and in making the alterations in the ship to accomodate so large a party and to provide the extra working space required, the present owners followed the lead of the original builders by employing each man on a portion only of one job, leaving another to complete, they themselves fixing the necessary secret connections and fittings after the men had prepared the way for they knew not what.

The wisdom of this course soon became apparent, for before many days had passed the workmen were waylaid and feted, many of the highest in the land thinking it not beneath their dignity to step from their high estate to fraternise with the humblest workman, if by so doing a little information could be obtained which would place them in possession of some of the secrets of the *Regina's* power. Astonished almost beyond measure at the sudden interest taken in their welfare, the humble, honest workmen felt that the theory of equality had, at last, resolved itself into definite practice, and that they were now being lifted up into the higher station of their patrons and were fast becoming compeers. Consequently,

* "The Immortal Light."

they, never suspecting duplicity—for what can a mouse know of the patient wiles of a cat till too late—exerted their utmost endeavours to please, and told all they knew with the frankness and innocence characteristic of them, suddenly to find their innocence become their undoing, for the patrons soon perceived that willing as the workmen might be to supply information, they could neither give nor suggest any reason for their work, and all led to confusion. The blind led the blind, and both fell; the rich to withdraw; the honest, well-meaning poor—who are, and will be, always with us—to return to their own level, ignored and discourteously treated by those of the higher grade who had just been so kind and friendly. This need not have occasioned surprise, for an arrogant and insolent manner is the prerogative of the well-to-do, and is useless to a poor man who has no one poorer than himself to practise upon. It is only when the pocket is well lined, and the conscience is seared almost to extinction by countless corrosive stains, that one can afford to be oblivious to everything except personal interests. A good maxim to follow is to

“Be good and you’ll be happy.
 Another thing is sure,
 More certain than the happiness—
 Be good and you’ll be poor.”

This is probably why the poor, who have so little comfort here, “inherit” the Kingdom of Heaven, but to the rich it is hard to find entrance, which can only be gained by the loving, voluntary sacrifice of everything, to give to the poor. This is a hard lesson, and more often than not causes a denial and a clinging to the riches as they are gripped all the closer—the poor remain poor and the rich hang the head, for the moment sorrowing that the peace of the poor is refused them, for they have great possessions.

All this but confirms the fact that though age

succeeds age, human nature remains unchanged, and the world wags on much in the old way. "A man that flattereth his neighbour spreadeth a net for his feet" is equally true to-day as it was in wise old Solomon's time, and as it will be always. In certain ways improvements take place, manners and customs change along with changing circumstances, but deep down "the heart is deceitful above all things and desperately wicked," and self is ever uppermost. Education advances and with it general knowledge increases, but this only gives a more or less thin veneer the hearts and lives of men remain the same, they still work for self and ill-gotten gains, though as they rise in station and become more 'educated,' they become all the more dangerous, as they can obtain their spoils more quietly and insidiously.

King Solomon seems to have had a varied experience which gave him an intimate knowledge of most things, and he was never more correct than when he said, "He that giveth to the rich shall surely come to want." And not from his own fault, but that the rich, having obtained all the poor man has to give, cannot bear to think he may possibly say, with apparent truth, that he has helped them, and given them such and such things, so they persecute him who befriended them and bring him to such a pass, that if ever he should be so indiscreet as to hint at any obligation on their part, he would but draw to himself the ridicule and unbelief of his hearers, and from the rich man, the good-humoured, patronising smile of light amusement, as though the statement were too ridiculously funny to be other than a joke; for is it within the bounds of possibility to think that the mouse was believed when it returned to its nest, and told to its loving, trusting friends the story of how it alone had set free the mighty lion.

Although everything is now in the hands of the state, and there is little need to be rich when there

can be no open oppression, which is one of the chief advantages accruing from riches, there are still the old faults and vanities exposed by Solomon underlying every phase and walk of life. The poorer serve the wealthy in the hope of being helped to riches, losing sight of the fact that they would then be in little better position, for in the semi-commonwealth of the present day the rich man is, morally, no more wealthy than the poor, as he must spend all his riches according to his position. All the same, beautiful as is the present state of things in theory, in actual practice the same envy, hatred, malice and all uncharitableness existing thousands of years ago, still flourish in ghastly virility.

The workmen employed on the *Regina* were, one after another, left by the curious to go their own way totally disregarded, and they could not understand it, for it never entered their guileless brains that they had been opened like oysters and, like the empty shells, flung aside.

It was plain that nothing could be learned about the vessel but what the owners permitted, and patience was a trying virtue to cultivate, but at last the delay which the alterations had occasioned came to an end, and the actual date of flight was fixed for the following Tuesday. The first flight of the *Regina* was altogether eclipsed by this, the most important voyage of all. On the Monday, the city of Derwent was again packed with people, and both on land and in the air business began to be restricted, and before the day was out ceased altogether. The following day crowds of people and ships assembled to see the mysterious net; and punctually at half-past ten in the morning the vessel rose out of her shed into the brilliant sunshine to be greeted with roar after roar of enthusiastic applause. She floated clear of the roof, then sank to within about twelve feet of the ground and there remained stationary. Over all her surface was a wonderful covering of

network, fitting her shape exactly like a glove, woven without a seam to fit the contour of the vessel ; at every point where the threads crossed, it was knotted, and the sun, glinting on these fine projections, reflected sparks of brilliant light, making the shimmering net appear as if studded with myriads of diamonds. The people went into ecstasies of delight and wonder, and every one wanted to know all about it. In response to the clamouring call, the three owners and Godfrey emerged to give a demonstration of the wonderful properties of the net, and on a platform specially erected, in full view of the assembled throng, they performed many experiments with the heat-resisting material, amongst which were fruitless attempts to ignite gunpowder, cordite, and other explosives with heat and flame and blazing liquids, none of which would pass the net in which the explosives were wrapped ; even a powerful oxyhydrogen blowpipe failed to ignite dry phosphorus under the same conditions, and having successfully gone through dozens of tests with all forms of materials and substances, there followed a perfect furore of applause ; for all in that vast assemblage were sufficiently experienced in chemistry and physics to comprehend the full import of the discovery, and what possibilities were open to the owners now the question of heat—as the world knows it—had been overcome. Whether the material would withstand the inconceivable heat of the sun could only be ascertained by going there, and none were more fully aware than those embarking that, severe and successful as the tests had been, they might all meet their doom in the crucial test.

All at once Dennis called his three friends aside.

" You look excited, old chap," said Ross. " What's in the wind ? "

" An idea has just struck me ! " was the reply, his eyes shining.

"Ideas must be scarce to cause such a to-do!" remarked Godfrey. "You look as excited as a school-boy."

"I am!" replied Dennis. "I believe we have made a still further discovery and placed the *Regina's* powers beyond all limit!"

Instantly all were alert as Dennis continued,—
"Hitherto a great drawback to our power came from the fact that we have always been obliged to go steady through atmosphere, or the friction would over-heat and destroy the ship; but if this network will withstand friction as well as heat, we can go through atmospheres as quickly as through vacuum and not be burned or warmed. Don't you see——"

"Capital!" interrupted the others, enthusiastically.

"Let us try it," suggested Godfrey, "shall we go round the Earth fast, to see how she acts?"

"We must tell the folk what we are doing," said Ross, "so that they can time us," so they returned to the vessel and 'waved' their intention to all, explaining their reasons for putting the ship to this further test by a rapid flight within the Earth's atmosphere, saying that in fifteen minutes' time she would go round the Earth at a height of twenty miles, pause for ten minutes, then encircle it again at a lower distance at a considerably increased speed. Whilst they were entering and sealing the vessel, the people were getting ready their instruments to time and photograph the flight. Punctually to time, the *Regina* rose and then shot ahead, soon afterwards to be resting over the shed, when the net was examined and found to be perfectly cold and uninjured.

Ten minutes later, she vanished towards the east and returned from the west, almost before many of the watchers had realised she had gone, the second circuit having been so quickly accomplished. Again were the net and casing found to be of the same tem-

perature as before the flight, and the four travellers were again overwhelmed with congratulations. Thousands of excellent photographs had been obtained from various points on the light and dark sides of the Earth, those taken on the shadow side showing little more than the ship's brilliant lights, for she had gone with all her lights full on; on each of those taken on the illumined side, every detail of her wonderful covering was distinctly seen to be undisturbed by the terrible rapidity of her flight.

"That was fine!" exclaimed Godfrey; "one just blinks and we are back! it's a splendid success."

"We shall be able to go hundreds of times faster, if need be," said Dennis. "That was merely to try it."

"But shall we always go through atmosphere at so terrific a speed?" asked Godfrey, in surprise.

"No, not necessarily, though it is reassuring to know that no matter what speed we have, we are not in danger, and there would be no reason why we should alter for atmosphere unless we wished to land, or take observations."

"Let us get off then!" exclaimed Godfrey. "I am anxious to go and so are we all. We are already an hour behind time. Shall I call the passengers?"

The others agreeing, Godfrey very unceremoniously called up the twenty impatient visitors who, along with the two attendants, mounted the ladder and were soon safely aboard. The net was joined, doors were closed, and amidst applause which rolled aloft like thunder, the ship ascended, all the occupants going to the windows to watch the people becoming smaller and smaller, suddenly to vanish as the ship increased speed; and now they saw the rivers and seas like strips of hammered silver; then all was lost in billowy clouds; then all was dark; below

them lay the Earth, a great ball, or disc of light, which became smaller and smaller and was even now but the size of a marble, as the *Regina* shot onwards with terrific speed straight for the gigantic sun.

CHAPTER X

THE CONSPIRACY

"Foul whisp'rings are abroad ; unnatural deeds
Do breed unnatural troubles ; infected minds
To their deaf pillows will discharge their secrets."

(SHAKESPEARE.)

ALMOST the first thing to excite comment amongst the visitors was the appearance of the stars. On Earth stars are seen above and around, as if the spectator were placed in the centre of a great ball, on the inner side of which ball stars are seen, but owing to the Earth intervening and cutting off all sight below the horizon, only the upper half of the dome is visible. But here in space the stars were above, around, and below ; in every direction they shone brilliantly, the *Regina*, notwithstanding her rapid movement, being always and at all times the altering centre of a vast and ever-changing space, with ever-changing objects, which appeared weird and awful when viewed in the absence of an atmosphere through which everything in nature must necessarily be seen from Earth, and which softens and beautifies by its moisture and substance and clouds and refraction and dozens of other blessings, or the inhabitants would be driven almost mad to see the wonders of creation and the terrible sun, shorn of the Earth's beneficent veil of atmosphere.

Many of the passengers were appalled, and several intensely regretted their misplaced enthusiasm. They

had, all their lives, examined their celestial globes from *without*, as they necessarily were obliged to do, merely bearing in mind, in a casual sort of way, that the Earth was really *within*, and instead of the dome of the heavens being above, the Earth was itself the centre of limitless space. They nearly lost their self-control and were driven to the verge of hysterics to realise that the frail thing on which they stood was actually adrift in immeasurable space, and only the All-seeing Eye could guide them back to their own world.

As seen from Earth, stars are mere points of light, the rays from which in passing to us become subject to various laws, and are also not only refracted, but are affected by the density, humidity and temperature of our atmosphere, coming to us as twinkling lights. Also under the highest telescopic power stars show no appreciable size, and are comparatively fixed in their places, forming such small points in the heavens that their positions can be determined so correctly that the measurements and movements of other stars and planets can be recorded with almost certain accuracy, for keeping the same position themselves with regard to Earth, they define clearly and unmistakably the movements of our world.

A star being *one* point of light, twinkles only, whilst planets, moons, and the sun have so many points and rays of light, all twinkling, that the combination of all the scintillating rays causes a steady light which is quite distinct from the light of a star, the magnitudes of which are classed according to their relative brightness, the first half-dozen or so classes being visible to the naked eye, and the next eighteen or more to the lens of a good telescope.

For many centuries it had been thought that the difference in the brilliancy of the stars came from the fact that though they were nearly all equally brilliant,

their distances were so remote as more or less to reduce their light, and that ether in space was entirely transparent. The *Regina*, however, had been the cause of considerable modification of these views by enabling many of the difficulties to be removed by actual observation on the spot, when it was found that certain parts of the ether of space were more or less opaque and partially, and often entirely, obliterated certain of the stars by intervening and absorbing some, or all, of their light; also that many, if not all, of these semi-opaque webs of ether were in motion, and sometimes this movement caused the more dense web to pass away from between certain stars and Earth, and thus in the more transparent space certain stars would appear brighter, and the new stars and moons of planets would become visible; at the same time the opaque web of ether having changed position, stars hitherto visible were blotted out of sight from Earth. This accounted for many discoveries of new stars and the loss of many previously observed, also for the periodic loss and reappearance of others, for in certain cases the fog-like stratum of ether was found to move in definite and periodic pulsations which exposed one or more stars beyond, as the veil lifted, or fell, or moved aside. Such stars may then have remained visible for years and would again vanish as the stratum moved back, and in course of time, probably anything from a few hours to thousands of years, it would again expose the hidden star, which would appear and disappear in definite cycles of time. Such stars are called "variables," of which there are considerably over a thousand, and others are being added as time goes on; some have definite periods of visibility and invisibility, and some change erratically, being seldom equal, all depending on the size, movement and density of the particular semi-transparent web of intervening ether, which, although appearing to be bound by no known law, yet has a certain law of movement of its

own, because it may be timed and its passage anticipated with accuracy.

One of the chief of these periodical stars is Mira Ceti, the "wonderful star," which was visible from Earth when the travellers left, but in a few days they passed through a great bank of dense, semi-opaque ether, thousands of miles in thickness and extent. This was almost imperceptible when they were in it, but as they had approached it had appeared like a faint cloud, the mass of which was sufficient to hide the star from Earth when intervening. The magnitude of Mira—in common with that of all other such stars—varies according to the density and opacity of the intervening stratum, undergoing many 'wonderful' changes. Its period is less than an Earth-year by about thirty-four days, thus going through about twelve changes in eleven Earth-years, or thereabouts. Its brightness, which is fiery red, causes it to be classed in the second magnitude, in which it remains about fifteen days, when it diminishes in brightness till, in about three months' time, the full bulk of the bank of ether hides it altogether from the naked eye, and only through powerful telescopes can it be seen for a little under five months, when a more transparent portion of the web of ether gradually pulsates before it. In the course of a little under three months the belt has lifted, or become so thin as to be wholly transparent, and the "wonderful star" comes into view again without anything intervening. She has thus regained her original brilliancy as a star of the second magnitude, and Mira has now gone through her average changes, but even these are subject to much variation. The movements of the ether follow a law at present unknown, to discover which the *Regina* would have been obliged to stay close at hand, probably for years, which was scarcely advisable, so the scientists left the definition of the law of ether-movement to some future occasion, contenting themselves with the

elucidation of the cause of the variability of stars, and particularly of this "wonderful star," which has been the source of so much controversy and speculation since its discovery in Cetus in 1596 by David Fabricius. It was also found that the ether pulsated and moved in such a manner as to cause the star to appear of varying brightness, and to alter its period to a longer or shorter time—probably a matter of twenty to thirty days either way. They, however, noticed that at the eleventh maximum of brilliancy, which was then approaching, the star was completely exposed to view from Earth, thus causing it to appear at that particular time far brighter than when at its greatest brilliancy. It was seen far away, shining steadily, but without the scintillating, fiery glow seen from Earth, which, along with other characteristics peculiar to their unique point of sight, caused much friendly discussion amongst the voyagers as the ship sped onward direct for her goal—the star which warms, illumines and governs all the planets and the thousands of planetoids forming the solar system, binding them all together by such close and common ties, as of relationship, that no shock or change of any magnitude can take place in any one of them without affecting all the others, however remote.

By this time the *Regina* had travelled a little over twenty-seven of the ninety-three millions of miles which separate the earth from the sun, and consequently had arrived within the orbit of Venus. The details of the visit the original owners had paid to this "Star of Love" centuries before, were, of course, matters of history, well known to every person on board; notwithstanding which, several of the visitors wished to go out of their course to follow in the wake of the planet, and land, and pressed Dennis to go there, but he refused, saying they must travel direct to the sun and back, and in this decision the rest of the party concurred, seeing that Venus was at the opposite side

of the sun to Earth and they would have to go past the sun and then come back. Then for the first time dissension arose, and amongst the few who wished to go to Venus were some of those who first regretted having embarked. These openly expressed their dissatisfaction, and endeavoured to inflame the fears of their more courageous and peace-abiding companions by referring constantly to the now awful-looking sun which, shorn of the protecting veil of Earth atmosphere, glared with terrible power into the vessel, and contrasted his malignancy with the benign, yet distant Venus, rolling onward in stately movement. So effective were these constant comparisons that before many days had passed other faint-hearts saw in the sun and its slowly increasing and awful bulk a doom by the worst of deaths, and they commenced to argue with all the owners in turn, that even if the vessel could withstand the enormous heat and friction, she could not possibly sustain the equally enormous pressure, but would be cracked like a nut as she drew nearer, for a tiny jet of vapour on the sun would strike with a force of thousands, perhaps millions of tons, and shatter the ship like burnt paper.

"The vessel can withstand lightning and any other force," said Dennis, with conviction.

"Lightning, may be!" retorted Edgar Holt, who seemed to be regarded by his friends as their spokesman, "but not solar energy. In lightning you have direct electrical energy, and I will admit for argument your sources of power to be greater than lightning, but solar energy is infinitely stronger, and we shall be crushed."

"Energy, solar or otherwise, is all the same to us; the energy radiated from each square foot of the sun's surface has been computed at something like twelve thousand horse-power, but that is, of course, only a guess, as must be all estimates. Now the secret of the *Regina's* power lies in the fact that not

only can we absorb any form of opposing energy—be it gravity, heat, electricity, magnetism, or what not—but oppose to it the same force increased a thousand-fold and more, so that we can assure you there is no danger; we may safely enter the sun's atmosphere, and no matter what force opposes us, it will be harmless."

"It will not!" retorted Holt, in rude contradiction, "we shall be annihilated!"

"Oakland is right, Holt," broke in Ross, with some warmth; "and if not, and we are burnt up, you knew the risks—why did you come if you were not prepared to face them?"

"We were blinded with the glamour of the adventure, but that has worn off and we cannot go!"

"You cannot go?" exclaimed Godfrey, who had heard all. "My most estimable friends, you've got to go, you must go! unless you prefer being put outside, and even then you'd go, for you'd follow us."

"We do not intend going," repeated Holt, quietly, but with evident determination.

"You see that collection of spots over there, good people?" queried Godfrey, sarcastically. "One of them is our world—I'll be hanged if I know which, and yet I'm here. I know no more about this ship than you do, and it seems like tempting Providence even to hope that we can ever find our own little speck of a planet again amongst the thousands of others, which seem to me to be all alike, and yet I am perfectly content—as are we all except you—to trust to Providence, the *Regina*, and to the power the three owners have over her. Going to the sun we are, and as we have been friendly so far, let us proceed and all work together amicably for the general good. Believe me, we are sure to return to Earth safe and sound. If we don't—well—we don't!"

This long and sensible speech of Godfrey's, despite the cold comfort of the climax, created an excellent

impression, and caused several who seemed wavering to side with the owners and remain true to the original plan, but it was plain to see that the dissentients to the number of eight were unconvinced, and it was equally evident that some plan, known only to themselves, had been formed.

Fearing an attempt at mutiny, Dennis wisely professed to compromise and suggested that the objectors should talk the matter over amongst themselves in the far saloon, and the rest should do the same where they now were, all meeting the following morning (*i.e.*, Earth-morning, for they kept Earth-time) so that they could settle the matter amicably, if possible.

The eight went away as suggested, and after a short discussion, the meeting terminated and work proceeded as before. In the meantime, immediately the eight had left, Gilbert slipped into the sanctum and set the sehen-microphones in recording motion, which, minute by minute, recorded the mutineers' every act and speech, how they had formulated a plan to seize the ship, for as there were several eminent electricians amongst them, they did not for a moment doubt their ability to work her. They considered all the cautionary notices placed in various parts of the vessel, forbidding further passage, to be but 'bluff,' merely placed there to give an air of mystery to intensify the influence of the owners, and it was absurd to think that if they transgressed they would be held rigid, if not seriously injured. And all the time, silently and secretly, the recorders reproduced their every word with persistent and remorseless accuracy, working automatically by electricity and independent of attention. Occasionally one or other of the owners saw that the supply of films was ample, and so, hour after hour, from the first suspicion of danger, each of the eight cabins and the far saloon were kept in circuit, and waking or sleeping every action of the eight suspects was recorded in indisputable evidence. On

turning in for the night, the owners took out some of the films, and placing them on a reproducer in their private room heard the whole scheme. Upon this, ascertaining that all the occupants were in their berths, the doors of their cabins were electrically sealed, and the friends retired to rest, keeping a four hours' watch in turn, for they had agreed that during the whole of the voyage, considering they were not alone, at least one of them should always be in guarded territory. The following morning, all met together as arranged, and Dennis—who as chief and senior owner was deputed spokesman—requested the eight mutineers to stand at one side of the saloon, and the rest at the opposite side; he, with his two partners, being behind the barrier.

"My friends," he began, addressing the friendly passengers, "before going further into the matter we are discussing, I am sure you will be interested to hear what these eight objectors have to say, in order to come to a proper decision—No, Holt! it is not necessary for either you or any of your party to speak yet," he remarked, as Edgar Holt stepped forward, "we have something here that will explain everything;" saying which he motioned to his companions, and Ross and Gilbert, who had brought out the recorder from the sanctum, set it working and the machine spoke out loudly as the films travelled through it. For a moment the offenders seemed struck dumb with amazement and when Holt understood what was happening, he made a dart forward, instantly to become rigid, for within a few feet of where the party stood the floor had been electrified and he could not pass. As soon as the others saw this and that all was going to be disclosed, they became furious, and one, losing his self-control, pulled out a revolver which shot electric pellets, but before he could use it, Gilbert, who had left Ross to the machine, whilst he went to the switch-board to prepare for such an

emergency, instantly put the whole of that portion of the steel floor in circuit with the roof, and the men, being between the two metallic surfaces, were brought into electric field and became immovable. Still the machine talked on, reproducing their very voices, tones, and expressions, disclosing the whole scheme, clearly and exactly as when the words were uttered, all that had been said and done, both when in the saloon and in conversations together in the privacy of their own cabins; even their breathings and talks during sleep were equally distinct, as Ross put through such of the films taken by the various instruments as would give a general idea of their proceedings and plots. When these were finished Dennis resumed, "This is no time for sentiment. You have heard their schemes as from their own lips, and we should be justified in destroying them; with you all as witnesses, the law would uphold our action in so doing, for they have not only mutinied but attempted murder. We must not, however, take life except in dire necessity, and yet these people cannot stay here. As they say they do not intend going to the sun, they shall not do so. Last night we went through most of the films you have just heard, and we decided that these men should leave us, for their presence here would be a constant source of danger and suspicion, and at the very least, they would disturb that harmony which our association together renders necessary to ensure a happy and successful voyage. At the same time, we cannot land them on Venus, they are not good enough; so we have arranged to seek, out of the numerous planetoids around us, one with an atmosphere similar to that of our own world and leave them there till we return, they running the risk of our not finding them; and you will be witness to the wisdom of this course, for as they positively refuse to go to the sun, we have no alternative but to yield. We shall, therefore, provide them sufficient water and general pro-

visions for twelve months, and if we do not pick them up before then, they must look after themselves, or die;" then turning to the mutineers, he continued,— "You have heard your fate! you will now go to your cabins and remain there as prisoners until such time as we find that for which we shall search. We do not fear your arms, as by this time they will be too hot for use, if not actually dangerous to yourselves;" and nodding to Gilbert, he stepped back, and Gilbert switched off the current, when Bosworth Keeth, who had his revolver poised, dropped it with a cry of agony, for some of his skin was still sizzling on it, though the pain had not been felt till the electric current was broken. His companions, also, with cries of pain, hurriedly snatched revolvers from their pockets and threw them down with burning fingers, as they were scorching through their clothing to the skin.

In complete silence, cowed but malevolent, they then marched to their respective cabins, instantly to find the metal doors strongly magnetised to the frames and themselves prisoners, each in a chilled-metal, drill-proof cabin, which, however, was warm and luxurious.

Had any of the other passengers questioned the powers of the *Regina*, or the determined characters of the three men in charge, the tragedy just enacted must have set all doubts at rest. They one and all approved the punishment following the conviction

ERRATUM.

Page 171, bottom line:—for "happened" read "appeared."

but on the fourth day they saw what happened to be

emergency, instantly put the whole of that portion of the steel floor in circuit with the roof, and the men, being between the two metallic surfaces, were brought into electric field and became immovable. Still the machine talked on, reproducing their very voices, tones, and expressions, disclosing the whole scheme, clearly and exactly as when the words were uttered, all that had been said and done, both when in the saloon and in conversations together in the privacy of their own cabins; even their breathings and talks during sleep were equally distinct, as Ross put through such of the films taken by the various instruments as would give a general idea of their proceedings and plots. When these were finished Dennis resumed, "This is no time for sentiment. You have heard their schemes as from their own lips, and we should be justified in destroying them; with you all as witnesses, the law would uphold our action in so doing, for they have not only mutinied but attempted murder. We must not, however, take life except in dire necessity, and yet these people cannot stay here. As they say they do not intend going to the sun, they shall not do so. Last night we went through most of the films you have just heard, and we decided that these men should leave us, for their presence here would be a constant source of danger and suspicion, and at the very least, they would disturb that harmony which our association together renders necessary to ensure

RECAPITULATION

"The first film taken for the purpose of the expedition."

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visions for twelve months, and if we do not pick them up before then, they must look after themselves, or die;" then turning to the mutineers, he continued,— "You have heard your fate! you will now go to your cabins and remain there as prisoners until such time as we find that for which we shall search. We do not fear your arms, as by this time they will be too hot for use, if not actually dangerous to yourselves;" and nodding to Gilbert, he stepped back, and Gilbert switched off the current, when Bosworth Keeth, who had his revolver poised, dropped it with a cry of agony, for some of his skin was still sizzling on it, though the pain had not been felt till the electric current was broken. His companions, also, with cries of pain, hurriedly snatched revolvers from their pockets and threw them down with burning fingers, as they were scorching through their clothing to the skin.

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Had any of the other passengers questioned the powers of the *Regina*, or the determined characters of the three men in charge, the tragedy just enacted must have set all doubts at rest. They one and all approved the punishment following the conviction from the men's own lips, and the attempt at murder, which the others were evidently prepared to follow up, seeing that all were armed, and they commended the way in which the mutiny had been quelled at its inception, while the few who had wavered now felt devoutly thankful they had decided rightly.

The following day nothing occurred, and for two more days there was no sign of anything likely to prove a suitable object on which to deposit the mutineers, but on the fourth day they saw what happened to be

a wandering star, or planet, which was ahead, near Venus, and would be between her and the sun, as seen from Earth at that time. This star had a faint phosphorescent glow, showing through the spectrum flutings of a peculiar purple; evidently a star which was cooling though not to extinction and would therefore be easily distinguishable, and far out of their course as this was, they decided to go to it. An examination of a portion of its atmosphere proved it to be capable of supporting Earth-life, whilst the gravitometer showed it to have a surface-gravity only slightly exceeding that of Earth.

"We are not likely to find a world more suitable than this," said Gilbert. "Shall we dump them here?"

The others assenting, the two attendants got together the necessary provisions and brought the men, each from his cabin. In the meantime, the ship sank slowly through the clouds and hovered over water. Slowly she roved, but everywhere was water broken only by rocky islands, barren and fruitless, on which no food of any kind could be obtained, so they sailed towards the other side, and as they approached the further hemisphere, they saw the islands were by no means so numerous, though larger, and were covered with vegetation, and well stocked with animals.

