FROM POLE TO POLE

BY

GEORGE GRIFFITH

Freeditorial

From Pole To Pole

CHAPTER I

"Well, Professor, what is it? Something pretty important, I suppose, from the wording of your note. What is the latest achievement? Have you solved the problem of aerial navigation, or got a glimpse into the realms of the fourth dimension, or what?"

"No, not any of those as yet, my friend, but something that may be quite as wonderful of its sort," replied Professor Haffkin, putting his elbows down on the table and looking keenly across it under his shaggy, iron-grey eyebrows at the young man who was sitting on the opposite side pulling meditatively at a good cigar and sipping a whisky-andsoda.

"Well, if it is something really extraordinary and at the same time practicable—as you know, my ideas of the practicable are fairly wide —I'm there as far as the financial part goes. As regards the scientific end of the business, if you say 'Yes,' it is 'Yes.'"

Mr. Arthur Princeps had very good reasons for thus "going blind" on a project of which he knew nothing save that it probably meant a sort of scientific gamble to the tune of several thousands of pounds. He had had the good fortune to sit under the Professor when he was a student at, the Royal School of Mines, and being possessed of that rarest of all gifts, an intuitive imagination, he had seen vast possibilities through the meshes of the verbal network of the Professor's lectures.

Further, the kindly Fates had blessed him with a twofold dowry. He had a keen and insatiable thirst for that kind of knowledge which is satisfied only by the demonstration of hard facts. He was a student of physical science simply because he couldn't help it; and his grandfather had left him groundrents in London, Birmingham, and Manchester, and coal and iron mines in half-adozen counties, which produced an almost preposterous income.

At the same time, he had inherited from his mother and his grandmother that kind of intellect which enabled him to look upon all this wealth as merely a means to an end.

Later on, ProfeesorHaffkin had been his examiner in Applied Mathematics at London University, and he had done such an astonishing paper that he had come to him after he had taken his D.Sc. degree and asked him in brief but pregnant words for the favour of his personal acquaintance. This had led to an intellectual intimacy which not only proved satisfactory from the social and scientific points of view, but also materialised on many profitable patents.

The Professor was a man rich in ideas, but comparatively poor in money. Arthur Princeps had both ideas and money, and as a result of this

conjunction of personalities the man of science had made thousands out of his inventions, while the scientific man of business had made tens of thousands by exploiting them; and that is how matters stood between them on this particular evening when they were dining tete-a-tete in the Professor's house in Russell Square.

When dinner was over, the Professor got up and said—

"Bring your cigar up into the study, Mr.Princeps. I want a pipe, and I can talk more comfortably there than here. Besides, I've something to show you."

"All right, Professor; but if you're going to have a pipe, I'll do the same. One can think better with a pipe than a cigar. It takes too much attention."

He tossed the half of his Muria into the grate and followed the Professor up to his sanctum, which was half study, half laboratory, and withal a very comfortable apartment. There was a bright wood-and-coal fire burning in the old-fashioned grate, and on either side of the hearth there was a nice, deep, cosy armchair.

"Now, Mr.Princeps," said the Professor, when they were seated, "I am going to ask you to believe something which I dare say you will think impossible."

"My dear sir, if you think it possible, that is quite enough for me," replied Princeps. "What is it?"

The Professor took a long pull at his pipe, and then, turning his head so that his eyes met his guest's, he replied—

"It's a journey through the centre of the earth."

Arthur Princeps bit the amber of his pipe clean through, sat bolt upright, caught the pipe in his hand, spat the pieces of amber into the fireplace, and said—

"I beg your pardon, Professor—through the centre of the earth? That's rather a large order, isn't it? I've just been reading an article in one of the scientific papers which goes to show that the centre of the earth —the kernel of the terrestrial nut, as it were—is a rigid, solid body harder and denser than anything we know on the surface."

"Quite so, quite so," replied the Professor. "I have read the article myself, and I admit that the reasoning is sound as far as it goes but I don't think it goes quite far enough—I mean far enough back. However, I think I can show you what I mean in a much shorter time than I can tell you."

As he said this, he got up from his chair and went to a little cupboard in a big bureau which stood in a recess beside the fireplace. He took out a glass vessel about six inches in diameter and twelve in height, and placed it gently on a little table which stood between the easy-chairs.

Princeps glanced at it and saw that it was filled with a fluid which looked like water. Exactly half-way between the surface of the fluid and the bottom of the glass there was a spherical globule of a brownish-yellow colour, and about an inch in diameter. As the Professor set the glass on the table, the globule oscillated a little and then came to a rest. Princeps looked at it with a little lift of his eyelids, but said nothing. His host went back to the cupboard and took out a long, thin, steel needle with a little disc of thin white metal fixed about three inches from the end. He lowered it into the fluid in the glass and passed it through the middle of the globule, which broke as the disc passed into it, and then re-shaped itself again in perfectly spherical form about it.

The Professor looked up and said, just as though he were repeating a portion of one of his lectures—

"This is a globule of coloured oil. It floats in a mixture of alcohol and water which is of exactly the same specific gravity as its own. It thus represents as nearly as possible the earth in its former molten condition, floating in space. The earth had then, as now, a rotary action on its own axis. This needle represents that axis. I give it a rotary motion, and you will see here what happened millions of years ago to the infant planet Terra."

