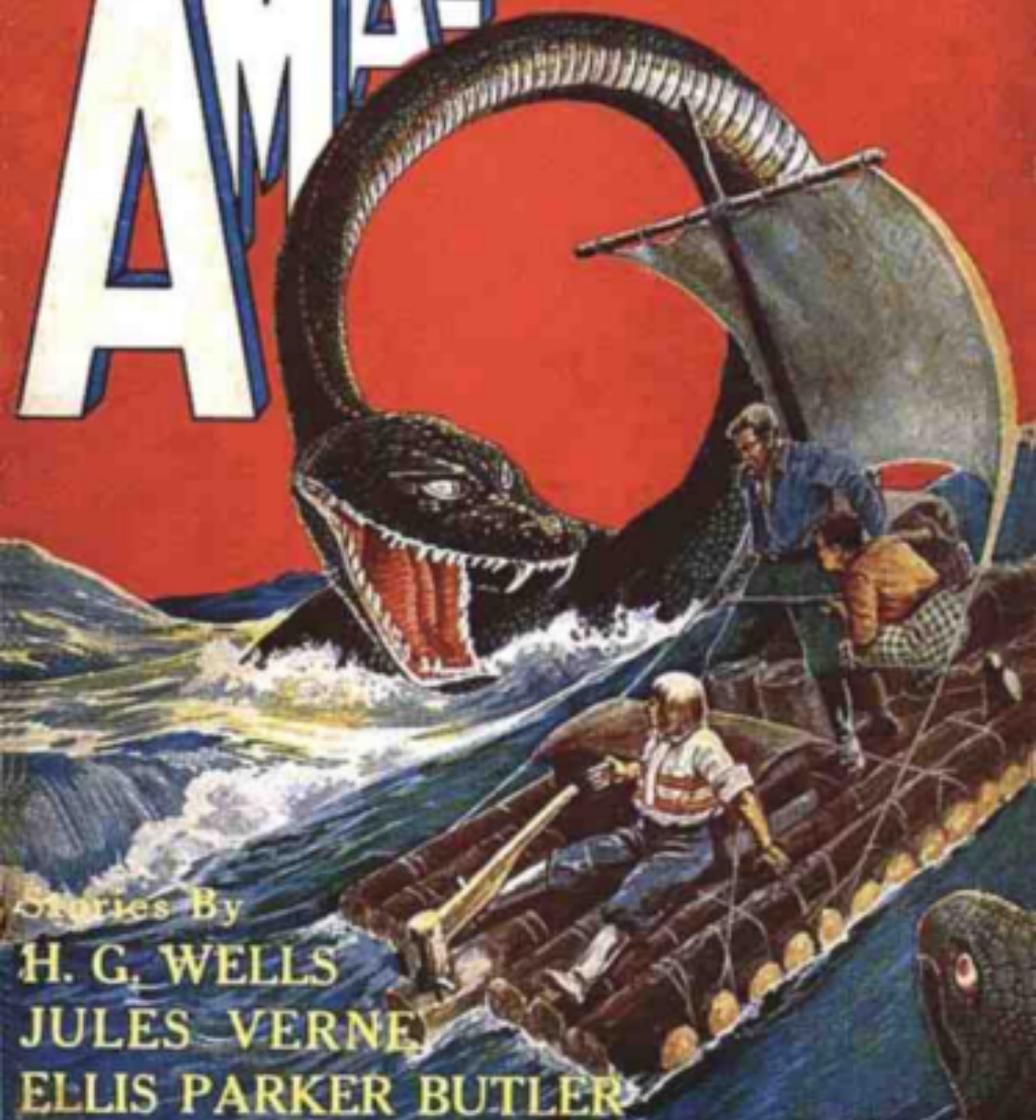


June, 1926

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AMAZING STORIES

HUGO GERNSBACK
EDITOR



Stories By
H. G. WELLS
JULES VERNE
ELLIS PARKER BUTLER

EXPERIMENTER PUBLISHING COMPANY, NEW YORK, PUBLISHERS OF
RADIO NEWS - SCIENCE & INVENTION - RADIO REVIEW - AMAZING STORIES - RADIO INTERNACIONAL

To
PRACTICAL MEN
and
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STUDENTS

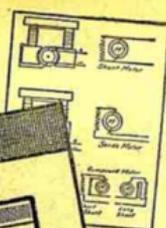
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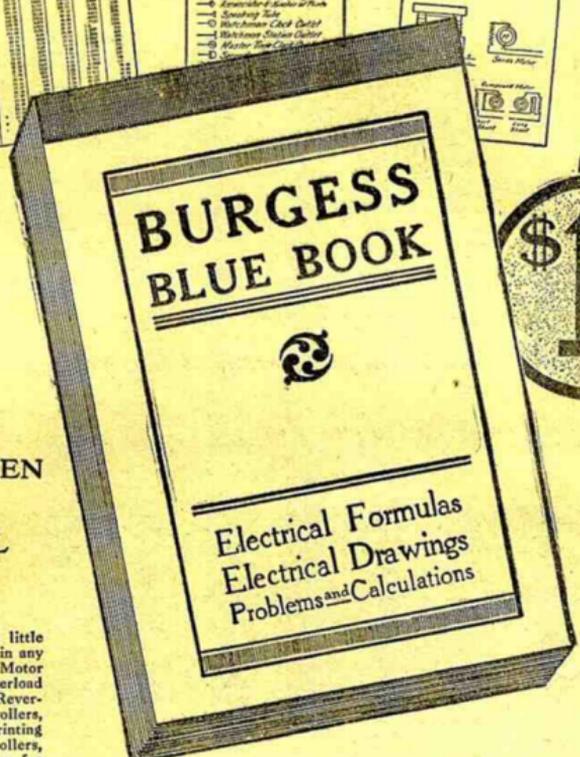
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JULES VERNE'S TOMBSTONE AT AMIENS
PORTRAYING HIS IMMORTALITY

AMAZING STORIES

Vol. 1 No. 3
June, 1926

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OUR COVER

Illustrates an episode in this month's story, "A Trip to the Center of the Earth," by Jules Verne. Here we see our intrepid explorers almost perish at the agency of one of the great sea monsters roaming the great Inner Sea.

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THE
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OF
SCIENTIFICATION

HUGO GERNSBACK, F.R.S., Editor

DR. T. O'CONOR SLOANE, M. A., Ph.D., Associate Editor

Editorial and General Offices

53 Park Place, New York, N. Y.

Extravagant Fiction Today - - - - - *Cold Fact Tomorrow*

THE LURE OF SCIENTIFICATION

By HUGO GERNSBACK, F.R.S.



SCIENTIFICATION is not a new thing on this planet. While Edgar Allan Poe probably was one of the first to conceive the idea of a scientific story, there are suspicions that there were other scientification authors before him. Perhaps they were not such outstanding figures in literature, and perhaps they did not write what we understand today as scientification at all. Leonardo da Vinci (1452-1519), a great genius, while he was not really an author of scientification, nevertheless had enough prophetic vision to create a number of machines in his own mind that were only to materialize centuries later. He described a number of machines, seemingly fantastic in those days, which would have done credit to a Jules Verne.*

There may have been other scientific prophets, if not scientification writers, before his time, but the past centuries are so beclouded, and there are so few manuscripts of such literature in existence today, that we cannot really be sure who was the real inventor of scientification.

In the eleventh century there also lived a Franciscan monk, the amazing as well as famous Roger Bacon (1214-1294). He had a most astounding and prolific imagination, with which he foresaw many of our present-day wonders. But as an author of scientification, he had to be extremely careful, because in those days it was not "healthy" to predict new and startling inventions. It was necessary to disguise the manuscript—to use cypher—as a matter of fact, so that it has taken many great modern minds to unravel the astonishing scientific prophecies of Roger Bacon.**

The scientification writer of today is somewhat

*Da Vinci—the Edison of the Middle Ages—is credited with having first imagined the printing press, the breech-loading gun, the mitrailleuse gun, the steam engine, the chain drive, a man-propelled airplane, the parachute and many others—an amazing array of "scientification"—because he admittedly only imagined these inventions.

**In his famous *Opus Majus* he accurately prophesied the telescope. He gave excellent descriptions of the camera obscura, and of the burning glass—even the invention of gun powder is accredited to him. He forecast an age of industry and invention, with all prominence given to experiment. As a reward for his immortal work, he was incarcerated for a number of years.

more fortunate—but not so very much more. It is true that we do not behead him or throw him into a dungeon when he dares to blaze forth with what seems to us, an impossible tale, but in our inner minds we are just as intolerant today, as were the contemporaries of Roger Bacon. We have not learned much in the interval. Even such a comparatively tame invention as the submarine, which was predicted by Jules Verne, was greeted with derisive laughter, and he was denounced in many quarters. Still, only forty years after the prediction of the modern submarine by Verne, it has become a reality.

There are few things written by our scientification writers, frankly impossible today, that may not become a reality tomorrow. Frequently the author himself does not realize that his very fantastic yarn may come true in the future, and often he, himself, does not take his prediction seriously.

But the seriously-minded scientification reader absorbs the knowledge contained in such stories with avidity, with the result that such stories prove an incentive in starting some one to work on a device or invention suggested by some author of scientification.

One of our great surprises since we started publishing AMAZING STORIES is the tremendous amount of mail we receive from—shall we call them "Scientification Fans"?—who seem to be pretty well orientated in this sort of literature. From the suggestions for reprints that are coming in, these "fans" seem to have a hobby all their own of hunting up scientification stories, not only in English, but in many other languages. There is not a day, now, that passes, but we get from a dozen to fifty suggestions as to stories of which, frankly, we have no record, although we have a list of some 600 or 700 scientification stories. Some of these fans are constantly visiting the book stores with the express purpose of buying new or old scientification tales, and they even go to the trouble of advertising for some volumes that have long ago gone out of print.

Scientification, in other words furnishes a tremendous amount of scientific education and fires the reader's imagination more perhaps than anything else of which we know.

A TRIP to the CENTER of the EARTH

By Jules Verne

Author—"Around the World in 80 Days", "Off on a Comet", etc., etc.



We found ourselves close to a lofty forest! It consisted of straight trunks with tufted tops, in shape like parasols. The air seemed to have no effect upon these trees—which in spite of a tolerable breeze remained as still and motionless as if they had been petrified. . . . My uncle unhesitatingly called them by their real names. "It is only," he said in his coolest manner, "a forest of mushrooms."