At last they came to a great continent dotted with numerous cities, and selecting one they descended to within fifty feet of the ground, which caused numbers of people to collect. These seeming friendly, the eight prisoners were brought forward, their weight regulated to the weight of the air at that level and, some of them sullen and revengeful, others frightened into pleading for mercy, they were all floated outside and their weights gradually increased. So they slowly sank down to the ground, each with his supply of provisions; then seeing the men reach *terra firma*

and be received by the astonished natives with demonstrations of warm welcome and friendliness, the net of the vessel was joined again, the doors sealed, and the *Regina* rose like an eagle. Getting a rebound from the gravity of the planet, the good ship continued her course to the sun, her passengers, sure of themselves and of each other, feeling more tranquil and comfortable now that the only disturbing element and source of danger had been removed from their midst, and they tried to dismiss the occurrence from their minds by assiduous devotion to the object of their voyage, which now lay before them like an awful furnace of molten fire. But enthusiastic as they were and confident as they might be of safety, they could not look ahead without feelings of awe and a nervous tremor. The *Regina* had travelled slowly in order that all should have time and opportunity for astronomical and other observations, and although, with a gravity similar to that of Earth and so powerful an objective as the sun, she could have travelled the distance in a very short space of time, the journey had occupied three weeks, and every one on board had been intensely busy, some checking the Earth-measured distances of stars by actual measurement in celestial survey, others from their unique position in space noting the physical and chemical changes and dispositions of the stars; taking moving photographs in colour; testing and analysing the structure and movements of the ether-web; the currents; passages of light; atoms, germs, meteoric stones and other substances floating on, and passing through, the ether, and scores of other phenomena hitherto impossible to deal with first hand: all this was so engrossing that the hours and days appeared to slip away ere they had well begun. Every one on board worked with feverish application to add to his knowledge, each allowing himself merely the amount of sleep actually necessary to maintain health in order

that he could—in his own line—gather as much information as possible for the ultimate benefit of the people on Earth. Very quickly, as it seemed, the time drew near when the sun was but a few million miles ahead, and its gravity had just altered the position of their vessel. Instead of the sun being *before* them, they approaching bows first, their ship had, as it were, stood on end and the sun was *below* them, they being still on an even keel, but instead of going *forward*, they now had simply to sink to his surface, like descending on our own world from the clouds. As soon as they perceived this change, they paused, making the ship in equilibrium, and, over five million miles above him, rested for final discussion and completion of arrangements.

Already they were encountering clouds of metallic dust, still red-hot, being rapidly drawn to the sun again by their own gravity; and although the intrepid travellers were intent on sinking to the actual furnace raging below them, which now blotted out the whole of the lower heavens, the sight of the awful mass of seething 'something' made all quake, and the pause was generally welcome. At the same instant there rang through the ship the soft, silvery sound of the electric tubular bells, calling all to the saloon for a meeting, whilst each passenger received a telepathic message stating the object. A few moments later all were assembled and Dennis, as usual, being elected spokesman, began, with considerable emotion,—

"Fellow-travellers, on the last occasion when we assembled here there were, unfortunately, mutinous companions in our midst, but now we all meet together in heart and mind one, and it may be for the last time, for in that fearful heat below us—that heat which no human mind has power to grasp or means of defining—we may be destroyed, notwithstanding all our precautions; and at this sacred and solemn moment we cannot do better than kneel and ask Him

who keeps yon furnace in its place, and dots limitless space with wondrous worlds, to keep us safely also, and watch over us."

All knelt, and he continued,—

"O Almighty and Eternal God! at Whose command worlds burst forth from chaos and darkness to perfection, without Whom nothing is strong, nothing is holy, we Thy unworthy servants humbly implore Thee to look down upon us who are assembled in Thy Most Holy Name; and may we so consider our present undertaking that we proceed not lightly in it, or recede from it dishonourably, but pursue it steadfastly, ever remembering that the object and intent of our journey is to learn obedience to Thy sacred laws. Also grant to us Thy Truth, that Thou being our Ruler and Guide we may so pass through things temporal as finally not to lose the things eternal, and as Thou never failest those who trust Thee, be now our Guide. For we know that our eternal welfare is considered in every atom and law of the ineffable mysteries of Creation, and that from all eternity, now and through endless time, Thou art the Being from Whom all perfection springs.

"And bringing us safely through this solar fire, grant that we may use the knowledge gained to Thy Glory. May it inspire us with the most exalted idea of Thee, and lead us to the exercise of pure and solemn piety and a greater reverence for the Universe and Thee, the Eternal Maker and Ruler of it and of its life; the primordial source of all its principles and the very spring and fountain of all its virtues. Amen."

On rising, Dennis remained silent for a few moments and then, after a few preliminary words on the danger which possibly threatened them, he proceeded,—

"The diameter of the sun is supposed to be about 866,500 miles, as you know; we will, of course, measure this and ascertain its accuracy. We have been sailing in the curiously shaped corona for over five million

miles, in fact we entered the corona at a height of about twelve of its diameters, or, roughly speaking, when we were ten million four hundred thousand miles from its surface. And as you will see through the darkened sun-screens, we are in the midst of the vast clouds and flames lying over the solar atmosphere, and even here, sound-insulated as we are, the noises of the explosions and collidings of the vast jets of vapour which are hurtling around us on all sides are unpleasantly evident. Thanks to our net, the shell of the vessel is not advanced the fraction of a degree in temperature, and you will notice the de-atomising force around the ship prevents any of the jets of fire and vapour from touching us. From the fact that for some distance back the flames and fiery vapour have played about us, and at this height we are encountering vaporous metals at enormous pressure, we gain an idea of what the force must be on the surface of the sun itself. And my partners and I thought it a time for us all to consult together as to the manner in which the observations shall be conducted." Here he paused, and Crawford Rollsborough, the chief astronomer on board, asked,—

"So far, we are all right ; but before we test the still greater dangers below us, are you *certain* the vessel is likely to be proof against the terrific power of the vapours and forces there ? for we had better be sure before we leap."

"We have every reason to believe so," replied Dennis ; "her resisting or repulsive force is now about two thousand times less than she is capable of projecting, and it is more than sufficient to withstand the present forces and awful turbulence immediately outside."

"But as we get lower and the forces increase ?"

"So will our power to resist increase in equal ratio, and judging from the needle here," looking at the dial, "we shall then have in reserve at least two

thousand times more force than that being projected, so that so far as power to resist is concerned, we have no fear: a danger might arise if our de-atomising force, backed up by the net, would not withstand the heat, but this we cannot tell without actual test, although we feel sure there is nothing to fear."

"Would not the net alone answer?" inquired Price Rowland, a physicist.

"Certainly it would, but without the protecting force, it would itself be for weeks and months in actual contact with baths of liquid fire, explosive vapours and gases, many of which may be corrosive to its substance; and there are elements to encounter of which we Earth-folk do not understand the nature, and consequently could not test before we left; so by projecting the de-atomising force to, say, a distance of one or two feet beyond the vessel, the net is protected from every danger, and will, we hope, see us through safely."

"But the pressure?" said Raymond Sorrel, the geologist. "Will not that be difficult to overcome below?"

"No, it should not be. All forces should be de-atomised, and whether they take the form of pressure, expansion, or heat in solid, liquid, or gaseous form, or any other force, all should be pulled up at our current, which is self-adjusting and is always more than enough to dispel anything brought or projected near it."

"Then you think we can safely approach the surface?" questioned Merrick Rutherford, a metallurgist.

"Without doubt. You see the large needle over your head; it is still as if welded where it stands; the fearful thunders and explosions round us and the rushing of flaming vapours under enormous pressure, are turned aside by us and go round, causing not so much as a tremor. The needle shows us absolutely

motionless, moving only with the sun, so that I feel sure we can reach his surface unharmed."

"Will the windows sustain the pressure?" asked Sorrel, again.

"Yes, both heat and pressure," replied Dennis, reassuringly. "No one nowadays knows how the glass was made, but it is unbreakable, uncutable, and neither heat nor anything we know affects it except fluorine, and it is covered with the net, as you see, like the casing."

"But when we sink through this corona, and through these flames and the atmosphere, and reach the photosphere, what shall we do then? go through that?" asked Rollsborough.

"Yes, if possible, and see what lies below!"

"But suppose below the photosphere there is nothing but molten fire—liquid chaos; what then?"

"Go through that to the other side and see what it is."

"Could we do that!" exclaimed several, jumping up in excitement.

"Certainly, if you wish it!"

"But if we sank to the centre, should we not be fixed there?" asked Kirkby Reeve, a zoologist.

"Certainly not; we should become heavier as we descended till we reached the interior, from which we should repel ourselves and come out at the other side on a straight line. Anyway, we will risk it if you are willing. So far, no one, even with the most powerful glasses, has ever penetrated the photosphere, so we cannot say what is below, but it would be interesting to discover."

"But is not the project of going *through* the sun an impossibility?" objected Rowland. "The ship, when resting on the ground in the shed, did not de-atomise the ground below her, and how could she sink through the sun's mass—solid or liquid—unless that mass were in part de-atomised? if not, she would crush herself."

"That is so," replied Dennis; "when in the shed and when resting on land, there was no real line of current under the ship, but the force surrounding her was so placed that nothing, however small, could come upwards under any part of the vessel without entering into electric field, and causing the current to fly from each side to itself, and the intruding object would be destroyed long before contact. This is the ship's safety, as it precludes all risk of danger through tunnelling. When going through the sun—if we decide to do so—we should, in that case, connect the current below us and be completely enveloped in it as we are now, and as we always are when there is danger, such as hovering over formidable foes, and any matter through which we wished to sink would become de-atomised, and we should sink through it as through water. We should use this power to give a temporary and local alteration only, so that the instant our force had passed, and as it passed, the power would be lost, and the objects, solid or liquid, would resume their former condition—it would be equivalent to passing through solids without altering their substances and compactness, and on this point there is nothing we are likely to encounter but what the forces of the ship will take without being taxed."

"Gentlemen!" cried Rollsborough, standing up and turning slightly to face his companions, "to my thinking there is no obstacle to the accomplishment of our purpose; it seems as if we could go through the sun as easily as not, and I, personally, would dearly like to see of what it really is composed, and as the owners have placed the decision with us, are you willing to risk your lives in this manner as the owners risk the ship, for the cause of science? Are you——"

He got no further, for he was interrupted by shouts of "Aye" and applause which drowned all words, leaving no doubt of the unanimity of opinion.

The conversation then became general, drifting to the *modus operandi* of conducting the observations and examinations, and for several hours the voyagers discussed the subject in detail, deciding to examine the corona in which they rested; to sink into the atmosphere, testing, photographing, and analysing as they proceeded, and measuring its depth in various places. Then to settle down to the photosphere and travel round the sun in or over this, take all measurements, find its composition, its physical and chemical properties, its spots, granules, and, in short, settle beyond dispute every detail at present doubtful or unknown, and verify all now accepted as fact.

After this the *Regina* was to sink through the photosphere, be it gaseous, molten elements, or what not, and risk annihilation by penetrating to its heart to find its inner structure, coming out, in all probability, on the other side. Not a soul on board flinched at the possible danger of a horrible death, not one doubted the powers of the *Regina* or the skill of the men controlling her, to whose hands they had gladly entrusted their lives. Heroes, and possibly martyrs, in the cause of science, facing death itself and that in its most awful form on the mere chance of adding a little more scientific knowledge to that already possessed which, great as it might seem, was less than a mere drop in the vast ocean of the unknown. Grey-headed men, many of them, they anticipated the perilous venture with the same keen enthusiasm with which a youth anticipates his play, and the details being settled, they were impatient to proceed.

Accordingly, the *Regina* was made slowly to sink, perhaps her last descent, and as she gently settled down like a falling leaf in a motionless air, the occupants became completely absorbed in their work, which had been so arranged that each one took such items and branches as would collectively cover every

phase and detail on which information was necessary or desirable, and so they slowly but surely approached nearer and ever nearer the glorious but annihilating Mystery, defying the Death that was lurking there with sharpened scythe.

CHAPTER XI

"THE IMPREGNABLE ROCK"

"He hath made the earth by His power, He hath established the world by His wisdom, and hath stretched out the heavens by His discretion."

(JEREMIAH.)

GODFREY was a kind of gentleman visitor, free to work or not as he chose. His work had been done in being the means of providing the net, and he was enjoying a well-earned repose after the assiduous toil of the past two years. At the same time he could not be idle and had insisted on taking his share of work, to which he devoted himself with all his energies, and after some hours of close application he found himself with a little time to spare and was strolling about promiscuously, glancing at anything and everything, when he came upon the chief geologist, Raymond Sorrel, who was looking out of a window intently watching the 'flames' which were shooting past them with a terrific roar and, knowing he was always ready to talk on his pet subject, and was never so happy as when he had a good listener who would not interrupt, Godfrey thought he could not do better than spend an hour or so with the great man whose knowledge was so profound, and obtain some information on certain subjects about which he had thought very little, so he sauntered up and casually remarked, "I fear most of my bacilli would get frizzled in that furnace, Sorrel."

"Without doubt, Spenser!" responded Sorrel, smiling. "I do not suppose you ever thought to rear fire-proof-spinning insects, any more than I imagined it would ever be my good fortune to come to the sun—even now I can scarcely realise it!"

"I am ashamed to say I am almost ignorant of astronomical matters and everything else except my grubs and electricity—my *métier* is *really* electricity, but fate placed me amongst grubs, so I suppose I shall be with them as long as I live, and they'll be with me after, unless we get cremated here—and until I made my first voyage for the Jovian bug with my friends, I scarcely knew one star from another."

"We cannot be everything," replied Sorrel, laughing. "I knew little about natural history till you explained to me the habits of those most interesting creatures to which we owe our presence here and our safety from that!" and he pointed outside.

"What an awful sight it is!" said Godfrey. "It makes one realise what a wonderful and holy thing creation is."

"Indeed it does! and the Bible, despite the attacks made on it, still stands true in its references to science."

"Really!" responded Godfrey; "it seems to be a growing belief that the Bible story of creation is merely fanciful; very poetic, but untenable when faced with scientific research."

"You mean that science and theology are at variance?"

"Certainly!" replied Godfrey; "such is the acknowledged belief nowadays."

"Then don't you believe it, Spenser. Poetical the story may be, with apparent slight contradictions in places, which are mostly different writers' ideas of things, but the broad teaching and general truths are actually proved by scientific fact to be founded on a rock, and impregnable. Science confirms the truth

of the Bible, and in like manner the Bible proves scientific facts to be facts."

"But take the story of creation, for instance," persisted Godfrey; "science cannot surely support the Bible-sequence of the events in the creation."

"Why not? To me it does."

"Because if the story is to be believed, the earth had light and darkness, day and night, long before the sun and moon were created, and yet we depend on both for light."

"Certainly, but what about the luminiferous ether, which can both convey and absorb healthy light, the *ignis fatuus*, and other well-known chemical phenomena which could give a form of light (though not healthy to us, but man was not then created), for ages before the formation of the sun, and the sun was certainly created long after our Earth because it is younger, being yet in its infancy, notwithstanding the old belief which is held even now by many eminent scientists, that the sun is the parent of the whole of the solar system. Besides, Spenser, if you give this matter but a moment's thought, you will see how untenable is the argument that light emanates *only* from the sun, for there are seen certain stars which are not suns and, so far as we can see, these have no ruling suns; if they had, our lenses would show them; but granted they have, the suns, to be out of reach of our glasses, must be so far away that their light could not reach these particular stars visible to us, which ought, therefore, to be dark and invisible. And if it had reached them and illumined them, the chances are the time is so long past that these suns do not now exist, and we see but the light of a bygone time, which no doubt in many instances is the case.

"Again, to bring the argument nearer home, to our own system, Mercury is nearest the sun, at a distance of but 36 million miles, or thereabouts, and in order of distance follow Venus, Earth, Mars, Jupiter, Saturn,

Uranus, and Neptune, etc., the most distant measured being Neptune at 2794 million miles away—there are many others of equal bulk further off still, but these will answer my purpose;—now if the planets, and the stars that are not suns *cannot* give their own light, what lights them? And again, if these members of our system are *entirely* dependent on this governing sun for every particle of their light, it would naturally follow that Mercury, being nearest the sun, would be brightest, and then the others in proportion to their distance; but we have the second star, Venus, as the brightest star in the whole system; the next brightest is not Earth, as we should expect (for we saw in coming that Mars, who is distant from the sun over half as far again as is Earth, was considerably brighter than Earth), but Jupiter, the *fifth* in point of distance; yet Jupiter, from a scientific and theoretical point of view, can only receive about twenty-five or twenty-six times *less* light from the sun than do we on Earth; Saturn over eighty times less, Uranus a shade over a three hundred and sixtieth part, and Neptune barely a one-thousandth part of Earth-light and -heat!

" Many theories have been propounded to account for this, the most popular being that the differences in lighting are merely those of atmosphere. That, however, will not bear argument, because modern science has proved positively what has been for ages asserted—that we can live on Mars and Venus, and so far as atmosphere goes we could live on Mercury; yet if the argument is to stand we should be burnt up on Venus and roasted alive on Mercury, which is so near the great heat of the sun that it should itself be a star, a subsidiary red-hot sun. To carry the same argument further, we ought not to be able to see Neptune at all, considering his great distance and the little light he receives from our sun, for if he depended on that alone, he would be quite invisible to us. And to take it still further, to the planets discovered far

beyond the orbit of Neptune and yet undoubtedly belonging to our system: how did they get there? and why were they not noticed, as belonging to our system, before the nineteenth to twenty-first centuries. If flung from our sun ages before, they would have wrecked the whole system, being great masses of energising matter, and at their enormous distances they cannot possibly receive any appreciable light from the sun, which will be but a star to them. Yet we can see them plainly, when by the very argument brought forward, of the sun being sole light-giver, they should be black and altogether invisible. No, Spenser, they must have been attracted and are now kept within the sun's mighty influence by his power, but receive not his light.

"Many other theories, besides those relating to the atmosphere, have been brought forward to account for various degrees of illumination of our own planets and of other heavenly bodies, but none are satisfactory except the one admitting that each world, star, planet, comet, or other heavenly body is, to a great extent, self-luminous; be it solid, hot or cold, watery, vaporous, molten, or of any other substance.

"Now, to prove to you how true is the story of creation as related in the Bible, let us take the version step by step and see how it harmonises with, or refutes, known scientific facts, for I want to convince you that the Bible, in its scientific statements, will repel any attacks on its veracity."

"Well, I have an open mind on the subject, Sorrel," replied Godfrey; "it seems to me that it is not irrelevant to discuss these most interesting matters under the present circumstances."

Sorrel then resumed,—

"At the first chapter in the Bible we have 'In the beginning God created the heaven and the earth,' at a period in the dim past, some millions of years ago, when perhaps, from a primary 'something' there was

formed a world which gradually solidified, and there came a time when the azoic rocks were established ; this was, roughly speaking, about 49,600 feet below the present surface of the Earth, and in these, as the name implies, exists no trace of organic life. At this time 'the earth was without form, and void ; and darkness was upon the face of the deep. And the Spirit of God moved upon the face of the waters,' causing to spring into being molluscs without sight, and very low forms of phytozoa and radiata, the fossils of which are found in the next bed above these azoic rocks, the bed being about 16,600 feet thick, or about 33,000 feet below the present surface. Of these shells, limestone and other substances necessary to later periods were made, and during the countless ages that passed whilst this great deposit, designated the Cambrian Period, was being formed, darkness brooded over the waters, as the Spirit of God caused these low forms of life to spring into existence and to die, in order that their remains might prepare the Earth for further races. Then 'God said, Let there be light : and there was light,' and in the waters there came a new race of beings with eyes—which had not been necessary previously—trilobites, and many other strange and wonderful creatures.

" Then the Bible goes on to say 'And God saw the light, that it was good,' and so it was, for it was life-giving, and was also accomplishing His purpose. 'And God divided the light from the darkness. And God called the light Day and the darkness he called Night'—and for the first time there was 'evening and morning.' As yet there was no mention of a sun ; the earth *itself* had become light-giving, and day dawned and faded into night without any solar aid, for over all the earth there were thick and impenetrable mists which excluded all exterior light, if any existed, and precluded all life save that which was capable of existing in water, and necessarily of the most lowly

form. Then we find a further development, for after these ages had passed, the Creator commences a new phase—'And God said, Let there be a firmament in the midst of the waters, and let it divide the waters from the waters,' and at His creative fiat the damp and heavy mists arose and, taking the form of clouds, floated upwards. 'And God made the firmament, and divided the waters which were under the firmament from the waters which were above the firmament: and it was so'—and from that time humid clouds began to separate from the watery world, and between the two there lay a depth of atmospheric space stirred by life-giving winds, the open air and winds cleansing and purifying the seas, and then there followed the call into being of creatures which required air for existence."

"And is all this your own theory, or based on proof?" interrupted Godfrey.

"Absolute proof, Spenser! indisputable proof from actual fossils and the geological structure of the earth."

As Godfrey remained silent, Sorrel continued his story,—“In course of time there then followed the appearance of dry land above the waters, for the capillary action of the atmosphere between the water and the clouds reduced the quantity of water and the absorption of the under-land would do the same, whilst in many places the moisture would reach the internal heat and volcanic eruptions would occur; these would also be brought about by the gradual gathering of gases and in many other ways, and the earth, by its upheavals, would be disturbed and tilted upwards and so give the seas and oceans limits which they could not pass, thus dividing land from water, this being what is known as the Devonian period.

"After these had all done their work, and insects had formed islands and the ground had become adapted for growth, God said, 'Let the earth bring forth grass, the herb *yielding* seed, and the fruit-tree *yielding* fruit

after his kind, *whose seed is in itself*, upon the earth : and it was so.' This, to my mind, Spenser, is a direct Creation, not evolution—a creation of everything first, and *then* evolution, and varieties caused by adaptations to surroundings."

"It quite agrees with what I have proved in my researches in natural history," observed Godfrey, "for I have found that each species of animals keeps to itself, and the different species never, under any circumstances, mix in their natural state. For instance, the wild ass will never mate with the zebra, or the zebra with the horse ; it is only under the influence of man that these race-distinctions are diverted, and, given the first creation, there follows natural adaptation, selection, and variety, in the same species according to surroundings in consequent succession."

"Just so," assented Sorrel. "The first vegetable creation, according to scripture, is 'the herb yielding seed'—or seed-pod—'and the fruit-tree yielding fruit after his kind, whose seed is in itself'—so that ever afterwards the fruit of the tree produces its own seed and no further 'creation' is necessary, it being from that time a question of repetition and evolution. 'And it was so,' for vegetation became luxuriant in the extreme, from which reason that period is called the Carboniferous era.

"In due time all this wealth of vegetation cleared the atmosphere and brightened the clouds, and when the time was ripe, there followed the next scheme which, as in the case of all the other phases, came slowly, without any line of demarcation, one period being gradually and imperceptibly blended with the next. So that the succeeding phase, the creation of the starry firmament, would also come about slowly ; the luxuriant vegetation would clear the sky, and the stars beyond would become visible in consequence. This creation of the stars, therefore, can only mean that those already existing became *visible* for the first

time through the gradually clearing sky—for it is not tenable to suppose, even for a moment, that all the stars and celestial bodies were created for *our* special benefit; the benefit of pleasure or instruction of the few people on earth who seriously study the science of astronomy, considering that myriads of these stars are millions of years older than Earth is now. Of course, seeing that man was not yet created, this influx of light could only be for the immediate benefit of the animals and vegetation then existing, in order that the world might be prepared for the succeeding life of all forms, and there comes another wonderful creation which may have been sudden. A sun is formed and begins to shine on the Earth, and the moon Luna, probably being already there—for she is older than the Earth, or, at any rate, older in her life—but dark, that is, merely luminous like some of the stars, receives the full blaze of the sunlight also, and our Earth, from its position, is illumined by the reflecting moon. And God made ‘the greater light to rule the day, and the lesser light to rule the night: he made the stars also’—thus came the completion, or the formation, of many of the stars, some of which might probably mean certain of our own planets, considering that several are younger than Earth, or possibly some of the actual stars or suns of other systems.

“Then commenced another epoch in Earth-history, and one, if anything, even more wonderful than those previous. For ages there had been light, but only the light which every world gives out from itself, as in the case of certain stars which are not suns and on which no sun ever shines, yet which are seen shining by their own light and lighting other worlds, as they do Earth to a great extent, quite apart from the light of our sun and moons, as I have already explained in detail. But the rays of the newly created sun warmed and penetrated the sombre haze which had hitherto surrounded the Earth, till at last all opposition was

destroyed and the vivifying rays and heat reached the ground, warming land, water and air, and causing more violent circulation of the atmosphere, and making certain portions of varying temperature. The winds, therefore, became fresher and stronger, and the sun ever after became the visible and physical ruler of Earth and all the other planets which were, or had been, drawn within his force of energy.

" This is, of course, taking my belief that the sun was made *after* the Earth, which belief I base on excellent and irrefutable grounds, though it is contrary to the opinion held by many great scientists, as I before remarked. You will see how strong is the basis of my theory from the fact that the Earth is proved to be certainly not less than one hundred and thirty million years old by the fossils on it, its structure, and the progress of its life, and even the greatest estimation of the age of the sun, as a sun, is that it *cannot* be more than fifteen and a half million years. How is it possible, then, for the Earth to have come from the sun's mass, either in the solid or in any other form ?

" Then followed the creative word—' Let the waters bring forth abundantly the moving creature that hath life, and fowl that may fly above the earth in the open firmament of heaven,' and the Reptile Age was formed, when sea-animals, reptiles and winged saurians existed.

" Then came the Tertiary period, the age of mammoths, with all kinds of animals *except man*. The fossils of these are found at a depth of from two hundred to two thousand feet below the present surface. Many noted scientists positively assert that there lived at this period human beings of a very primitive type, and say the order given in the Bible is out of place, but I cannot agree with them, for no remains of man have ever been found to exist with these, and it is but reasonable to suppose that considering his bones are of similar substance to those of other animals and of fishes, *his* remains could not have completely vanished

while theirs have been left to fossilise. As a matter of fact, no *human* fossils, bones, implements, or indeed any other human relics are, or ever have been, found lower than two hundred feet below the present surface. The argument, therefore, is entirely in favour of the Bible sequence of events—for man to be *uncreated* at this period.

"But after all these (to man) harmful creatures had died off, their places in the ordinary course being taken by others more suited to the quieter time, and over which man could have rule, *then*, and not before, was man created and given dominion over every living and moving thing—which brings us to the present era, when man, as a race, has for a time power to subdue the whole of the vegetable and animal creation, and according to the manner in which the privilege is used, so will posterity and the future of the world suffer, or benefit."

"Then you believe the Bible story absolutely as written?" said Godfrey, much impressed.

"How can I do otherwise, when I can only prove its correctness, search as I may to find it faulty?" replied Sorrel, with fervour. "I do believe the story most assuredly, as certainly as I believe that this sun will be peopled in time as Earth is now."

"You really believe that, Sorrel!" asked Godfrey. "Tell me how, for I have never considered the question of creation in so serious an aspect before. If these changes come gradually, what causes them?"

"The Creator, Spenser," replied Sorrel, reverently, "by first of all creating a certain law which, by means of cause and effect, works itself out *ad infinitum*. Without going over the ground again, I will tell you how from every effect giving rise to a later effect, the Creator's Wonderful Will and Power are worked out. Take this sun; in time the mass will cool to such an extent that the internal heat will not burst through it, and a crust will form; as this becomes

thicker, it will, on the outside, turn from white to black till it is almost cold. This coolness will cause these heavy, hot vapours above to condense and the ground will be covered with water, making it a watery world. The heavy, black, grit-laden clouds above will cause general darkness. Then will come a repetition of the creation of Earth, with which I will not trouble you again in its Biblical sense—the clouds will clear by precipitating their solid matter on the water, where it will sink, to form muddy ooze and the like at the bed. This deposit will lighten the clouds and there will be light—the light of a star unlit by a sun. In time, all the solid matter will have left the clouds which, relieved of their weight, will rise and an atmosphere will form below them, and, being in circulation, will cause winds which, in turn, will disperse the deadly gases and cause the water to have motion, which will purify it, and in the mud molluscs will grow, and the deadly gases above will be destroyed by combining, some with air, others with water, and others with land, so that there will be a healthy, breathable atmosphere through which the stars will be seen, and period follows period as I have just stated, till this present sun has become another world, even like Earth."

"And what about the present solar system,—where will it be then?"