As he said this, he began to twirl the needle swiftly but very steadily between the forefingers of his right and left hand. The globule flattened and spread out laterally until it became a ring, with the needle and the disc in the centre of it. Then the twirling slowed down. The ring became a globule again, but it was flattened at either pole, and there was a clearly defined circular hole through it from pole to pole. The Professor deftly withdrew the needle and disc through the opening, and the globule continued to revolve round the hole through its centre.

"That is what I mean," he said. "Of course, I needn't go into detail with you. There is the earth as I believe it to be today, with certain exceptions which you will readily see.

"The exterior crust has cooled. Inside that there is probably a semi- fluid sphere, and inside that again, possibly, the rigid body, the core of the earth. But I don't believe that that hole has been filled, simply because it must have been there to begin with. Granted also that the pull of gravitation is towards the centre, still, if there is a void from Pole to Pole, as I hold there must be, as a natural consequence of the centrifugal force generated by the earth's revolution, the mass of the earth would pull equally in all directions away from that void."

"I think I see," said Princeps, upon whom the astounding possibilities of this simple demonstration had been slowly breaking. "I see. Granted a passage like that from Pole to Pole—call it a tunnel—a body falling into it at one end would be drawn towards the centre. It would pass it at a tremendous velocity and be carried towards the other end; but as the attraction of the mass of the earth would be equal on all sides of it, it would take a perfectly

direct course—I mean, it wouldn't smash itself to bits against the sides of the tunnel.

"The only difficulty that I see is that, suppose that the body were dropped into the tunnel at the North Pole, it wouldn't quite reach the South Pole. It would stop and turn back, and so it would oscillate like a pendulum with an ever-decreasing swing—until it finally came to rest in the middle of the tunnel—or, in other words, the centre of the earth."

"Exactly," said the Professor. "But would it not be possible for means to be taken to propel the projectile beyond the attraction from the centre if those means were employed at the moment when the momentum of the body was being counteracted by the return pull towards the centre?"

"Perfectly feasible," said Princeps, "provided always that there were reasonable beings in the said projectile. Well, Professor, I think I understand you now. You believe that there is this tunnel, as we may call it, running through the earth from Pole to Pole, and you want to get to one of the Poles and make a journey through it.

"It's a gorgeous idea, I must confess. You've only got to tell me that you really think it possible, and I'm with you. If you like to undertake the details, you can draw on me up to a hundred thousand; and when you're ready, I'll go with you. Which Pole do you propose to start from?"

"The North Pole," said the Professor, quietly, as though he were uttering the merest commonplace, "although still undiscovered, is getting a little bit hackneyed. I propose that we shall start from the South Pole. It is very good of you to be so generous in the way of finances. Of course, you understand that you cannot hope for any monetary return, and it is also quite possible that we may both lose our lives."

"People who stick at small things never do great ones," replied Princeps. "As for the money, it doesn't matter. I have too much—more than anyone ought to have. Besides, we might find oceans of half-molten gold inside—who knows? Anyhow, when you're ready to start, I am."

CHAPTER II

Nearly two months after this conversation had taken place, something else happened. The Professor's niece, the only blood-relation he had in the world, came back from Heidelburg with her degree of Doctorof Philosophy. She was "a daughter of the Gods, divinely tall and most divinely fair," as became one in whose veins ran both the Norse and the Anglo-Saxon blood. Certain former experiences had led Princeps to the opinion that she liked him exceedingly for himself, and disliked him almost as much for his money—a fact which somehow made the possession of millions seem very unprofitable in his eyes.

Brenda Haffkin happened to get back to London the day after everything had been arranged for the most amazing and seemingly impossible expedition that two human beings had ever decided to attempt.

The British Government and the Royal Geographical Society of London were sending out a couple of vessels—one a superannuated whaler, and the other a hopelessly obsolete cruiser, which had narrowly escaped experimental bombardment—to the frozen land of Antarctic. A splendid donation to the funds of the expedition had procured a passage in the cruiser for the adventurers and about ten tons of baggage, the ultimate use of which was little dreamt of by any other member of the expedition.

The great secret was broken to Brenda about a week before the starting of the expedition. Her uncle explained the theory of the project to her, and Arthur Princeps added the footnotes, as it were. Whatever she thought of it, she betrayed no sign either of belief or disbelief; but when the Professor had finished, she turned to Princeps and said very quietly, but with a most eloquent glow in those big, grey eyes into which he had often looked so longingly—

"And you are really going on this expedition, Mr.Princeps? You are going to run the risk of probable starvation and more than probable destruction; and, in addition to that, you must be spending a great deal of money to do it —you who have money enough to buy everything that the world can sell you?"

"What the world can sell, Miss Haffkin—or, in other words, what money can buy—has very little value beyond the necessaries of life. It is what money cannot buy, what the world has not got to sell, that is really precious. I suppose you know what I mean," he said, putting his hands into his pockets and turning to stare in an unmeaning way out of the window. "But I beg your pardon. I didn't mean to get back on to that old subject, I can assure you."

"And you really are going on this expedition?" she said, with a deliciously direct inconsequence which, in a beautiful Doctor of Philosophy, was quite irresistible.

"Of course I will. Why not? If we find that there really is a tunnel through the earth, and jump in at the South Pole and come out at the North, and take a series of electro-cinematograph photographs of the crust and core of the earth, we shall have done something that no one else has ever thought about. There ought to be some millions in it, too, besides the glory."