What Went Before

PROFESSOR Harwigg, chemist, philosopher, mineralogist, etc., while delighting in a rare, old edition by a famous Icelandic author, unexpectedly comes upon a mysterious parchment, apparently containing a secret message. Both the professor and Harry—his nephew and pupil, who also lives with him—set to work and finally stumble on the key to the secret code and read the following message: "Descend into the crater of Yokul of Sneffels, which the shade of Scartaris covers before the kalends of July, audacious traveler, and you will reach the center of the earth. I did it.—Arne Saknussemm."

The professor decides that they will make the trip and also reach the center of the earth. Three days later, they—Harry much against his will and better judgment—start for Iceland and Mount Sneffels,

with the good wishes of Gretchen, the professor's ward, and Harry's fiancée.

When they get to Iceland, they are fortunate enough to obtain the services of Hans, a true Icelandic guide—calm, stolid and dependable. After numerous adventures and interesting encounters and difficult climbing, they reach the top of Mt. Sneffels and then descend into its crater—and thus following correctly, the directions of the message. So far the party is elated with the wonders of their surroundings as they descend deeper and deeper into the bowels of the earth, lowering themselves into the deeper wells by means of sturdy ropes doubled over the rocks above. At least once so far, they were re-assured of the truth of the mysterious message, when they noticed a rock, below the crater, bearing the inscription "Arne Saknussemm."

A Trip to the Center of the Earth

By JULES VERNE

PART II

CHAPTER XVI

The Eastern Tunnel

THE next day was Tuesday, the 2d of July—and at six o'clock in the morning we resumed our journey. We still continued to follow the gallery of lava, a perfect natural pathway, as easy of descent as some of those inclined planes which, in very old German houses, serve the purpose of staircases. This went on until seventeen minutes past twelve, the precise instant at which we rejoined Hans, who having been somewhat in advance, had suddenly stopped.

"At last," cried my uncle, "we have reached the end of the shaft."

I looked wonderingly about me. We were in the center of four cross paths—somber and narrow tunnels. The question now arose as to which it was wise to take; and this of itself was no small difficulty. My uncle, who did not wish to appear to have

any hesitation about the matter before either me or the guide, at once made up his mind. He pointed quietly to the eastern tunnel; and, without delay, we entered within its gloomy recesses.

Besides, had he entertained any feeling of hesitation it might have been prolonged indefinitely, for there was no indication by which to determine on a choice. It was absolutely necessary to trust to chance and good fortune!

The descent of this obscure and narrow gallery was very gradual and winding. Sometimes we gazed through a succession of arches, its course very like

the aisles of a Gothic cathedral. The great artistic sculptors and builders of the middle ages might have here completed their studies with advantage. Many most beautiful and suggestive ideas of architectural beauty would have been discovered by them. After passing through this phase of the cavernous way, we suddenly came, about a mile farther on, upon a square system of arch, such as that adopted by the early Romans, projecting from the solid rock, and keeping up the weight of the roof. Suddenly

we came upon a series of low subterranean tunnels which looked like beaver holes, or the work of foxes. Through these narrow and winding ways we had literally to crawl!

The heat still remained at quite a supportable degree. With an involuntary shudder, I reflected on what the heat must have been when the volcano of Sneffels was pouring its smoke, flames, and streams of melted lava—all of which must have come up by the road we

were now following. I could imagine the torrents of hot, seething stone darting on, bubbling up with accompaniments of smoke, steam, and sulphurous stench! "Only to think of the consequences," I mused, "if the old volcano were once more to get to work."

I did not communicate these rather unpleasant reflections to my uncle. His only idea was to go ahead. He walked, he slid, he clambered over piles of fragments, he rolled down heaps of broken lava, with an earnestness and conviction it was impossible not to admire.

IN the first installment we got our travelers well started on their way to the internal cavities of the globe. They have reached Iceland, have climbed Mount Sneffels, and with a stolid Iclander for a guide—or rather companion—have penetrated down through the crater of the volcano, and have started their adventurous and exciting trip. But now wonders really begin to happen—strange forms of prehistoric life are encountered, and dangers are met with. But our travelers get through all their troubles in the end and come back to tell us all about it. Jules Verne's astonishing scientific knowledge, combined with his talents as a narrator, gives the novel great value from a scientific, as well as from a literary standpoint. Few authors could write so vivid a description of adventure. Fewer yet, could fill it with such correct science. Follow our travelers through these exciting chapters.

At six o'clock in the evening, after a very wearisome journey, but one not so tiring as before, we had made six miles towards the southward, but had not gone more than a mile downwards.

My uncle, as usual, gave the signal to halt. We ate our meal in thoughtful silence, and then retired to sleep. Our arrangements for the night were very primitive and simple. A traveling rug, in which each rolled himself, was all our bedding. We had no necessity to fear cold or any unpleasant visit. Travelers who bury themselves in the wilds and depths of the African desert, who seek profit and pleasure in the forests of the New World, are compelled to take it in turn to watch during the hours of sleep; but in this region of the earth absolute solitude and complete security reigned supreme.

After a night's sweet repose, we awoke fresh and ready for action. There being nothing to detain us, we started on our journey. We continued to burrow through the lava tunnel as before. It was impossible to make out through what soil we were making way. The tunnel, moreover, instead of going down into the bowels of the earth, became absolutely horizontal. I even thought, after some examination, that we were actually tending upwards. About ten o'clock in the day this state of things became so clear, that finding the change very fatiguing I was obliged to slacken my pace and finally to come to a halt. "Well," said the Professor quickly, "what is the matter?"

"The fact is, I am dreadfully tired," was my earnest reply.

"What," cried my uncle, "tired after a three hours' walk, and by so easy a road?"

"Easy enough, I dare say, but very fatiguing."

"But how can that be, when all we have to do is to go downwards?"

"I beg your pardon, sir. For some time I have noticed that we are going upwards."

"Upwards," cried my uncle, shrugging his shoulders, "how can that be?"

"There can be no doubt about it. For the last half hour the slopes have been upward—and if we go on in this way much longer we shall find ourselves back in Iceland."

My uncle shook his head with the air of a man who does not want to be convinced. I tried to continue the conversation. He would not answer me, but once more gave the signal of departure. His silence I thought was only caused by concentrated ill-temper.

However this might be, I once more took up my load, and resolutely followed Hans, who was now in advance of my uncle. I did not like to be beaten or even distanced. The very idea of being left behind, lost in that terrible labyrinth, made me shiver as with the ague. Besides, if the ascending path was more arduous and painful to clamber, I had one source of secret consolation and delight. It was to all appearance taking us back to the surface of the earth. That in itself was hopeful. Every step I took confirmed me in my belief, and I began already to build castles in the air in relation to my marriage with my pretty little cousin.

About twelve o'clock there was a great and sudden change in the aspect of the rocky sides of the gallery. I first noticed it from the diminution of the rays of light which cast back the reflection of the

lamp. From being coated with shining and resplendent lava, it became living rock. The sides were sloping walls, which sometimes became almost vertical. We were now in what the geological professors call a state of transition, in the period of Silurian rocks. "I can see, clearly now," I cried; "the sediment from the waters which once covered the whole earth, formed during the second period of its existence, these schists and these calcareous rocks. We are turning our backs on the granite rocks."

I might just as well have kept my observations to myself. My geological enthusiasm got the better of my cooler judgment, however, and Professor Hardwigg heard my observations. "What is the matter now?" he said, in a tone of great gravity.

"Well," cried I, "do you not see these different layers of calcareous rocks and the first indication of slate strata?"

"Well; what then?"

"We have arrived at that period of the world's existence when the first plants and the first animals made their appearance."

"You think so?"

"Yes, look; examine and judge for yourself."

I induced the Professor with some difficulty to cast the light of his lamp on the sides of the long winding gallery. I expected some exclamation to burst from his lips. I was very much mistaken. The worthy Professor never spoke a word.

It was impossible to say whether he understood me or not. Perhaps it was possible that in his pride—my uncle and a learned professor—he did not like to own that he was wrong in having chosen the eastern tunnel, or was he determined at any price to go to the end of it? It was quite evident we had left the region of lava, and that the road by which we were going could not take us back to the great crater of Mount Sneffels. "At all events, if I am right," I thought to myself, "I must certainly find some remains of primitive plants, and it will be absolutely necessary to give way to such indubitable evidence. Let us have a good search."

I accordingly lost no opportunity of searching, and had not gone more than about a hundred yards, when the evidence I sought for cropped up in the most incontestable manner before my eyes. It was quite natural that I should expect to find these signs, for during the Silurian period the seas contained no fewer than fifteen hundred different animal and vegetable species. My feet so long accustomed to the hard and arid lava soil, suddenly found themselves treading on a kind of soft dust, the remains of plants and shells. Upon the walls themselves I could clearly make out the outline, as plain as a sun picture, of the fucus and the lycopods. The worthy and excellent Professor Hardwigg could not, of course, make any mistake about the matter; but I believe he deliberately closed his eyes, as he continued on his way with a firm and unalterable step.

I began to think he was carrying his obstinacy a great deal too far. I could no longer act with prudence or composure. I stooped on a sudden and picked up an almost perfect shell, which had undoubtedly belonged to some animal very much resembling some of the present day. Having secured the prize, I followed in the wake of my uncle. "Do you see this?" I said.

"Well," said the Professor, with the most imperturbable tranquility, "it is the shell of a crustacean animal of the extinct order of the trilobites; nothing more I assure you."

"But," cried I, much troubled at his coolness, "do you draw no conclusion from it?"

"Well, if I may ask, what conclusion do you draw from it yourself?"

"Well, I thought——"

"I know, my boy, what you would say, and you are right, perfectly and incontestably right. We have finally abandoned the crust of lava and the road by which the lava ascended. It is quite possible that I may have been mistaken, but I shall be unable to discover my error until I get to the end of this gallery."

"You are quite right as far as that is concerned," I replied, "and I should highly approve of your decision, if we had not to fear the greatest of all dangers."

"And what is that?"

"Want of water."

"Well, my dear Harry, it can't be helped. We must put ourselves on rations."

And on he went.

CHAPTER XVII

Deeper and Deeper—The Coal Mine

IN truth, we were compelled to put ourselves upon rations. Our supply would certainly last not more than three days. I found this out about supper time. The worst part of the matter was, that in what is called the transition rocks, it was hardly to be expected that we should meet with water! I had read of the horrors of thirst, and I knew that where we were, a brief trial of its sufferings would put an end to our adventures—and our lives! But it was utterly useless to discuss the matter with my uncle. He would have answered by some axiom from Plato.