"Probably revolving round some other sun. There would be a time, long in the past, when each of the planets was in some other part of the universe, each as a sun, the centre of its own system, but as time passed, and the violent energy gave place to the cooler and quieter energy of inhabited worlds, some other world, expending its new-formed energy in visible heat, by a coalescence with one or more others, became this present sun, and, powerful in its youthful and terrible energy, which was more assertive than that of any of the planets near, drew them within the

circle of its influence, and itself became the centre and ruler round which these planets must revolve until such times as its energy has no longer the power to retain them, when the next strongest will take up the tale and probably cause new suns and moons to form."

"How could a sun form,—by impact?"

"Yes, but I think that scarcely likely, for I have often experimented with motes in a sunbeam. If these are agitated in vacuum, they rise and fall and float around but never collide. At least I have never been able to cause any to do so; many draw near to each other, but long before they get sufficiently near to touch, they fly off horizontally and fall. So long as they float in space they will not collide; only is it possible for them to do so when they reach the fixed point to which they have been drawn. The motes will rest upon one another when they have reached the lowest part to which gravity has drawn them, but so long as they are above that part, I cannot cause them to collide, no matter to what agitation they are subjected. They float and dart here and there in the sunbeam as separate units—stars if you like—each avoiding contact with its neighbour, though the sizes are unequal."

"Then how could a sun form? I could understand the worlds separating if all the forces are equal, for in that case one would repel the other, but if they cannot collide, how can they form a sun by coalescence?"

"Though two worlds could not collide accidentally in space, one could draw the other to its own surface, if powerful enough to do so, the impact causing such heat as to liquefy both."

"Is not that the same thing as colliding in space?" asked Godfrey, dubiously. "I must confess I see no difference."

"No, not at all," said Sorrel, smiling, "I will illus-

trate the point by a simple experiment I have often used to prove this very question to my own satisfaction.

" If you take two revolvers exactly alike, firing the old-fashioned lead bullets, and so place and fix them that when fired their respective bullets will traverse the same line exactly, at the end of which is an iron-plate target, and arrange for them to be fired simultaneously, one would be inclined to think that the instant the bullet has left the end of the one barrel, it will strike and coalesce with that from the other barrel and travel along the same line as a single globule of molten lead, striking the target as one, for only one splash will be seen. If now, the experiment is repeated and arrangements made by which the bullet shall be photographed during the whole of its flight, you will find that both bullets leave simultaneously and approach each other instantly, but instead of colliding, they then *separate*, and travel together to the target side by side, but the instant they reach the iron plate—a mere breath before impact on it—they coalesce, and the actual impact on the plate takes place as one drop composed of two bullets *already* united, their union causing them to expend their energy in coalescence into a single globule of liquid lead. If you now increase or diminish the distance by placing the plate further back, or drawing it nearer, the result is the same. The bullets will not coalesce till the actual destination is reached, but will repel one another from the straight line till that time, though they are but a breath apart—from which we may infer that heavenly bodies cannot collide, but must be drawn definitely and irresistibly by some more powerful agency to the actual surface of another world before a union is possible, like a comet flying into the sun."

" In the case of the bullet experiment," said Godfrey, " if one followed the other, the latter at greater speed, it would overtake and absorb the former ? "

"Naturally, for its energy would be the greater."

"And if one went immediately behind the other, almost touching, I suppose there would be two impacts on the target; one would not hasten or retard the other?"

"There would be a slight influence, but not an appreciable one; there would be two impacts on the plate, in rapid succession, the first, naturally, striking the plate before that which followed."

"Are there other ways in which suns could be formed, without the energy called into being by the shock of contact?"

"Certainly, there are many ways; perhaps the quickest and most effective to Earth-minds would be the sudden withdrawal from the atmosphere of, say, our world, our own Earth, of every trace of nitrogen. The air then being all oxygen, without any nitrogen to restrain it, would cause the whole world to catch fire; as the Bible says, 'The elements shall melt with fervent heat; the earth also, and the works that are therein, shall be burned up'; everything would instantly catch fire; the water, seas, rocks, earth, and sky would become a molten mass of liquid fire—a fresh sun, full of the terrible energy of its own combustion; and in our blazing atmosphere and flaming clouds the people on other worlds would see exactly the same awful combustion as we are watching now. And our Earth, formed into a new sun, would probably still revolve round this sun, if his greater bulk and attraction had not then diminished, and would itself be the centre of a new system by reason of its energy attracting other planets, and causing them to form a new orbit round it.

"Such an inevitable result would follow the simple withdrawal from Earth of such a deadly gas as nitrogen, which by a loving Creator has been made to temper its exactly opposite energising gas, oxygen, the addition of but one-fifth of which, as you know,

is sufficient to turn the death-dealing four-fifths of nitrogen into our glorious, life-sustaining atmosphere, that is, of course, eliminating the small quantity of argon present (which is rather less than 1 per cent. of the atmosphere's volume) and the carbon di-oxide and aqueous vapour. There is thus but a breath between life and an awful, agonising, though rapid, death."

Godfrey, deeply impressed, stood musing and looking out into the flaming sea around them, when just as he turned to Sorrel to ask a question, there was heard a report in the laboratory, and crash after crash followed in swift succession as something hard could be heard striking the metallic walls there, and then came the sound of shattering glass.

CHAPTER XII

THROUGH FIRE AND FLAME AND MYSTERY

"I stand like one
Has lost his way, and no man near him to inquire it of."
(SIR ROBERT HOWARD.)

INSTANTLY everybody rushed to the laboratory, to find that though no one was injured much damage had been done to the apparatus, and on inquiry it transpired that Gilbert had prepared to obtain a sample of the outer air for analysis, and knowing that the pressure must be so much greater—inconceivably greater—than Earth-minds could estimate, he had provided a specially thick box, sheeted and clamped with strong steel, and had placed this over the net-covered valve, specially designed for such purposes, when, the instant the valve was opened, the accident occurred. Whether it was the enormous pressure outside, or the composition of the outer air which burst the box, could not be told, but it had been blown to little pieces and the air was filled with dry and acrid fumes, some of which were collected for examination. By a miracle Gilbert was unhurt, and he picked up several pieces of the broken box and handed them round. So great had been the pressure and so fierce the heat that in the momentary opening and closing of the valve, the vapour collected in that short time had completely destroyed what had been deemed a fireproof casing and fused the steel shell almost through before the explosion, which Gilbert

said was instant. Although there were more of these boxes, it was decided that for their general safety they would sample no more outer air, for the present, at least.

The gas which had been collected was soon found to have been metals in tenuous vapour, and now carbon and metallic dust in very fine division. It seemed most remarkable that although only a small quantity of vapour had entered, there should be so great a residue of this dust, for almost everything in the room was covered with the fine, impalpable powder. On analysis, this powder was proved to contain many of the metallic and other elements found on Earth and others at present unknown ; all the deposit was carefully collected and stored in sealed jars for more searching analysis later.

In the meantime, observations showed the 'corona' to consist of clouds which were similar to terrestrial clouds, but most delicately coloured in tone and hue and ever changing, being driven about by the constant explosions and gaseous projections from the furnace beneath, these projections being of such appalling force that times without number a mere pencil of gas would rise with lightning speed for several millions of miles and strike the surface of an enormous cloud, miles in extent and depth, and this cloud, which they proved to contain fine particles of hitherto vaporous carbon of a rosy tint, would turn to a dazzling white in the twinkling of an eye, and the whole cloud would sometimes be reheated so fiercely as to become vaporous and rise bodily for millions of miles, till it became so cooled as to be more dense, when it sank again ; at other times, or in other places, such a cloud would be disintegrated completely, dropping in miles of fire, which the glasses or spectrum showed to consist of minute metallic dust, now separated and falling in a white-hot shower, soon to be converted into vapour, proving most of the clouds to be, as it were,

but bags of gas sufficiently buoyant to hold the metals in suspension at enormous heights till burst by ignition, or rendered more rarefied, when the heavier and more refractory elements, such as carbon, were free to fall by their own gravity. These clouds were of exquisite colour of extraordinary variety, according to the degree of heat of the particles contained in their mass and the colour which was reflected from the lower strata of similar clouds, the moving, terrible 'flames' roaring round them with repeated flashes of gleaming white, as some terrific explosion below burst all flames and clouds asunder, and allowed the fearful lurid heat of the photosphere to be reflected directly upwards through the atmosphere.

This turbulence was incessant, and as they slowly sank and the hours passed, the awful grandeur made the necessary sleep seem almost a waste of time, for every mile they descended brought fresh wonders which it was felt almost a crime to miss. Frequently, as they were leaving to retire to their cabins, the spectacular display around them would be so amazing, that tired as they were, they would remain at the windows entranced, as perhaps a gigantic flame would mount higher and higher, licking a cloud like a huge tongue, and at the touch, the sea of cloud would be blown to ribbons which stretched in all directions, waving about in the terrible reek in millions of ragged tendrils, which darted away till lost in the distant flames, their long, tape-like feelers in constant motion as the heat twisted them, like a giant octopus being roasted alive and writhing in agony. For hours this would continue, till the watchers would turn away, reluctant to leave it, and seek their long-desired rest, impatient that nature had made it necessary for Earth-life to take systematic and regular repose. At other times the clouds would burst and disgorge their contents in floods of fire, awful to contemplate as they poured downwards like water, making broad

bands of flame connecting the two strata—the rolling sea of cloud-fire above with that of the furnace beneath.

This is, without doubt, what is seen from Earth and there discussed as “stems, which, though they appear thin and pencilled, are of enormous substance, connect the clouds with the chromosphere,” and which are seen to last sometimes for several days, so great is the quantity disgorged.

In addition to these the travellers saw the eruptive portions known on Earth as ‘flames,’ which were not only ruptured and changed from the gases below, but themselves became eruptive, causing violent changes to take place every few minutes, at times projecting dense masses of lava-like substances high aloft, and masses of dark but brilliant oily material like half-cooled metal; at other times their cavernous depths were comparatively shaded by the clouds and by their own immensity, and corresponded to the ‘spots’ seen from Earth. There are also immense clouds of hydrogen, similar to Earth-clouds, forming, dispersing, and exploding continuously above; and amongst these ‘flames,’ and the matter, liquid, solid, and gaseous, ejected from these ‘flames’ is inconceivable.

In shape the ‘corona’ spreads far and wide in all directions in wondrous variety both of form and colour, the ‘rays’ extending like a ‘glory,’ inexpressible in grandeur and magnificence. There is no real or definite line of demarcation between the ‘corona’ and the ‘flames,’ for, in some cases, the flames reach upwards and spread outwards like a gaseous envelope and form the base of the corona, whilst in others, the corona becomes part of the actual substance and shape of the tongues of eruptive fire which are designated ‘flames.’

Many theories have been put forward to explain what the corona really is; some saying that it is

cometary matter, others that it is merely nebulous ; that it is formed of streams of myriads of meteorites ; that it is merely a form of Zodiacal Light, and again others that it is nothing more than the glare of the furnace below reflected on the upper strata of atmosphere, as that of a terrestrial furnace is reflected on the clouds above it. It was, therefore, a proud moment when, after long investigation, the explorers could settle all these points of doubt, and prove it to be gaseous, finding, at various portions of its mass, oxygen, combining in enormous quantities with hydrogen, carbon, phosphorus, carbon mon-oxide, and sulphur, the combustion being accompanied with terrific heat and noise. Some idea of the amazing heat may be gathered from the fact that there were thousands of miles of carbon existing in combination with other of the most refractory elements as extremely thin and tenuous vapour, accompanying which were violent electric discharges, which encircled the *Regina* hour after hour and day after day in a tireless surging sea which, until the first fear had subsided, had paled the faces of the occupants, for the flood was so incessant that they could not help doubting if their protecting force would be proof against it, so close it seemed as they gathered round the windows trying to believe they were safe, longing for it either to terminate or for the annihilating stroke to end their suspense and close the terrible waiting for the death that tarried. But as it was perceived that although the *Regina* was the focus of all the wild, electric fluid of the zones and strata through which she sank, she continued her roving course unfettered and unharmed as if in a shower of Earth-rain, all fear gradually subsided, and the voyagers could look on the awful scene as on a wondrous panorama ; with no alarm and scarcely an expression of surprise except when some more than usually magnificent effect compelled their voiced admiration. And all this time as the ship was sinking

with a slow and steady descent, the clouds were dropping their elements, cooled from their gaseous state to finely powdered dust, to be reheated and blown back in fresh clouds of white and glowing gas, which mounted higher and higher in an endless repetition.

Had the voyage ended here the results would have been worth all the trouble and risk, for the solar corona, and chromosphere or sierra, had once and for all time given up their secrets. Having gone through these, the travellers came to the 'photosphere,' which, when seen from Earth, defines to the eye the extent of the sun's disc. This was, in reality, a sea of white-hot fire, or lava, so fierce that the liquid was thin as spirit, and the 'waves,' 'granules,' 'willow-leaves,' or 'rice-grains,' to which various astronomers have referred, were actually the rippling waves of the fiery, solar sea, the 'photosphere,' through which no instrument known on Earth has power to penetrate, and so white and blinding is the glare of it, that only those instruments of very high power can clearly distinguish the 'rice-grains,' which are accompanied by myriads of dark spots, called 'pores,' these being merely the shadows between the 'rice-grains'; the latter in a constant state of 'boil,' caused by portions being heated from the under-source and, increasing in volume, becoming specifically lighter and rushing upwards to a higher plane to which they carry much of their newly acquired temperature, their tops, or crests, glowing; whilst the portions of the sea which surrounded them sink into the cavities they left behind when they were projected upward, these also to be heated and again to return, their cooler portions and return showing as 'pores.'

The intense energy and rapidity with which these convection currents take place are so awful in their fierceness that the human mind can form no idea of what gas, vapour and energy on the sun really are.

Solar vapour is certainly millions of times more powerful than a terrestrial solid, and the greatest conceivable crash of impact of Earth-solid would not be anything near so violent as the tiniest spray of solar vapour, and in addition to this lightning-like, irresistible surge, there are portions of the solar sea where, either through the extra refractibility, or the union of some explosive gases, the liquid remains quiescent, or rather in a state of quiet ebullition, when, with a terrific report, it suddenly bursts, shooting upwards in a spray of white-hot foam, for hundreds, sometimes thousands of miles into the atmosphere. And there follows terrible flaming and explosive vapour, which spreads upwards and around, exploding and lighting other units of similar gas here, there, and everywhere, till the whole atmosphere to the horizon, and upwards as far as the clouds and flames will allow the sight to penetrate, is one deafening, exploding mass, as if some giant insect had rushed into a flame and the fierce heat caused the sudden expansion of its moisture to burst it, and the now dismembered creature had been flung screeching and flaming to the four winds of heaven, or as if some mighty bomb had been flung into and devastated hell.

As they hovered over this solar sea the effect was frightful to contemplate and their position nerve-shaking in the extreme, and again came the natural doubt that if they were fortunate in that the ship withstood the incalculable heat, she could never even float on that terrible sea, for who could estimate the temperature of a mass of molten metal and other substances nearly nine hundred thousand miles in diameter. She would be shattered in the awful tumult and the hurtling masses of vapour and the batterings of the irresistible fiery waves, the mere splashes of the foam of which came together with crashes of thunder, and several of the passengers rushed in trepidation to the owners of the vessel who,

each in his own prearranged place, were watching intently the *Regina's* various gauges and instruments, for the lives of all depended on the accurate adjustment of the various forces over which they had control, and the movement of a switch a thousandth of an inch too much or too little would throw matters out of balance and mean death, instant and certain. Ross was controlling the gravity, retarding and increasing as the ship rested and fell, constantly watching and comparing the dials registering the sun's gravity with that stating their own, keeping both in proper adjustment together, lest, in the twinkling of an eye, they should be drawn to the surface of the fiery sea. The work of Dennis and Gilbert was no less important and necessary to the general safety, and as Morris Farrant approached the barrier, Ross made the ship stationary and stepped into the saloon, along with his two colleagues, and in answer to Farrant's inquiry, he replied, "You need have no fear! the vessel's protective force could even now be greatly increased."

"Then there is no danger from shock of impact?" inquired Rowland.

"None whatever!" replied Ross; "we have on the compensating force which automatically calls out more force than that projected against her, as and to the extent in which it is needed, so that nothing can touch her," and then he suddenly exclaimed, "Just look at that sea coming straight at us!" and all rushed to the sloping windows, to see before them a flood of fire, miles in extent, rapidly welling upwards, the ship in the centre of it, and safe as they felt themselves to be, each gave an involuntary gasp as the deluge swept towards them and rose up and up till they were in the heart of it; then it passed and a few minutes later was exploded to the corona, where it was cast in all directions, falling on the surface of the sea with hissing splashes; a second later it was

reheated, and the sea was gleaming white as before. All gave another sigh as this great tidal-wave passed.

"That is, perhaps, the most severe test we have had," exclaimed Gilbert, "for it is the actual solar sea which swept over us! and this proves that we can go through it in safety."

"I cannot grasp it!" said Lees Ingle, an electrician. "I cannot comprehend how you can overcome gravity in this way, and why we are not overwhelmed! but then, that's your affair!" and he laughed, thoroughly mystified.

"There's this in it, anyway!" observed Godfrey, also laughing, "they'd scarcely come and bring *me* if there was much danger of being frizzled, and if we get toasted they do, for we're all in the same boat."

This safe passage of the tidal-wave set all doubts at rest finally, which was felt by all a wonderful relief, and with added zest they set to work again, this time to investigate the sun spots, but they could not find any. For days they wandered to and fro, seeing only larger and smaller 'granules' and 'pores,' as the heat and movement were more or less intense; but owing to the difficulty of seeing far ahead by reason of the heavy and fiery clouds above, and the deceptive whiteness of the surface below, they were unable to locate their position, for terrestrial compasses were useless. At last, after a long search they came to a zone of what they judged to be the familiar 'sun spots' which may be seen from Earth any day without the aid of a telescope, if there be but a little fog, or a smoked glass handy, and straightway commenced examining, measuring, and observing the origin of their formation, and why Earth was affected by their movements.

The primary cause was found to be the enormous pressures of vapour and currents of heat, which, acting violently on certain parts of the photosphere, made those parts much fiercer and brighter by the intensity

of the heat, and thus the parts adjacent and surrounding the whiter portions appeared considerably darker by contrast, just as a spot of brilliant white placed on a piece of paper less white will cause that portion of the paper immediately surrounding it to appear grey by contrast. Such portions resumed their normal state when the fierce local heat had passed—or, in reality, when the super-heated portion had cooled to that of the surrounding portions and the colour had become normal and even; for in these cases there are no spots except by contrast, which accounted satisfactorily for the fact that from Earth dark spots are seen to remain for various lengths of time, from a few minutes to a few days, and then vanish, suddenly to appear again elsewhere, following the course of the super-heated zone or the locality which might then be in a state of constant motion.

Some of these locally super-heated spots were found to vary from the diameter of a few inches to thousands of miles—one near the solar equator, and visible from Earth, being nearly two hundred thousand miles across. These and other large spots are mostly situated between solar latitudes 5° and 35° north and south of the equator, and are so extensive that certain physical causes have made them more or less constant. The continued welling upward of these portions of the solar sea and their cooler return have banked up the outer sides or borders of the spots, and deepened their interior space, after the manner of a volcano, and they are in a state of incessant eruption or boil.

Many of the sun-spots, also forming deep depressions, cavities, or wells in the photosphere, and penetrating for a considerable distance towards the interior of the sun, are caused by vast descending and often cyclonic cones of super-heated vapour of inconceivably enormous energy. Passing over the tops of the apertures, these are drawn inside and, once entered, spin round

the whole interior surface with terrible velocity, causing the boiling lava-like contents to be involved in intense revolution, the speed of which cools the far edges on the surface of the photosphere, causing definite lines or boundaries of demarcation which, owing to their reduced temperature, though still liquid, are considerably subdued in colour. To the eye these present a darkened hollow of terrible depth and fierceness, in and through which mighty currents flow unceasingly with lightning rapidity, and in many cases several of these cyclonic seas are connected by straits or channels. Seen from above, they show a dark core, or 'nucleus,' and surrounding this is the 'umbra,' which is not so dark as the core but is really the darker and cooler *sides* of the cavity; and between this and the blinding white of the outer sea, or surface of the photosphere, is the 'penumbra,' which is the *margin* of the cavity, appearing a greyish white in contrast to the gleaming white outer surface, and these three lines of demarcation are easily distinguishable from Earth.

In some cases there are long 'bridges' from the umbra to the penumbra, caused by surface irregularities. In passing over these cones, or spots, the *Regina* gave out enormous charges of electricity, and for some time the cause was not discovered, till at last it was found that the extraordinary pressures and conflicting currents in these regions generated a considerable amount of electricity, which was projected outwards and caught full on the *Regina* as she passed over. This, then, was the solution to the hitherto mysterious manner in which the appearance and disappearance of sun-spots affect the Earth; the gigantic force of electricity generated in these superheated zones is projected outwards and, travelling through space, no doubt affects every member of the solar family, Earth-people feeling its influence in simultaneous atmospheric and cyclonic disturbances and a general upsetting of magnetic needles, wave-

apparatus and the like, while in the mass of Earth itself causing at these times shakings, tremors, volcanic eruptions, landslips and earthquakes, all of a more or less violent character. Some of these vapour movements, vertical, horizontal and oblique, were proved by measurements to exceed half a million miles per second.

A sail round the entire surface of the sun proved the actual measurement to be 2,742,937 miles in circumference, or, roughly, about 873,105 miles in diameter, and not 866,500 or thereabouts, as previously supposed, and that its velocity of rotation at the equator was 6570 miles per hour, whilst the force of gravity on its surface, reckoning Earth as 1, was measured by the *Regina's* gravitometer to be 28.75 exactly.

Having spent nearly six weeks in roaming over the surface, the question arose as to the advisability of passing into or through its mass, and all were eager to make the attempt, risking the possibility of annihilation.

"We are in your hands," said Gilbert; "we have arranged to go when and where you desire; so shall we go down slowly, in order that you may examine the strata as we go, or quickly?"

"We would like to go slow," said several; and Kirkby Reeve asked if any idea could be formed of the interior, and of what it was likely to consist; when Gilbert answered,—"We can only tell by going. We shall find plenty of excitement in it till we get to the centre, and as we go through to the other side."

"Is it not tempting Providence?" observed Heriot Field, a naturalist. "Considering we were saved in the tidal wave, shall we not let that suffice?"

"Certainly, if you wish it," replied Gilbert, bluntly; "would you rather not go—are you afraid?"

"I am, I know! awfully afraid!" exclaimed Godfrey, tactfully, seeing that Field resented Gilbert's

unthinking remark, "and so are we all, and I expect if you asked each of us if we would rather not go, we should all say 'Yes,' but we intend going all the same!—at least I suppose so, for we don't get the chance of slipping into the sun every day; so if all are ready and willing, sink her, old man, and then we'll watch—and get roasted together, may be!"

All smiled, even Field, serious as was the occasion, and Gilbert altered several of the switches, closely examining the indicators meanwhile, then came into the saloon and joined the rest, who were crowded round the windows in silence; somehow, words seemed superfluous, as they stood, each intently thinking, for any moment now they might meet their doom.

For the space of several minutes they stood, with no apparent change.

"We are not moving!" said Rollsborough, in an intense whisper.

"Yes," responded Gilbert, "we are becoming slowly heavier; look! the sea is drawing nearer!"

So it was; the ship seemed perfectly still, and the fiery ocean to the whole horizon was apparently rising up to them, the waves spinning and lashing and the 'granules,' or 'rice-grains,' their tops wonderfully white, were gleaming and sparkling like the sun on rippling Earth-water, as they spun in eddies and long, lapping waves; and a moment later the ocean appeared to give a final rush upwards to crush the ship, and the liquid fire was level with the base of the windows; then the surface of it was level with their eyes; then it rose higher, and the windows seemed covered from the bottom with a golden-like blind with an edging of sparkling lace as it drew higher and higher, and then they were engulfed.

Now what was to happen? Were they to be destroyed in that awful bath? Each drew a deep breath and gripped the sides of the windows, as though

that would save them ; then the deathly silence was broken by Rollsbrough saying in a whisper, " See, the fire is at least a foot distant from the windows. We are safe ! "

" Thank God ! " came from several parts of the saloon, so hoarsely and faintly that it had been more heartfelt than articulate.

No one spoke again for some minutes, for thoughts and the relief from tension were too deep for words. Slowly they sank, seeing nothing but cream-coloured blinds to the windows—a sea which became as slowly hotter and more glaringly white till at last they could scarcely see in the blinding light. They drew all the screens before the windows, and after ascertaining that the continuous photographic apparatus and the instruments for spectrum-photography were working properly, they waited as patiently as their excitement would allow. For hours they continued their slow descent, the time seeming like an eternity, till at last some one ejaculated, " For mercy's sake, let us get through or we shall be turning delirious ! "

Gilbert, whose turn it was to be in charge of the ship's movements, said not a word, but walked across to the switchboard and made some slight alteration, then came amongst them again. Scarcely had he resumed his position when, with the suddenness of a pistol-shot, they were plunged into darkness—a darkness that could be felt.

Willing hands excitedly drew up the screens, but all outside was dense blackness ; the inner lights were put on, but only the inside of the net was visible through the glass, and Ross at once switched on the whole of the search-lights, which blazed forth in all directions, revealing dense and impenetrable fog on every side.

" What has happened ? Where are we ? " every one was asking, in consternation.

" I don't know ! " replied Gilbert, looking at the

dial and the distance travelled ; " the ship is all right ; we are still falling rapidly, but we're not in the sun, that's evident ! " And he brought the vessel to a stand, poised in equilibrium, wherever they might be.

CHAPTER XIII

"VAULTS OF PURPLE"

"All the elements
At least had gone to wreck, disturbed and torn
With violence of this conflict."

(MILTON.)

"WHAT'S up, old man?" exclaimed Ross, hurriedly, as he and Dennis came hastily round the barrier, and Dennis asked, "Anything gone wrong?"

"Not here!" replied Gilbert, mystified; "the ship's all right, everything is in perfect order and working splendidly. What's gone wrong we've to find out. We have come on a straight line towards the centre."

"Have we gone off at a tangent and come outside?" asked Miles Dalton, a botanist, as the rest all crowded up to the barrier.

"Impossible!" replied Dennis, "or we should again be in the atmosphere, or photosphere."

"We must do something!" said Gilbert; "shall we sample the fog outside with one of the strong retainers, and risk another explosion?" All the others assenting, he continued: "Here, Dennis, take my place, old man, and do something for your living! that job can wait, under the circls!" And he and Price Rowland passed into the laboratory.

The ship being safe, the others all stood about discussing the curious situation, without arriving at any reasonable conclusion. In the meantime, Gilbert and

Rowland had obtained a sample of the outer air, this time without accident, and in due course they entered the saloon, where all the others crowded round them, anticipating startling news from their surprised expressions.

"What do you think!" exclaimed Gilbert; "the atmosphere here is nitrogen, neither more nor less than pure nitrogen!"

Had he told them they were in the shed at home, his fellow travellers could not have been more astonished, and several incredulously repeated, "Nitrogen? *nitrogen*! are you sure? Nitrogen!!—a colourless gas, and this colour!"

"Yes, indeed it is," answered Rowland. "This soup-like appearance is due entirely to fine particles of metallic and other dust which, when taken away, leaves absolutely pure nitrogen."

"Then the inference is obvious!" cried Rutherford and several others.

"Assuredly," agreed Gilbert; "all is now clear as daylight. We have passed through the immensely thick crust of the sun, and either come into a stratum of nitrogen or the whole interior of the planet is nitrogen."

Here, indeed, was a discovery. This gas, nitrogen, from its being neutral and neither inflammable nor a supporter of combustion, either had put out the solar fire or caused a thick black crust of solid matter to form, which was the black portion through which they had recently passed, and the fine particles of solidified sun-dust were falling towards the centre, drawn thither by their own gravity; those being eliminated, nitrogen only remained.

"All has come to pass as you foretold, Oakland," said Parkin Coombes; "but in spite of the *Regina's* powers it seems a marvellous thing that the sea has not rushed in after us, through the aperture we made."

"And if the atoms were pushed aside by the *Regina*

and pressed into the parts adjacent, so as to allow free passage to the ship, one would think the sides of the well-like opening we made would become so tightly packed as to prevent the re-formation of the atoms in their original position, and thus form a shaft down which the sea could pour," said Farrant.