"And suppose you don't? Suppose this wonderful vessel of uncle's gets launched into this bottomless pit, and doesn't come out properly at the other end? Suppose your explosive just misses fire at the wrong moment, and when you've nearly reached the North Pole you go back again past the centre, and so on, and so on, until, perhaps, two or three centuries hence, your vessel comes to rest at the centre with a couple of skeletons inside it—what then?"

"We should take a medicine-chest with us, and I don't suppose we should wait for starvation."

"And so you seriously propose to stake your life and all your splendid prospects in the world on the bare chance of accomplishing, an almost impossibly fantastic achievement?"

"That's about what it comes to, I suppose. I don't really see how a man in my position could spend his money and risk his life much better."

There was a little silence after this, and then Brenda said, in a somewhat altered voice—

"If you really are going, I should like to come, too."

"You could only do that, Miss Haffkin, on one condition."

"And that is—?"

"That you say 'Yes' now to a question you said 'No' to nine months ago. You can call it bribery or corruption, or whatever you like; but there it is. On the other hand, as I have quite made up my mind about this expedition, I might as well tell you that if I don't get back, you will hear of something to your advantage by calling on my lawyers."

"I would rather go and work in a shop than do that!" she said. "Still, if you'll let me come with you, I will."

"Then the 'No' is 'Yes'?" he said, taking a half turn towards her and catching hold of her hand.

"Yes," she said, looking him frankly in the eyes. "You see, I didn't think you were in earnest about these things before; but now I see you are, and that makes you very different, you know, although you have such a horrible lot of money. Of course, it was my fault all the time, but still—"

She was in his arms by this time, and the discussion speedily reached a perfectly satisfactory, if partially inarticulate, conclusion.

CHAPTER III

The quiet wedding by special licence at St. Martin's, Gowcr Street, and the voyage from Southampton to Victoria Land, were very much like other weddings and other voyages; but when the whaler Australia and His Majesty's cruiser Beltona dropped their anchors under the smoke-shadow of Mount Terror, the mysterious cases were opened, and the officers and crew began to have grave suspicions as to the sanity of their passengers.

The cases were brought up on deck with the aid of the derricks, and then they got unpacked. The ships were lying about a hundred yards off a frozen, sandy beach. Back of this rose a sheer wall of ice about eighteen hundred feet high. On this side lay all that was known of Antarctica. On the other was the Unknown.

The greater part of the luggage was very heavy. Many and wild were the guesses as to what the contents of these cares could possibly be used for at the uttermost ends of the earth.

The Handy Men only saw insanity—or, at least, a hopelessly impracticable kind of method—in the unloading of those strange-looking stores. There were little cylinders of a curiously light metal, with screw-taps on either end of them-about two thousand of them. There were also queer "fitments" which, when they were landed, somehow erected themselves into sledges with cog-wheels alongside them. There were also little balloons, filled out of the taps of the cylinders, which went up attached to big kites of the quadrangular or box form. When the wind was sufficiently strong, and blowing in the right direction towards the Southern Pole, a combination of these kites took up Professor Haffkin and Mr. Arthur Princeps, and then, after a good many protestations, Mrs.Princeps. She, happening to get to the highest elevation, came down and reported that she had seen what no other Northernborn human being had ever seen.

She had looked over the great Ice Wall of the South, and from the summit of it she had seen nothing but an illimitable plain of snow-prairies, here and there broken up by a few masses of icemountains, but, so far as she could see, intersected by snow-valleys, smooth and hard frozen, stretching away beyond the limit of vision to the South.

"Nothing," she said, "could have been better arranged, even if we had done it ourselves; and there is one thing quite certain—granted that that hole through the earth really exists, there oughtn't to be any difficulty in getting to the edge of it. The wind seems always blowing in the same direction, and with the sledges and the auxiliary balloons we ought to simply race along. It's only a little over twelve hundred miles, isn't it?"

"About that," said the Professor, opening his eyes a little wider than usual. "And now that we have got our stores all landed, and, as far as we can provide, everything that can stand between us and destruction, we may as well say 'Good-bye' to our friends and world. If we ever get back again, it will

be via the North Pole, after we have accomplished what the sceptics call the impossible.

"But, Brenda, dear, don't you think you had better go back?" said her husband, laying his hands on her shoulders. "Why should you risk your life and all its possibilities in such an adventure as this?"

"If you risk it," she said, "I will. If you don't, I won't. You don't seem to have grasped the fact even yet that you and I are to all intents and purposes the same person. If you go, I go—through danger to death, or to glory such as human beings never won before. You asked me to choose, and that is what I have chosen. I will vanish with you into the Unknown, or I will come out with you at the North Pole in a blaze of glory that will make the Aurora Borealis itself look shabby. But whatever happens to you must happen to me as well, and the money in England must just take care of itself until we get back. That is all I have to say at present."

"And I wouldn't like you to hear you say one syllable more. You've said just what I wanted you to say, just what I thought you would say, and that's about good enough for me. We go from South to North through the core of the earth, or stop and be smashed up somewhere midway or elsewhere, but we'll do it together. If the inevitable happens, I will kill you first and then myself. If we get through, you will 'be, in the eyes of all men, just what I think you are now, and-well, that's about enough said, isn't it?"

"Almost," she said, "except—"

And then, reading what was plainly written in her eyes, he caught her closer to him.

Their lips met and finished the sentence more meaningly than any words could have done.