During the whole of the next day we proceeded on our journey through this interminable gallery, arch after arch, tunnel after tunnel. We journeyed without exchanging a word. We had become as mute and reticent as Hans, our guide. The road had no longer an upward tendency; at all events, if it had, it was not to be made out very clearly. Sometimes there could be no doubt that we were going downwards. But this inclination was scarcely to be distinguished, and was by no means reassuring to the Professor, because the character of the strata was in no wise modified, and the transition character of the rocks became more and more marked.

It was a glorious sight to see how the electric light brought out the sparkles in the walls of the calcareous rocks, and the old red sandstone. One might have fancied himself in one of those deep cuttings in Devonshire, which have given their name to this kind of soil. Some magnificent specimens of marble projected from the sides of the gallery; some of an agate gray with white veins of variegated character, others of a yellow spotted color, with red veins; farther off might be seen samples of color in which cherry-tinted seams were to be found in all their brightest shades.

The greater number of these marbles were

stamped with the marks of primitive animals. Since the previous evening, nature and creation had made considerable progress. Instead of the rudimentary trilobites, I perceived the remains of a more perfect order. Among others, the fish in which the eye of a geologist has been able to discover the first form of the reptile. It was quite evident to me that we were ascending the scale of animal life of which man forms the summit. My excellent uncle, the Professor, appeared not to take notice of these warnings. He was determined at any risk to proceed.

He must have been in expectation of one of two things; either that a vertical well was about to open under his feet, and thus allow him to continue his descent, or that some insurmountable obstacle would compel us to stop and go back by the road we had so long traveled. But evening came again, and, to my horror, neither hope was destined to be realized!

On Friday, after a night when I began to feel the gnawing agony of thirst, and when in consequence appetite decreased, our little band rose and once more followed the turnings, and windings, the ascents and descents, of this interminable gallery. All were silent and gloomy. I could see that even my uncle felt that we had adventured too far.

After about ten hours of further progress,—a progress dull and monotonous to the last degree—I remarked that the reverberation, and reflection of our lamps upon the sides of the tunnel had singularly diminished. The marble, the schist, the calcareous rocks, the red sandstone, had disappeared, leaving in their places a dark and gloomy wall, sombre and without brightness. When we reached a remarkably narrow part of the tunnel, I leaned my left hand against the rock. When I took my hand away, and happened to glance at it, it was quite black. We had reached the coal strata of the Central Earth. "A coal mine!" I cried.

"A coal mine without miners," responded my uncle, a little severely.

"How can we tell?"

"I can tell," replied my uncle, in a sharp and docterial tone. "I am perfectly certain that this gallery through successive layers of coal, was not cut by the hand of man. But whether it is the work of nature or not is of little concern to us. The hour for our evening meal has come—let us up."

Hans, the guide, occupied himself in preparing food. I had come to that point where I could no longer eat. All I cared about were the few drops of water which fell to my share. What I suffered it is useless to record. The guide's gourd, not quite half full, was all that was left for us three! Having finished their repast, my two companions laid themselves down upon their rugs, and found in sleep a remedy for their fatigue and sufferings. As for me, I could not sleep, I lay counting the hours until morning.

The next morning, Saturday, at 6 o'clock, we started again. Twenty minutes later we suddenly came upon a vast excavation. From its mighty extent I saw at once that the hand of man could have had nothing to do with this coal mine; the vault above would have fallen in; even now it was only held together by some miracle of nature. This mighty natural cavern was about a hundred feet wide, by

about a hundred and fifty high. The earth had evidently been forced apart by some violent subterranean commotion. The mass, giving way to a prodigious upheaving of nature, had split in two, leaving the vast gap into which we inhabitants of the earth had penetrated for the first time.

The whole singular history of the coal period was written on those dark and gloomy walls. A geologist would have been able easily to follow the different phases of its formation. The seams of coal were separated by strata of sandstone, and by a compact clay, which appeared to be crushed down by the weight from above.

While we still continued our journey, I forgot the length of the road, by giving myself up wholly to these geological considerations. The temperature continued to be very much the same as while we were traveling amid the lava and the schists. On the other hand my sense of smell was much affected by a very powerful odor. I immediately knew that the gallery was filled to overflowing with that dangerous gas the miners call fire-damp, the explosion of which has caused such fearful and terrible accidents, making a hundred widows, and hundreds of orphans in a single hour.

Happily, we could illuminate our progress by means of the Ruhmkorf apparatus. If we had been so rash and imprudent as to explore this gallery, torch in hand, a terrible explosion would have put an end to our travels, simply because no travelers would be left.

Our excursion through this wondrous coal mine in the very bowels of the earth lasted until evening. My uncle was scarcely able to conceal his impatience and dissatisfaction at the road continuing still to advance in a horizontal direction. The darkness, dense and opaque, a few yards in advance and in the rear, rendered it impossible to make out what was the length of the gallery. For myself, I began to believe that it was simply interminable, and would go on in the same manner for months.

Suddenly, however, at six o'clock, we stood in front of a wall. To the right, to the left, above, below, nowhere was there any passage. We had reached a spot where the rocks said in unmistakable accents—No Thoroughfare. I stood stupefied. The guide simply folded his arms. My uncle was silent.

"Well, well, so much the better," cried my uncle, at last, "I now know what we are about. We are decidedly not upon the road followed by Saknussee. All we have to do is to go back. Let us take one night's good rest, and before three days are over, I promise you we shall have regained the point where the galleries divided."

"Yes, we may, if our strength lasts as long," I cried, in a lamentable voice.

"And why not?"

"To-morrow, among us three, there will not be a drop of water. It is just gone."

"And your courage with it," said my uncle, speaking in a severe tone.

What could I say? I turned round on my side, and from sheer exhaustion fell into a heavy, but troubled sleep. Dreams of water! And I awoke unrefreshed. I would have bartered a diamond mine for a glass of pure spring water!

CHAPTER XVIII

The Wrong Road

NEXT day, our departure took place at a very early hour. There was no time for the least delay. According to my account, we had five days' hard work to get back to the place where the galleries divided.

I can never tell all the sufferings we endured upon our return. My uncle bore them like a man who has been in the wrong—that is, with concentrated and suppressed anger; Hans, with all the resignation of his pacific character; and I—I confess that I did nothing but complain, and despair. I had no heart for this bad fortune. But there was one consolation. Defeat at the outset would probably upset the whole journey!

As I had expected from the first, our supply of water gave out completely on our first day's march. Our provision of liquids was reduced to our supply of Schiedam; but this horrible—nay, I will say it—this infernal liquor burnt the throat, and I could not even bear the sight of it. I found the temperature to be stifling. I was paralyzed with fatigue. More than once I was about to fall insensible to the ground. The whole party then halted, and the worthy Icelander and my excellent uncle did their best to console and comfort me. I could, however, plainly see that my uncle was contending painfully against the extreme fatigues of our journey, and the awful torture generated by the absence of water. Then a time came when I ceased to recollect anything—when all was one awful, hideous, fantastic dream!

At last, on Tuesday, the eighth of the month of July, after crawling on our hands and knees for many hours, more dead than alive, we reached the point of junction between the galleries. I lay like a log, an inert mass of human flesh on the arid lava soil. It was then ten in the morning.

Hans and my uncle, leaning against the wall, tried to nibble away at some pieces of biscuit, while deep groans and sighs escaped from my scorched and swollen lips. Then I fell off into a kind of deep lethargy. Presently I felt my uncle approach, and lift me up tenderly in his arms. "Poor boy," I heard him say in a tone of deep commiseration.

I was profoundly touched by these words, being by no means accustomed to signs of womanly weakness in the Professor. I caught his trembling hands in mine and gave them a gentle pressure. He allowed me to do so without resistance, looking at me kindly all the time. His eyes were wet with tears. I then saw him take the gourd which he wore at his side. To my surprise, or rather to my stupefaction, he placed it to my lips.

"Drink, my boy," he said.

Was it possible my ears had not deceived me? Was my uncle mad? I looked at him, with, I am sure, quite an idiotic expression. I would not understand him. I too much feared the counteraction of disappointment.

"Drink," he said again.

Had I heard aright? Before I could ask myself the question a second time, a mouthful of water cooled my parched lips and throat—one mouthful, but I do believe it brought me back to life. I

thanked my uncle by clapping his hands. My heart was too full to speak.

"Yes," said he, "one mouthful of water, the very last—do you hear, my boy—the very last! I have guarded it at the bottom of my bottle as the apple of my eye. Twenty times, a hundred times, I have resisted the fearful desire to drink it. But—no—no, Harry, I saved it for you."

"My dear uncle," I exclaimed, and the big tears rolled down my hot and feverish cheeks.

"Yes, my poor boy, I knew that when you reached this place, this cross road in the earth, you would fall down half dead, and I saved my last drop of water in order to restore you."

"Thanks," I cried; "thanks from my heart."

As little as my thirst was really quenched, I had nevertheless partially recovered my strength. The contracted muscles of my throat relaxed—and the inflammation of my lips in some measure subsided. At all events, I was able to speak. "Well," I said, "there can be no doubt now as to what we have to do. Water has utterly failed us; our journey is therefore at an end. Let us return."

While I spoke thus, my uncle evidently avoided my face: he held down his head; his eyes were turned in every possible direction but the right one.

"Yes," I continued, getting excited by my own words, "we must go back to Sneffels. May heaven give us strength to enable us once more to revisit the light of day. Would that we now stood on the summit of the crater."

"Go back," said my uncle speaking to himself—"and must it be so?"

"Go back—yes, and without losing a single moment," I vehemently cried.

For some moments there was silence under that dark and gloomy vault. "So, my dear Harry," said the Professor in a very singular tone of voice, "those few drops of water have not sufficed to restore your energy and courage."

"Courage!" I cried.

"I see that you are quite as downcast as before—and still give way to discouragement and despair."

What, then, was the man made of, and what other projects were entering his fertile and audacious brain! "You are not discouraged, sir?"

"What! give up just as we are on the verge of success," he cried, "never, never shall it be said that Professor Hardwigg retreated."

"Then we must make up our minds to perish," I cried with a helpless sigh.

"No, Harry, my boy, certainly not. Go, leave me, I am very far from desiring your death. Take Hans with you, *I will go on alone.*"

"You ask us to leave you?"

"Leave me, I say. I have undertaken this dangerous and perilous adventure. I will carry it to the end—or—I will never return to the surface of Mother Earth. Go—Harry—once more I say to you—go!"

My uncle as he spoke was terribly excited. His voice, which before had been tender, almost womanly, became harsh and menacing. He appeared to be struggling with desperate energy against the impossible. I did not wish to abandon him at the bottom of that abyss, while, on the other hand, the instinct of preservation told me to fly.