"Yes," replied Dennis, "that is what would occur ordinarily; but being temporarily turned into vapour by our de-atomising force, the atoms would, almost instantly after our passage, resume their former condition, and what heat had been imparted to them by the change would be destroyed by this nitrogen. Consequently, we have not disturbed the crust—actually—although, considering the circumstances, how we have escaped being involved in an awful explosion is a mystery."

"Anyway, it is evident we *are* fairly inside Dan Phœbus!" exclaimed Rowland; "and whether we caused an extra explosion up above or not is immaterial, for it is certain that the crust is as substantial as before, or the fiery sea even now would be pouring down on us and into the interior."

Their discovery of the nitrogen could not do otherwise than cause a violent sensation, and every one buttonholed his neighbour, and talked and expounded theories galore. Then Gilbert asked them to come into the laboratory, and they trooped in *en masse*, for each knew what such a revelation meant, and to what it might lead, and every one was on the tip-toe of expectancy. Fresh samples were taken, with the same result as before; they were in a sea of nitrogen, safe from fire—but were they safe from chemical action?"

On this point, judging from the severe tests which their protecting currents had withstood already, they were reassured, and then the whole company went nearly wild with enthusiasm. They were so delighted as almost to bewilder the three owners with thanks

and congratulations for bringing them there, and to Godfrey also for his share in it, which made the four of them so shy and embarrassed that, in comic despair, they took Rollsborough by the collar and pushed him to the fore, as the one who had first suggested they should go *through* the sun, and then *he* became the centre of a fresh avalanche of applause; they chaired him, like a set of wild schoolboys, and kept it up till the simple, good-hearted little man nearly cried with pleasure and excitement, and could only say, hysterically, "No, no, gentlemen! not I, not I! I had no idea of this happening; I had not, really! Thank Oakland and his friends, and our good friend Spenser. Oh dear! gentlemen, don't, I beg of you! It is very kind of you, very, but—no, no! I thank you sincerely, but—Oakland, and——" And, overwhelmed, he struggled and fought his way amongst his clamouring colleagues till he got to Dennis, under whose wing he took shelter, exclaiming, "Really, Oakland, all the thanks are due to you and to Eastern, and Ainley, and to Spenser, here, and how *can* we thank you enough! What will the world say?" And the poor man mopped his forehead, agitated and perspiring.

"The world!" interjected Godfrey, laughing. "What will the world say? It will say that we are one and all supreme liars, at the very least, possibly something stronger!—for to begin with, no one on Earth will believe for a moment that we have been under the sun's enormous crust, or even *in* the fiery sea at all."

No one seemed to have thought of that, and somebody suggested they should at once 'wave' the news to Earth and see how they took it, so Ross despatched the message, and after a while the instrument started and the reply came: "The *Regina* is too small for us to pick her out on the sun's disc. We note you say that you are inside the sun and appreciate your joke."

This was pinned up, and caused no little amusement,

which soon turned to mortification when there dawned on them the utter impossibility of being able to prove their statements.

The dust seemed exactly like that obtained up above, and therefore to say a portion of it had been obtained below the photosphere, and another portion high above, would be no proof that they had not divided it; and to bring back cylinders of pure nitrogen with a statement that it came from inside the crust would not prove that it had not been made on board. Neither would the miles of continuous photographs and spectrum films prove the positions from which they had been taken.

Of course they were all trusted scientists, men on whose word reliance was placed, but it seems to be a trait in human nature to doubt anything abnormally wonderful, unusual, or even contrary to established belief and expectations; and though the weight of numbers all telling the same story precluded avowed incredulity, all knew that to state such startling and unexpected facts without substantial and indisputable proof would but cause people to disbelieve at heart while apparently agreeing with what they could not deny.

They could only leave it to chance to provide them the evidence required, so they dismissed the matter for the moment, and several suggested that they should rise and examine the interior of the crust, or shell. Accordingly Dennis caused the *Regina* to rise till her dome was just below the crust, but near as were the lights, their powerful beams failed to penetrate the gas, rendered thick by the fine dust which absorbed their rays. The vessel then circled the crust, traveling immediately beneath, but though many samples of air were taken, the same results followed, revealing only nitrogen.

After the circuit had been made, Ross inquired, "Are we going upward outside, the way we came, or shall we descend to the centre?"

Some were for returning and others for sinking, when Sorrel said: "Let us fall, Ainley. There's no telling what will happen, and as we *are* here we shall see, at any rate, if the whole of the interior is nitrogen."

This now meeting with general assent, the ship fell steadily, all the search-lights full on, and every face was pressed closely to the windows, watching the opaque wall of dust, so that no alteration or passing object should escape notice. In a few minutes there was a general exclamation of surprise, as, simultaneously, all saw a change take place in the fog around, and there was a sudden cry from various places, "Oxygen, with nitrogen—nitrogen peroxide!"

Instantly the ship was stopped, and on all sides the wall of fog showed ruddy-coloured and glowing. The particles of dust were being destroyed, either by heat or evaporation, for the light now penetrated several feet and the haze had the distinct red glow which comes from the chemical combination of nitrogen with oxygen, though on Earth such a union is caused by the action of intense heat.

Again was there great excitement, and all crowded round Gilbert, as he obtained and examined a sample of the outer air, which but confirmed their suppositions, there being a perceptible diminution in the quantity of dust collected.

It was now about the usual time for retiring to rest but all ignored the automatic electric signal; sleep, even rest, was out of the question, for who could sleep when such strange and marvellous phenomena were unfolded before them in such unexpected and exciting form.

They sailed forward, maintaining the same gravity, thus keeping an equal distance from the crust all round, returning to the spot from which they started, finding but a repetition of the previous experience; in some wonderful and unaccountable way the deadly

nitrogen had taken to itself, and united with, oxygen, giving promise of becoming less deadly.

Slowly sank the ship, samples of the air being taken every few miles, and though for several hours there was no change, they eventually came to a stratum where there was a greater percentage of oxygen. All knew what this portended and again everybody became almost distracted, and it required all their self-control to enable them to conduct their observations calmly and systematically, step by step, as they proceeded.

All at once Dennis threw down some wires from an induction coil which he had been using, saying to Ross,—“I’m played out, Ross! Tell them all to go to sleep, and insist on it; what’s coming can wait! And let the ship stay where she is.” And he passed on into his cabin, where he flung himself down just as he was, falling asleep almost before he had settled in his hammock, without heeding Ross’s reply.

Ross then spoke up: “I say, you fellows, we must look after our health, you know! For nearly fifty hours we have had no sleep, and all the time have been under full pressure of exciting work. We cannot continue it without being ill, and illness on board would be a dreadful thing. Let us all retire for at least twelve hours and then we can continue our observations and experiments in detail, as we sink down to that which appears to be below us. In the meantime, the ship is stationary and will not move a hair’s-breadth, so we shall lose nothing. Good-night.” And he also passed into his room and was soon fast asleep.

Loth to leave their work, yet feeling the wisdom of reserving their energies, and finding there was no movement in the air around, the others gradually sought repose in their cabins, going off in driblets till the saloon, laboratory and observatory were empty, and throughout the ship there reigned silence, broken only by the heavy breathing of the sleepers.

Gilbert had retired some hours before Dennis; for

over two days he had been working feverishly, but though fagged out, he would not seek rest except on Ross's solemn promise to wake him in order to take charge of the vessel. Consequently, he was the first up, and saw that for the first time during the voyage the ship was unwatched, and felt somewhat annoyed that Ross had not called him as promised before vacating his position. Evidently both he and Dennis had been too weary to waken their sleeping companion.

Mechanically Gilbert looked round and saw that all was safe, then passed into the rooms of Dennis and Ross, both of whom were sleeping soundly; in the reflecting tubes he examined every berth and nook of the whole ship, to find all safe and the occupants sleeping calmly in their cabins. He then, in the dead silence, passed out of the *sanctum sanctorum* to examine the air apparatus, which proved to be working satisfactorily, and then forward into the laboratory where, after a general glance round to see what experiments were in progress, he commenced some further analyses of the composition, weight, and nature of the atmosphere in which the ship rested. What was his surprise to find that the air outside was in motion, so slight that only the most delicate instrument recorded the faintest trace of sound, but sound it was, undoubtedly. Rushing back, he examined the switches and dials, to find the ship poised and absolutely still. The air must have been in motion, therefore, the night before, but so slightly that, the ship's motion being present also, the instrument was unaffected. When the ship was still, the vibration of eighteen moving people, imperceptible as that seemed on so large and rigid a vessel, had, nevertheless, proved sufficient to annul the instrument's record of sound.

It was evidently an illustration of a law of physics—that if two sound-waves not in unison meet, and the swell of one encounters the opposite phase of the other, silence will result, for both will be neutralised; just

as in the well-known experiment of the tumbler placed on a table and a second tumbler held at right-angles over it. A tuning-fork in rapid vibration is held in the centre of the angle formed by the two tumblers, and though its vibrations continue, no sound results; but the sound is made to become audible or cease as one of the tumblers is removed or replaced. In the one phase, by the upper tumbler being removed there is no check on the vibrations, which are free to produce sound, but when the upper tumbler is held as described, the sound-waves strike one another at opposite phases, and the plus of one is absorbed in the minus of the other.

It was a most interesting point, for the sound-waves set in motion by the moving air and those disturbed by the moving people chanced to be at right-angles, and produced silent vibrations. For several hours Gilbert continued his observations and experiments, hearing first one and then another of his companions moving about, and at last he awoke Dennis and Ross, asking them not to start the ship for the present. Very soon all were in their accustomed places, refreshed and alert after their long sleep. Hearing that Gilbert had found out something important, everybody trooped into the laboratory and he explained his discovery.

“What do you infer from that?” asked Godfrey. “I only see in it a most interesting physical experiment naturally conducted.”

“It is more than that,” was the reply; “it means that there is ‘sound’ outside.”

“Really!” remarked Godfrey, banteringly. “Surely we have had enough sound outside since we came near the sun to make a little more or less now a matter of no surprise—but you physicists have always something wonderful up your sleeve, haven’t you, Gilbert? What is it now?”

All the rest laughed at Godfrey’s manner, and Gilbert,

turning to his chum, retorted, laughingly,—"This will prove a lesson in deduction, old man, and show you how to make one fact elucidate another!" And then more seriously,—“You notice that after passing through the enormously thick sun-crust we came to silence; all the upper thundering noises were cut off. We entered a stratum of nitrogen which even the sun could not burn; then a little lower and it became mixed with oxygen; now the percentage of oxygen is higher. So far, everything points, as you all know, to the presence far below us of a breathable atmosphere—breathable to us, I mean—and we are all naturally asking ourselves the question, ‘Why this breathable air if there is no need for it?’ and the presence of ‘sound,’ faint as it is, strengthens the supposition. *If* there is sound, as there is, something must make it, and given an atmosphere capable of supporting human life, added to sound, or the echo of sound as we might call it, which is now absent as we are all moving, it is highly probable that something living exists below. If you will kindly turn the ship on its axis, Ross, so as to alter the direction of our waves to run parallel to those outside, we shall find, unless I am very much mistaken, a modification of the same law, and the two sounds which seem now to have changed and to run in unison will be doubled when they run side by side.”

This was proved to be the case, and a sound coming from the instrument, though faint, was distinctly audible, and the vibrations were numbered on the dial.

“It is possible that down below us we shall find light, of course,” remarked Parkin Coombes.

“More than possible,” replied Rowland.

“What new phase has turned up now? Do you mean to say we are likely to be lit up shortly?” interposed Godfrey.

“Everything points to that, certainly,” answered Sorrel, “and Rollsborough here will tell us all about

it." And as several others came up at the news and crowded round, Rollsborough proceeded,—“It seems more than possible that we shall come to an illumined world; the luminiferous ether permeates everything, and given an air free from solid matter that could obstruct, absorb, or divert the rays of light (and every mile of descent the air is becoming clearer), there is no reason why we should not have light below, for light is, in effect, the same as sound and follows many of the same laws, and if two luminous waves encounter each other at opposites, each extinguishes the other and total darkness results; but on the other hand, if two light-rays run parallel to each other, then the light is doubled. An effect of this is seen in the twinkling stars, from which two unequally vibrating rays will coincide at certain points, when their light will be doubled, but at all their vibrations that do not coincide there is no light of any kind, but instead, total darkness. This—darkness and light following in rapid succession as the unequal rays coincide and miss one another—gives us the twinkling of the stars; the altering humidity and density of the air on Earth through which the light-rays must pass also contribute largely to the effect of scintillation.

“It is, therefore, judging from the present progress, probable that as we descend we shall come to a world which is self-lighting, and on which the luminiferous ether has so many of its rays in coincidence that every ray is augmented by its next ray, and not a single light-ray is lost, thus making this unknown world, if not brilliant, at least light; probably very light, as is the case with many of the stars.”

Needless to say, this conversation did not conduce to calmness in their already exciting position, and Godfrey remarked,—“Folk say that scientists conduct their work without sentiment, and are all matter-of-fact, but, upon my word, we all of us need a good thrashing to compel us to go on with our own business!

I never knew it so difficult to work steadily on and wait patiently for what is coming ! ”

All the same, every one knew he was working well and seriously with every nerve concentrated on what he had in hand. And if it had been suggested that they should rush down to solve their doubts, he would have been one of the first to say, “No, we must not be too enthusiastic ; we must examine step by step, and get a true record of every stratum through which we pass.” He, however, did but express the general feeling, and none were sorry when the time came to sink lower.

All at once they descried below them a peculiar sight. As far as they could see, there were piled up hundreds of miles of rocks, the *bases* lit with a peculiar haze, or glow, which came from the ground itself like a giant *ignis fatuus*, or ‘will-o’-the-wisp,’ the origin of which is, even to-day, a mystery to science, and though many explanations have been attempted, none are conclusive, or even tenable. Then numbers of these flashing lights appeared, as though a multitude of people were carrying huge candles or lanterns, some of the lights being blue, others greenish and yellow, but the majority purple, and all these flitted in and out and about the bases of the hills, and clambered up and rested on peak after peak in the most ghostly manner imaginable. Then all was dark again. The ground heaved and split, and the ‘marsh gas,’ the colliers’ ‘fire-damp’ (evolved during the process of decomposition of the dead and dying vegetable matter in the ground and in the changes taking place while coal was being formed), had found a means of outlet through the opening, and, mixing with the air, formed the well-known explosive mixture which, with an awful though silent disruption, laid low hill after hill, and a few seconds later what had been a range of mountains became a desolate plain.

The ship was made in equipoise, and in complete

amazement, all watched the surface of the world below them change its shape and configuration every few minutes—it was in constant fret, and though not losing its shape as a whole, yet valleys were turned into hills and mountains into deserts with an awfulness which the darkness and silence rendered even more frightful.

All would be dark—black; then from point to point in the distance the light would come again, roving here and there like a lost spirit fruitlessly searching in a desolate world for its soul, and would run up the rocks in a gliding flow, hanging for a few moments on dizzy pinnacles, and then, in apparent despair, precipitate itself headlong, or wash itself down the steep sides like an avalanche of sliding snow; perhaps, when half-way down, suddenly to stop and take a fresh movement, spreading and stretching itself like a flickering, elastic web, embracing hill after hill in its toils, till the whole horizon was covered with it, and there lay below them a snowy world, with every summit frowning and black by contrast, showing above it as though impaled. A second later the whole landscape, shuddering under its cloak, would shake itself and the light suddenly vanish, leaving black darkness again everywhere.

The *Regina's* search-lights were switched off, and the whole vessel plunged in darkness, so that the occupants could better examine the strange world below them as they crowded round all the windows, intently watching through their glasses.

For a while nothing could be discerned, and then the whole country, to the limits of blackness, was glowing with phosphorescent fire, and times without number the rocks rose and fell as though floating on an angry sea, completely hidden by the forms above. And all the while the 'will-o'-the-wisp' lights were dancing their mad flight, and the rocks, in their apparent endeavour to trap them, rent themselves apart and

crashed together, always too late, or too soon, for the lights invariably fled elsewhere, whilst the rocks were but welded firmly into larger and more compact masses.

It was a world in chaos—a nightmare of evolution—where the ghosts and spirits of creation tossed and tumbled in their fevered, restless efforts to build themselves into solid shape; where earth and rock were spun and pounded together as clay in the hands of the potter; pounded this way and that in an ever-turning churn, becoming more and more compact as gigantic masses of earth and rock crashed together and became absorbed one in the other, and were again packed into less than half their bulk, mountain after mountain becoming little more than a hill; and when no further compression seemed possible, they would tumble upside down, their bases uppermost, their jagged roots, which had seemed so firmly embedded in the ground, showing in the flickering light like awful teeth, the sight of which made the flesh creep; their peaks also, now twisted and awry with the shock, were wounded and beseeching, for the beautiful mountains had become deformed monstrosities. So would they heave as in an agony of physical pain, tumbling and twisting about to obtain relief; travelling over and under other mountains which they exposed and lifted up as they dug underneath them, they being momentarily hidden. Some of these did not rise again, but were plunged into the depths below, in which they became fixed; others, after being slowly and irresistibly pounded into compactness, would suddenly become disintegrated and spread themselves out as though some mighty roller were crushing them into slabs, and during the process they would resume some semblance of their original form and become dense, hard, invincible rock with precipitous sides. Chain after chain of hills would turn to valleys and long sweeps of undulating country;

these undulations would then become more pronounced, then involved, and then suddenly rise; the next moment they were hundreds of miles of forbidding, death-inviting mountain ranges, with craggy sides on which no human being could find a foothold, or if found, could keep. Over the range would pass a gentle shiver, and without a sound would follow an awful earthquake, swallowing up hundreds of enormous hills, and for the space of fully five minutes there yawned beneath the ship a bottomless gulf, with sides as straight as if cut, into which the whole mass of the hills seemed to tumble.

Even here the strange and lurid light flashed on the sides of the chasm as they dashed together again, leaving no trace of the awful catastrophe.

Awed into long and complete silence, the occupants of the *Regina* watched the chaotic disturbance below, rendered doubly amazing by the absence of sound—at least of sufficient volume to penetrate the vessel—and the gentle, deliberate way in which all the movements took place. Had the changes been made with terrible speed and deafening clatter and bang, the observers would not have been disturbed, for there would have been nothing abnormal, but sound *could* be heard in the ship, and such havoc ought to have been accompanied with crash and noise, yet the upheavals took place silently, the impacts being an 'absorption' of one into the other, as it were, with quiet force which seemed awful in its irresistibility.

"I think this is more awful than the fire above!" ejaculated Merrick Rutherford, at last.

"It is!" agreed Creeve Kelman, with a long breath. "Who would have thought that a world was so formed?"

"And contrary, too, to all established beliefs and theories!" said Sorrel.

"We had better go down into it," proposed Gilbert; "we shall be safe! What do you say, all?"

"Yes, let us go," said Dennis; "we have seen as much as we can from here"; and Gilbert stepped towards the switch-board, but scarcely had he traversed half the distance when there was a yell from Godfrey, who turned away from the window, shrieking with laughter. So long and vigorously did he laugh that the poor fellow could not stand, and, doubled up as he was, he sought to sit on a chair, but missing it, fell on the floor, where he lay laughing and crying in turn.

"He's gone mad!" cried half a dozen, in dismay, as they rushed to his assistance, but being waved aside, they formed a circle round their prostrate companion, all the rest hurrying up also.

"Whatever's the matter, Godfrey," exclaimed Gilbert, running back.

"Mad! we're all mad!" gurgled Godfrey, painfully. "Oh, Great Bona! I shall die, I'm sure I shall! I can't laugh any more. Oh, dear!" and he rolled over in agony.

"Tell us all about it, old man!" exclaimed several, soothingly, as they attempted to raise him up, which drew a protest as he slid back on the floor, moaning, "Oh, don't! don't touch me, or I'll snap in two like a carrot!—the windows!—look out——"

All rushed to the windows, but nothing was visible except the turbulent world, and when they turned round Godfrey was sat on the floor with his legs straight out and his hands to his sides, the picture of woe.

"There's nothing!" said Dennis; "only what we've been looking at half a day. Tell us what's the matter, there's a good chap."

"The matter?" moaned Godfrey, getting on his hands and knees like a bear, but, finding it painful, sitting down again. "The matter! everything's the matter! And 'only what we've been looking at half a day'!—why, that's just it, my boy!

"We're as bright a set of idiots as could be got together in a lifetime!" And he declaimed, as if giving a lecture,—*"We get into the way of looking for scientific explanations for everything, till we can't use our eyes to see what's staring us in the face as plainly as a hole in a ladder! My dear fellow-idiots, I regret to say that it only dawned across my woolly brains a few moments since that we have, the whole lot of us, spent five solid hours staring at nothing more nor less than clouds with light on them, thinking——"*

"Clouds!!" they all shrieked, without waiting to hear more, and, leaving the orator as if he were a pestilence, they made a tumbling rush for the windows. Now they had the idea, they saw distinctly that they were above a stratum of clouds which were faintly illumined from below, the light catching the upper portions as their movements allowed it points of entrance.

There was no doubt about it! the more they gazed, the more certain it was, and the grim humour of the situation appealed to them as to Godfrey; they all laughed till they could not stand, some till they could not sit but rolled on the floor to join Godfrey, alternately wiping away tears and holding their aching sides. Anon they would look up at one another with pain-drawn features, and the sight of their companions in a similar state would send them off into fresh paroxysms of laughter. The joke, like the sun, was immense; not one of these intensely scientific men could be said to be without a sense of humour, and not one of them felt in any way ashamed or embarrassed to be utterly prostrated with amusement at his own blunder. But the laugh did come in, though they had to do it themselves, and "it's a good thing to laugh, at any rate."

After they had all calmed sufficiently to be serious again they descended, photographing as they fell, in accordance with the custom they had observed since

the commencement of the voyage ; and as they sank they came to brighter and still brighter strata until at last, far below them, they espied a wide stretch of what appeared to be Earth-clouds, so Earth-names were given to them. The highest, those now immediately below them, were the 'cirrus,' or 'mare's tails,' and were moving somewhat rapidly, proving the presence of a strong wind as in the strata above. These cirrus clouds floating on this particular current of atmosphere were proved to be minute crystals of ice, the refractions and reflections of which produced ravishing colour. Below these were heavy cumuli, cutting off all view below as they lay in an unbroken bed beneath them, like a sea of grey, unbleached wool, and once through these, although they had hoped for what they saw, the realisation raised their excitement to fever-heat. Ever since they had found the atmosphere changing from deadly nitrogen by very gradual degrees into the semblance of Earth-atmosphere, they had partly expected to find an interior world of some form or other, yet they could be excused feeling fevered when they saw below them their whole horizon filled with land, only lit by the luminous ether, 'tis true, but clear and fresh as one sees the Earth under the light of early dawn.

The cirrus clouds had been 43,000 feet above the ground, the cumulus had had an elevation of but 6000 feet, and now, a few feet above the ground, Rowland took the last sample of air and found it contained nitrogen, oxygen, carbon dioxide, aqueous vapour, helium, and traces of nitric acid, ammonia and carburetted hydrogen, thus being practically like terrestrial atmosphere, and the gravitometer registered the same gravity as that of Earth, so that there was no reason why the outer air should not be breathed, and amidst cheers, for the second time since leaving Earth, the doors were opened, the net drawn aside, and there permeated the ship the natural air of heaven, pure

and fresh as that on the country moors in the far-away home—and the hearts of the adventurers filled with gratitude and thankfulness for their preservation.

The first care was to go over every inch of the net and outer casing of the ship, in case any damage had been sustained, so that they might at once make any needful repairs, or, if necessary, replace the net with a new one they had brought for such a contingency, several having been woven at the same time. Every knot and twist was most searchingly scrutinised, for all their lives during the equally perilous return journey depended on the immutability of the net, but it was found in as excellent condition as when newly woven.

This long and tedious though important task over, they gave themselves up to the examination of that portion of the country on which they had settled; this was overgrown with small trees and shrubs, the foliage, as well as the grass, being a strange golden yellow, twinkling with green.

This might be the effect of the peculiar light, but be that as it may, all were amazed to see so strange a sight under circumstances so entirely at variance, for in the absence of sunshine, how was it possible for the vegetation to have such glinting, gleaming lights?

On closer inspection, they were surprised beyond measure to find that what they had taken to be long tendrils were, in reality, festoons of insects, clinging together in such numbers as to obliterate every living thing above the ground. There were millions of them, and their golden, horny bodies, with brilliant green elytra, or wing-cases, which their movements caused to be in a state of constant agitation, produced a shimmering as of a myriad gems. On the bushes being shaken they arose in a golden cloud, as of cut and sparkling precious stones, to settle a moment later, hiding every living thing of vegetable growth, clinging

to each other in some places like swarming bees, and in others they formed strings, festoons and tendrils, binding bush to bush with living, jewelled cords, and the combined sound of their movements rose in a faint hum like a distant, swiftly revolving fan. It was a fairy-land. Examination of the plants was scarcely possible, for no sooner had the little creatures been disturbed and their resting-places exposed than they were back again, and so persistent were they in this that though some of the shrubs were cut down and taken into the vessel, thousands followed and rested on them. How they lived was a miracle, for they did not appear to eat the vegetation, yet it was necessary to their existence, for of all the thousands Godfrey and his entomological colleagues collected and kept apart, not one survived, yet those allowed to remain on or near the shrubs lived and multiplied exceedingly, although, like some of the ephemera—the may-fly, for instance—they possessed no mouth organs, or indeed any digestive organs, even of a rudimentary nature. And strange to say, the shrubs and plants (which, in common with all other vegetable growth on this world, when divested of the insects, were of a pale green colour) neither grew nor faded, losing none of their suppleness, and when carefully weighed it was found that after they had given support to scores of generations of thousands of insects, their weight had not varied in the least. Neither ordinary heat nor moisture affects them, but if an actual light is put to them or they are burned, they then prove highly inflammable, burning furiously till consumed, when they leave no ash or residue; they are, however, perfectly safe at any temperature not exceeding 200° F.

With regard to the insects themselves, so rapidly did they increase that every week or so handfuls had to be taken away and kept apart from the shrubs, when they died—yet thousands never got near because

of the thousands intervening, to which they clung. It was an interesting instance of symbiosis, and virtue in some shape or form must have been transmitted through the intervening bodies, or possibly by means of some delicate sense of smell.

Neither Godfrey nor any other of the great biologists of the time have ever been able to throw any additional light on the matter, though not unparallel cases have been known in certain of those islands on Earth, of highly volcanic origin, formerly called the Fiji, or Viti Islands, which were a British dependency. These islands were famed for the tropical luxuriance of their vegetable and insect life, but were submerged in the South Pacific by the great tidal wave closely following the devastating eruption and earthquake of 2316 A.D., which permanently raised that portion of the South Pacific Ocean.

CHAPTER XIV

BETWEEN TWO WORLDS

"For thousand perils lie in close await
That none except a god, or God him guide,
May them avoid, or remedy provide."

(SPENSER.)

THERE were no inhabitants anywhere in sight, and the general appearance of the landscape was flat, the country stretching away in beautiful rolls of heath, broken only by the small, stunted trees and shrubs on which were seen the millions and millions of strange insects, their shining bodies causing the landscape to look as if covered with corn golden to harvest, and shaking with vivid green dewdrops.

After roaming about for several miles, disturbing these insects at every step, at each further step to find that those last disturbed had settled down again, the wanderers returned to the ship, most of them weary with the monotony.

As there was now no danger of damage from outer heat, the net had been drawn back from before the windows, and with everything open and most of the explorers on the outer deck, the vessel sailed along some twenty feet above the ground. For some distance the country continued flat, but before very long the ship had to rise to avoid some hills over which they passed; then came a wooded valley where their presence startled thousands of birds not unlike our wild pigeons, which rose out of the trees and encircled

the ship, many of them entering fearlessly. Beyond the momentary alarm at the enclosed place, they seemed not in the least afraid, when several of the fellows stroked their heads and their tiny ears almost hidden by minute feathers. They followed the ship for miles, flying inside and out, devouring the food offered them with avidity, and making themselves so perfectly at home that a dozen or more, finding things to their liking, stayed and became general favourites, walking and flying about in all parts of the ship except the laboratory and engine-room; either the aroma or a sense of danger caused them to shun these two places. They, like terrestrial creatures, required sleep, during which they crushed up together in circles with their heads and bodies touching.