"I thought you'd say that," he said afterwards.

"I don't think you'd have asked me to marry you if you hadn't thought it," she said.

"No," he said. "I wouldn't. It seems a bit brutal to say so, but really I wouldn't."

"And if you hadn't asked like that," she said, once more looking him straight in the eyes, "I should have said 'No,' just as I did before."

She looked very tempting as she said this. He pulled her towards him; and as she turned her face up to his, he said-

"Has it ever struck you that there is infinitely more delight to a man in kissing lips which have once said 'No' to him, and then 'Yes,' than those which have only said 'Yes'?"

"What a very mean advantage to take of an unprotected female."

A kiss ended the uncompleted sentence.

Then she began again—

"And when shall we start?"

"Seven to-morrow morning—that is to say, by our watches, not by the sun. Everything is on shore now, and we shouldn't make it later. I'm going to the Professor to help him up with the fixings, and I suppose you want to go into the tent and see after your domestic business. Good night for the present."

"Good night, dear, for the present."

And so was said the most momentous "Good night" that man and woman had ever said to each other since Adam kissed "Good night" to Eve in Eden.

CHAPTER IV

The next day—that is to say, a period of twelve hours later, measured according to the chronometers of the expedition (for the pale sun was only describing a little arc across the northern horizon, not to sink below it for another three months or so)—the members of the Pole to Pole Expedition said "Good-bye" to the companions with whom they had journeyed across the world.

There was a strong, steady breeze blowing directly from the northward. The great box-kites were sent up, six of them in all, and along the fine piano-wire cables which held them, the lighter portions of the stores were sent on carriers driven by smaller kites.

Princeps and Brenda had gone up first in the carrier-slings. The Professor remained on the beach with the bluejackets from the cruiser, who, with huge delight and no little mystification, were giving a helping hand in the strangest job that even British sailors had ever helped to put through. Their remarks to each other formed a commentary on the expedition as original as it was terse and to the point. It had, however, the disadvantage of being mostly unprintable.

It was twelve hours later when the Professor, having shaken hands all round, a process which came to between three and four hundred handshakes, took his seat in the sling of the last kite and went soaring up over the summit of the ice-wall. A hearty cheer from five hundred throats, and a rolling fire of blank cartridge from the cruiser, reverberated round the walls of everlasting ice which guarded the hitherto unpenetrated solitudes of Antarotica as the sling crossed the top of the wall, and a pull on the tilting-line bought the great kite slowly to the ground.

As the cable slackened, it was released from its moorings on the beach. A little engine, driven by liquid air, hauled it up on a drum. Three tiny figures appeared on the edge of the ice-cliff and waved their last adieus to the ships and the little crowd on the beach. Then they disappeared, and the last link between them and the rest of the world was cut, possibly— and, as every man of the Antarctic Expedition firmly believed, for ever.

The three members of the Pole to Pole Expedition bivouacked that night under a snow-knoll, and after a good twelve hours' sleep they set to work on the preparations for the last stage but one of their marvellous voyage. There were four sledges. One of these formed what might be called the baggage-wagon. It carried the gas-cylinders, the greater part of the provisions, and the vehicle which was to convey the three adventurers from the South Pole to the North through the centre of the earth, provided always that the Professor's theory as to the existence of the transterrestrial tunnel proved to be correct. It was packed in sections, to be put together when the edge of the great hole was reached.

The sledge could be driven by two means. As long as the north-to-south wind held good, it was dragged over the smooth, snow-covered ice and land, which stretched away in an illimitable plain as far as the eye could reach from the top of the ice-wall towards the horizon behind which lay the South Pole and, perhaps, the tunnel. It was also furnished with a liquid-air engine, which actuated four big, spiked wheels, two in front and two behind. These, when the wind failed, would grip the frozen snow or ice and drive the sledge-runners over it at a maximum speed of twenty miles an hour. The engine could, of course, be used in conjunction with the kites when the wind was light.

The other three sledges were smaller, but similar in construction and means of propulsion. Each had its drawing-kites and liquid-air engine. One carried a reserve of provisions, balloons, and basket-cars, with a dozen gas-cylinders. Another was loaded with the tents and cooking-apparatus, and the third carried the three passengers, with their immediate personal belongings, which, among other oddments, included a spiritheater and a pair of curling- tongs and hairwavers.

All the sledges were yoked together, the big one going first. Then came the passenger-car, and then the other two side by side. In case of accidents, there were contrivances which made it possible to cast any of the sledges loose at a moment's notice. The kites, if the wind got too high, could be emptied and brought down by means of tilting-lines.

There was a fine twenty-mile breeze blowing when the kites were sent up after breakfast. The yoked sledges were held by lines attached by pegs driven deeply into the frozen snow. The kites reached an altitude of about a thousand feet, and the sledges began to lift and strain at the mooring-lines as though they were living things. The Professor and Princeps cut all the lines but one before they took their places in the sledge beside Brenda. Then Princeps gave her a knife and said:

"Now start us."

She drew the keen edge backwards and forwards over the tautly stretched line. It parted with a springing jerk, and the next moment the wonderful caravan started forward with a jump which tilted them back into their seats.