Meanwhile, our guide was looking on with pro-

found calmness and indifference. He appeared to be an unconcerned party, and yet he perfectly well knew what was going on between us. Our gestures sufficiently indicated the different roads each wished to follow—and which each tried to influence the other to undertake. But Hans appeared not to take the slightest interest in what was really a question of life and death for us all, but waited quite ready to obey the signal which should say go aloft, or to resume his desperate journey to the interior of the earth.

How I wished then with all my heart and soul that I could make him understand my words. My representations, my sighs and groans, the earnest accents in which I should have spoken would have convinced that cold hard nature. Those fearful dangers and perils of which the stolid guide had no idea, I would have pointed them out to him—I would, as it were, have made him see and feel. Between us, we might have convinced the obstinate Professor. If the worst had come to the worst, we could have compelled him to return to the summit of Sneffels. I approached Hans. I caught his hand in mine. He never moved a muscle. I indicated to him the road to the top of the crater. He remained motionless. My panting form, my haggard countenance, must have indicated the extent of my sufferings. The Icelander gently shook his head and pointed to my uncle. "*Master,*" he said.

"The master!" I cried, beside myself with fury—"madman! no—I tell you he is not the master of our lives; we must fly! we must drag him with us! do you hear me? Do you understand me, I say?"

I have already explained that I held Hans by the arm. I tried to make him rise from his seat. I struggled with him and tried to force him away. My uncle now interposed. "My good Harry, be calm," he said. "You will obtain nothing from my devoted follower; therefore, listen to what I have to say."

I folded my arms, as well as I could, and looked my uncle in the face.

"This wretched want of water," he said, "is the sole obstacle to the success of my project. In the entire gallery, composed of lava, schist, and coal, it is true we found not one liquid molecule. It is quite possible that we may be more fortunate in the western tunnel."

My sole reply was to shake my head with an air of incredulity.

"Listen to me to the end," said the Professor in his well known lecturing voice. "While you lay yonder without life or motion, I undertook a reconnoitering journey into the conformation of this other gallery. I have discovered that it goes directly downwards into the bowels of the earth, and in a few hours will take us to the old granitic formation. In this we shall undoubtedly find innumerable springs. The nature of the rock makes this a mathematical certainty, and instinct agrees with logic to say that it is so. Now, this is the serious proposition which I have to make to you. When Christopher Columbus asked of his men three days to discover the land of promise, his men ill, terrified, and hopeless, yet gave him three days—and the New World was discovered. Now I, the Christopher Columbus of this subterranean region, only ask of you one more day. If, when that time is expired, I

have not found the water of which we are in search, I swear to you, I will give up my mighty enterprise and return to the earth's surface."

Despite my irritation and despair, I knew how much it cost my uncle to make this proposition, and to hold such conciliatory language. Under the circumstances, what could I do, but yield?

"Well," I cried, "let it be as you wish, and may heaven reward your superhuman energy. But as our hours are numbered, unless we discover water, let us lose no time, but go ahead."

CHAPTER XIX

The Western Gallery—A New Route

OUR descent was now resumed by means of the second gallery. Hans took up his post in front as usual. We had not gone more than a hundred yards when the Professor carefully examined the walls. "This is the primitive formation—we are on the right road—onwards is our hope!"

When the whole earth got cool in the first hours of the world's morning, the diminution of the volume of the earth produced a state of dislocation in its upper crust, followed by ruptures, crevasses and fissures. The passage was a fissure of this kind, through which, ages ago, had flowed the eruptive granite. The thousand windings and turnings formed an inextricable labyrinth through the ancient soil. As we descended, successions of layers composing the primitive soil appeared with the utmost fidelity of detail.

No mineralogists had ever found themselves placed in such a marvelous position to study nature in all her real and naked beauty. The sounding rod, a mere machine, could not bring to the surface of the earth the objects of value for the study of its internal structure, which we were about to see with our own eyes, to touch with our own hands. Remember that I am writing this *after* the journey.

Across the streak of the rocks, colored by beautiful green tints, wound metallic threads of copper, of manganese, with traces of platinum and gold. I could not help gazing at these riches buried in the entrails of mother earth, of which no man would have the enjoyment to the end of time! These treasures—mighty and inexhaustible, were buried in the morning of the earth's history, at such awful depths, that no crowbar or pickax will ever drag them from their tomb! The light of our Ruhmkorf's coil, increased tenfold by the myriad of prismatic masses of rock, sent their jets of fire in every direction, and I could fancy myself traveling through a huge hollow diamond, the rays of which produced myriads of extraordinary effects. Towards six o'clock, this festival of light began sensibly and visibly to decrease, and soon almost ceased. The sides of the gallery assumed a crystallized tint, with a somber hue; white mica began to commingle more freely with feldspar and quartz, to form what may be called the true rock—the stone which is hard above all, that supports, without being crushed, the four stories of the earth's soil. We were walled in by an immense prison of granite!

It was now eight o'clock, and still there was no sign of water. The sufferings I endured were horrible. My uncle now kept at the head of our little

column. Nothing could induce him to stop. I, meanwhile, had but one real thought. My ear was keenly on the watch to catch the sound of a spring. But no pleasant sound of falling water fell upon my listening ear.

At last the time came when my limbs refused to longer carry me. I contended heroically against the terrible tortures I endured, because I did not wish to compel my uncle to halt. To him I knew this would be the last fatal stroke. Suddenly I felt a deadly faintness come over me. My eyes could no longer see; my knees shook. I gave one despairing cry—and fell!

"Help, help, I am dying!"

My uncle turned and slowly retraced his steps. He looked at me with folded arms, and then allowed one sentence to escape, in hollow accents, from his lips—"All is over."

The last thing I saw was a face fearfully distorted with pain and sorrow; and then my eyes closed.

When I again opened them, I saw my companions lying near me, motionless, wrapped in their traveling rugs. Were they asleep or dead? For myself, sleep was wholly out of the question. My fainting fit over, I was wakeful as the lark. I suffered too much for sleep to visit my eyelids—the more, that I thought myself sick unto death—dying. The last words spoken by my uncle seemed to be buzzing in my ears—*all is over!* It was probable that he was right. In the state of prostration to which I was reduced, it was madness to think of ever again seeing the light of day. Above were miles upon miles of the earth's crust. As I thought of it, I could fancy the whole weight resting on my shoulders. I was crushed, annihilated! and I exhausted myself in vain attempts to turn in my granite bed.

Hours upon hours passed away. A profound and terrible silence reigned around us—a silence of the tomb. Nothing could make itself heard through these gigantic walls of granite. The very thought was stupendous.

Presently, despite my apathy, despite the kind of deadly calm into which I was cast, something aroused me. It was a slight but peculiar noise. While I was watching intently, I observed that the tunnel was becoming dark. Then gazing through the dim light that remained, I thought I saw the Iceman taking his departure, lamp in hand.

Why had he acted thus? Did Hans the guide mean to abandon us? My uncle lay fast asleep—or dead. I tried to cry out, and arouse him. My voice, feebly issuing from my parched and fevered lips, found no echo in that fearful place. My throat was dry, my tongue stuck to the roof of my mouth. The obscurity had by this time become intense, and at last even the faint sound of the guide's footsteps was lost in the blank distance. My soul seemed filled with anguish, and death appeared welcome, only let it come quickly.

"Hans is leaving us," I cried. "Hans—Hans, if you are a man, come back!"

These words were spoken to myself. They could not be heard aloud. Moreover, a moment's reflection re-assured me. Hans' departure could not be a flight. Instead of ascending the gallery, he was going deeper down into the gulf. Had he had any bad design, his way would have been upwards.

This reasoning calmed me a little and I began to hope! The good, and peaceful, and imperturbable Hans would certainly not have arisen from his sleep without some serious and grave motive. Was he bent on a voyage of discovery? During the deep, still silence of the night had he at last heard that sweet murmur about which we were all so anxious?

CHAPTER XX

Water, Where Is It? A Bitter Disappointment

DURING a long, long, weary hour, there crossed my wildly delirious brain all sorts of reasons as to what could have aroused our quiet and faithful guide. The most absurd and ridiculous ideas passed through my head, each more impossible than the other. I believe I was either half or wholly mad. Suddenly, there arose, as it were from the depths of the earth, a voice of comfort. It was the sound of footsteps! Hans was returning. Presently the uncertain light began to shine upon the walls of the passage, and then it came in view far down the sloping tunnel. At length Hans himself appeared.

He approached my uncle, placed his hand upon his shoulder, and gently awakened him. My uncle, as soon as he saw who it was, instantly rose. "Well!" exclaimed the Professor.

"Vatten," said the hunter.

I did not know a single word of the Danish language, and yet by a sort of mysterious instinct I understood what the guide had said.

"Water, water!" I cried, in a wild and frantic tone, clapping my hands, and gesticulating like a madman.

"Water!" murmured my uncle, in a voice of deep emotion and gratitude. "Hear?"

"Nedat."

"Where? below!" I understood every word. I had caught the hunter by the hands, and I shook them heartily, while he looked on with perfect calmness.

The preparations for our departure did not take long, and we were soon making a rapid descent into the tunnel. An hour later we had advanced a thousand yards, and descended two thousand feet. At this moment I heard an accustomed and well-known sound running along the floors of the granite rock—a kind of dull and sullen roar, like that of a distant waterfall.

During the first half-hour of our advance, not finding the discovered spring, my feelings of intense suffering returned. Once more I began to lose all hope. My uncle, however, observing how down-hearted I was again becoming, took up the conversation. "Hans was right," he exclaimed, enthusiastically; "that is the dull roaring of a torrent."

"A torrent," I cried, delighted at even hearing the welcome words.

"There's not the slightest doubt about it," he replied, "a subterranean river is flowing beside us."

I made no reply, but hastened on, once more animated by hope. I did not even feel the deep fatigue which hitherto had overpowered me. The very sound of this glorious murmuring water already refreshed me. We could hear it increasing in volume every moment. The torrent, which for a long time could be heard flowing over our heads, now ran dis-

tinctly along the left wall, roaring, rushing, spluttering, and still falling.

Several times I passed my hand across the rock, hoping to find some trace of humidity—of the slightest percolation. Alas! in vain. Again a half hour passed in the same weary toil. Again we advanced.

It now became evident that the hunter, during his absence, had not been able to carry his researches any farther. Guided by an instinct peculiar to the dwellers in mountain regions and water-finders, he "smelt" the living spring through the rock. Still he had not seen the precious liquid. He had neither quenched his own thirst nor brought us one drop in his gourd.