In a short time there dawned on the horizon a long, dark streak of blue-grey, with touches of white, unmistakably sea, and here they pulled up for a day or so, during which they obtained dredgings and samples of the water at various depths. The water was salt and contained a considerable quantity of iodine. Several small fishes had found their way into the boxes which collected the samples of water, and amongst them were numbers of many new varieties of spirilla, radiata and the like, while the dredgings in various places brought up corals, pearl-oysters, granite, gravel, iron pyrites and the like, as well as many new forms of deep-sea life, all of which added considerably to the unique collection already on board.

The sea-shore was bounded by rocks, sand and shingle, on and amongst which were found sea-urchins and sea-squirts, also jelly-fish and many other forms of amœbæ. The water was wonderfully clear, showing deep grey-blue when in bulk, and though the waves were apparently the same as those of Earth-seas, they were found to go to the very bottom, yet there seemed to be no tide. The rocks were covered with barnacles, limpets, sea-weeds and other sea-growths; they were

wet to a fixed level only, except where splashed by the lapping water or the waves driven by the wind; there had been no evidence anywhere of a tide, and the water was in a state of calm, but as they approached the further hemisphere, the character and motion gradually changed, and at that portion almost opposite the place where they had first landed, although there were still no tides, the waves were so awful and so mighty as to make the sea altogether unnavigable. It seemed as if each wave was a great tidal wave caused by the eruption of volcanoes under the sea-bed, or some other upheaval of the ocean, for so far as the eye could reach were waves rising in blocks, as if great slabs of water had been cut out of the ocean, and these were being pushed along the top as solid things which tore along in walls seventy or eighty feet high, rolling great rocks before them as if they were seeds, their crests for ten or twenty feet deep white with foam. Straight up from the beach a wave would roar till its energy was spent, when suddenly breaking, it fell, an avalanche of water, in an overwhelming flood, and the shore became a huge cauldron of foam. Quickly this subsided, leaving the rocky bed as if filtered through, its place soon to be taken by the next wave, and so on unceasingly, without any abatement, the sea from its inmost depths being lifted up and almost turned upside down. So powerful was the force of these waves and so sudden their break, that though the travellers spent several days trying to get samples of deep-sea water and dredgings of the ocean bed, everything they let down was lost, wrenched away by the awful rush of these terrible waves, which were wonderful even in calm, but when driven by the wind they were beyond description, and one could not keep the thought out of the mind that if on the shore, and in search of some of the wondrous stones and seaweed brought up with each wave, a rush had been made between the waves to snatch the treasure before it

was reclaimed by the ocean, once the safe ground had been left, the sudden inrush of the succeeding wave would be so appalling as to terrify into inaction, though but a stride from safety, for these waves did not flow as do those of Earth, but came to their limits as a solid, and then suddenly stood and fell. Any one venturing too near and seeing this wall of water come towering along would become rooted to the spot with fear, powerless to do aught but give an agonised cry for help—the help that could never come to any one on that lonely shore ; nothing but a pounding to pulp under the thousands of tons of water that must fall, striking like an almighty hammer.

Such is the inner sun-sea—an awful thing—a thing to remember with dread—a thing which to think of precludes sleep or, entering into it, produces a horrible nightmare, in which the feet are fast in a rock, or held there by some rock-wedged crab, or sunk in the sand, or as heavy as lead ; and the eyes start and the body becomes damp with agony, a mere foretaste of the watery grave which is even then preparing—the nerves so shaken as to be temporarily paralysed, and, unable to run, crawl or move, or even to shout, the victim stands inert and hopeless ; unable to do anything but think and watch the avalanche rush forward and mount high overhead ; and just when the wave breaks, and the tons of water are falling and crushing the very limbs apart, the capacity to step aside returns, too tardily to benefit ; the voice comes too late to save, for no help is possible ; yet help does come, for the cry brings wakefulness again, and one is thankful to live a little longer and go to one's long home in some more restful way. Yet it is only fancy, and a matter of little moment whether, when that time comes, we cross the river with a wild and agonising wrench, or enter into rest lying on our own bed, nestled in some loving arms, our hands held by those whom only, in the whole of creation, it is hard to leave. In either case

we go, and though this world is so hard for many that it is a matter of very little concern *how* the end comes, providing it does come, and quickly, so that the rest and quietness found on the bosom of dear, kind Mother Earth are granted ; yet somehow, we are all of us weak, and life is so hard, so full of pain and suffering, with so little comfort, that we cannot keep down the hope that the end will be quiet and happy, merely "a sleeping and a forgetting," and surely a hard and cruel fate will not deny that one isolated happiness to its victims.

Such thoughts come to many, not that they show a morbid or unhealthy fancy, but because life, though apparently full of glowing happiness, is, to the majority of those who are strictly honest, but a weary time of toil and trouble, a time of endless struggle and pain ; all battle and strife and strenuous effort to exist, till actually to 'live' would seem paradise : life to such is a period of giving up with a smile all that it holds dear, though the throat chokes and the eyes blind with scalding tears at every recollection ; a period in which the close friend may prove to be the devil ; a period in which those in whom trust is placed, and from whom advice is sought, betray their trust, and add to treachery counsel that will enable them to plunder their confiding victim, sinking every spark of honour, along with all people with whom they come in contact, if by so doing they can benefit themselves or rise higher. When friends prove false and age creeps on, and both soul and body are less able to bear the strain, it becomes harder and ever harder to keep both together, and torn and tired hearts cry, "O Lord, how long !" and the soul is overwhelmed till it "longs for rest, yet rest can never find" ; longs for love and sympathy, and instead,

" The purposes of life misunderstood
Baffle and wound us "—

and the honest are ever the tiny flowers, whilst the callous and wicked are the spreading bay-tree, and the unsolvable problem—Why?—makes the injustice of it the more keenly felt. For are not all precepts, from childhood onwards, to the effect that honesty is the best policy? Yet in real life, the honest, straight man always comes off worst in his dealings with unscrupulous people, and he is invariably the loser, for he will not stoop to their actions, so the conditions are not equal, and as Longfellow so aptly says,—

“ Force rules the world still,
Has ruled it, shall rule it ;
Meekness is weakness,
Strength is triumphant ;
Over the whole earth
Still is it Thor's Day ! ”

To such contemplations did the appearance of the awful sun-sea give rise, for it was like the friend, the counsellor, and any or all of those who mean to grow rich anyhow, even at the price of another's blood ; it waged a terrible and one-sided fight, itself always the victor—it would relentlessly crush and batter and overwhelm all in its path ; rise it must ; progress it must ; and woe to that which stood in its way, for without feeling, without an atom of sentiment or veneration, that obstacle would be swept away, or if that were not possible, because too firmly rooted (by honesty, say, to carry forward the simile), it would be absorbed and covered, and though it might to a slight extent retard the onward rush, it would be unceasingly beaten and torn, and if not forced aside, worn away and, throughout, be virtually non-existent.

The *Regina* sailed round this strange world, encountering sea, land, moor and wood ; birds, animals and insects innumerable, none greatly differing from those of Earth, but apparently it was a world given up to

all forms of life except man, and was undoubtedly the purer and better for it.

Finding no trace of human beings, the explorers turned their attention to the study of the physical conditions of the world; its natural history, biology, climate, geology, and the scores of other matters on which they were anxious to glean information, although this could only be done in a superficial way, seeing they were human and the span of their lives was limited.

While they were looking for human beings, they found none, but as the weeks passed they were conscious, at times, of having seen strange figures in a kind of mist, or haze. In each case the travellers made no mention of the incident, fearing to incur the ridicule of their companions and putting the matter down to an excess of 'bile' in the system, or to fancy, produced, perhaps, by the state of excitement in which they had lived for some months past. However, it came out at last. One evening—if a constant light can have an evening—they were all assembled in the saloon for their usual discussion on the day's work and the progress made, preparatory to going to rest, when the subject of ghosts was mentioned, and there were many furtive looks around.

"I suppose we are safe?" asked Kelman of Dennis, who was seated beside him.

"Certainly; we are closed up—fifty feet from the ground with the protecting current outside; nothing could reach us, and we could not be successfully attacked. These precautions are never omitted under any circumstances, no matter which of us chances to be in charge."

"I am glad of that," said Kelman, and then remained silent, absorbed in thought.

"Why, what makes you ask that?" questioned Ingle.

"Nothing much," replied Kelman, "only I had an idea."

"Well, out with it, then!" cried several.

"I expect you will say I am dreaming, or need a restoring tablet," said Kelman, reluctantly, "but several times lately I have had hallucinations and have seen ghosts!"

"Well, that's curious," said Heriot Field, "for I have too!"

"So have I."

"And I!" "And I!" And so it went round.

"Thanks for the information," exclaimed Kelman, more brightly. "I am much relieved! And now the ice is broken, we are all free to compare notes and discuss the question, because I, personally, do not believe in ghosts, and yet I cannot refute what I see myself."

Here he paused for some others to recount their experience, but as all were looking to him to continue, he proceeded,—“For several weeks past, when I have been intent on some work and completely absorbed, I have suddenly looked aside to find close by me, one or two, or perhaps half a dozen or more, strange beings, not human and not inhuman but a kind of glorified ‘essence’—a ‘nebula’—out of focus, tangible and yet ethereal—and I have looked, lost in amazement, thinking our hard work and close application had upset my nerves, and to be frank with you all, I began to wonder if I was going mad!”

He looked round, and Coombes rejoined,—“I have had similar visions and I wondered what was the import of it, judging it was my imagination, purely and simply”; and most of the others said the same.

“Have any of you ever seen these beings except when completely engrossed in other matters?” asked Reeve.

“No!” no one had.

“Then it seems to me,” continued Reeve, “that these beings are not under our influence, or we under theirs unless our minds are blank, so to speak.”

"Something like that," agreed Rutherford. "I should say the people are much better than ourselves—angels, in fact—for they have a kind of 'glory' round them, and when addressed they become fainter and die away."

"It's a strange thing," observed Godfrey, "if in the future life we have to become nebulous and float about doing nothing particular except frighten any folk who chance to come along by turning up when they're not expecting us, and vanish when they ask us what the deuce we mean by it—as I did several lots of them. The idea is rather thin and unsatisfactory to my mind, and I should have thought there would be something better for us to do!"

"We ought to get to the bottom of this mystery!" remarked Farrant, seriously. "When we look for beings they are not there; we none of us see them, unless our minds are, not a blank, but entirely pre-occupied to *their* total exclusion; when we accost them they begin to fade. All this seems to me to point to hallucinations, brought on by our experiences, close application, and the perhaps somewhat morbid influence of this inhabited, but unpeopled world."

"I think the same," assented Ingle; "and the fact that we have been so eager to find man has, in some mysterious way, stamped itself on our minds to such an extent that when strained or much pre-occupied, there comes a reaction in a vision of the things desired."

"Yes, that may be granted in an isolated case, perhaps," argued Field, "but when *all* have the same experience, I fail to see how you obtain your case."

"To me that seems its strongest point," responded Ingle, "for though we experience no strain, as a physical sensation, there is no possible doubt that

the tension of the last few months must have told on us, and made us fanciful."

"But all seeing the same?" repeated Field.

"A mere matter of telepathy," replied Ingle. "All being in the same physical condition at the particular moment of total abstraction, ready to be impressed by the same thing, by pure transmission of thought."

"I agree with you, Ingle," said Reeve, "yet such impressions usually are only transmissible and receivable when the mind is a blank."

"That is so," continued Ingle, "but the acme of receptiveness is reached at the identical moment of the acme of concentration, whether that state is brought about by the concentration of nothingness or that of serious abstraction. The result is the same: for that identical moment the mind is a blank."

"And that moment is when the hallucination takes place, you think?" asked Reeve.

"So it seems to me," Ingle replied.

"I do not see it," observed Rutherford, quietly; "neither in dreams nor in any other manner do people see what is beyond or, I should say, 'above' their actual experience."

"I fear you'll have to explain that," said Coombes.

"What I mean is this," continued Rutherford; "you never, say, dream of what is *beyond* your experience, or of doing something you do not previously know how to do, or of seeing correctly something of which no previous and similar object has come within your experience or crossed your vision; when that point comes,—when all previous knowledge or suggestion ceases, then you will wake. Nor is there evidence, even in telepathy with excellent mediums, of going beyond scenes and objects which have come within the knowledge of the medium by sight or description."

"What about mediums telling of heaven—of angels—by actual sight?" queried Ingle.

"Nothing of the kind! they merely relate the impressions given, and in this age of telepathy, when we can transmit thought all over the world, it is *known* thought, and we do not get beyond it."

"But angels!"

"Exactly the same thing. We cannot soar above our own knowledge, yet we want to show human beings in a higher beatitude, so we make them sexless and there arises a difficulty as to which sex they shall be like, so we clothe the body with a long, white robe, and show only the feet, making the faces clear so as to stand either for a woman or a beardless man, for you must all admit that it would look incongruous to represent angels with strongly marked features and nicely trimmed beards and waxed moustachios!"

"How would you represent an angel, then, Rutherford?" asked Coombes, laughing.

"I could not do better. No one could, for the simple reason I gave before. We cannot soar beyond actual experience without being ridiculous; we have never seen higher beings, and therefore what they are like we cannot even imagine, for our fancy stops at ourselves, and the best we can do is to make spirits, angels, and all higher beings, like ourselves, but shorn of our carnal portions, and compromise the matter."

"Then you think angels and spirits are not like us, and need not be of anything like our form?" questioned Ingle.

"Certainly not necessarily so," answered Rutherford, and looking across at Godfrey, he went on,—
"I don't want to intrude on the ground of the biological section, but in the case of the caterpillar it does not follow, necessarily, that its next life shall be that of another and better caterpillar, and yet if it could answer the question it would be sure to say that it

would be a better caterpillar, with perhaps a few more legs, for being accustomed to crawl all its life, it would scarcely be likely to imagine that a future phase would be flying in the sunshine, or the twilight, as the case might be, in an element of which it could not know the existence as a crawling grub, or resting pupa. This is a wonderful feature, and a few moments' thought will show how exceedingly difficult it is to conceive of a glorified human being in any different shape to ourselves, without mutilating or degrading the race. If we take the mental qualities and glorify them, we but make the figure a brainy idiot, with a palsied body, his appearance revolting to every sense of feeling and delicacy. If we take his skill in work and glorify this by extending the power to exercise that skill and confer on man a multiplicity of arms and legs, we merely form a Hindoo idol; if his sight, and increase that, or in any way tamper with him mentally or physically, we make nothing more than a revolting heathen god. If we try to alter his shape and mode of movement, adding a few more limbs, and make him creep, crawl or fly, we degrade him. Finding all these things ruled out we take his limitless thought and soul, and, knowing that thought can travel up to God, we give him wings and make an angel of him, as mentioned at first—and that is man as he is, with scarcely any alteration; because no one can suggest any beautifying and ennobling variation apart from the present figure of man, and yet there *is* a Power in Creation which is not figure or flesh. No man has seen this Power at any time, yet no one who has eyes or a thinking brain can do other than feel it everywhere. For instance, who can define 'space' in the universe? We get instrument after instrument, each more powerful than the last, and in each one we may begin another and more distant space where the previous instrument ended, and when we have discovered millions of miles of space in all directions, we are only at the beginning of it—if space can

have a beginning—and our finite brains almost burst at the effort to grasp and actually realise 'Infinity'—to understand how far it can extend and what it contains. We know the Spirit of God is there and is part of, and *in*, all Creation; but because no man has seen God, or can form the slightest idea of describing such a Spirit without being profane, he can only regard the conception in the abstract, as a 'Spirit,' or 'Influence'—yet is it only 'Influence' that makes and orders the universe, our knowledge of which is so infinitesimal that the combined learning of the whole Earth is not so much as one grain in comparison with the weight of our world. And because of this incapacity of the human mind to grasp the idea of higher beings, we are compelled to represent them as ourselves, slightly improved—as we think it.

"Still one more instance. Many will have been present at the death of some near relation or friend, and as the end draws near, the sight seems to enter futurity, and yet not one of these has been able to tell us a single word of what is beyond this life, or to what the soul is going. Yet the dying spirit *would* be glad to do so, *would* gladly do us all the good possible, but the lips are sealed, and we shall never know till the same psychical moment has arrived for each of us, and our own dissolution is near. All that we know is that whatever the 'home' is, or wherever it is situated, the mere sight of it fills the departing soul with an indescribable peace and a longing for possession so holy, so lovely, and so welcome, that mere mortal lips cannot speak of it, neither can the heart conceive of it—only the 'soul' understands and grudges every moment spent out of the 'rest,' which would be too disturbing for us to see, or to do aught but conjecture about before we are almost entering. For it would be too disturbing to our peace of mind to be compelled to live out our allotted time in this existence, knowing positively all the while that in each after-phase we

should be working at that for which we are most fitted, and all this without any of the storm, strife and turmoil of this life. Under these conditions, such future work would be perfect rest and peace to us, in comparison with the present, and would also be in such a transcendently higher degree as to be altogether inconceivable to us while in this life."

Rutherford ceased, and for a few minutes no one broke the silence, when Reeve asked,—“Then what do you infer from that in the present case?”

“That beings are here,” answered Rutherford; “real spirits, of a far higher grade than ourselves!”

“And that being so, we can only see them in our higher and more serious moments of thought?” suggested Godfrey.

“Yes,” replied Rutherford, “and because of our inferiority, in that peculiar psychical moment when our brain is at its zenith of concentration, as Ingle put it, we are elevated out of ourselves, and see those beings who are even now around us in a way we can neither describe nor recall. Kelman hit it off exactly by his simile of a ‘nebulous glory,’ an ‘indescribable something’—and that is all I can say.”

“From that point of view, the return to a lower psychical state or zone causes them to vanish by the inferiority of ourselves?” said Sorrel.

“I should say so, for they are beyond our ken, except in the rare moments when we, mentally, get nearer their level, and then a faint radiance of their glory becomes visible to us!”

“And you would take it, Rutherford,” questioned Rollsbrough, “that we, as we are normally, never could get more than a nebulous idea, or vision, of a higher life, even under favourable circumstances?”

“I do not see that it is possible, but of course I have never given the subject a thought before; this is only my own idea, deduced from the present experience.”

"It would, of course, naturally follow that at the very best, the glimpse we get might be nebulous, but never *could* be sufficiently distinct to enable us to form even a mental idea of what a spirit really is, seeing we are mortal?" pursued Rollsborough.

"I should say not, myself, judging from past experience and the ever-present impossibility of the human mind to explain the unknown."

"Possibly there may be something in the air, or in the spirit of this world, that renders us more susceptible to outside influences," put in Godfrey.

"The magnetic influence is very strong," said Dennis, as he stepped back from looking at the dial.

"It is possible," remarked Sorrel, "that the tremendous forces above are here diverted to make the world habitable."

"That opens out another difficulty—a difficulty to me, that is," said Godfrey. "I remember what you told me about the creation of worlds, Sorrel, and if the sun is so much younger than our own Earth—in its infancy, in fact—how can you account for a staid old world like this being in his stomach—a world which is quite the age of our own, judging from the landscape, trees and animals, all of which are practically of our period—and if this has been formed like Earth, what is it doing here?"

"That is, indeed, a mystery," said Sorrel; "strange to say, Rollsborough mentioned the very same thing to me a few days ago. He said it had been troubling him for a week or two, but I must confess the idea never occurred to me till he spoke of it. Since then we have had a good deal of talk on the subject between ourselves, but we are not certain of our ground yet."

"But have you no idea?" asked Godfrey. "It seems to me inexplicable. What do you think about it, Rollsborough?"

"I must confess myself at sea, Spenser," was the

reply. "I am like Sorrel; for want of proof, there is only conjecture, and conjecture is not safe."

"Could we get proof?"

"I fear not; it would mean staying here for years and years. You see, Spenser, on Earth each succeeding generation adds a little knowledge to that left by its predecessors, but only a little, and in our work and studies, we of the present time reap the benefit of the experience and discovery of ages,—of history which was mere 'happenings' at the time, though we of later date see all these fit in like segments of a wheel, and so the world wags! but to begin studying geological structure and scores of other sciences, from *nothing*, would take many a lifetime to get any kind of results. Is not that so, Sorrel?"

"I regret to say it is," Sorrel replied; "it would be just as hopeless for you, in your life-time, to hunt up, classify, and elucidate the life-history of every fly and grub and bacillus on this planet, from the very beginning."

"Just so, Sorrel, but tell us what you think; how it *may* have come here. Has the sun blown out and the internal nitrogen and what not developed this kernel more rapidly?"

"I don't like stating mere theories, Spenser," answered Sorrel, smiling, "but as you press me I will tell you what I imagine has been the case. The only thing I can conceive as being in any way possible is that the sun may have been formed by an extremely large planet attracting to its mass another large planet of less gravity, the impact forming this present sun. If a portion of one of the worlds, however, embedded itself in the centre by probably an earthquake at the moment of impact, there would be no immediate contact, and consequently no immediate fusion of this portion, but directly the contact came, perhaps less than a second later, there would be instant cohesion, and also instant expansion of the parts brought

into contact, which would allow the embedding portion to touch nothing ; it would strike to the centre and remain there, because it would then have reached equally opposing forces all round, and would commence to float and revolve in space enveloped by the atmosphere projected with it, and probably some instant conversion of some of the nitrates, or metallic portions of the immense globule, would create a crust and generate a deep layer of nitrogen, which would prevent further combustion downwards ; the ordinary breathable air below would remain there, with only a slight intermingling in the extreme upper strata, which are further held in place and away from the atmosphere here by that wonderful zone of thick clouds which so deceived us, they forming natural shields, or vanes. In any case, the cold centre would cause the outer crust to move away from it, and expand, and conduce to the cooling of the crust, as would also the nitrogen, being a non-supporter of combustion ; the world itself would become comparatively round and revolve as our Earth does, in its own atmosphere. Then the usual cycle of waste and repair would follow, and the air be made and kept sweet and fresh ; the animal kingdom would give out carbonic-acid gas and inhale oxygen, whilst the vegetable kingdom would inhale carbonic acid and exhale oxygen, thus each kingdom giving out as a waste product that which was necessary to the existence of the other, as on Earth, the general health and safety of both kingdoms being thus maintained, for each is indispensable to the other.

"This is my explanation, and though it may seem to you at first thought somewhat fanciful, I believe it is the one and only correct solution, and it is at least a scientific possibility that will bear argument."

After airing opinions, and discussing the pros and cons of every argument brought forward, they all retired, soon to be lost in slumber.

For several weeks longer they continued their work

of observation and the collecting of specimens, still feeling, and at times seeing, their nebulous friends, and in vain they tried to solve the problem "why had they not felt the presences before, when they had been working so long under similar conditions?"

As the weeks sped on, there began to be signs of failing health in the party; for the first time, first one and then another had to take a day's rest, lying in his cabin. Although no pain was felt, there was prostration. Then this increased, and the day off extended into two or three at a time, the usual remedies altogether failing to restore chemical and physical balance. Finally, this came to such a pass that only half the number were working, Dennis himself being too ill to leave his cabin. Connecting this strange occurrence with something unknown in the air or emanating from the ground, they decided that it would be wise to leave, and bringing the work in hand to a speedy close, they entered the ship, fastened the net securely, and started the return journey with Dennis and half a dozen others ill in their berths. They had made all aerial observations in coming, so there was nothing to retard their progress; Ross took first turn at the switchboard, and a few minutes later they were rapidly ascending to the terrible heat and pressures and turbulence of the sun's surface.

Even as they ascended, the conditions of the invalids improved, and by the time the windows needed further masking they were able to sit up for a while, from which it was evident they had left behind something inimical to them.

It had long been a subject of keen controversy whether the sun was solid, liquid or gaseous. It had been proved previously not to be solid, at least not entirely so, and, consequently, was generally accepted as being part gaseous and part either solid or liquid, excellent and almost indisputable scientific proof having been forthcoming from the exponents of both theories,

and as there was so much that was doubtful, the partisans of both beliefs could each make their case good in unanswerable argument. The adventures of the explorers, the continuous photographs in colour, and the spectrum photographs of the whole of the travels over the sun's surface and the actual descent, would, when reproduced on the scoposolograph machine, show living, moving pictures in colour of the whole voyage, thus elucidating completely many of the mysteries of the sun, the mighty ruler and light-giver of the Solar system.

CHAPTER XV

JOCI CAUSÂ

"Look, the world tempts our eye
And we would know it all."

(ARNOLD.)

As the *Regina* arose amongst the flames or protuberances of the planet they were leaving, they saw several violent eruptions, the dense masses of flames in the chromosphere being sent upwards to measured heights of half a million miles, and as they passed high into the corona, which dyed the interior of the ship with gorgeous colour notwithstanding the darkened windows, again they found the sun's mass to cut off the whole sight of the heavens, and later still to be but a vast horizon, then a great disc behind them, from which the blackened heavens extended into limitless space. One evening as they were sitting in the saloon for their customary chat, Ross said, casually,—“We must now set about finding our mutineers and take them home!” which remark caused considerable comment, for, strange to say, so absorbed had they all been in the wonders they encountered every day that the thought of the mutineers had scarcely crossed their minds, and Ross's simple remark came upon them as a surprise.

“I suppose you have got sufficiently correct bearings to locate the position of the world on which we left them?” asked Dalton.

“Yes,” responded Rollsborough, “it will be com-

paratively easy to find when we reach the orbit of Venus. We shall have to follow in the wake of the planet a little, that will be all."

"How shall we locate it?" inquired Rutherford.

"It was a "Nova," or new star, which had been drawn into the orbit of Venus and attracted to that planet."

"But it was between Venus and the sun as seen from Earth?" said Dalton.

"That was so," assented Rollsbrough; "but that was mere coincidence; it will be encircling Venus as a new satellite or forming a binary or double planet, and consequently be easy to find."

"But supposing it is not easy to find, what then?" said Rutherford, laughing.

"We got its position too carefully to make any mistake," replied Rollsbrough, also laughing. "Sorrel and several others of us worked the thing out independently, then compared notes and all were the same. I think we need have no fear."

"It would be decidedly awkward if it's gone, certainly!" chimed in Sorrel, "but that is scarcely likely. We tested its progress and gravity, and it was following exactly the planet Venus; and, if you remember, we followed it up for some time after we had sighted it, testing it in every way before we landed our rebels. I don't think there can be any doubt."

"None at all," rejoined Ross, "we are sure to find it when we see Venus."

Very soon the screens could be taken from the windows; that portion of the net covering the glass of the saloon and observatory had been made so that it could be drawn aside or tightly secured from the inside, and as the ship was some distance from the sun, the de-atomising and repelling forces projected outside were now thought to be sufficient to keep the ship secure, so these portions of the net were released and observation was now possible all over the universe,

as during the first part of their outward journey. Venus was soon sighted, and along with her a second world, forming a 'double.'

"There she is!" cried several, excitedly. "There's the planet we want, still alongside," and all rushed to the windows; but the greater experience of Rollsborough and Sorrel discovered something, the communication of which caused general consternation. They went to the windows and at the first glance, Rollsborough exclaimed, "that's not the planet, that's not a 'binary'! the world we want is not there; now what shall we do!"

"Not there!" repeated several, incredulously. "Why, we can see it!"

"That star is a long way past Venus! it is a 'double'! get your glasses and look," said Sorrel.

A rush was made to the observatory telescope and to the windows with hand-glasses, when Rollsborough was proved to be right. Examination showed that the new star, planet, or satellite of Venus had vanished, and what they were examining was a large and distant star, the position of which chanced to be close behind Venus 'in line of sight,' appearing to be in the same plane, just as when two boats sailing down a river, one in the middle and the other near the middle would, when viewed from a distant bridge in line with the way they were travelling, or 'end on,' appear as if sailing abreast, when in reality one might be a mile before the other, which a change of position would show. So it was with Venus; for some time the two stars seemed to be travelling together, when a slight alteration in the *Regina's* position showed Venus sailing rapidly to one side, whilst her supposed companion remained fixed, 'in line' with the bows of the vessel—a distant star—the angle of distance between the two worlds becoming wider and wider every moment. Venus was lacking her previous attendant, and the occupants of the *Regina* looked at each other in dismay.