The little snow-hills began to slip away behind them. The tracks left by the springrunners tailed swiftly away into the distance, converging as railway-lines seem to do when you look down a long stretch of them. The keen, cold air bit hard on their flesh and soon forced them to protect their faces with the sealskin masks which let down from their helmets; but just before Brenda let hers down, she took a long breath of the icy air and said—

"Ah! That's just like drinking iced champagne. Isn't this glorious?" Then she gasped, dropped her mask over her face, put one arm through her husband's and one through her uncle's, pulled them close to her, and from that moment she became all eyes, looking through the crystal plate in her

mask at the strange, swiftly moving landscape and the great box-kites, high up in the air, dull white against the dim blue sky, which were dragging them so swiftly and so easily towards the Unknown and, perhaps, towards the impossible.

CHAPTER V

The expedition had been travelling for little more than six days, and so far the journey had been quite uneventful. The pale sun had swung six times round its oblique course without any intervention of darkness to break the seemingly endless polar day. At first they had travelled seventeen hours without halting. None of them could think of sleep amidst such novel surroundings, but the next day they were content with twelve, and this was agreed on as a day's journey.

They soon found that either their good fortune had given them a marvellously easy route, or else that the Antarctic continent was strangely different from the Arctic. Hour after hour their sledges, resting on rubber springs, spun swiftly over the undulating fields of snow-covered ice with scarcely a jog or a jar—in fact, as Brenda said at the end of the journey, it was more like a twelve-hundred mile switchback ride than a polar expedition.

So they travelled and slept and ate. Eight hours for sleep two hours evening and morning for pitching and striking tents, supper and breakfast, and the stretching of limbs, and twelve hours' travel.

Lunch was eaten en route, because the lowering of the kites and the mooring of the sledges were a matter of considerable labour, and they naturally wanted to make the most of the wind while it lasted.

Every day, as the sun reached the highest point of its curved course along the horizon, the Professor took his latitude. Longitude, of course, there was practically none to take, since every day's travel took them so many hundred miles along the converging meridians, and east and west, with every mile they made, came nearer and nearer together.

On the seventh morning the kites were all lowered, taken to pieces, and packed up, with the exception of one which drew the big sledge.

They had calculated that they were now within about a hundred miles of the Pole—that is to say, the actual end of the earth's axis—and, according to the Professor's calculations (granted that the Pole to Pole tunnel existed) it would be about a hundred miles in diameter. At the same time, it might be a good deal more, and, therefore, it was not considered advisable to approach what would literally be the end of the earth at a speed of twenty miles an hour, driven by the strong, steady breeze which had remained with them from the top of the ice-wall. So the liquidair engines were set to work, the spiked wheels bit into the hard-frozen snow, and the sledges, following the big one, and helped to a certain extent by its kite, began to move forward at about eight miles an hour.

The landscape did not alter materially as they approached the polar confines. On all sides was a vast plain of ice crossed in a generally southerly direction by long, broad snow-lanes. Here and there were low hills, mostly

rounded domes of snow; but these were few and far between, and presented no obstacles to their progress.

A little before lunch-time the ground began to slope suddenly away to the southward to such an extent that the kite was hauled in, and the spiked wheels had to be used to check the increasing speed of the sledges. On either hand the slope extended in a perfectly uniform fashion, and after a descent of about an hour, they could see a vast curved ridge of snow stretching to right and to left behind them which shut out the almost level rays of the pale sun so that the semi-twilight in which they had been travelling was rapidly deepening into dusk.

What was it? Were they descending into a vast polar depression, to the shores of such an open sea as had often been imagined by geographers and explorers, or were they in truth descending towards the edge of the Arctic tunnel itself?

"I wonder which it is?" said Brenda, sipping her midday coffee. "Don't you think we'd better stop soon and do a little snowshoeing? I, for one, should object to beginning the journey by falling over the edge. Ugh! Fancy a fall of seven thousand miles into nowhere! And then falling back again another seven thousand miles, and so for ever and ever, until your flesh crumbled off your bones and at last your skeleton came to a standstill exactly at the centre of the earth!"

"Not at all a pleasant prospect, I admit, my dear Brenda," said the Professor; "but, after all, I don't think you would be hurt much. You see, you would be dead in a very few seconds, and then think of the glory of having the whole world for your tomb."

"I don't like the idea," she replied. "A commonplace crematorium and a crystal urn afterwards will satisfy me completely. But don't you think we'd better stop and explore?"

"I certainly think Brenda's right," said Princeps. "If the tunnel is there, and the big sledge dragged us over into it—well, we needn't talk about that. I think we'd better do a little exploring, as she says."

The sledges were stopped, and the tilting-line of the great kite pulled so as to empty it of wind. It came gently to the earth, and then, rather to their surprise, disappeared completely.

"By Jove!" said Princeps. "I shouldn't be surprised if the tunnel is there, and the kite has fallen in. Brenda, I think it's just as well you spoke when you did. Fancy tobogganing into a hole like that at ten or fifteen miles an hour!"

"If that is the case," said the Professor, quietly ignoring the hideous suggestion, "the Axial Tunnel must be rather larger than I expected. I did not expect to arrive at the edge till late this afternoon."

When the sledges were stopped, they put on their snowshoes and followed the line of the kite-cable for about a mile and a half until they came to the edge of what appeared to be an ice-cliff. The cable hung over this, hanging down into a dusk which quickly deepened into utter darkness. They hauled upon it and found that there were only a few yards over the cliff, and presently they landed the great kite.

"I wonder if it really is the tunnel?" said Brenda, taking a step forward.

"Whatever it is, it's too deep for you to fall into with any comfort," said her husband, dragging her back almost roughly.