Moreover, we soon made the disastrous discovery, that if our progress continued, we should soon be moving away from the torrent, the sound of which gradually diminished. We turned back. Hans halted at the precise spot where the sound of the torrent appeared nearest.

I could hear the suspense and suffering no longer, and seated myself against the wall, behind which I could hear the water seething and effervescing not two feet away. But a solid wall of granite still separated us from it!

Hans looked keenly at me, and, strange enough, for once I thought I saw a smile on his imperturbable face. He rose from a stone on which he had been seated, and took up the lamp. I could not help rising and following. He moved slowly along the firm and solid granite wall. I watched him with mingled curiosity and eagerness. Presently he halted and placed his ear against the dry stone, moving slowly along and listening with the most extreme care and attention. I understood at once that he was searching for the exact spot where the torrent's roar was most plainly heard. This point he soon found in the lateral wall on the left side, about three feet above the level of the tunnel floor.

I was in a state of intense excitement. I scarcely dared believe what the eider-duck hunter was about to do. It was, however, impossible in a moment more not to both understand and applaud, and even to smother him in my embraces, when I saw him raise the heavy crowbar and commence an attack upon the rock itself.

"Saved," I cried.

"Yes," cried my uncle, even more excited and delighted than myself; "Hans is quite right. Oh, the worthy, excellent man! We should never have thought of such an idea."

And nobody else, I think, would have thought of it. Such a process, simple as it seemed, would most certainly not have entered our heads. Nothing could be more dangerous than to begin to work with pickaxes in that particular part of the globe. Supposing while he was at work a break-up were to take place, and supposing the torrent once having gained an inch were to take an ell, and come pouring bodily through the broken rock!

Not one of these dangers was chimerical. They were only too real. But at that moment no fear of falling in of roof, or even of inundation was capable of stopping us. Our thirst was so intense, that to quench it we would have dug below the bed of old Ocean itself.

Hans went quietly to work—a work which neither

my uncle nor I could have undertaken. Our impatience was so great, that if we had once begun with pickax and crowbar, the rock would soon have split into a hundred fragments. The guide, on the contrary, calm, ready, moderate, wore away the hard rock by little steady blows of his instrument, making no attempt at a larger hole than about six inches. As I stood, I heard, or thought I heard, the roar of the torrent momentarily increasing in loudness, and at times I almost felt the pleasant sensation of water upon my parched lips.

At the end of what appeared an age, Hans had made a hole, which enabled his crowbar to enter two feet into the solid rock. He had been at work exactly an hour. It appeared a dozen. I was getting wild with impatience. My uncle began to think of using more violent measures. I had the greatest difficulty in checking him. He had indeed just got hold of his crowbar when a loud and welcome hiss was heard. Then a stream, or rather a jet of water burst through the wall and came out with such force as to hit the opposite side!

Hans, the guide, who was half upset by the shock, was scarcely able to keep down a cry of pain and grief. I understood his meaning when, plunging my hands into the sparkling jet, I myself gave a wild and frantic cry. The water was scalding hot! "Boiling," I cried, in bitter disappointment.

"Well, never mind," said my uncle, "it will soon get cool."

The tunnel began to be filled by clouds of vapor, while a small stream ran away into the interior of the earth. In a short time we had some sufficiently cool to drink. We swallowed it in huge mouthfuls.

Oh what exalted delight—what rich and incomparable luxury! What was this water, whence did it come? To us what was that? The simple fact was—it was water; and, though still with a tinge of warmth about it, it brought back to the heart, that life which, but for it, must surely have faded away. I drank greedily, almost without tasting it.

When I had almost quenched by ravenous thirst, I made a discovery. "Why, it is ferruginous water."

"Most excellent stomachic," replied my uncle, "and highly mineralized. Here is a journey worth twenty to Spa."

"It's very good," I replied.

"I should think so. Water found six miles under ground. There is a peculiarly inky flavor about it, which is by no means disagreeable. Hans may congratulate himself on having made a rare discovery. What do you say, nephew, according to the usual custom of travelers, to name the stream after him?"

"Good," said I. And the name of "Hans-bach" was at once agreed upon.

Hans was not a bit more proud after hearing our determination than he was before. After having taken a very small modicum of the welcome refreshment, he had seated himself in a corner with his usual imperturbable gravity.

"Now," said I, "it is not worth while letting this water run to waste."

"What is the use," replied my uncle, "the source from which this river rises is inexhaustible."

"Never mind," I continued, "let us fill our goat skin and gourds, and then try to stop the opening up."

My plan, after some hesitation, was followed or

attempted. Hans picked up all the broken pieces of granite he had knocked out, and using some tow he happened to have about him, tried to shut up the fissure he had made in the wall. All he did was to scald his hands. The pressure was too great, and all our attempts were utter failures.

"It is evident," I remarked, "that the upper surface of these springs is situated at a very great height above—as we may fairly infer from the great pressure of the jet."

"That is by no means doubtful," replied my uncle, "if this column of water is about thirty-two thousand feet high, the pressure per square inch must be something enormous. But a new idea has just struck me."

"And what is that?"

"Why be at so much trouble to close this aperture?"

"Because——" I hesitated and stammered, having no real reason.

"When our water bottles are empty, we are not at all sure that we shall be able to fill them," observed my uncle.

"I think that is very probable."

"Well, then, let this water run. It will, of course, naturally follow in our track, and will serve to guide and refresh us."

"I think the idea a good one," I cried, in reply, "and with this rivulet as a companion, there is no further reason why we should not succeed in our marvellous project."

"Ah, my boy," said the professor, laughing, "after all, you are coming round."

"More than that, I am now confident of ultimate success. Forward."

"One moment, nephew mine. Let us begin by taking some hours of repose."

I had utterly forgotten that it was night. The chronometer, however, informed me of the fact. Soon we were sufficiently restored and refreshed, and had all fallen into a profound sleep.

CHAPTER XXI

Under the Ocean

BY the next day we had nearly forgotten our past sufferings. The first sensation I experienced was surprise at not being thirsty, and I actually asked myself the reason. The running stream, which flowed in rippling wavelets at my feet, was the satisfactory reply.

We breakfasted with a good appetite, and then drank our fill of the excellent water. I felt myself quite a new man, ready to go anywhere my uncle chose to lead. I began to think. Why should not a man as seriously convinced as my uncle, succeed, with so excellent a guide as worthy Hans, and so devoted a nephew as myself? These were the brilliant ideas which invaded my brain. Had the proposition now been made to go back to the summit of Mount Sneffels, I should have declined the offer in a most indignant manner. But unfortunately there was no question of going up. We were about to descend farther into the interior of the earth. "Let us be moving," I cried, awakening the echoes of the old world.

We resumed our march on Thursday at eight o'clock in the morning. The great granite tunnel went round by sinuous and winding ways, present-

ing every now and then sharp turns, in fact it had all the appearance of a labyrinth. Its direction, however, was in general towards the southwest. My uncle made several pauses in order to consult his compass. The gallery now began to trend downwards in a horizontal direction, with about two inches of fall in every furlong. The murmuring stream flowed quietly at our feet. I could not but compare it to some familiar spirit, guiding us through the earth, and I dabbled my fingers in its tepid water, which sang like a naiad as we progressed. My good humor began to assume a mythological character.

As for my uncle he began to complain of the horizontal character of the road. His route he found began to be indefinitely prolonged, instead of "sliding down the celestial ray," according to his expression.

But we had no choice; and as long as our road led towards the center—however little progress we made, there was no reason to complain. Moreover, from time to time the slopes were much greater; the naiad sang more loudly, and we began to dip downwards in earnest. I felt no further painful sensation. I had not yet recovered from the excitement of the discovery of water.

That day and the next we did a considerable amount of horizontal, and relatively very little vertical, traveling. On Friday evening, the tenth of July, according to our estimation, we ought to have been thirty leagues to the southeast of Reykjavik, and about two leagues and a half deep. We now received a rather startling surprise.

Under our feet there opened a horrible well. My uncle was so delighted that he actually clapped his hands—as he saw how steep and sharp was the descent. "Ah, ah!" he cried, in rapturous delight; "this will take us a long way. Look at the projections of the rock. Hah!" he exclaimed, "it's a fearful staircase!"

Hans, however, who in all our troubles had never given up the ropes, took care so to dispose of them as to prevent any accidents. Our descent then began. I dare not call it a perilous descent, for I was already too familiar with that sort of work to look upon it as anything but a very ordinary affair. This well was a kind of narrow opening in the massive granite of the kind known as a fissure. The contraction of the terrestrial scaffolding, when it suddenly cooled, had been evidently the cause. If it had ever served in former times as a kind of funnel through which passed the eruptive masses vomited by Sneffels, I was at a loss to explain how it showed no mark. We were, in fact, descending a spiral, something like those winding staircases in use in modern houses.

We were compelled every quarter of an hour or thereabouts to sit down in order to rest our legs. Our calves ached. We then seated ourselves on some projecting rock with our legs hanging over, and gossiped while we ate a mouthful—drinking still from the pleasantly warm running stream which had not deserted us.

It is scarcely necessary to say, that in this curiously shaped fissure the Hans-bach had become a cascade to the detriment of its size. But it was still sufficient, and more than sufficient, for our wants. Besides we knew that, as soon as the declivity

ceased to be so abrupt, the stream must resume its peaceful course. At this moment it reminded me of my uncle, his impatience and rage, while when it flowed more peacefully, I pictured to myself the placidity of the Icelandic guide.

During the whole of two days, the sixth and seventh of July, we followed the extraordinary spiral staircase of the fissure, penetrating two leagues farther into the crust of the earth, which placed us five leagues below the level of the sea. On the eighth, however, at twelve o'clock in the day, the fissure suddenly assumed a much more gentle slope still—trending in a southeast direction. The road now became comparatively easy, and at the same time dreadfully monotonous. It would have been difficult for matters to have turned out otherwise. Our peculiar journey had no chance of being diversified by landscape and scenery. At all events, such was then my idea.

At length, on Wednesday the fifteenth, we were actually seven leagues (twenty-one miles) below the surface of the earth, and fifty leagues distant from the mountain of Sneffels. Though, if the truth be told, we were very tired, our health had resisted all suffering, and was most satisfactory. Our traveler's box of medicaments had not even been opened. My uncle was careful to note every hour the indications of the compass, of the manometer, and of the thermometer, all of which he afterwards published in his elaborate philosophical and scientific account of our remarkable voyage. He was therefore able to give an exact relation of the situation. Therefore, when he informed me that we were fifty leagues in a horizontal direction distant from our starting-point, I could not suppress a loud exclamation.