"Our friends stand a fair chance of settling down permanently in their new quarters," said Godfrey, nonchalantly; "they are not at all likely to mutiny here again."

This set every one smiling, notwithstanding the seriousness of the situation, and Rowland exclaimed, "How shall we set about finding the runaway!"

No one could offer a satisfactory reply at the moment, so Godfrey continued, laughing, "We ought to have chalked it!" and turning to Dennis and his chums, "this beats the Jupiter affair altogether, triad!" at which the three laughed sheepishly, and on the others inquiring what was meant, Godfrey explained,— "Some years ago, Oakland, Ainley, and Eastern took me to Jupiter to find a particular grub that was to give us the material for the outer net, and the only address they had was 'one special grub, species unknown, Jupiter'; they had no more information, in fact they were not quite sure if it *was* Jupiter, as if we could go round asking all the planets if they'd got a grub to sell! I thought that showed a superb mind for detail, but this takes all the shine out of it, we've dumped the folk down and where are they? 'eight denizens of Earth, a star, the universe,' is a most lucid address! shall we go there, Denny?" and as Godfrey made some further similar remarks, Dennis cried, "Shut up, Godfrey! it's no laughing matter."

"It looks it, old man," answered Godfrey, as he sat tilted back on a chair with his toes just touching the floor. "We're all serious, and we 'appreciate your joke' as the wave message there says; I see it is still up. It is a joke worthy of any of us."

For reply, Dennis shied an air-cushion at him; he caught it and placing it at his back, continued, beaming,— "Thanks, dear boy! I'm glad to see you've got an eye to your old chum's comfort on this most solemn and serious occasion."

"Oh! stop it, Godfrey!" exclaimed Ross, "you'll kill us all! I can't laugh any more!"

"Ay, do be serious!" said Gilbert, dabbing the tears of laughter out of his eyes, his expression belying the words, "it's no laughing matter! we've put those fellows on a world which we've got to find, and how are we to do it amongst the lot outside?"

"Oh, easily enough!" replied Godfrey, airily, with a wave of his arm, "take the lot in rotation and knock at each one, and ask if eight of the wickedest and cleverest men of Earth are there, and if so, can they come out? it's simple enough!"

This renewed the laughter, and another cushion came flying across the room, this time from Gilbert, as Ross said,—

"Stop it, Godfrey, or we shall be ill! you look after your grubs and leave us to find the runaways."

"Oh, very well!" responded Godfrey, pretending to take offence. "What did Gilbert ask me for if he didn't want to know? there's been some mighty brain at work to provide us with this entertainment! was it yours, Denny? it's worthy of you, my boy, although by the quality of it, you've all three had a hand in it."

After a little more banter all round, the travellers discussed the situation more seriously. In the first place, the star was accompanying Venus, and at no great distance, comparatively. For millions of miles the *Regina* had gone out of her course so that the voyagers could test, retest, and confirm its position and movement, and so far as human means could ascertain, Venus had permanently attached to herself a satellite. As seen from Earth Venus would now be a morning star rising nearly four hours before the sun; for some weeks previously she had been moving to the left, crossing the constellation Leo and was, on that particular day close to β in Virgo; she had only just passed the period of her greatest brilliancy

as a morning star, and from Earth would appear like a crescent moon. Between Venus and β in Virgo this 'Nova,' or satellite, should now be seen, for the first plan, drawn before the mutineers were landed, had been most carefully compiled; the exact spot was now marked on the plan, but no star was there. Again were the calculations checked over, and again the result showed the position as being between Venus and β in Virgo, as now seen from Earth.

"We shall have to do something!" exclaimed Rollsborough. "We cannot return to Earth and leave our fellow creatures to their fate."

"Certainly not!" replied Dennis, "but what are we to do? We are still racing rapidly onward with the impetus obtained from the sun; we can slow up by converting the repulsive force into attractive, but we shall lose the speed and cannot get it again until we come to some world from whose gravity we can get a rebound. It is impossible for us to stand still in space; we can only do that when within the force of gravity of some other world."

"Can you alter direction?" asked Sorrel.

"Yes, to a certain extent, but every deviation in space means loss of speed, and we may now be going miles out of the right course every second," answered Gilbert, as they all stood talking together and asking all manner of questions.

"We are not lost," remarked Ross, "but we are practically in the same state when in any and every direction we go we may be wrong."

"If we turn, can you get force enough to travel, and if we stop, what would happen? annihilation?"

"We can turn, certainly," was the reply, "but as Oakland says, we shall lose speed we cannot regain, and if we lost all, we should have little or no de-atomising force and only a slight repelling force, and be thrown entirely on our engines, which now we use only in atmosphere; with a speed of a few hundred

miles an hour obtained in this way it would take us years to get anywhere, almost. We should have to become negative and allow ourselves to be drawn into the gravity of the nearest large star, which in this case is the sun, and we should fly back on to his surface like a comet."

"Then we should be lost?"

"No, for we should set the compensating current ready for whatever might draw us, and whenever sufficiently near for it to act, we should have full power again."

"Then there is no real danger to us, in any case?" questioned Reeve.

"No, not to us; the only difficulty is the loss of time. We shall lose speed by turning, but so long as we reserve enough power to return to the sun, or do not go outside his influence, we can always get more force, but it is obvious that we cannot waste all our time going back to get fresh starts, and it seems to me that that is what it amounts to if we cannot locate the position of the world we are in search of. The idea of hunting up one world in infinity, as Godfrey put it, is appalling!"

Ross looked at his companions for suggestions, but no one had any to make, so Dennis repeated, "What can we do? we are perhaps going further off every second, and it would be madness to rush here and there on the bare chance of any one of these millions of stars being the particular one we seek."

"Could we not compare the photographs we are taking now with those taken in coming? They would give us the progress and course of the star in question," suggested Godfrey. "Rollsborough, here, would work out where that star is now from the course of its orbit."

This suggestion was acted upon immediately, but after leaving the planet the ship had headed for the sun, and the shielded lenses were round the bows, so

that when they turned, the planet being then at the stern all view of it ended with their departure.

"Could you tell by the heavens now, compared with the relative position in coming, whether any new stars are there?" again suggested Godfrey; but Rollsbrough shook his head, replying, "It is not possible; the heavens are changing momentarily, and to calculate the positions of all the stars, so that we could locate every one at any given moment, would take too long for us to consider the attempt even. Besides, we have seen thousands of new stars not visible to Earth, and these would have to be explained before we could hope even to guess at the right one, and as Ainley and Oakland say, it would be madness to guess."

However, Rollsbrough, Sorrel, and several others did make many calculations as to the relative positions their ship bore on the outward journey to their present position, but the results were far from encouraging, as were several special photographs, though the latter were of great service to science, for in addition to the many new stars seen with the naked eye, the searching lenses revealed many distant ones of varying magnitude, invisible from Earth by reason of their distance, or of other stars intervening.

It was most difficult to arrive at location in space, for what on Earth appeared as groups and constellations by reason of being viewed in 'line of sight' ceased to be such when amongst them. Finally, Rollsbrough said to Dennis, "How would it be to 'wave' to Earth, and inquire if they observed the phenomenon of the new satellite of Venus? If they have had it under observation, and if they know where it has gone?"

At once this wise suggestion was carried into effect, and a few hours later came the answer,—“For a short time preceding the date given, Venus was scarcely visible here, being very low down in Sagittarius, and was an evening star. She set twenty minutes after

the sun, gradually extending the time to two hours as she slowly passed into Capricornus. She was at the opposite side of the sun from Earth, and was most brilliantly illumined ; though small, her disc was so exceedingly and unusually bright as to excite general and keen examination, especially as she was moving a little to the south of Saturn. They being so near together, the effect was very marked, and, entering the small space between the two planets, there appeared a new object which we took to be a moon, either of Venus or Saturn. For ten days after that, the weather prevented further observation, the skies being over-shadowed with clouds. On the eleventh day the light was bad, though better ; Saturn was too near the sun for successful observation, and the extra moon was not noticed. Then he passed behind the sun (in conjunction) and became invisible for five weeks. Venus was obliterated by thick clouds and for several days no observation was possible, then the sky cleared, and Venus was passed by Luna, but no new object was visible. Can you explain the new object ? ”

There the message ended and left them in the same difficulty as before. Though from Earth, Saturn and Venus had the appearance of being close together, when viewed from the ship in space their great distance apart could be realised, but could Saturn, at his enormous distance, have wrested a planet from Venus, who was comparatively close to the sun ? It did not seem possible. Or had the sun drawn the new planet to his surface, it being between him and Venus ? If so, then search could not, of course, be successful, no matter how protracted, for the world would but have swollen a small portion of the sun-sea, scarcely making any difference.

“ Do you think it was merely drawn into the orbit of Venus for the time being, and then flung out, to go travelling onward ? ” asked Dalton.

“ It is impossible to say,” responded Rollsborough.

"In the time since we left many things may have happened, meteor-swarms and dozens of other things may have drawn it away."

"Are the fellows worth troubling about?" debated Field. "Considering their offence, are we justified in wasting time looking for them?"

"Perhaps not," said Dennis, "but we must get them if at all possible."

"Then if you have the exact position of the heavens when they were dumped on this moon, could you not calculate its present position from its previous movement?"

"That we have done," replied Rollsborough, "and taking into account the progress, the attraction of Venus, that of the sun, its own gravity, and the influence and positions of the other members of the solar family, the previous movement still brings it an attendant on Venus, and every calculation we make gives that result, yet you see it is not there! I have tried everything I can think of, so have Sorrel and several others, but all our results come to Venus, and nowhere else—so we are nonplussed."

"You know the attractive power of the world, Oakland?" said Coombes, "Could you not draw it here?"

Dennis shook his head without answering.

"Would not that be possible?" Coombes persisted.

"No, quite impossible! to attempt to do that would upset the balance of the whole solar system and bring inconceivable disaster. We should also attract millions of planetoids, meteor-swarms, and everything of less power to resist, and be crowded with them on all sides for thousands of miles."

"Then what *can* we do, Oakland?" asked Rowland. "It would take hundreds of years to go to all the planets we see from here, and every mile we go brings new ones into view."

"I am done, Rowland!" replied Dennis, despair-

ingly, "so are we all. You tell us something, Rollsborough!"

"I am quite in the dark like yourselves, Oakland, and anything I can suggest must, of necessity, be wild and perhaps reckless, but I recognise that we ought not to speed along home and perhaps be leaving the planet we want further afield every second. I have an idea that we are in some way the cause of the disappearance, and I would like to work out the world's present position, taking it to have flown off at a tangent after we left."

After what seemed an interminable time, though in reality but a few minutes, Rollsborough continued,—
"This calculation I have made would show the star to have taken a course directly to a few degrees to the left of the way we are travelling, and it points to one of these two stars which we see here on the last photograph, but invisible through our glasses till we get nearer. I propose that we alter our course slightly and proceed to one of these uncharted stars lying somewhat to our left, and trust to chance to find the right one. This will entail the alteration of but a few degrees, and would not, perhaps, lessen the ship's speed appreciably; would it, Oakland?"

"That would not be sufficient to affect it in any way," answered Dennis; and a moment later they were heading for a distant star, and after some days had passed, drew sufficiently near to form some idea of its orbit. It was travelling rapidly from them, in the same direction, which accounted for the long time taken to approach its mass, they, fortunately, travelling at a much greater speed.

On resting in its atmosphere, they obtained samples, to find it contained constituents unknown on Earth, and every sample analysed by Earth-methods exploded, and so seriously as to destroy much of the glass apparatus in the laboratory. Although it was evident human beings could not exist there, in response to

the general desire to explore, the good ship sank through the atmosphere and hovered about one hundred feet over the ground, the occupants searching for signs of inhabitants.

As far as their eyes could reach, to the distant horizon, the surface of the globe was covered with water, and numerous islands, on which were some fine animals not unlike the now almost extinct horses of Earth, but with the spreading, palmated antlers of the elk, or moose. After the first momentary start of surprise, the animals took no notice of the great ship overhead, but continued their playing in total unconcern. "If animals like these can breathe the atmosphere, we should be able to do so," said Farrant.

"I fear not," said Gilbert, "the composition is such as we have no means of ascertaining without considerable research, but we can try it on the birds."

All watched as some of the air was collected and one of the sun-birds was about to be put in, when it was deemed to be too precious to experiment with, so Reeve called up his dog and tried to put his head in the receiver, but the dog only thought it a joke and barked furiously; however, when Reeve dropped a biscuit in the jar and suddenly released the cap, Dick fetched out his biscuit and ran off with it to one of the softest rugs, where he could get a good grip and make a litter of crumbs. Though much of the air in the receiver must have mixed with that in the ship, there could not have been anything harmful in it, or Dick would not have tried it, for he was very careful and left experimenting to other dogs, and then he would fight for the prize, or, more generally, cause others to do so, snatching it away while they were busy, for he was a terrier and a born diplomatist. The air doing Dick no harm, they concluded it would be breathable by them, though to guard against danger, the large door was thrown open and quickly closed, but they only felt a slight draught, the air itself being

undistinguishable from that in the vessel. The doors were then flung wide open and the occupants stepped on the outer deck.

"I should like a run on one of those things," said Ingle. "Shall we get down? We can't do wrong, because they are on that small island."

The idea was urged by several others and when the vessel came to within eight or ten feet of the ground, Coombes, Ingle, Kelman, Reeve and Gardner descended. The animals allowed themselves to be caught, and vaulting on their backs by the aid of their antlers, the riders got excellent seats. Whether they were accustomed to being driven, or the presence of a burden startled them, there was little time to discover, for no sooner were the riders seated than the horses flourished their heels and then set off like the wind, with heads lowered and horns nearly vertical. Shouts of delight came from the daring riders as they raced onward, surprised and thankful that the animals did not elevate their heads and thus bring the horns horizontal, in which case they would have stood an excellent chance of being swept off. On they went at a break-neck pace, waving their arms and shouting to their companions above who were watching, with not a little envy, perhaps excusable. The speed increased as the horses settled down into long, swinging strides, and now the end of the island was in sight; about half a mile of water separated it from the next island, but the horses never slackened pace, and instead of wheeling round and returning, or following the contour of the island, they rushed madly forward, dashing straight into the water at full speed, and that which followed made every one breathless. They did not sink, or at any rate not more than if they had been on sand, and the flying hoofs cut through the ripples of water, flinging behind them the crests and splashes of the waves as if they had been sand.

The surprise of it so overcame Kelman that he let

go the antlers, and at the sudden release the creature lifted up his head, gave it a turn, and the next instant Kelman was swept off his back, narrowly escaping being trampled to death by the scores of riderless horses following, whose flying hoofs, to the horrified gaze of those in the ship, seemed to be pounding him to a jelly. Instead of sinking, however, he fell flat with a splash, the water rising all around like sand, but in tiny globules as of quicksilver, and there he lay floating on the water, half his body immersed, and the waves lapping gently over him, wetting him to the skin, he being too surprised to do anything but lie still and stare around him. Then he essayed to rise, but instead of his feet sinking, they remained almost where they were, the frustrated action rolling him over on his face. From this position he got on his hands and knees, and finally stood up with only his feet slightly sunk, as in sand on the sea-shore, the water dripping from his nose, chin, elbows and his clothing.

This water was almost solid, as substantial as the soft sand on a terrestrial sea-shore, and utterly oblivious to all else in his astonishment, he stood splashing and slapping the water with his feet and trying to sink. Then he tasted it, swallowed a mouthful, then another, and then went down again on his knees digging and wobbling his hands in an endeavour to bury his arms in the water flowing past, but he might almost have tried to push them through earth, for he got no further than the wrists despite his exertions.

Meanwhile the watchers on board the *Regina*, on first seeing that the horses meant taking to the water, considered it a fine joke, but when the sight of its wonderful buoyancy followed, they were so surprised that the herd had passed out of sight into a wood on the next island almost before they had realised the situation. Quickly following, the *Regina* hovered over Kelman, who, apparently forgetting all that had passed in the moment of surprised discovery, glanced upward

and shouted,—“Look here, you fellows, this water is solid as sand; I’ve just had a drink and it’s beautiful. Come down, all of you!”

“Where have the others gone?” shouted several from the outer deck.

“The others? oh, ay! the others, to be sure!” he repeated, looking round in dismay, without the ghost of an idea where they were, and astonished to find himself alone. “The others? ay! yes, the others? ay, yes!” and again he looked down and round, and up and down again, as if he expected them to rise up out of the water, or fall from the sky; “the others! they’re not here!”

The remarkable wisdom displayed in this statement set every one laughing, and then Kelman saw the situation himself, and laughed boisterously, standing all the time in the water, and then said—no longer abstractedly,—“I was so astonished and absorbed in this discovery that really for the moment I had quite forgotten everything else and how I came here. Help me up, you fellows, and don’t stand grinning there. How can we hunt for them if you grin the time away like that!” and amidst general laughter he was hauled up, dripping as he was, when the ship rose so that they could get a more extended horizon, but nowhere could the runaways be seen. This was serious, so Godfrey, Dalton, Field and Rutherford were put down on the next island, near the wood, armed in case of danger, and with instructions not to leave that island. The *Regina* rose to scour the country and the four searchers entered the wood. All this, however, had taken some time, and it was fully fifteen minutes before the *Regina* could start her own independent search.

“It will be easy to search this,” said Godfrey, who led the party, “for the antlers of the horses would make a track, or show one. There it is!” as they came to a broad open way like an avenue where the

grass was trampled down. As they entered this avenue Godfrey cautioned,—“Rutherford and I will go first; Dalton and Field, do you keep a few yards in the rear and look well behind you and at each side, to prevent any attack that way; we don't know what dangers may be lurking for us.”

In this order they progressed for about half a mile, when a figure dropped in front of them from one of the trees, and Ingle greeted them with,—“So you've come, have you?” which self-evident fact was met by the equally lucid,—“Oh, it's you, is it?” and all five stood together while Ingle recounted what had passed,—

“You saw us cross that water? Yes? The surprise of it nearly unseated us all. Kelman did fall; is he safe? Yes? Well, he had the best of it. Most of us were well seated with an arm on the shovel or web-shaped part of the antlers as they stuck up. When we entered the wood the horses held their noses up, which made the antlers lie close on their backs, so we were wedged as if in arm-chairs, and we pressed our elbows on the horns to keep them down and steady, so getting a good leverage. The horses didn't like being held that way and began to wriggle, and the brute I was on tried several times to spin his head and slice me off, but I held him tight and then, like a streak of lightning, he darted under the trees here, with his nose high in the air, and antlers tight on his back. He'd have swept me off with some bough and killed me in another second had I not instantly guessed his little game, for we were going at least a mile a minute, so the instant he swerved, I jumped off and up, and caught that bough, and he passed under it. See, his tracks are there. What has become of the others? I'm sure I don't know. The fact is, I believe I fainted for a minute or two, for I shot at the bough with an awful smack, and fell

across two ; they kept me up, or I should have been killed, for my brute was one of the first."

"Then you are hurt!" exclaimed Godfrey, in concern.

"Yes, a little, old man!" he answered, and snatched at Godfrey's arm, which he grasped below the greeting-band, but under the circumstances this was allowed to pass unnoticed, although it was an indictable offence; recovering himself, he continued,—“What have I done! You must excuse me, I was a little dizzy for the moment; I have broken two or three ribs, and I think one has scratched my lung, for I'm bleeding, see”; and he spat out a mouthful of blood.

"And you jumped off the tree and stood talking to us with broken ribs! lie down this instant!" ordered Godfrey, in dismay.

"How else could I get down? I had no wings! I was afraid to get off till some one came, but the jerk has given the lung a scrape; I shall be glad to lie down, for the trees are spinning, and you are all upside——" and notwithstanding his bravery he had fainted.

They strapped him up tightly till his breathing became easier, and then restored him.

"How do you feel now, old fellow?" inquired Rutherford.

"As fit as a fiddle," was the answer; "but it did hurt to lie across the boughs! I'd buttoned my things up as tight as I could, but it wasn't like this."

"Then not another word!" said Godfrey. "Dalton and Field will stay by you for company, but if you talk, they'll gag you straight away. Rutherford and I will search through the wood, although what we shall do if we meet the herd, I don't know! If danger comes, telepath to us, and we'll come back at once."

"Right!" replied Dalton. "We'll telepath to the

ship, any way, and rig up a stretcher. Come back as soon as you can."

"I'm right enough!" expostulated Ingle, "I don't want a stretcher."

"If he says another word, you two gag him!" ejaculated Godfrey, bluntly, and he and Rutherford left, whilst Dalton and Field placed Ingle in the undergrowth off the main avenue, lest the herd should return, and prepared to make a stretcher.

"We can't telepath," said Ingle, faintly. "I tried all the time I was in the tree. Now I'll not say any more."

"You'd better not, with a chest like that," warned Field, "we'll try." The two remained in close concentration of thought for a few minutes, but it was as though an extinguisher was on their mind, and no reply came.

"That's strange!" exclaimed Dalton. "I never knew a failure before!"

"Marvellous!" agreed Field. "We've 'waved' from the sun to Earth, and the others have 'waved' from Jupiter to Earth, and we can telepath all over our world and yet here we can't send a message half a mile."

"It may be that we have no power outside the solar system," suggested Dalton.

"I never thought of that," said Field. "We must look into it."

While they were discussing this discovery, their two companions passed through the small forest for about two miles, when they came to water, which they found as buoyant as that first seen. Finding no other way out of the forest, except the avenue, they retraced their steps, and each taking a corner of the stretcher which had been improvised by taking two long boughs, plaiting the intervening branches together and filling it with leaves, they brought their burden to the edge of the forest where they had first alighted,

and rested there to wait for the ship, which was out of sight.

After lowering them, she had risen high so that the occupants could search the whole country with their glasses, but nowhere could the runaways be seen; though there were numbers of other animals, the horses and their riders had disappeared. Whilst they were looking, however, the herd emerged from a great forest some distance away, heading for their original pastures, the men still on their backs, and the question arose as to how the riders could be rescued without being damaged, or the horses being injured.

"Couldn't you make them light, and float them up?" asked Sorrel.

"There are difficulties," said Ross, smiling. "In that case, the horses would come too, and our friends might be injured in the scrimmage of getting off. If we lightened them so as not to affect the horses, as the men's legs are below the horses' backs, it would be awkward if half their bodies came up and the other half stayed down. We don't know what would happen, for we've never tried it."

"Make them light, and throw a rope down," said Rollsborough.

"And, they being light, the rope would knock the life out of them," objected Dennis.

"I hadn't thought of that," said Rollsborough, laughing; "and, of course if the rope was equally light, it would be no good."

"And if the horses are drawn up, they'd get such a fright as might kill them, I suppose," said Rowland.

"But could we not telepath to the fellows to stand on the horses' backs and then waft them up?"

"It will be risky," returned Gilbert, "for if they slip, the horses coming behind will rip them up, but we'll try it," and they all telepathed.

During this time the horses were still madly racing

and reckless, the three riders keeping pretty much their original positions.

"Where's Ingle?" asked Reeve.

"I'm afraid he's done for," replied Coombes. "His horse flung him crash against a tree, and he fell across it like a broken reed,—if he dropped he would be trampled to death."

"And Kelman?"

"He fell in the water, and he'll be done for," said Gardner, "for there were scores behind him, or he's drowned."

"Why don't those fellows up there do something! they're pottering around, taking observations and photographing us, I'll be bound, instead of doing something to help!" said Reeve, grumpily.

"I wish they would. These blessed things are going on for ever," exclaimed Gardner. "I'm sat on a thumping ridge of bone and its scraping terribly!"

"Sit tight!" cried Reeve, excitedly, "they're turning!" as the riderless horses in front wheeled round, their own and all in the rear taking the same movement as if in one frame.

"Great Bona!" groaned Gardner, "that jerk took off another inch of bark, I'm certain! Look up at those asses in the ship, they're following us about, shouting for us to hurry up or something like it, enjoying the fun instead of helping us."

"And when we get back, they'll show us our photographs, how nice we look from their point of view, and expect us to appreciate it," exclaimed Reeve.

"They're immediately overhead and following us and they'll give us elaborate calculations of our speed and distance travelled," said Coombes, jerkily. "I'm sure they're measuring every inch of ground."

"Ay!" agreed Gardner, "and then they'll expect us to enthuse over it—steady there, mind my eye—" as an antler came very near his head. "I've been telepathing like mad, and they take no notice!"

"So have I," responded Reeve, disgustedly. "But who can concentrate on these blessed things! It takes us all our time to dodge their horns to prevent being impaled. They could get at us, though, and they won't!"

"Not likely!" ejaculated Coombes, "they're enjoying it too much to think of our side of it;" and then suddenly,—*"Hallo, what's up now!"* as all the horses left the ground and floated about a foot above it. The riders looked up, and from the outer deck Ross shouted, *"Can you hear me?"*

"Yes," was the reply.

"We've been shouting to you, but the noise the horses made drowned our voices. Stand up on their backs, you cannot fall lower than you are. Take hold of the upright horns and mind you don't get impaled on those following behind."

Too intent to speak, they obeyed, when the vessel swooped down and as the herd divided in fright, many hands snatched up the figures with a jerk, and in less time than it takes to tell, all three were safe aboard again, and the horses were restored to their previous weight by the simple withdrawal of all attraction. The ship then went to pick up Godfrey and his party, and Ingle was put under treatment, suffering very little inconvenience. When in the safety of the ship, the three riders forgot their momentary annoyance, though they felt very contrite about Ingle's accident, but he protested he only was to blame, having first suggested the frolic, and that the enjoyment was worth what followed, especially considering the discovery of the strange water which, in all probability, would not have been made but for that. They took in a quantity of this water, which was sweet and pure, and although no thicker than Earth-water was wonderfully buoyant, and of the same specific gravity as the earth of the planet (taken from the average of twenty samples of different kinds of earth, rock, stone, etc. etc.).

The adventure whetted their appetites for further exploration, and on proceeding they saw in many parts of the country colonies of beings, and selecting one of the largest colonies, they found it inhabited by strange people, who were highly intelligent and who, though not greatly unlike human beings, had a skin covered with exceedingly fine and silky hair which gleamed in the light. They wore no clothing nor did they eat, as do the denizens of the solar system, but drew in their nourishment from the air itself, which not only entered the lungs and gave life and heat to the body as with us, but provided them with a sufficiency of the chemical elements to build up the frame, and replace the loss caused by physical and mental exertion. They were apparently sexless, and seemed all to live together in the closest bonds of love and friendship, thinking and doing no wrong, and treating their strange visitors with courtesy, respect and perfect frankness. They examined the ship with interest, and were pleased to hear what the vessel had done, though knowing nothing of Earth, which was too far away to be seen by their instruments, except as a very minute star. They spoke of the sun—which was seen from here with the naked eye as but a star—as from actual knowledge, explaining its internal and external structure accurately, and when their description was confirmed, they were both pleased and grateful for the proof.

They were entirely without guile, childishly frank and open, and of a scale of intelligence far surpassing human limits. Although the Earthians could not telepath even to each other in this world—or indeed anywhere outside the solar system—they were so much under the influence of these people that they could both understand and be understood by thought alone. Dennis and his close friends had been to other planets in the solar system, and only now did they realise what had previously escaped their notice, plain though it

was. Although the people and climates, and modes of living, had differed on various planets, yet there had been a certain similarity in form and thought. They had been 'humans'—differing more or less, but in action, power, life, manner of keeping alive by eating cooked or uncooked food, and telepathy alike, and so far as the terrestrials were concerned they had been able to communicate with Earth by ether wave so long as they had remained in the solar system, thus proving that all the members of that system were really of one family, and that the welfare of one world was identical with that of all the others, but in this planet—the first they had visited outside the system—all communication with the units of that system was cut off.

These new friends confirmed this and pointed out that the influence of the various worlds and their inhabitants could always be felt most in their own particular family; it did not necessarily follow that the characteristics of one system were repeated *en bloc* in all others throughout the universe. They also explained that if it were possible to visit all the systems in the universe, it would be found in each case that all conditions were changed; gravity was not the same, chemicals were not governed by the same laws, substances and cohesion of atoms and particles were under laws suited to them in their special local relation to other things, and though throughout the whole of creation a certain general law might and did prevail, the countless millions of units which formed the one grand whole were controlled and built up by that which would, in each individual case, be best suited to enable that one unit to fulfil its allotted task; that nothing in creation was wasted, and that each world, each unit, was as necessary to the proper adjustment of the whole, and was as important to the completion of the great work of creation, as was one small wheel to the correct movement of a clock.