Almost at the same moment a mass of ice and snow on which they had been standing a few minutes before, hauling up the cable of the kite, broke away and disappeared into the void. They listened with all their ears, but no sound came back. The huge block had vanished in silence into nothingness, into a void which apparently had no bottom; for even if it had fallen a thousand feet, an echo would have come back to them up the wall.

"It is the tunnel," said Brenda, after a few moments' silence, during which they looked at each other with something like awe in their eyes. "Thank you, Arthur, I don't think I should have liked to have gone down, too. But, uncle," she went on, "if this is the tunnel, and that thing has gone on before us, won't it stop and come back when it gets near the North Pole? Suppose we were to meet it after we have passed the the centre. A collision just there wouldn't be very pleasant, would it?"

"My dear Brenda," he replied, "there is really no fear of anything of that sort. You see, there is atmosphere in the tunnel, and long before it reached the centre, friction will have melted the ice and dissipated the water into vapour."

"Of course. How silly of me not to have thought of that before! I suppose a piece of iron thrown over there would be melted to vapour, just as the meteorites are. Well now, If we've found the tunnel, hadn't we better go back and get ready to go through it?"

"We shall have to wait for the moon, I suppose," said Princeps, as they turned away towards the sledges.

"Yes," said the Professor. "We shall have plenty of moonlight to work by in about fifty-six hours. Meanwhile we can take a rest and do as Brenda says."

It was just fifty hours later when the moon, almost at the full, rose over the eastern edge of the snow-wall, casting a flood of white light over the dim, ghostly land of the World's End. As it rose higher and higher, they saw that the sloping plain ended in a vast semicircle of cliff, beyond which there was nothing. They went down towards it and looked beyond and across, but the curving ice-walls reached away on either hand until they were lost in the distance. They were standing literally on the end of the earth. No sound of

water or of volcanic action came up out of the void. They brought down a couple of rockets and fired them from the edge at a downward angle of sixty degrees. The trail of sparks spread out with inconceivable rapidity, and then, when the rockets burst, two tiny blue stars shone out, apparently as far below them as the stars of heaven were above them.

"I don't think there's very much doubt about that," said the Professor. "We have found the Axial Tunnel: but, after all, if it is only a very deep depression, our balloons can take us out of it after we have touched the bottom. Still, personally, I believe it to be the tunnel."

"Oh, it must be!" said Brenda decisively. And so, in fact, it proved to be.

As the moon grew rounder and brighter, the work of preparation for the last stage of their amazing enterprise grew apace. Everything had, of course, been thought out to the minutest detail, and the transformation which came over their impedimenta was little short of magical.

The sledges dissolved into their component parts, and these came together again in the form of a big, conical, drum-like structure, with walls of thick papiermache. It had four long plate-glass windows in the sides and a large round one top and bottom. It was ten feet in diameter and fifteen in height. The interior was plainly but snugly fitted up as a sitting-room by day and, by means of a movable partition, a couple of sleepingberths by night.

The food and water were stowed away in cupboards and tanks underneath the seats, and the gas-cylinders, rockets, etc., were packed under the flooring, which had a round trap-door in the centre over the window.

The liquid air-engines and the driving apparatus of the sledges were strongly secured to the lower end with chains which, in case of emergency, could be easily released by means of slip-hooks operated from inside. There were also two hundred pounds of shotballast underneath the flooring.

Attached to the upper part of the structure were four balloons, capable at their full capacity of easily lifting it with its whole load on board. These were connected by tubes with the interior, and thus, by means of pumps worked by a small liquid-air engine, the gas from the cylinders could either be driven up into them or drawn down and re-stored. In the centre of the roof was another cable, longer than those which held the balloons, and to this was attached a large parachute which could be opened or shut at will from inside.

CHAPTER VI

When the moment chosen for departure came, there remained no possible doubt as to the correctness of the Professor's hypothesis. The sun was dipping below the horizon and the long polar night was beginning. The full moon shone down from the zenith through a cloudless, mistless atmosphere. The sloping snow- field and the curved edge of the Axial Tunnel were brilliantly illuminated. They could see for miles along the ice-cliffs, far enough to make certain that they were part of a circle so vast that anything like an exact calculation of its circumference was impossible.

The breeze was still straight to the southward, to the centre of the tunnel. The balloons were inflated until the Brenda—as the strange vehicle had been named by a majority of two to one—began to pull at the ropes which held her down. Then, with a last look round at the inhospitable land they were leaving—perchance never to see land of any sort again—they went in through the curved sliding door to windward. Princeps started the engine, the balloons began to fill out, and three of the four mooring-ropes were cast off as the Brenda began to rock and swing like the car of a captive balloon.

"Once more," said Princeps, giving his wife the knife with which she had cut the sledges loose.

"And this time for good—or the North Pole—or—well, at any rate, this is the stroke of Fate."

She gave her left hand to her husband, knelt down on the threshold of the door, and made a sideward slash at the slender rope which was fastened just under it. The strands ripped and parted, the Brenda rocked twice or thrice and became motionless. The ice-cliffs slipped away from under them, the vast, unfathomed, and fathomless gulf spread out beneath them, and the voyage, either from Pole to Pole or from Time to Eternity, had begun.

The Professor, who was naturally in command, allowed the Brenda to drift for two and a half hours at a carefully calculated wind-speed of twenty miles all hour. The he said to Princeps—

"You can deflate the balloons now, I think. We must be near the centre. I will see to the parachute."