"What is the matter now?" cried my uncle.

"Nothing very important, only an idea has entered my head," was my reply.

"Well, out with it, my boy."

"It is my opinion that if your calculations are correct we are no longer under Iceland."

"Do you think so?"

"We can very easily find out," I replied, pulling out the map and compasses.

"You see," I said, after careful measurement, "that I am not mistaken. We are far beyond Cape Portland; and those fifty leagues to the southeast will take us into the open sea."

"Under the open sea," cried my uncle, rubbing his hands with a delighted air.

"Yes," I cried, "no doubt the old ocean flows over our heads."

"Well, my dear boy, what can be more natural. Do you not know that in the neighborhood of Newcastle there are coal mines which have been worked far out under the sea?"

Now my worthy uncle, the Professor, no doubt regarded this discovery as a simple fact, but to me the idea was by no means a pleasant one. And yet when one came to think the matter over seriously, what mattered it whether the plains and mountains of Iceland were suspended over our devoted heads, or the mighty billows of the Atlantic Ocean? The whole question rested on the solidity of the granite roof above us. However, I soon got used to the idea, for the passage, now level, now running down, and still always to the southeast, kept going deeper

and deeper into the profound abysses of Mother Earth.

Three days later, on the eighteenth day of July, on a Saturday, we reached a kind of vast grotto. My uncle here paid Hans his usual six-dollars, and it was decided that the next day should be a day of rest.

CHAPTER XXII

Sunday Below Ground

I AWOKE on Sunday morning without any sense of hurry and bustle attendant on an immediate departure. Though the day to be devoted to repose and reflection was spent under such strange circumstances, and in so wonderful a place, the idea was a pleasant one. Besides, we all began to get used to this kind of existence. I had almost ceased to think of the sun, of the moon, of the stars, of the trees, houses, and towns; in fact, about any terrestrial necessities. In our peculiar position we were far above such reflections.

The grotto was a vast and magnificent hall. Along its granitic soil the stream flowed placidly and pleasantly. So great a distance was it now from its fiery source, that its water was scarcely lukewarm, and could be drunk without delay or difficulty.

After a frugal breakfast, the Professor made up his mind to devote some hours to putting his notes and calculations in order. "In the first place," he said, "I have a good many to verify and prove, in order that we may know our exact position. I wish to be able on our return to the upper regions, to make a map of our journey, a kind of vertical section of the globe, which will be as it were the profile of the expedition."

"That would indeed be a curious work, uncle; but can you make your observations with anything like certainty and precision?"

"I can. I have never on one occasion failed to note with great care the angles and slopes. I am certain as to having made no mistake. Take the compass and examine how she points."

I looked at the instrument with care. "East one-quarter southeast."

"Very good," resumed the Professor, noting the observation, and going through some rapid calculations. "I make out that we have journeyed two hundred and fifty miles from the point of our departure."

"Then the mighty waves of the Atlantic are rolling over our heads?"

"Certainly."

"And at this very moment it is possible that fierce tempests are raging above, and that men and ships are battling against the angry blasts just over our heads?"

"It is quite within the range of possibility," rejoined my uncle, smiling.

"And that whales are playing in shoals, thrashing the bottom of the sea, the roof of our adamantine prison?"

"Be quite at rest on that point; there is no danger of their breaking through. But to return to our calculations. We are to the southeast, two hundred and fifty miles from the base of Sneffels, and, according to my preceding notes, I think we have

gone sixteen leagues in a downward direction."

"Sixteen leagues—fifty miles!" I cried.

"I am sure of it."

"But that is the extreme limit allowed by science for the thickness of the earth's crust," I replied, referring to my geological studies.

"I do not contravene that assertion," was his quiet answer.

"And at this stage of our journey, according to all known laws on the increase of heat, there should be here a temperature of *fifteen hundred* degrees of Reaumur."

"There should be—you say, my boy."

"In which case this granite would not exist, but be in a state of fusion."

"But you perceive, my boy, that it is not so, and that facts, as usual, are very stubborn things, overruling all theories."

"I am forced to yield to the evidence of my senses, but I am nevertheless very much surprised."

"What heat does the thermometer really indicate?" continued the philosopher.

"Twenty-seven six-tenths."

"So that science is wrong by fourteen hundred and seventy-four degrees and four-tenths. According to which, it is demonstrated that the proportional increase in temperature is an exploded error. Humphrey Davy here shines forth in all his glory. He is right, and I have acted wisely to believe him. Have you any answer to make to this statement?"

Had I chosen to speak, I might have said a great deal. I in no way admitted the theory of Humphrey Davy—I still held out for the theory of proportional increase of heat, though I did not feel it. I was far more willing to allow that this chimney of an extinct volcano was covered by lava of a kind refractory to heat—in fact a bad conductor—which did not allow the great increase of temperature to percolate through its sides. The hot water jet supported my view of the matter.

But without entering on a long and useless discussion, or seeking for new arguments to controvert my uncle, I contented myself with taking up facts as they were. "Well, sir, I take for granted that all your calculations are correct, but allow me to draw from them a rigorous and definite conclusion."

"Go on, my boy—have your say," cried my uncle, good-humoredly.

"At the place where we now are, under the latitude of Iceland, the terrestrial depth is about fifteen hundred and eighty-three leagues."

"Fifteen hundred, eighty-three and a quarter."

"Well, suppose we say sixteen hundred in round numbers. Now, out of a voyage of sixteen hundred leagues we have completed sixteen."

"As you say, what then?"

"At the expense of a diagonal journey of no less than eighty-five leagues."

"Exactly."

"We have been twenty days about it."

"Exactly twenty days."

"Now sixteen is the hundredth part of our contemplated expedition. If we go on in this way we shall be two thousand days, that is about five years and a half, going down."

The Professor folded his arms, listened, but did not speak.

"Without counting that if a vertical descent of

sixteen leagues costs us a horizontal of eighty-five, we shall have to go about eight thousand leagues to the southeast, and we must therefore come out somewhere in the circumference long before we can hope to reach the center."

"Bother your calculations," cried my uncle in one of his old rages. "On what basis do they rest? How do you know that this passage does not take us direct to the end we require? Moreover, I have in my favor, fortunately, a precedent. What I have undertaken to do, another has done, and he having succeeded, why should I not be equally successful?"

"I hope, indeed, you will, but still, I suppose I may be allowed to——"

"You are allowed to hold your tongue," cried Professor Hardwigg, "when you talk so unreasonably as this."

I saw at once that the old doctorial Professor was still alive in my uncle—and fearful to rouse his angry passions, I dropped the unpleasant subject.

"Now, then," he explained, "consult the manometer. What does that indicate?"

"A considerable amount of pressure."

"Very good. You see, then, that by descending slowly, and by gradually accustoming ourselves to the density of this lower atmosphere, we shall not suffer."

"Well, I suppose not, except it may be a certain amount of pain in the ears," was my rather grim reply.

"That, my dear boy, is nothing, and you will easily get rid of that source of discomfort by bringing the exterior air in communication with the air contained in your lungs."

"Perfectly," said I, for I had quite made up my mind in no wise to contradict my uncle. "I should fancy almost that I should experience a certain amount of satisfaction in making a plunge into this dense atmosphere. Have you taken note of how wonderfully sound is propagated?"

"Of course I have. There can be no doubt that a journey into the interior of the earth would be an excellent cure for deafness."

"But then, uncle," I ventured mildly to observe, "this density will continue to increase."

"Yes—according to a law which, however, is scarcely defined. It is true that the intensity of weight will diminish just in proportion to the depth to which we go. You know very well that it is on the surface of the earth that its action is most powerfully felt, while on the contrary, in the very center of the earth bodies cease to have any weight at all."

"I know that is the case, but as we progress will not the atmosphere finally assume the density of water?"

"I know it; when placed under the pressure of seven hundred and ten atmospheres," cried my uncle with imperturbable gravity.

"And when we are still lower down?" I asked with natural anxiety.

"Well, lower down, the density will become even greater still."

"Then how shall we be able to make our way through this atmospheric fog?"

"Well, my worthy nephew, we must ballast ourselves by filling our pockets with stones," said Professor Hardwigg.

"Faith, uncle, you have an answer for everything," was my own reply. I began to feel that it was unwise in me to go any farther into the wide field of hypotheses, for I should certainly have revived some difficulty, or rather impossibility that would have enraged the Professor.

It was evident, nevertheless, that the air under a pressure which might be multiplied by thousands of atmospheres, would end by becoming perfectly solid, and that then admitting our bodies resisted the pressure, we should have to stop, in spite of all the reasoning in the world. Facts overcome all arguments.

But I thought it best not to urge this argument. My uncle would simply have quoted the example of Saksussem. Supposing the learned Icelander's journey ever really to have taken place—there was one simple answer to be made:—In the sixteenth century neither the barometer nor the manometer had been invented—how, then, could Saksussem have been able to discover when he did reach the center of the earth? This unanswerable and learned objection I kept to myself, and bracing up my courage awaited the course of events—little aware of how adventurous the incidents of our remarkable journey were yet to be.

The rest of this day of leisure and repose was spent in calculation and conversation. I made it a point to agree with the Professor in everything; but I envied the perfect indifference of Hans, who, without taking any such trouble about the cause and effect, went blindly onwards wherever destiny chose to lead.

CHAPTER XXIII

Alone

IT must in all truth be confessed, things as yet had gone on well, and I should have acted in bad taste to have complained. If our difficulties did not increase, it was within the range of possibility that we might ultimately reach the end of our journey. Then what glory would be ours! I began in the newly aroused ardor of my soul to speak enthusiastically to the Professor. Was I serious! The whole state in which we existed was a mystery—and it was impossible to know whether or not I was in earnest.

For several days after our memorable halt, the slopes became more rapid—some were even of a most frightful character—almost vertical, so that we were forever going down into the solid interior mass. During some days, we actually descended a league and a half, even two leagues towards the center of the earth. The descents were sufficiently perilous, and while we were engaged in them we learned fully to appreciate the marvelous coolness of our guide, Hans. Without him we should have been wholly lost. The grave and impassible Icelander devoted himself to us with the most incomprehensible *sang froid* and ease; and, thanks to him, many a dangerous pass was got over, where, but for him, we should inevitably have stuck fast.