What that scheme is no mind other than that of the Creator can grasp ; but every single star and grain of meteoric dust in space is needed to work it out. And all the movements in space, where orbits are within orbits and worlds innumerable rush on with various speeds, clashing when necessary, missing when necessary, all in regular motion like a well-balanced clock ; nothing wanting, not a speck of dust superfluous, show the work of God proceeding, unerringly, unceasingly ; in limitless space above, around, below, where there is neither height, nor depth, nor length, nor breadth that does not end as remote in eternity as the beginning, and at the mere thought the mind experiences a crushing feeling of oppression at such a declaration by the heavens of the Glory of God.

Never before had the travellers got such a close insight into the wondrous Scheme of Creation, and never before had they met creatures higher than found in any part of the solar system, or any unlike themselves. Had any one told them that beings could be hairy and unclothed and not be degraded, they would have been held in derision, as suggesting an impossibility ; yet here were people before their very eyes, unlike any seen elsewhere, not greatly different in form, manner or speech, but with soft, hairy skins, glossy as silk, every motion full of grace and beauty, unclothed and sexless yet not knowing it, their thoughts and actions guileless as those of children ; god-like in figure and movement, and withal a god-like mind, and a frank love and trustfulness that were in themselves a protecting hedge from outer evil, had there been any.

Appreciating the great wisdom and kindness of these people it seemed but natural to the explorers to tell them of the difficulty they were in with relation to the recovery of their lost companions, and after hearing the whole story in detail, and seeing the map of the heavens at the time, the natives told them that

the planet selected had been for ages a member of the solar family, but it was not likely to be often seen from Earth, as it was one of the 'variable stars.' Some terrestrial months previously, however, they had seen it pass rapidly out of the solar system, becoming larger and larger as it drew into nearer view, and it was even now speeding forward some hundred million miles distant. On referring to the photograph, it was found to be the second of the two stars which Rollsborough had cleverly worked out; they had naturally taken that needing the least alteration in steering, but had they selected the second, they would by this time have had their companions on board. On their saying they must go to recover them, one of the natives asked if they had power to make their attraction felt by telepathy, seeing the world was really one of the solar family, but it was explained that so far they had never been able to telepath anywhere except to Earth, though the people on the other planets in the system communicated with each other freely, though none to Earth.

Dennis, Ross and Gilbert, feeling proud of the enormous power they had under control, boastfully said—as a sort of set-off to the apparent stigma cast on Earth by its seeming to be the pariah of the solar system, which they took as personal—that it would be easy for the ship to arrest the planet in its present course, and draw it to them, if necessary, and letting their pride get the better of their judgment, they tried to persuade the passengers to agree to the planet's course being changed towards them.

Rollsborough, Sorrel, and some others strongly objected, saying that such a proceeding would be most unfair both to the people on the planet now giving them hospitality, and also to those on the world they proposed attracting, and insinuating that as many dangers had been so wonderfully overcome, they were allowing their heads to be turned by their successes,

and grossly presuming on their powers over nature. The rival parties became considerably heated, one side enumerating some of the evils that might be expected to ensue, the other treating the matter as a joke, making light of the fears of the older section, until at last a vote was proposed and taken, and wisdom lost, as usual.

For several hours they talked over the project, most of them saying, recklessly, that it would be a fine experience to draw the world to them and let the mutineers almost step off one to the other, arguing that as the worlds were practically equal in gravitating power, and the atmospheres, though different in chemical composition, equally capable of supporting Earth-life, by careful manipulation the two planets could be brought together safely and their atmospheres would not explode but would commingle; the hare-brained section were certain that with the power at their disposal they could overcome all the probable dangers, and bring the two worlds actually into contact at their equators, like two balls, and the rebels could and *should* jump from one sphere to the other, no matter what happened, and then the worlds should be separated, neither the worse. Rollsborough and his party said nothing, and without more than these passing thoughts to the possible consequences, that same evening—so precipitate were they—the *Regina's* attractive force was directed towards the runaway world.

"It is speeding away from us rapidly," said Dennis, "but before we breakfast it will have begun to pull up until its present force is broken, when it will veer round and come to us!" and most of them cheered; but Rollsborough, taking off his glasses and putting them in their case, said, severely,—“You are light-headed, gentlemen, and intoxicated with the previous success; but what will the end be?”

No one spoke, and Sorrel quietly got up to go, but

as he was passing out of the saloon he turned and said,—

“The price will be a heavy one; very heavy indeed. It is a mad project. Good-night!” and he went to his cabin, followed by Rollsborough, who silently passed on to his at the other side.

For a few minutes this open disapproval put a damper on the jollity, which was not lightened when several others rose and merely saying “Good-night” left for their cabins, but this soon passed, and Allan Gardner asked Ross,—“Are you going to tell the people here?”

“That is as we may all decide,” answered Ross, already almost regretting the scheme; “perhaps we had better say nothing, but let it come as a surprise.”

“Yes, that will be best,” agreed all; and so it came to pass that, reckless of consequences, eleven men who were regarded as the coolest, most matter-of-fact, most noted and reliable scientists Earth could produce—for the sake of doing something bizarre in order to impress a circle of new-found friends—so far forgot themselves as to wrench a planet from its course and find it another.

CHAPTER XVI

"A RACE OF LAUGHING PHILOSOPHERS"

"At length corruption, like a general flood,
So long by watchful ministers withstood,
Shall deluge all ; and avarice creeping on,
Spread like a low-born mist and blot the sun."

(POPE.)

THE approach and descent of the *Regina* with the intent of warehousing her cargo of detrimental on the new-found world caused considerable commotion, and in the district they approached, all the people within sight came running up, signalling to others, so that a crowd had collected within the space of a few minutes, quite in terrestrial style. All gazed upward in astonishment to see the great vessel slowly settling, which was augmented when the side opened, the shimmering net was drawn back, and several figures stepped on the outer deck ; the watchers gave a shout of dismay as one of the figures walked off the ship as if on a level crossing, and this dismay turned to consternation as they saw that the man did not fall crashing to the ground as they expected, but remained floating as he was. Then another followed and still another till there were eight, all clustered together, suspended in space, when they slowly sank to the ground, men just like themselves, though differently dressed. Looking up to the airship they saw the net drawn together, heard the metal doors clink and snap, and then without

further sound or sign the vessel rose higher and higher till lost to sight. What did it mean? and they stood staring at the eight strange people who had dropped in their midst from the clouds. Edgar Holt, essaying the first question, asked the people around where they were and the name of the planet, but neither the natives nor visitors could understand the languages used. Like wild-fire the news spread that eight beings from another world had been deposited on their sphere, and people came flocking up from all directions till the ground for some distance around was packed and movement was well-nigh impossible. Word was passed from one to another, telling the story of the strange descent over and over again, as could be perceived by their gesticulations, and some looked upon Holt and his companions with awe and reverence, almost as gods, whilst those who had not witnessed their arrival considered the accounts exaggerated, owing to excitement, especially as there was no trace of vessel, or sign of one, to corroborate, and their visitors appeared much the same weight as their own average, therefore it was difficult to believe they had floated.

The eight friends could speak many different languages amongst them, and these were all tried in turn, the people also speaking several, as the visitors could tell by the change of accent and the different vocalisation, but all without being understood. Two men, who seemed to be governors or officers, next took the visitors in hand and conveyed them to an enclosure, over which was placed an awning. Here again the same difficulty arose with regard to speech, and matters at once came to an *impasse* when Aubrey Bolford thought of telepathy. All difficulties were now ended, for the people were more expert in the science than those of Earth, and both parties were surprised that the idea had not occurred to them before,

though as its use was not necessary or usual in personal conversation, the temporary omission to try it was not really to be wondered at.

Edgar Holt, as a middle-aged man, had carried out the practice and promise of his youth, for he made a point of ignoring and belittling anything and everything in which he could not take the chief part. This had been his undoing on the ship, and now he took everything in his own hands and acted as the spokesman and appointed leader of the expedition. It never occurred to him that any of his companions-in-disgrace might object to his rule, nor would it have made much difference if they had done so ; he would have ruled, just the same, or left them to go their way while he went his. His friends, however, were well content to leave the leadership to him, for though, like most men of his class, he was unscrupulous to a degree, he was gifted with ready wit and infinite resource which had hitherto stood him in good stead, for he had always been able to shift his difficulties to some one else and himself appear not only guiltless but very much injured ; and in this last, and first, case of detection, had it not been for those bothering secret instruments giving them away, and the whole thing being dealt with before he had had time to think, he felt quite confident that whatever might have happened to the others *he* would still have been in the ship, respected and honoured, not only as a scientist, but as a gentleman. None of his companions, therefore, resented the aspect their leader put on the affair in not stating the raw and garish truth, but presenting that cultured compromise which some call the 'truth, put delicately,' and others a 'white lie,' as their fancy dictates ; the result, however, is the same. So in his most captivating way, as he could not tell a lie for anything, Holt told the officials the 'truth,' according to his lights—and no one living could disprove it, or call him an untruthful man,—“We, with

many others, were going on a voyage of exploration to the sun in a splendidly equipped ship, but as we had to come near this world, we expressed a strong desire to visit it and make friends with the inhabitants, so we eight were put down here to explore whilst our friends proceeded on their journey, and in due course our ship will call and take us back again. We thought that by this means we could render better service to science by visiting here whilst our friends explored the sun, and thus both objects could be dealt with together and considerable time saved. We therefore request that you will accord to us that hospitality and assistance which you yourselves would receive from our own people in similar circumstances."

This pretty, flattering little speech could have but one result, and smiles and greetings of the warmest character followed.

Then came many questions on both sides, and as the natives did not know Earth by that name, a drawing was made of the solar system, and they were asked to name the various worlds. The sun they named 'Claytor,' a word to them signifying 'light and heat'; Mercury they called 'Celtas' or 'one,' being nearest the sun; their own planet was 'Ramsar,' and 'Surans'—the former meaning 'two,' or the second from the sun, the latter signifying 'much water,' the world having more water than land; Venus was 'Lovis'—or 'three,' and Earth 'Rathela' or 'four.' Stars were called 'Claros,' which means 'fixed,' in contrast with 'Icelaros,' signifying 'unfixed,' or 'travelling' stars, which Earthians call 'planets.'

"What is your orbit in the system?" asked Fred Congreve.

"It is within that of Venus, journeying round the sun."

"How is it then that we have never seen it from

Earth?" questioned Aubrey Bolford, who was an astronomer.

"You see from this photograph that it is surrounded by a belt of semi-opaque ether, which would render it wholly, or partially invisible to you except on the rare occasions when the web lifted, and even then meteor-swarms or planetoids might intervene. We shall therefore be a 'variable' star to you, just as your Earth and all the other members of the solar family are not always visible to us, for which reason we call them, as a whole, the 'Selporas,' a word signifying 'variables,' as you name them."

"You may perhaps recall," remarked Bolford, turning to Holt, "that in the year 2000 A.D. many astronomers at the chief observatories in the world noticed a large object near Venus which was taken to be a 'Nova,' or else a new moon, but after being under observation for a few days, it disappeared and has not been seen since; it never has been visible in England. Perhaps this is the one referred to."

"I think it is more than probable," assented Holt, then turning to one of the bystanders he asked if astronomy was one of their special studies, to find that not only astronomy but all other arts and sciences were studied most assiduously. Holt then informed them who he and his companions were and explained their professions. Such an event as the almost miraculous dropping in their midst of eight of the most noted scientists of another world could not be other than a great national event. All over the world the news was 'waved,' for the people were far more advanced in every way than those of Earth, and the 'wave' apparatus was so universal that almost every family had one fixed in their dwelling, and even young children were conversant with its use; it was a common sight even for them suddenly to stand for a moment in silent concentration, and then smile

happily, as some affectionate message from parents or other loved ones was received and joyfully answered. Considering the universal use of telepathy, the 'wave' apparatus was almost unnecessary, except that it imprinted the messages which mere transmission of thought necessarily made evanescent.

It followed then that all the inhabited world was soon possessed of the fullest particulars of the *Regina's* visit, and those who were able to do so came to the spot on which the travellers had alighted, the octet being the cynosure of all eyes. Certain people were deputed to attend to their personal comfort and elucidate everything not clear to them, the strangers on their part explaining the methods, science and learning of their own planet.

The people lived in community, each colony so excellently organised that no one had ever known a single instance of any wrong being done. However, this state of things was soon to be altered, for Earthians are not yet fitted to associate with those of better life without the latter suffering. In theory, the better exercise such a splendid example for good that the less good immediately improve; but in practice, the only way to maintain the perfection of the good is to isolate them, in order that they may grow better and not worse, and then perhaps go to a still better world; which is the reason, maybe, why nature separated each world from its neighbour by instituting the laws of gravity and atmospheric pressure, and by placing between a chasm of unbreathable and unbridgable space. In conquering gravity, science and chemistry had bridged this gulf and the visits to Venus and other places had done no harm, because those particular visitors were not base, but had sought only good. In the present instance, however, the eight voyagers were very jealous-minded, and were disposed to go to great lengths to obtain the fruits of other men's

labours, hence their presence here, which was likely to prove a real calamity to the pure and honourable inhabitants of this planet, who knew no wrong,—and because they were far above the terrestrials in science, learning and morals, they were childlike in their innocence, their lives glowing with happiness and mirth; every one of them contented and jovial, taking everything that came with a smiling face; having clear consciences and knowing that everything *must* work out for their good, they accepted each event with philosophy and good-humour, and in their own frankness they never for a moment even dreamed that their visitors could be in any way different, for were not all in the solar system closely related and under the ruling power of the same mighty Sun! They therefore trusted the strangers implicitly and, to use a well-known proverb, they wore their hearts on their sleeves, never imagining that there were such creatures as daws to peck them.

Unfortunately for the natives, thought-transmission with the visitors could only be effected by very strong effort, or they would have known what manner of men they were entertaining, and the visitors' minds not being so pure and refined as theirs could only grasp their thoughts with the utmost difficulty, failing altogether to do so as often as not.

The strangers were a type of the successful business man of Earth, considering anything justifiable if gain resulted. Earth always favours such men, scorning those boneless creatures whose honour shrinks from causing another's ruin, so these eight had always been regarded there as exceedingly smart and, bearing in mind Earth's definition of a sound business man, they despised these clever, innocent people; before the sun set on their first day Holt said to Keeth, laughingly,—“What do you think of these folk here?”

“Exceedingly clever, apparently,” Keeth replied,

sneeringly, "but the simplest folk I have ever seen."

"They're too innocent by half," broke in Congreve, an electrician, "and if we don't pluck them and feather our nests out of this lot, we shall deserve all we get!"

"Why, what shall we get?" inquired Ellis Siddall.

"Get?" ejaculated Pease Dawson, querulously. "Get? you'll see! We were downright fools ever to have thought of taking that ship, and we shall regret it to our dying day!"

"Yes!" agreed Congreve, "with all our experience of what the owners could and would be likely to do, we might have been sure it would end badly."

"Well, after all," said Herbert Wadsworth, "we took the risk, and we made up our minds to stand or fall together when we attempted to seize the ship, and we've lost, so we must make the best of it."

"That's all right," rejoined Brookes Hewitt, "but who would have thought they'd have those instruments secreted everywhere, and that the vessel could be electrified in units!"

"Anyway," said Siddall, much aggrieved, "they should have kept us prisoners and not dumped us here."

"Never fear!" replied Congreve, "we shall have to face the music, all in good time."

"You don't mean to say you think they *will* call for us?" said Siddall, incredulously.

"Of course they will," answered Congreve, "and they'll take us back to England and we shall be tried for mutiny in the air, and you know that is a capital offence."

"We'll bring a counter-charge against them for damages," persisted Siddall, loth to feel he had no case.

"My dear fellow," interposed Holt, somewhat rudely,

as was his wont, "those folk in the ship hold the cards and they'll play them at the proper time and win. They'll go to the sun, conduct their observations, call for us and take us back, and then there'll be a fine kettle of fish, and we shall be the fish! so you might just as well make up your mind to it."

"Then I for one shall stay here!"

"Don't be a fool, Siddall!" protested Wadsworth. "You know very well from what you've heard and seen, that if we're called for we've got to go, *nolens volens*. Could you get out of your cabin? Could you help coming here? No, when they come for us, we go! They'll find us, float us up, take the whole blessed world with them if they can't find us without, so it's foolish to talk about not doing this, or that; they'll take us when we're wanted, whether it's days or years. It would have been more charitable to kill us, for even if they beg us off in England, our lives will be a misery to us on Earth after this business, but they *cannot* beg us off!"

This violent outburst silenced Siddall, and Holt said,—“Well, I propose that we have a good time here, and get as much out of these softies as we can, for it's the last good time we shall have, and we'd better make the best of it.”

“Yes, certainly,” agreed Hewitt, “and they'll be simple enough to do all that we want.”

“Just fancy!” broke in Keeth, “with all their learning, they don't know what smoking is! and they are ignorant of alcohol, except as a chemical compound, which they use in their manufactures and laboratories.”

“And they're so awfully good,” chimed in Congreve, “they know nothing about games of chance, or anything, poor beggars.”

“That's soon remedied,” laughed Holt; “we'll show them! The *Regina* will be away getting on for a year, at least, and we can never exist so long as that without relaxation.”

"No," said Siddall, "we worked hard in coming, and we must work hard here, so as to learn as much as possible, while we have the opportunity."

"That's all right," responded Wadsworth, laughing grimly; "but if we manage to get off, which does not seem possible, we shall have to work harder when we get back to Earth than we have done all our lives together, and if we don't get off and our lives are forfeit, what's the good? I think we can afford to take things easy for awhile."

"That's all very well, as you say," expostulated Siddall, "but in the interests of science it is our duty to do the best we can, and we have opportunities here that we shall never have again."

"Granted!" replied Wadsworth, airily, "I'm not going to argue the matter, old man; I don't say you're wrong, but no amount of preaching will avail—our reputations are gone, once and for ever, and nothing is of any moment now."

"That is foolish, Wadsworth!" exclaimed Siddall, warmly; "that's fool's talk! we must not lose our moral strength; we have gone wrong, let it be a lesson to our profit—and considering who we are, it is indeed degrading for us so to forget our manhood and the dignity of our professions as to talk in this way. *Noblesse oblige*, remember!"

This sensible speech pulled them together so much, and made several feel so ashamed, that much heated argument resulted, in which Siddall declared his determination to work and retrieve the past, and the others vowed they would have a 'decent' time, and enjoy themselves, showing the utter impossibility of Siddall's working alone while they went their own course untrammelled, and again Siddall appealed to their honour and better judgment, this time to such purpose that they agreed to spend the next few days in seeing the district and then attach themselves to the various departments of learning and research to which they

were severally accustomed, if the people would allow them to do so, and thus perhaps help and be helped in useful work.

Then they retired for the night, but the next day was very dull and they felt depressed; one of them begged a little alcohol to restore him, for he had a weak heart. The chemists were aghast when they saw him drink it, for such a thing had never been seen before. The strength of terrestrial alcohol was no criterion for that made on another planet, so he took what he considered a ridiculously small dose, but it was very powerful and overcame him so much that he was completely intoxicated. With deep regret at the occurrence, his companions tried to rouse him, when they found, to their dismay, that he was slowly sinking. It was extremely difficult to obtain the proper restoratives, and those they had with them were not strong enough, for though all the usual chemicals were in the natives' laboratory, their names and properties were different, and it was a long process to obtain what was needed; at last one of them found some pure oxygen, which was pumped into the unconscious man and he gradually recovered; but this first lapse, half accidental as it was, cast a gloom over the party and seemed to foreshadow trouble.

The day following, the astronomical observatories were in uproar, and on asking the cause, the visitors were told that the planet was apparently steadily leaving its orbit. This was indeed startling news, and Bolford, with several other members of the party, made careful observations with the natives, of the sun in the daytime, and the stars and planets in the night, and this they kept up for some time, in the hope of getting a definite clue to their own position and movements, to find, without doubt, that slowly and surely the relative positions of the heavens and themselves were steadily changing.

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The sun no longer described the same arc in his course, and the altering stars were already causing accidents at sea. Knowing their original position, the astronomers found it only too true; they had left their orbit near Venus, and were surely drifting onwards in a new one, in a course leading them direct from the sun, and already they must have passed out of the semi-opaque web of ether with which they had hitherto been surrounded, for only a portion of the solar system was now obscured and they had an uninterrupted view of almost the whole of the heavens, thousands of stars, planets, and planetoids never seen before being now visible to them. Many of them were known on Earth, and Bolford and the other members of the expedition who understood the science of astronomy were in great request, explaining and pointing out the celestial objects as they could locate and recognise them, for it was only natural that the people should be almost feverishly anxious to learn all about those portions of the heavens now seen by them for the first time, and after a few days of this high pressure they were very much fatigued, for all had been working without cessation, calculating, theorising, and taking observations and photographs when the clouds made this possible.

The visitors had been accustomed to taking various reviving drinks by dissolving pellets in water, but when they were ejected from the *Regina* a supply of these pellet-intoxicants had not been included in their stores; they had but some chemical restoratives, so, feeling tired and knowing now where and what the alcohol was, they asked for and drank a small quantity diluted with water, to pull them together. Those in this department also had never thought of such a thing before, but seeing that instead of killing their guests it really made them bright-eyed and alert again, they were easily persuaded to try it, especially as the visitors assured them it would produce good and not

harm. At the mere draught the potent spirit ran through their veins like liquid fire, and being previously totally unacquainted with this use of it, its effect was to take away all their weariness as if by magic and make them fresh again. They thanked their new friends profusely for the discovery, and began to take it frequently on the assumption that if a little could revive them, more would do it better, and the following day several of the natives were found in the observatories hopelessly drunk.

Most of the members of the visiting party were shocked and thought it was a pity the people had no more sense, and they foresaw the possible consequences, but the folk should not be so foolish!—they would, however, soon learn better. But the secret was out and the drink fiend had come in their midst. The poor fellows were carried home and their friends were cautioned as to the danger, but they might just as well have been cautioned not to let the lightning flash—one would not have been more difficult than the other; several cases of drunkenness occurred the following day,—and the visitors had not been there a week.

Then in the evenings, after the serious day's work was over, the people asked the strangers to join them in conversation, being hospitable and kind. Congreve, who was an inveterate smoker, had got Keeth, a chemist, to sterilise some particular leaves which Dawson had found, rolled and dried, and these were smoked by the visitors with delight; and they, being hospitable and friendly also, could not sit there talking and enjoying their smokes without offering similar cigars to their friends. Such exchange of courtesy could not be denied, and what was good for one could not harm two, so the natives followed the example of their visitors and smoked with them, and, anxious to please and entertain their guests, the spirit was brought out also. By this time, being accustomed to live so near

the sun, they perceived that though the climate had not changed perceptibly, the evenings were a little chilly, and they needed warm and cosy rooms to maintain their bodily heat, thus fires had to be made, and as they were all seated around talking over their experiences and discussing matters of great interest to all, it was only natural that, seeing there was plenty of spirit and water, Holt should suggest a warm drink the better to keep out the cold—and Keeth, who was an adept at compounding appetising liquors, was called upon to show the people what he could do; so with the boiling water, some fruits, spirit and other ingredients, he made a splendid drink, which was handed round, steaming hot, and swallowed with avidity. The natives were assured it would do them good, and they knew it was so by the taste and by the delightful feeling of inward warmth and invigoration which followed. As the evening wore on all drank freely of the comforting beverage, and the natives blessed their visitors for showing them a new and enjoyable use for the material which they had made for years and years, all their lives in fact, yet hitherto had never attempted to drink. With the smoke and wine came games, and it amused these ingenuous folk to play at winning shells from one another; they were found in thousands on the sea-shore, and it was an exciting pastime for chilly evenings—a pastime in which they soon became adepts; then the lust for gambling became rooted in their simple minds, and their visitors gave them to understand that, whatever the consequences might be, gaming debts must in honour be paid in full.

Before long this became the expected and customary method of spending the evenings, now longer and cooler, and the news of these wonderful terrestrial games and customs spread rapidly, and others wished to join the privileged circle, to take part in these ravishing amusements. What if they lost! it was

nothing ! they would lose one time and gain the next, so things must work out even ; and what so refreshing after a hard day's work as to spend their leisure in exciting play, smoking curled leaves, and drinking the hot and delicious spirit that drove away all care. Truly these Earthians were a wonderful race, and, but for them, the leaves would have been unsmoked, the spirit untasted, all enjoyment from them unknown, and they vowed that henceforth the world would not be the same. They began to teach others, and some found themselves unable to pay and had to sell their stock, for they could not be called dishonourable ; they could, however, always play again and win more, getting all back with interest, and for the first time there came the desire for wealth, for unlimited stock, and the only way to get it was to win it from some one else, so again they played and several lost all. These refused to pay, but they were so oppressed by the high moral standard and tone of their companions, and especially of the terrestrials, who placed 'honour' above all other virtues, even above life, that in despair they gave up all that they had and paid,—and the first pauper was created.

Then others, men, and women too, who had lost even more than they possessed, having staked wildly in their excitement, found themselves in terrible positions, and being able to give themselves in complete settlement, recklessly paid this price and became free from their debts, but woke up to the fact that heavy toll was henceforth to be exacted,—and theft and immorality were for the first time known on the planet.

The visitors had only been there a month, but they were doing excellent business, having already taken much of the profits of these people, many of whom, because they lived in community, had only part-shares in goods, but who, in terror of being considered dishonourable, took their own and their partners' shares,

themselves receiving all the money with which to pay their debts and buy spirit, which had by this time increased in value. In other places there was no money, but by a gradual and judicious exchange of goods, the strangers soon gathered to themselves many valuables in such small compass as could be carried about with them on their persons, and in many other ways the Earthians proved themselves smart business men.

After the first momentary shock of finding they had laid a terrible burden on the shoulders of these guileless people had passed, the same jealous greed of gain which had prompted the eight men to seize the ship now prompted them all—even Siddall—to throw to the winds all their better feelings, discretion and honour, in order to take advantage of their innocent victims, so gently and so insidiously that the injury was unperceived until too late: to wrong these people who had been more sinned against than sinning; who had hitherto been wealthy in the possession of contentment and in a light-heartedness that shone in every feature, causing every movement to fill them to overflowing with the joy of life.

It was but a repetition of the time-worn story of the devout and the profane parrots, and a confirmation of the experience that the good do not make the bad good, but are by them degraded, and one evil mind in a community is as the "dead flies" that "cause the ointment of the apothecary to send forth a stinking savour." No longer the 'laughing philosophers' of yore, the inhabitants were weary, careworn and sad, filled with a deadly fear that 'community' would not bring them enough to eat, so in order to protect themselves and those who were near and dear to them, they became sly and thieving; and put goods and money away secretly, and dissembled, feeling they could not keep on 'giving'; and all the time the drinking and gambling habits were growing fast,

numbers finding their only joy on the occasions when the hot and flowing bowl drove away their cares, and the gaming-table diverted their attentions from sorrow.

Then some desperate spirits condemned their visitors, and lips that before they came did naught but bless, cursed them, cursed those they had greeted with loving trust and friendship. But what if the poor, helpless, and injured one—whether injured through drink or anything else—turns round and curses the shrewd and clever business man, what effect has it? What does he care? As well might a gnat curse the elephant that tramples it! even if by a lucky chance it manages to insert a drop of poison and cause an instant's pain, which is scarcely felt, it gets crushed to nothingness. No more do curses trouble a man of the world; something may perhaps sting him slightly, but the stinger is hopelessly broken and as certainly forgotten; the victor has gained all he desired and put his victim away at the same time. If he did care in the least he would, *ipso facto*, cease to be respected as a smart business man.

The mutineers had only been on the world four months when they suddenly disappeared from the community, and none too soon, or they would have added a fresh link to the already long chain of their sins by causing the crime of murder to be introduced, for more than one had sworn to kill them, and these vengeful victims sought for them high and low, in all communities, but they seemed to have vanished from the face of the world. Meanwhile the planet was drifting more and more from its course, going no one knew whither—apparently attracted by a stronger force than the sun, the climate getting worse and worse. Fogs were now of daily occurrence, and the diminution of the sun's rays affected the whole world most seriously. There was no longer the great difference between the heat of the day and that of the night, and there was very little circulation in the atmosphere.