They had been thinking and talking of this journey, with all its apparent impossibilities and terrific risks, until they had become almost commonplace to them. But for all that, they looked at each other as they had never done before, as the Professor gave the fateful order. Even his lips tightened and his brows came together a little as he turned to cast loose the fine wire cables which held the ribs of the parachute.

The powerful little engine got to work, and the gas from the balloons hissed back into the cylinders. Then the envelopes were hauled in and stowed away. Through the side windows, Brenda saw a dim, far-away horizon rise

up all round, and through the top window and the circular hole in the parachute, she saw the full disc of the moon growing smaller and smaller, and so she knew that they had begun their fall of 41,708,711 feet.

Taking this at 7,000 miles, in round numbers, the Professor, reckoning on an average speed of fifty to sixty miles an hour, expected to make the passage from Pole to Pole in about six days, granted always that the tunnel was clear all through. If it wasn't, their fates were on the knees of the Gods, and there was nothing more to say. As events proved, they made it in a good deal less.

For the first thirty-six hours everything went with perfect smoothness. The wind-gauges at each side showed a speed of fifty-one miles an hour, and the Brenda continued her fall with perfect steadiness.

Suddenly, just as they were about to say "Good night" for the second time, they heard a sharp snapping and rending sound break through the smooth swish of the air past the outer wall of their vehicle. The next instant it rocked violently from side to side, and the indicators of the gauges began to fly round into invisibility.

"Heavens, uncle! what has happened?" gasped Brenda, clinging to the seat into which she had been slung.

"It can only be one thing," replied the Professor, steadying himself against the opposite wall. "Some of the stays have given way, and the parachute has split or broken up. God forgive me! Why did I not think of that before?"

"Of what?" said Princeps, dropping into the seat beside Brenda and putting his arm round her.

"The increasing pull of gravitation as we get nearer to the earth's centre. I calculated for a uniform pull only. They must have been bearing a tremendous strain before they parted."

While he was speaking, the vehicle had become steady again. The wind-gauges whirled till the spindles screeched and smoked in their sockets. The rush of the wind past the outside wall deepened to a roar and then rose to a shrill, whistling scream.

Long, uncounted minutes of sheer speechless, thoughtless terror passed. The inside air grew hot and stifling. Even the uninflammable walls began to crinkle and crack under the fearful heat developed by the friction of the rushing air.

Brenda gasped two or three times for breath, and then, slipping out of her husband's arms, fell fainting in a heap on the floor. Mechanically both he and the Professor stooped to lift her up. To their amazement, the effort they made to do so threw her unconscious form nearly to the top of the conical roof. She floated in mid-air for a moment and then sank gently back into their arms.

"The centre of the Earth!" gasped the Professor. "The point of equal attraction! If we can breathe for the next hour, we have a chance. Quick, Arthur, give us more air! The evaporation will reduce the temperature."

Even in such an awful moment as this, Professor Haffkin could not quite forget his scientific phraseology.

He laid Brenda, still weighing only a few pounds, on one of the seats and went to the liqueur-case for some brandy. Princeps meanwhile turned the tap of a spare cylinder lying beside the air-engine which drove the little electric- light installation. The sudden conversion of the liquid atmosphere into the gaseous form brought the temperature down with a rush, and— as they thought afterwards, with a shudder—probably prevented all the cylinders from exploding.

The brandy and the sudden coolness immediately revived Brenda, and after the two men had taken a stiff glass to steady their shaken-up nerves, they sat down and began to consider their position as calmly as might be.

They had passed the centre of the earth at an enormous but unknown velocity, and they were, therefore, endowed with a momentum which would certainly carry them far towards the northern end of the Axial Tunnel; but how far, it was impossible to say, since they did not know their speed.

But, however great the speed, it was diminishing every second, and a time must come when it would be nil—and then the backward fall would begin. If they could not prevent this, they might as well put an end to everything at once.

Hours passed; uncounted, but in hard thinking, mingled with dumb apprehension.

The rush of the wind outside began to slacken at last, and when Princeps at length managed to fit another wind-gauge in place of the one that had been smashed to atoms, it registered a little over two hundred miles an hour.

"Our only chance, as far as I can see," said the Professor at length, looking up from a writing-pad on which he had been making pages of calculations, "is this. We must watch that indicator; and when the speed drops, say, to ten miles an hour, we must inflate our balloons to the utmost, cut loose the engines and other gear, and trust to the gas to pull us out."

There was literally nothing else to be done, and so for the present they sat and watched the indicator, and, by the way of killing the weary hours, counted the possibilities and probabilities of their return to the civilised world should the Brenda's balloons succeed in lifting her out of the northern end of the Axial Tunnel.

Hour by hour the speed dropped. The fatal pull, which, unless the balloons were able to counteract it, would drag them back with a hand resistless as that of Fate itself, had got them in its grip. Somewhere, an unknown

number of miles above them, were the solitudes of the Northern Pole, from which they might not get away even if they reached them. Below was the awful gulf through which they had already passed, and to fall back into that meant a fate 80 terrible that Brenda had already made her husband promise to shoot her, should the balloons fail to do their work.