His silence increased every day. I think that we began to be influenced by this peculiar trait in his character. It is certain that the inanimate objects by which you are surrounded have a direct action on the brain. It must be that a man who shuts himself up between four walls must lose the faculty

of associating ideas and words. How many persons condemned to the horrors of solitary confinement have gone mad—simply because the thinking faculties have lain dormant!

During the two weeks that followed our last interesting conversation, there occurred nothing worthy of being especially recorded. I have, while writing these memoirs, taxed my memory in vain for one incident of travel during this particular period.

But the next event to be related is terrible indeed. Its very memory, even now, makes my soul shudder, and my blood run cold. It was on the seventh of August. Our constant and successive descents had taken us quite thirty leagues into the interior of the earth, that is to say that there were above us thirty leagues, nearly a hundred miles, of rocks, and oceans, and continents, and towns, to say nothing of living inhabitants. We were in a southeasterly direction, about two hundred leagues from Iceland.

On that memorable day the tunnel had begun to assume an almost horizontal course. I was on this occasion walking on in front. My uncle had charge of one of the Ruhmkorf coils, I had possession of the other. By means of its light I was busy examining the different layers of granite. I was completely absorbed in my work. Suddenly halting and turning round, I found that I was alone!

"Well," thought I to myself, "I have certainly been walking too fast—or else Hans and my uncle have stopped to rest. The best thing I can do is to go back and find them. Luckily, there is very little ascent to tire me."

I accordingly retraced my steps, and while doing so, walked for at least a quarter of an hour. Rather uneasy, I paused and looked eagerly around. Not a living soul. I called aloud. No reply. My voice was lost amid the myriad cavernous echoes it aroused!

I began for the first time to feel seriously uneasy. A cold shiver shook my whole body, and perspiration, chill and terrible, burst upon my skin.

"I must be calm," I said, speaking aloud, as boys whistle to drive away fear. "There can be no doubt that I shall find my companions. There cannot be two roads. It is certain that I was considerably ahead; all I have to do is to go back."

Having come to this determination I ascended the tunnel for at least half an hour, unable to decide if I had ever seen certain landmarks before. Every now and then I paused to discover if any loud appeal was made to me, well knowing that in that dense and intensified atmosphere I should hear it a long way off. But no. The most extraordinary silence reigned in this immense gallery. Only the echoes of my own footsteps could be heard.

At last I stopped. I could scarcely realize the fact of my isolation. I was quite willing to think that I had made a mistake, but not that I was lost. If I had made a mistake, I might find my way: if lost—I shuddered to think of it.

"Come, come," said I to myself, "since there is only one road, and they must come by it, we shall at last meet. All I have to do is still to go upwards. Perhaps, however, not seeing me, and forgetting I was ahead, they may have gone back in search of me. Still even in this case, if I make haste, I shall get up to them. There can be no doubt about the matter."

But as I spoke these last words aloud, it would have been quite clear to any listener—had there been one—that I was by no means convinced of the fact. Moreover, to associate together these simple ideas and to reunite them under the form of reasoning, required some time. I could not all at once bring my brain to think.

Then another dread doubt fell upon my soul. After all, was I ahead? Of course I was. Hans was no doubt following behind, preceded by my uncle. I perfectly recollect his having stopped for a moment to strap his baggage on his shoulder. I now remembered this trifling detail. It was, I believed, just at that very moment that I had determined to continue my route.

"Again," thought I, reasoning as calmly as was possible, "there is another sure means of not losing my way, a thread to guide me through the labyrinthine subterranean retreat—one which I had forgotten—my faithful river."

This course of reasoning roused my drooping spirits, and I resolved to resume my journey without further delay. No time was to be lost. It was at this moment that I had reason to bless the thoughtfulness of my uncle, when he refused to allow the eider hunter to close the orifices of the hot spring—that small fissure in the great mass of granite. This beneficent spring after having saved us from thirst during so many days would now enable me to regain the right road. Having come to this mental decision, I made up my mind, before I started upwards, that ablation would certainly do me a great deal of good.

I stopped to plunge my hands and forehead in the pleasant water of the Hans-bach stream, blessing its presence as a certain consolation.

Conceive my horror and stupefaction!—I was treading a hard, dusty, shingly road of granite. The stream on which I reckoned had wholly disappeared!

CHAPTER XXIV

Lost!

NO words in any human language can depict my utter despair. I was literally buried alive; with no other expectation before me than to die in all the slow horrible torture of hunger and thirst. Mechanically I crawled about, feeling the dry and arid rock. Never to my fancy had I ever felt anything so dry.

But, I frantically asked myself, how had I lost the course of the flowing stream? There could be no doubt it had ceased to flow in the gallery in which I now was. I began to understand the cause of the strange silence which prevailed when last I tried if any appeal from my companions might perchance reach my ear.

It so happened that when I first took an imprudent step in the wrong direction, I did not perceive the absence of the all-important stream. It was now quite evident that when we halted, another tunnel must have received the waters of the little torrent, and that I had unconsciously entered a different gallery. To what unknown depths had my companions gone? Where was I?

How to get back? Clue or landmark there was absolutely none! My feet left no signs on the granite and shingle. My brain throbbled with agony as I tried to discover the solution of this terrible

problem. My situation, after all sophistry and reflection, had finally to be summed up in three awful words—*Lost! LOST!! LOST!!!*

Lost at a depth which, to my infinite understanding, appeared to be immeasurable. These thirty leagues of the crust of the earth weighed upon my shoulders like the globe on the shoulders of Atlas. I felt myself crushed by the awful weight. It was indeed a position to drive the sanest man to madness.

I tried to bring my thoughts back to the things of the world so long forgotten. It was with the greatest difficulty that I succeeded in doing so. Hamburg, the house on the Königstrasse, my dear cousin Gretchen—all that world which had before vanished like a shadow floated before my now vivid imagination. There they were before me, but how unreal. Under the influence of a terrible hallucination I saw the whole incidents of our journey pass before me like the scenes of a panorama. The ship and its inmates, Iceland, M. Fridriksson, and the great summit of Mount Sneffels! I said to myself that if in my position, I retained the most faint and shadowy outline of a hope it would be a sure sign of approaching delirium. It were better to give way wholly to despair!

In fact, if I reasoned with calmness and philosophy, what human power was there in existence able to take me back to the surface of the earth, and ready too, to split asunder those huge and mighty vaults which stood above my head? Who could enable me to find my road—and regain my companions? Insensate folly and madness to entertain even a shadow of hope!

"Oh, uncle!" was my despairing cry. This was the only word of reproach which came to my lips; for I thoroughly understood how deeply and sorrowfully the worthy Professor would regret my being lost, and how in his turn he would patiently seek for me.

When I at last began to resign myself to the fact that no further aid was to be expected from man, and knowing that I was utterly powerless to do anything for my own salvation, I knelt with earnest fervor and asked assistance from Heaven. The remembrance of my innocent childhood, the memory of my mother, known only in my infancy, came welling forth from my heart. I had recourse to prayer. And little as I had right to be remembered by Him whom I had forgotten in the hour of prosperity, and whom I so tardily invoked, I prayed earnestly and sincerely.

This renewal of my youthful faith brought about a much greater amount of calm, and I was enabled to concentrate all my strength and intelligence on the terrible realities of my unprecedented situation. I had about me that which I had at first wholly forgotten—three days' provisions. Moreover, my water bottle was quite full. Nevertheless, the one thing which it was impossible to do was to remain alone. Try to find my companions I must, at any price. But which course should I take? Should I go upwards, or again descend? Doubtless it was right to retrace my steps in an upward direction.

By doing this with care and coolness, I must reach the point where I had turned away from the rippling stream. I must find the fatal bifurcation or fork. Once at this spot, once the river at my feet,

I could, at all events, regain the awful crater of Mount Sneffels. Why had I not thought of this before? This, at last, was a reasonable hope of safety. The most important thing, then, to be done was to discover the bed of the Hans-bach.

After a slight meal and a draught of water, I rose like a giant refreshed. Leaning heavily on my pole, I began the ascent of the gallery. The slope was very steep and rather difficult. But I advanced hopefully and carefully like a man who at last is making his way out of a forest, and knows there is only one road to follow.

During one whole hour nothing happened to check my progress. As I advanced I tried to recollect the shape of the tunnel—to recall to my memory certain projections of rocks—to persuade myself that I had followed certain winding routes before. But no one particular sign could I bring to mind, and I was soon forced to allow that this gallery would never take me back to the point at which I had separated myself from my companions. It was absolutely without issue—a mere blind alley in the earth.

The moment at length came when, facing the solid rock, I knew my fate, and fell inanimate on the arid floor!

To describe the horrible state of despair and fear into which I then fell would now be vain and impossible. My last hope, the courage which had sustained me, drooped before the sight of this pitiless granite rock! Lost in a vast labyrinth, the sinuosities of which spread in every direction, without guide, clue or compass, it was a vain and useless task to attempt flight. All that remained to me was to lie down and die. To lie down and die the most cruel and horrible of deaths!

In my state of mind, the idea came into my head that one day perhaps, when my fossil bones were found, their discovery so far below the level of the earth might give rise to solemn and interesting scientific discussions. I tried to cry aloud, but hoarse, hollow and inarticulate sounds alone could make themselves heard through my parched lips. I literally panted for breath.

In the midst of all these horrible sources of anguish and despair, a new horror took possession of my soul. My lamp, by falling down, had gotten out of order. I had no means of repairing it. Its light was already becoming paler and paler, and soon would expire. With a strange sense of resignation and despair, I watched the luminous current in the coil getting less and less. A procession of shadows moved flashing along the granite wall. I scarcely dared to lower my eyelids, fearing to lose the last spark of this fugitive light. Every instant it seemed to me that it was about to vanish and to leave me forever—in utter darkness!

At last, one final trembling flame remained in the lamp; I followed it with all my power of vision; I gasped for breath; I concentrated upon it all the power of my soul, as upon the last scintillation of light I was ever destined to see; and then I was to be lost forever in Cimmerian and tenebrous shades.

A wild and plaintive cry escaped my lips. On earth during the most profound and comparatively complete darkness, light never allows a complete destruction and extinction of its power. Light is so diffuse, so subtle, that it permeates everywhere,

and whatever little may remain, the retina of the eye will succeed in finding it. In this place nothing—not the faintest ray of light. It mazed me!

My head was now wholly lost. I raised my arms, trying the effects of the feeling in getting against the cold stone wall. It was painful in the extreme. Madness must have taken possession of me. I knew not what I did. I began to run, to fly, rushing at haphazard in this inextricable labyrinth, always going downwards, running wildly underneath the terrestrial crust, like an inhabitant of the subterranean furnaces, screaming, roaring, howling, until bruised by the pointed rocks, falling and picking myself up all covered with blood, seeking madly to drink the blood which dripped from my torn features, mad because this blood trickled over my face, and watching always for this horrid wall which ever presented to me the fearful obstacle against which I could but dash my head.