The vapours rising up from the earth and water now hung over the globe in a thick and impenetrable mist, clouds remained almost stationary, and through the thick, foggy air was not a breath of wind; the heat from the warmer portions of the globe was not wafted to the cooler, and *vice versâ*, in order to produce a temperate average from their distribution. And the foetid vapours emanating from the earth and sea, and all the dead and dying life in and on them, and from the living people, were not destroyed, or blown away, and in some cases the inhabitants died like flies,—by hundreds. And as the weeks and months sped on matters grew ever worse, for the air became more and more dense and stationary. Sound became gradually more subdued and at last ceased, and there settled on the whole world a chilling, numbing cold, nipping the already paralysed limbs. The clouds, unable to perform their functions, condensed less and less, as the sun, the source of heat, grew more and more distant, till at last the air—the world's scavenger—finally refused to absorb and disperse the now dreadful emanations from the animal, vegetable and other matter, by its capillary attraction, and life became almost intolerable, only possible to the very strong and vigorous, for the climatic conditions were changing faster than it was possible for life of any kind to adapt itself to them.

Work was impossible, yet folk must live, and the stronger snatched the food from dying lips to keep life going, and a second later it would again be snatched away, clutched convulsively and lost, the exertion, feeble though it was, being fatal, and the victorious one would roll over inert as his own victim had done a moment before.

It was now nearly an Earth-year since the strangers had alighted—their cursed visitors; and where they were no one knew. Without doubt they were the cause of the national disaster and moral degradation,

and now everybody was too feeble to wish them back except to kill them, for by this no one cared to do that sufficiently to search for them, for every atom of strength was needed for their own bare existence. For months people had been telepathing with all their energies to all parts of the world, but their corrupters had vanished as completely as if taken off again in the ship.

One day, to add to their misery, there burst over them an electric storm, which first began in various parts of the world and then embraced its whole surface, almost setting the very air on fire. Such a storm had never been known before, and people crouched and crawled and hobbled away in all directions to find a corner in which to shield themselves from the lightning-charged air, as if they could get away from that awful atmosphere which filled all the space on the earth, and in a cave by a lonely shore eight figures crouched together in deadly terror, waiting for the end which they felt was close at hand.

"We are not safe by this water!" said Dawson, whose voice scarcely rose above a whisper, and in that thick and soundless air would not have been heard at all but for the acoustic properties of the cave. "Let us get away. See, the whole heavens are blazing, and the sea is so charged with electricity that it is actually floating fire."

"It is running in here and will burn us up!" exclaimed Siddall, hoarsely. "Let us go out and find another place."

"No," cried Holt, "the sea is our safety," and for the first time in his life he appealed to others for support of his statement. "The sea and cave are our safety," he repeated; "Keeth, Congreve and Hewitt will tell you the same, and if we step outside we shall be caught. No one has thought it possible for us to be here"; and as the first wave of the rushing incoming tide rose up the floor, lighting the cave with

a flood of electric fire, he continued,—“Now we should have to dive through the fire to get out!” Exhausted with this long speech, he leaned back against the wall, panting for breath.

“Let us go higher,” said Keeth, painfully lowering himself from the ledge on which he had been sitting gazing seaward through a thin crack in a stratum of rock, and they all clambered still higher up the side of the cave, the water on the floor meanwhile being flooded with light.

“It’s lucky we had a good supply of food in pellet form,” said Siddall, “or we should be dead now!”

“It would have been better so!” groaned Wadsworth, “our records are none too clean; we have sent hundreds to the devil and have corrupted the morals of a whole world, for if the people here recover from this awful disaster, they’ll continue to go to the devil, who will get the lot!”

Dawson was in a state bordering on collapse, and as he painfully dragged himself along, a few inches at a time, for he could not sit up, he became very faint, but by dint of much patience and a heroic determination not to give way, he managed to pull himself above high-water mark, and, overcome with the exertion of keeping the few inches in advance of the rising water, he now leaned back against the wall with his head on the cool rock, damp with ooze from the sodden herbage above; the touch of the wet and slimy rock, the only cool thing in that fiery atmosphere, acted as an ice-cap and restored him wonderfully, and looking round at his companions he said, brokenly,—“I remember my parents telling me of a Bible story; it was something about one who causes another to offend—I forget how it went, but I think it said it would be better for him if a millstone had been tied round his neck and he had been thrown into the sea first. I think we’ve tied millstones round these folk as well as ourselves! I’ve not seen my Bible since I was grown up, but I’d give

a lot to be an innocent boy again," and he turned his face to the cooling slime.

"You can't have sentiment in business, my boy; life's too short!" exclaimed Holt, brusquely.

"I fear it is, Holt," came the feeble reply, in jerks. "Life's very short. Our days are but a shadow—life is short, Holt—I fear it is——" and then, after a pause, just as one of the others was commencing,—
"and Tom, dear, will you give your sister this, and say it's from me——"

"What's the fellow talking about?" asked Holt, roughly.

Unheeding, Dawson went on—"and tell her I'm very sorry. I fear I shall not see her again," another pause—"I had hoped I should meet her in heaven, but I don't know, now. I have not been good, Tom, but tell her not to fret, I am not worth it! Why have you put out the light, Tom? it is dark, and I——"

"What's the matter?" asked Congreve, trying to crawl nearer.

"I believe he's dying!" exclaimed Hewitt.

"Good heavens!" they cried, as all came round, themselves almost too ill to move, and held a volatile restoring tablet under his nostrils; the oxygen which it gave off along with other vapours, though not bringing him round, sent him into a deep sleep, his steady breathing giving promise of recovery.

"Thank God!" interjected several, as they placed another pellet beside the face of the sleeping man.

"We have need to say that!" observed Siddall, regretfully. "I'd like to have the chance of undoing this business before I die, if that were possible."

"Are you feeling bad, too?" asked Holt, offering him his box of restorative tablets.

"Only in mind! that's bad enough!" replied Siddall, sinking down again.

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"What's the cause of this electric storm and this fiery sea, Congreve?" asked Wadsworth, "you should know."

"I have been wondering for the last two or three hours," replied Congreve, musingly. "It may be that the foul gases on the ground have caught fire, or that there is some great electric disturbance; which it is I cannot understand."

"Not the *Regina*!" exclaimed Hewitt.

"No, certainly not!" broke in Holt. "Oakland would come to the old orbit between Venus and the sun, and would never look for us here."

"It would be an utter impossibility," rejoined Bolford; "the last view we had of the sun was as of a star of the fifth magnitude; that was some months since, and it will be about the seventh now, or invisible without a glass."

"What can have caused us to shoot off? the *Regina*?" asked Keeth.

"There's no doubt about it to my mind," returned Bolford; "but only those in the ship could tell us why; perhaps only the owners."

Too exhausted to talk any more, they languidly rolled over, too ill to care what happened, and they dropped off to sleep one after the other, in fitful dozings, from which they were awakened a few hours later by water dripping on their faces from the cracks in the roof above. On going to the hidden chink in the rocks, from which they had an extended view of the shore, they saw rain. It was falling in a deluge, heavy, pouring rain; descending like long rods of polished steel, boring holes in the sand and the motionless sea, breaking the now feeble, lanky and colourless grass and pouring down the rocks in a flood, carrying the electricity with it in rainbows innumerable—floods of prismatic, fiery water. For hours it came down unceasingly, wetting them to the skin, as from every niche and cranny tiny and then strong streams raced

down the cave floor and mixed with the stinking salt water at the entrance ; but their hope revived as the rain continued. At last it ceased, and there came a freshened feeling in the air as the first puff of wind blew through the slit in the rock.

"You know what that means !" cried Bolford, joyfully.

"Yes, thank heaven !" they exclaimed.

"Yes, thank heaven !" he repeated, fervently ; "we are drawing near to the planet or source that has been pulling us all this time, and the atmosphere is moving."

"That rain has come in the nick of time," said Keeth ; "one day later and we should have been dead, every one of us."

"Let us get to the mouth of the cave to breathe the air, and bring Dawson," said Siddall ; "we can dive under the water."

Only then did they realise how ill they were, for try as they would they could not stand, or indeed rise higher than a sitting posture, and in this position they shuffled along, dragging the still unconscious form of Dawson with them, inch by inch, every foot or so of the way having to rest to regain strength, and in this wise they got near the water. There they rested quite overcome, and all more or less unconscious, staying there for hours, perhaps for days, for most of the time was spent dozing in a semi-unconscious condition and time passed unnoticed, but when they did find intelligence returning to them, there was a distinct breeze, the clouds had lifted, and the stars could be seen. Bewildered, they searched the heavens, and Bolford cried,— "We have altered our orbit again ! when we first came here we had Aquarius facing the cave, stationary, 'in line of sight' for months, and now we are opposite Aries ! Something else has got us now !"

In great excitement they all looked out, and there, sure enough, was Aries, and they were crossing. For

hours they watched, and Holt remarked, "Never mind where we go, so long as we can live, and this new power is healthier than the last, anyway."

"We shall never get to England now, that's one comfort!" exclaimed Siddall, in a tone of relief.

"No, old man," responded Congreve, "you need have no more fear. Even the *Regina* can't trace us now!" and he attempted a laugh, which ended in a dry cackle. Only then did they notice that their lips and tongues were cracked and hard, and the whole interior of their mouths dry and almost devoid of feeling, their voices sounding hoarse and most untuneful, so it was evident that hearing had returned.

"Holt!" exclaimed Keeth, suddenly, "don't you feel how charged the air is with electricity? I feel myself full of faint prickles!"

"I was going to remark the same thing," replied Holt. "I will have a look outside;" saying which he tried to rise, but failing to do so, he drew a clasp-knife and stuck it in a crack in the rock to assist him, when the metallic blade crackled and sparkled with electricity. Withdrawing the blade and closing it, he turned to Hewitt, saying,—"There's some powerful current here and no mistake! Look outside, Hewitt, old man; I'm too ill to rise without help."

Hewitt could not go either, so Congreve slowly worked his way to the front, tasting the air and feeling at the rocks, and then going to the opening he put his head outside, withdrew it, and then tested the rocks with his own knife, but to find Holt's experience repeated.

"Anything atmospheric to cause that, Congreve?" inquired Hewitt.

"No! nothing!" he replied, shortly.

"What do you think?" asked Holt.

Congreve did not answer, but put out his head again, and again withdrew it, and stood looking out at the opening.

"Don't you know?" queried Holt and several others, impatiently.

"No. I'm thinking!" he muttered, and then remained silently lost in thought for so long that they asked again.

"I don't know; only a passing fancy, but it's not possible!"

"What is it?" they asked, excitedly.

"Nothing, only a foolish fancy; but it cannot be," he replied, musingly, still looking out.

"Tell us then!" they persisted.

"I thought it might be the *Regina*!" he said slowly, pausing between each word. "But she could not know where we are."

"Impossible!" interjected Holt. "She could never single one planet out of millions, not knowing the direction we took, and especially now we have changed again. It is absurd."

"I said so," said Congreve, reflectively, still at the opening.

"And as we are not near the orbit of Venus at all, she could not find us; it is impossible!" put in Keeth.

"No; I told you it was a foolish idea," murmured Congreve, still lost in thought and still closely watching. Then he came and sat down with the rest, and one after another each one fell asleep where he was. How long they slept they had no means of telling, but nature had applied her own remedy and they awoke considerably refreshed; even Dawson was now conscious, though too ill to move.

After a while the air became so charged with electricity that their cave was like an electric oven, so stifling as to be painful, and they crawled to the opening for relief and to watch the weird effect outside, and endeavour to locate their position by the stars, and in the black and starry sky they beheld what they took to be a comet.

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"What can that be?" asked several, indifferently.

"A comet," replied Keeth, briefly.

"I did not know there was one due there," said Bolford, musingly,—and then suddenly they all cried,—

"Can it be?—can it! Oh! good heavens!—It IS the *Regina*!!"

CHAPTER XVII

SMALL PROFIT AND QUICK RETURN

"Doth the wild ass bray when he hath grass? or loweth the ox over his fodder?"

(JOB.)

THE day following the stormy meeting on board the *Regina* nothing of moment transpired, and only the strongest faith in the *Regina's* powers made them know that, although unseen, a mighty force was speeding along the enormous space that intervened between themselves and the planet they were attracting. They knew it would be madness to draw it to them rapidly, like rebounding elastic; the only safe thing to do would be first to project against it a gradually increasing attraction, till its present speed was completely overcome, when they expected it would alter its course to follow the line of greater attraction to them. Some time, therefore, must elapse before anything would be noticeable, during which the visitors would have to continue their work of joint observation and exploration with their new-found friends, and in the abstraction of these researches the subject was seldom referred to. In the course of a week, however, there came over the atmosphere of that part of the world in which they had made their headquarters a slight change, so gradual as to be scarcely perceptible; it was the 'smell' of electricity—that peculiar, almost indefinable odour which is always evident when an enormous amount of electricity

is present, and has been defined as being like many different chemicals, though most people consider it chiefly resembles chlorine. The natives noticed this, but attributed it to the continued presence of the vessel. Then they perceived that the planet which had been speeding away from them had altered its course, and they delightedly told their visitors of this, saying that as it was now coming in their own direction, it would be better for them to go to it by means of their ship later, without making so long a journey, pressing them to stay until the world drew nearer, never even dreaming for a moment that their visitors were effecting it and not knowing or believing they had power to do so. Feeling guilty at having to dissemble in order to keep the secret for the great and final surprise, the travellers very kindly accepted the offer to stay and wait till the other world drew near. They had hoped the people would not notice the altered direction of the planet, but the fact of other terrestrials being on it, and wanted by their comrades, had aroused interest and the planet had, in consequence, been under observation ever since. It was, however, but a runaway star, and, like a lost and turned-out dog that is ready and willing to become attached to any one who is kind enough to give it a home, so was this disowned planet flying through space, ready to form a new orbit in any system that would or could keep it, or to coalesce, if need be, with any more powerful world into whose influence it chanced to come, and thus form another sun. When it turned, the people merely thought it had, as it were, aimlessly crossed a stronger influence and had become drawn towards some other and distant force.

"How long will it be before the planet is with us?" asked Dalton of Gilbert.

"About a fortnight," he replied. "We do not wish it to come too fast, lest its revolution and atmosphere and those of this world should be disturbed."

A few hours later, there came upon the atmosphere a more sudden change; the air became perceptibly drier, hotter and more stifling, and before long, heavy clouds gathered and obliterated the stars, the distant, yet approaching world sharing the same fate, being no longer visible; and there were no means of ascertaining its position except by intricate calculations from the amount of force projected. By this time all around the ship there rested a faint phosphorescence, and the heat and dryness in the air became severely felt, filling the nostrils with such a choking as to make inspiration painful in the extreme. The enormous amount of electricity projected was slowly converting the air into allotropic oxygen, or ozone, of such intensity that it burned the lungs and made breathing a torture, and the sense of suffocation became almost intolerable. To the natives this change was deplorable, depending as they did on the air for both breathing and food; and living in the open they had no shelter, only the frail structures erected for astronomical observations and the carrying on of business—laboratories and the like. In vain they entered these in order to find coolness, then returned to the open, for in that furnace of altering elements there was no cool, everywhere was equally painful.

"We cannot work in this stifling heat, and the clouds are impenetrable," telepathed one of the native astronomers to Rollsborough. "There is some dreadful electrical disturbance around; I am glad your ship is here, for it is drawing towards itself all the local forces"; and in the air there could be seen floating beside the ship, a faint, rosy light, paling into greens and purples and moving fitfully.

Rollsborough said nothing, for he, along with the other objectors, had decided to take a neutral stand, and neither help nor hinder anything the owners and their colleagues were pleased to do. But he now debated with himself whether he would not be justified

in divulging the real facts of the case, though on further consideration he remembered that if the owners chose to do anything with the ship's powers, they could do it, and as no one else understood the control of these forces, no good purpose could be served by interfering now. Besides, with the ship elevated, as was the usual custom, no hurt could come to the natives, or district, and every man on board was supposed to be level-headed and ought to know what he was doing. So Rollsborough made no comment, but stood along with many of his companions and the natives, watching the strange glow round the vessel, and thus they continued several hours, during which gloom had fallen, and for the first time within the history of this world there was dense, black night; the only light seen was the ghastly, ghoulis glow round the vessel. The natives insisted on their visitors going back to the ship, so Rollsborough and his friends entered, and with closed doors and the artificial apparatus going, they felt no inconvenience. So refreshing was this after the heat outside, that they persuaded a number of the natives to enter, but they could not breathe the air, which was *only* air, and incapable of supporting their life, so they had to leave hastily, but would not hear of the visitors coming out of their ship again till the storm, as they thought it, had passed. For even now, though they were so extremely intelligent, they did not associate with it the *Regina* and the far-away world—never thinking that the world was coming straight at them, like a shot out of a gun, for they knew the changes were really electrical disturbances only, and bad as the effect was on the air, it was their natural atmosphere, and they could endure it better than their visitors; therefore, when they found those in the artificial air were free from trouble, they insisted on their staying in the ship. This consideration made the delinquents feel very guilty, and Godfrey tried to persuade his friends to abandon their project, but

they said it was but a temporary inconvenience, and would pass away soon.

The ship was elevated about two hundred feet in the air, in order that the powerful current projected should not damage the surrounding country and the inhabitants, for with such a force, so long continued, no power in nature could have prevented its blasting effect on everything, and particularly in all those parts coming between the approaching planet and the ship, where would lie an inconceivably strong current of electricity, for they were, in reality, using their vessel as a magnet, bridging the space by the mighty current. Such a force could not do otherwise than disturb the elements, for the power required to draw the world from such a distance would have fused the very earth beneath, had the vessel been nearer the ground. And although the objectors still disapproved of the whole scheme, the manner in which the three owners manipulated the vessel so as to ensure the absolute safety of the people below, compelled their enthusiastic admiration. Awful and spectacular as the results became as the world drew nearer, and the same forces were more spread locally, they knew that beyond a few weeks' inconvenience and semi-starvation, the natives would be no worse, and not a blade of grass would be singed. And as they received somewhat of the reflected forces, the vessel became the centre of wonderful displays of electric fireworks, which were watched by the people below with amazement, for they could not see the world because of the clouds, and the people in the ship could not telepath with them except when in close proximity. All around the ship and high into the clouds, forming a magnificent, gigantic corona, there shone a living, trembling flame, changing colour incessantly; the electric fluid, like a sea, washed and lashed around the ship, and leaped in waves and spray, dashing against the vessel; the spray flying upwards like phantoms,

the white wreaths of light floating away into nothingness, forming and re-forming, till lost in the distant sky. Every now and then some wave, more violent than the rest, would break itself upward in a column of lightning, twisting and twining like a fiery snake standing erect and writhing in agony. Higher and higher these terrible columns would rise, becoming thicker and more lurid, bending and straightening as though alive, while here and there two would meet and float away upward, united by loops and tongues and festoons of lively flame.

The people below, experienced as they were, and knowing there was no real danger so long as the vessel was the centre of the storm, as they believed, could not help being disturbed by the change in the atmosphere, now so powerfully charged with electricity; and as the world revolved, community after community beheld the wonderful stationary ship, their preserver, and felt thankful it had come in time to save them by bringing the elements to the focus of itself. At her elevated position the *Regina* remained poised and motionless—not moving with the atmosphere, yet still in it—sending forth a steady, continuous force, unerringly in the same direction.

“Is it wise to carry this so far?” again remonstrated Godfrey. “Won’t the world come on and on and crash into this?”

“It would, of course, if we didn’t stop it in time,” smiled Gilbert.

“But how can you tell when it is near enough to stop?”

“There are four days yet.”

“But Gilbert,” pleaded Godfrey, “are you justified in causing these good people all this inconvenience? Is it fair play?” And turning round impetuously, he spoke up so that all should hear,—“Rollsborough and I and all of us who originally objected to this mad scheme decided neither to hinder nor to help, but to be

perfectly neutral, and to this decision I was fully intending to adhere, but I had to keep saying something in protest. Nobody admires and appreciates more than I do the capabilities of the vessel and the amazing skill of the owners, but because we have power and skill here, are we to misuse them, merely to let these people see what we can do? It might be excusable in a youngster, but it does not sit very well on any of us. *We* are in here, with pure air, good food, and everything to make us happy, and yet we are calmly looking on while we cause visible discomfort, if not actual pain, to the people below who are gasping for breath; these people who have been so exceedingly good to us,—and we allow them to think we are their benefactors! I call it cowardly! yes, cowardly!! and a thing we shall look back upon with shame to our dying day. Believe me, we shall! Planet-shifting is not in my line, I know nothing of it—but I feel very warm on this matter. We are Britons, bred and born; do let us act like Britons! and above all, like gentlemen; men of too much honour to abuse our privileges. Surely in sending that planet out of its orbit we did damage enough! You know what Shakespeare says,—‘It is excellent to have a giant’s strength, but tyrannous to use it like a giant.’ Let us be merciful! I can say no more, friends, or I shall break down!” and good, well-meaning Godfrey, quite overcome, stepped down from the stool upon which he had jumped.

For the space of a few seconds there was a deadly silence, and then as if from one voice, they cheered Godfrey, and finally ‘chaired’ him.

As soon as silence was restored, Dennis spoke up,—“My friends, let us with one accord thank Spenser here for showing us our duty. Our pride has humbled us to the dust, and we have fallen—fallen lower than I care to think about, but we will make what reparation we can! Ainley has already corrected the

current and in a few hours the air will improve. Rolls-borough and Sorrel, we want your advice as to what we shall do with the other planet, if we have not forfeited the right to ask for it."

Their eyes filled with tears, the two stepped forward and remained in long conversation with the three owners, looking at photographs and drawings and making many calculations.

While they were thus engaged, the rest, now as repentant as they had been reckless, went to the windows and looked out. All restraint was now over, and every one without exception felt happy in having taken the one and only honourable course—and as they gazed at the sea of fire around them, which cut off all view from below, a great cloud burst above them and rain fell in torrents; the lightning ran down the rain as it fell, filling the air with solid pillars of fire. Flash followed flash in such quick succession that they seemed to strike one another long before reaching the ground; and the focus of the storm was ever the good old ship, which stood unmoved, as though imperturbably defiant, while the whole heavens seemed to have combined to wage war against her in revenge for the disturbance she had caused. All the electricity projected seemed to return with angry energy, flashing and beating round the ship in mighty fury, the *Regina* answering flash with flash till the fury was augmented instead of reduced, as the teeming heavens sluiced fire. As far as the eye could reach the rain brought down the lightning in floods of vivid flame, and on all sides the clouds were incessantly opening and belching out their overcharges of electricity, accompanied by deafening thunder. In ten or fifteen minutes the storm was spent, and gradually nothing remained but an occasional feeble flicker and roll of thunder. Soon even this ceased, and slowly the light returned as the clouds dispersed or were dissipated, and around the ship only a faint glow remained. This began to flicker

like the light from a dying candle, each flicker seeming the last ; and finally, with a last splash of light, all was gone.

Instantly the ship fell and the occupants came out, to be greeted effusively by the grateful people. " You have done this ! " telepathed the principal of the observatory. " How can we thank you ? "

" Thanks ! " telepathed Dennis, stepping forward. " You have little to thank us for ! " and with feelings of deep shame, he telepathed a full confession.

" But what have you done with the planet ? How can it remain where it is if the forces are stopped ? "

" It is now under the influence of your world's attraction, and travelling with you as a binary, and as you see is too far off to affect this planet for the short time it will stay. "

Then it was for the visitors to see what friendship was, to have ' coals of fire ' heaped upon them, for the natives made light of their sufferings, and not only telepathed that there was nothing to forgive, but persisted in thanking them for their kindness in relieving them from the dreadful atmosphere.

Such magnanimity made the visitors exceedingly contrite and feel that they could have submitted to abuse, even, rather than such overwhelming kindness and generosity ; but it proved to them that in a higher life feelings of evil and resentment find no place, but instead there is the forgiveness that can both forget and forgive, though the past injuries be incalculably great.

The attracted planet could not stay where it was for any great length of time, as it would soon affect the climatic conditions of the world to which it had been drawn, so the travellers were obliged to leave their noble friends, who parted with them most affectionately, they feeling sincere remorse at their treatment by the kind inhabitants as they set out for the adjoining world, obtaining a splendid rebound straight for the solar system with the absconding planet in their wake ; the

position it should at that time be occupying having been correctly worked out by Rollsborough, it was restored to its proper place and orbit in which it sped onwards in its journey round the sun—this time free from the belt of semi-opaque ether in which it had hitherto floated. Then the *Regina* settled into its atmosphere. First locating the place where the mutineers had originally been stored, but finding it a waste, they hunted for them with their glasses in many parts; and at last, on a lonely shore, they saw two men, apparently terrestrials, dirty and unkempt, their clothing and faces smeared and hair matted with slime. These men, too feeble to stand without staggering, signalled to the ship, which settled down to find two of the party of which they were in search—Congreve and Hewitt. Several of the fellows came out of the vessel and were told in a few words, rendered painful by the cracked lips and tongue, where their companions were. Then came the long and difficult task of getting the six men from the cave, for they were all too ill to help themselves, and the entrance being under water it was necessary to dive to get inside. However, it was accomplished at last, though Dawson became unconscious again with the effort, and the whole eight were soon on board the *Regina* and well looked after.

As they reclined in lounge-chairs enjoying the rest and comfort, and already feeling considerably better, Bolford remarked,—“Did not the *Regina* send the planet ‘Ramsar’ out of its orbit?”

“Yes,” replied Ross, “I regret to say that is the case, I believe.”

“How did you do it, and why?” asked Siddall.

“We approached the planet from between it and Venus, and we must have left it with a repulsive force and sent it off; it was quite an accident.”

“But if you approached between it and Venus, and gave it a repulsive force, it would have gone into the sun!” said Bolford. “I don’t understand.”

"If you remember," continued Ross, "we had to go round the world, and we left it at the side near the sun. The attraction of the sun was so enormous that we had to steady ourselves by converting some of the attraction into repulsion, and the planet being then in our wake, must by that have been projected out of its system, away from the sun."

"Then how did you find us?" asked several, much interested.

"Rollsborough suggested this solution when we found you'd bolted. Knowing the exact position when we left, and the planet's gravity, speed of travel, and orbit, and all the rest of it, he cleverly worked out the direction in which you had been hurled and—here you are!"

While Ross was talking, the rest had gathered round, and as he finished, they asked the mutineers for their story; Holt related the account of their adventures, that is to say, the version which, while in the cave, had been agreed upon to present to sympathising friends,—

"On our arrival, the first thing we did was to attach ourselves to the various departments of science, for Siddall at once suggested that as we had fallen we must, in the short time we should have to live, do our best to work well and try to retrieve the past, and in this we all concurred. We were doing excellent work when the people discovered they were out of their orbit and blamed us for it. Fearing this was correct, yet not knowing how, or why, we made light of it, and their fears were allayed for the time being. However, time passed, and as the climatic changes which were sure to follow such an event on a world not intended to be so far away from the sun came along, we were blamed more and more. To so sorry a pass did matters come that, although we had been presented with no end of wealth, we had to leave it all, and fly suddenly for our very lives. They hunted for us everywhere,

and we should have been killed months since, but for the cave.

"We found it by watching an animal dive in ; eventually we killed the beast and then one of us dived under to see if there was any shelter, and, finding a cave, we lived there in terrible suffering through all the changes the sudden departure from the sun brought about, till you came and saved our lives."

All the listeners, hearing of these unmerited sufferings, were filled with remorse and, not knowing the actual facts—that a demoralised world had just been returned to its proper orbit—felt they had been doubly guilty in causing such disaster and, most of all, in putting the lives of their eight companions in jeopardy. These expressions of sincere sympathy were received by the eight victims of an unkind fate as the apology to which they were entitled, and as the subject of the mutiny was not referred to, they considered they had kept their good names untarnished and won but the just reward of their integrity and, not to be outdone in generosity, they virtuously forgave their commanders, and unity was again restored.

That same day all the 'wave' instruments of Earth received the message,—

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