The Professor passed most of his time in elaborate calculations, the object of which was the ascertaining, as nearly as possible, their distance from the centre of the earth, and, therefore, the number of miles which they would have to rise to reach the outer air again. There were other calculations which had relation to the lifting power of the balloons, the weight of the car and its occupants, and the amount of gas at their disposal, not only for the ascent to the Pole, but also for their flight southward, if happily they found favourable winds to carry then back to the confines of civilisation. These he kept to himself. He had the best of reasons for doing so.

The hours went by, and the speed shown by the indicator dropped steadily. A hundred miles an hour had become fifty fifty became forty, then thirty, twenty, ten.

"I think you can get your balloons out now, Arthur," said the Professor. "It's a very good thing we housed them in time, or they would have been torn to ribbons by this. If you'll cast them loose, I'll see to the gas apparatus. Meanwhile, Brenda, you may as well get dinner ready."

Within an hour the four balloons were cast loose through their portholes in the roof of the car and attached to their cables and supply pipes. Meanwhile the upward speed of the Brenda had dropped from ten to seven miles. The gas- cylinders were connected with the transmitters and apparatus which allowed the gas to return to a normal temperature before passing into the envelopes, and then the balloons began to fill.

For a few moments the indicator stopped and trembled as the cables tightened, then it went forward again. They saw that it was registering six and a half miles an hour. This rose to seven, eight, and nine. Presently it passed ten.

"We shall do it, after all," said Princeps. "You see, we're going faster every minute. I wonder what the reason of that check was?"

"Probably the increased atmospheric friction on the surface of the balloons," replied the Professor quietly, with his eyes fixed on the dial.

The indicator stopped again at ten, and then the little blue, steel hand, which to them was veritably the Hand of Fate, began to creep slowly backwards.

None of them spoke. They all knew what it meant. The upward pull of the balloons was not counteracting the downward pull exerted from the centre of the earth. In a few hours more they would come to a standstill, and then,

when the two forces balanced, they would hang motionless in that awful gulf of everlasting night until the gas gave out, and then the backward plunge to perdition would begin.

"I don't like the look of that," said Princeps, keeping his voice as steady as he could. "Hadn't we better let the engines go?"

"I think we ought to throw away everything that we can do without," said Brenda, staring at the fateful dial with fixed, wide-open eyes. "What's the use of anything if we never get to the top of this horrible hole?"

"That's rather a disrespectful way in which to speak of the Axial Tunnel of the earth, Brenda," said the Professor, with the flicker of a smile. "But we won't get rid of the impedimenta just yet," he went on "You see, as the mathematicians say, velocity is momentum multiplied into mass. Therefore, if we decrease our mass, we shall decrease our momentum. The engines and the other things are really helping us along now, though it doesn't seem so. When the indicator has nearly stopped, it will be time to cut the weight loose."

Then they had dinner, eaten with a mere pretence of appetite, assisted by a bottle of "Pol Roger '89." The speed continued to drop steadily during the night, though Princeps satisfied himself that the balloons were filled to the utmost limit consistent with safety, and at last, towards the middle of the conventional night, it hovered between one and zero.

"I think you may let the engines go now, Arthur," said the Professor, "It's quite evident that we're overweighted. Slip the hooks, and then go up and see if your balloons will stand any more."

He said this in a whisper, because Brenda, utterly worn out, had gone to lie down behind the partition.

The hooks were slipped, and the hand on the dial began to move again as the Brenda, released from about six hundred pounds' weight, began to ascend again. But the speed only rose to fifteen miles an hour, and that was eight miles short of the result the Professor had arrived at. The attractive force was evidently being exerted from the sides of the tunnel as well as from the centre of the earth. He looked at the dial and said to Princeps—

"I think you'd better go and lie down now. It's my watch on deck. We're doing nicely now. I want to run through my figures again."

"All right," said Princeps, yawning and shaking hands. "You'll call me in four hours, as usual, won't you?"

Professor Haffkin nodded and said: "Good night. I hope we shall be through our difficulties by the morning. Good night, Arthur."

He got out his papers again and once more went minutely through the maze of figures and formulae with which the sheets were covered. Then, when the

sound of slow, deep breathing told him that Princeps was asleep, he opened the trap-door in the floor and counted the unexhausted cylinders of gas. When he had finished, he said to himself in a whisper-

"Barely enough to get them home, even with the best of luck; but still enough to prove that it is possible to make a journey through the centre of the earth from Pole to Pole. At least, that will be done and proved— and Karl Haffkin will live for ever."

There was the light of martyrdom in his eyes as he looked for the last time at the dial. Then he unscrewed the circular window from the bottom of the car, lowered himself through it, hung for a moment to the edge with his hands, and let go.

When Princeps and Brenda woke after several hours' sleep, they were astonished to find the windows of the car glowing with a strange, brilliant light—the light of the Northern Aurora. Princeps got out, saying: "Hurrah, Professor! we've got there! Daylight at last!"

But there was no Professor, and only the open trap-door and the window hanging on its hinges below told how an almost priceless life had been heroically sacrificed to make the way of life longer for two who had only just begun to tread it together through the golden gates of the Garden of Love.

But Karl Haffkin's martyrdom meant even more than this. Without it, the great experiment must have failed, and three lives would have been lost instead of one; and so he chose to die the lesser death so that his comrades on that marvellous voyage might live out their own lives to Nature's limit, and that he himself might live for ever on the roll of honour which is emblazoned with the names of the noblest of all martyrs—those who have given their lives to prove that Truth is true.

THE END