Where was I going? It was impossible to say. Several hours passed in this way. After a long time, having utterly exhausted my strength, I fell a heavy inert mass along the side of the tunnel, and lost all consciousness of existence!

CHAPTER XXV

The Whispering Gallery

WHEN at last I came back to a sense of life and being, my face was wet; but wet as I soon knew, with tears. How long this state of insensibility lasted, it is quite impossible for me to say. I had no means left to me of taking any account of time. Never since the creation of the world, had such a solitude as mine existed. I was completely abandoned.

After my fall I had lost much blood. I had felt myself flooded with the life-giving liquid. My first sensation was perhaps a natural one. Why was I not dead? Because I was alive, there was something left to do. I tried to make up my mind to think no longer. As far as I was able, I drove away all ideas, and utterly overcome by pain and grief, crouched against the granite wall.

I commenced to feel the fainting coming on again, with the sensation that this was the last struggle before complete annihilation,—when, on a sudden, a violent uproar reached my ears. It had some resemblance to the prolonged rumbling voice of thunder, and I clearly distinguished sonorous voices, lost one after the other, in the distant depths of the gulf.

Whence came this noise? Again I listened with deep attention. I was extremely anxious to hear if the strange and inexplicable sound was likely to be renewed! A whole quarter of an hour elapsed in painful expectation. Deep and solemn silence reigned in the tunnel. So still that I could hear the beatings of my own heart! I waited, waited, waited with a strange kind of hopefulness.

Suddenly my ear, which leaned accidentally against the wall, appeared to catch the faintest echo of a sound. I thought that I heard vague, incoherent and distant voices. I quivered all over with excitement and hope! "It must be hallucination," I cried. "It cannot be! it is not true!"

But no! By listening more attentively, I really did convince myself that what I heard was the sound

of human voices. To make any meaning out of the sound, however, was beyond my power. I was too weak even to hear distinctly. Still it was a positive fact that some one was speaking. Of that I was certain.

There was a moment of fear. A dread fell upon my soul that it might be my own words brought back to me by a distant echo. Perhaps without knowing it, I might have been crying aloud. I resolutely closed my lips, and once more placed my ear to the huge granite wall. Yes, for certain. It was in truth the sound of human voices.

I now by the exercise of great determination dragged myself along the sides of the cavern, until I reached a point where I could hear more distinctly. But though I could detect the sound, I could only make out uncertain, strange, and incomprehensible words. They reached my ear as if they had been spoken in a low tone—murmured, as it were, afar off. At last, I made out the word *forlorad* repeated several times in a tone betokening great mental anguish and sorrow.

What could this word mean, and who was speaking it? It must be either my uncle or the guide Hans! If, therefore, I could hear them, they must surely be able to hear me. "Help," I cried at the top of my voice; "help, I am dying!"

I then listened with scarcely a breath; I panted for the slightest sound in the darkness—a cry, a sigh, a question! But silence reigned supreme. No answer came! In this way some minutes passed. A whole flood of ideas flashed through my mind. I began to fear that my voice, weakened by sickness and suffering, could not reach my companions who were in search of me.

"It must be they," I cried; "what other men can by any possibility be buried a hundred miles below the level of the earth?" The mere supposition was preposterous. I began, therefore, to listen again with the most breathless attention. As I moved my ears along the side of the place I was in, I found a mathematical point as it were, where the voices appeared to attain their maximum of intensity. The word *forlorad* again distinctly reached my ear. Then came again that rolling noise like thunder which had awakened me out of torpor.

"I begin to understand," I said to myself, after some little time devoted to reflection; "it is not through the solid mass that the sound reaches my ears. The walls of my cavernous retreat are of solid granite, and the most fearful explosion would not make uproar enough to penetrate them. The sound must come along the gallery itself. The place I was in must possess some peculiar acoustic properties of its own."

Again I listened; and this time—yes, this time—I heard my name distinctly pronounced: cast as it were into space. It was my uncle, the Professor, who was speaking. He was in conversation with the guide, and the word which had so often reached my ears, *forlorad*, was a Danish expression.

Then I understood it all. In order to make myself heard, I too must speak as it were along the side of the gallery, which would carry the sound of my voice just as the wire carries the electric fluid from point to point. But there was no time to lose. If my companions were only to remove a few feet from where they stood, the acoustic effect

would be over, my Whispering Gallery would be destroyed. I again therefore crawled towards the wall, and said as clearly and distinctly as I could—"Uncle Hardwigg."

I then awaited a reply.

Sound does not possess the property of traveling with such extreme rapidity. Besides, the density of the air at that depth from light and motion, was very far from adding to the rapidity of circulation. Several seconds elapsed, which, to my excited imagination, appeared ages; and these words reached my eager ears, and moved my wildly beating heart—"Harry, my boy, is that you?"

A short delay between question and answer.

"Yes—yes."

"Where are you?"

"Lost!"

"And your lamp?"

"Out."

"But the guiding stream?"

"Is lost!"

"Keep your courage, Harry. We will do our best."

"One moment, my uncle," I cried; "I have no longer strength to answer your questions. But—for heaven's sake—do you—continue—to speak—to me!"

Absolute silence, I felt, would be annihilation.

"Keep up your courage," said my uncle. "As you are so weak do not speak. We have been searching for you in all directions, both by going upwards and downwards in the gallery. My dear boy, I had begun to give up all hope—and you can never know what bitter tears of sorrow and regret I have shed. At last, supposing you to be still on the road beside the Hans-bach we again descended, firing off guns as signals. Now, however, that we have found you, and that our voices reach each other, it may be a long time before we actually meet. We are conversing by means of some extraordinary acoustic arrangement of the labyrinth. But do not despair, my dear boy. It is something gained even to hear each other."

While he was speaking my brain was at work reflecting. A certain undefined hope, vague and shapeless as yet, made by heart beat wildly. In the first place, it was absolutely necessary for me to know one thing. I once more therefore leaned my head against the wall, which I almost touched with my lips, and again spoke.

"Uncle."

"My boy," was his ready answer.

"It is of the utmost consequence that we should know how far we are asunder."

"That is not difficult."

"You have your chronometer at hand?" I asked.

"Certainly."

"Well, take it into your hand. Pronounce my name, noting exactly the second at which you speak. I will reply as soon as I hear your words—and you will then note exactly the moment at which my reply reaches you."

"Very good; and the time between my question and your answer will be double the time occupied by my voice in reaching you."

"That is exactly what I mean, uncle," was my eager reply.

"Are you ready?"

"Yes."

"Well, make ready, I am about to pronounce your name," said the Professor.

I applied my ear close to the sides of the cavernous gallery, and as soon as the word Harry reached my ear, I turned round, and placing my lips to the wall, repeated the sound.

"Forty seconds," said my uncle. "There has elapsed forty seconds between the two words. The sound, therefore, takes twenty seconds to ascend. Now, allowing a thousand and twenty feet for every second—we have twenty thousand and four hundred feet—a league and a half and one-eighth."

These words fell on my soul like a kind of death-knell. "A league and a-half," I muttered in a low and despairing voice.

"It shall be got over, my boy," cried my uncle in a cheery tone; "depend on us."

"But do you know whether to ascend or descend?" I asked faintly enough.

"You have to descend, and I will tell you why. We have reached a vast open space, a kind of bare cross road, from which galleries diverge in every direction. That in which you are now lying, must necessarily bring you to this point, for it appears that all these mighty fissures, these fractures of the globe's interior radiate from the vast cavern which we at this moment occupy. Rouse yourself, then, have courage and continue your route. Walk if you can, if not, drag yourself along—slide, if nothing else is possible. The slope must be rather rapid—and you will find strong arms to receive you at the end of your journey. Make a start, like a good fellow."

These words served to rouse some kind of courage in my sinking frame. "Farewell for the present, good uncle, I am about to take my departure. As soon as I start, our voices will cease to commingle. Farewell, then, until we meet again."

"Adieu, Harry—until we say Welcome." Such were the last words which reached my anxious ears, before I commenced my weary and almost hopeless journey.

This wonderful and surprising conversation which took place through the vast mass of the earth's labyrinth, these words exchanged, the speakers being about five miles apart—ended with hopeful and pleasant expressions. I breathed one more prayer to Heaven, I sent up words of thanksgiving—believing in my inmost heart that He had led me to the only place where the voices of my friends could reach my ears.

I accordingly rose to my feet. But I soon found that I could not walk; that I must drag myself along. The slope, as I expected, was very rapid; but I allowed myself to slip down.

Soon the rapidity of the descent began to assume frightful proportions; and menaced a fearful fall. I clutched at the sides; I grasped at projections of rocks; I threw myself backwards. All in vain. My weakness was so great I could do nothing to save myself.

Suddenly earth failed me. I was first launched into a dark, and gloomy void. I then struck against the projecting asperities of a vertical gallery, a perfect well. My head bounded against a pointed rock, and I lost all knowledge of existence. As far as I was concerned, death had claimed me for his own.

CHAPTER XXVI

A Rapid Recovery

WHEN I returned to the consciousness of existence, I found myself surrounded by a kind of semi-obscurity, lying on thick and soft coverlids. My uncle was watching—his eyes fixed intently on my countenance, a grave expression on his face; a tear in his eye. At the first sigh which struggled from my bosom he took hold of my hand. When he saw my eyes open and fix themselves upon his, he uttered a loud cry of joy. "He lives! he lives!"

"Yes, my good uncle," I whispered.

"My dear boy," continued the grim Professor, clasping me to his heart, "you are saved!"

I was deeply and unaffectedly touched by the tone in which these words were uttered, and even more by the kindly care which accompanied them. The Professor was one of those men who must be severely tried in order to induce any display of affection or gentle emotion. At this moment our friend Hans, the guide, joined us. He saw my hand in that of my uncle, and I venture to say, that, taciturn as he was, his eyes beamed with lively satisfaction. "God dag," he said.

"Good day, Hans, good day," I replied, in as hearty a tone as I could assume, "and now, uncle, that we are together, tell me where we are. I have lost all idea of our position, as of everything else."

"To-morrow, Harry, to-morrow," he replied. "To-day you are far too weak. Your head is surrounded with bandages and poultices that must not be touched. Sleep, my boy, sleep, and to-morrow you will know all that you require."

"But," I cried, "let me know what o'clock it is—what day it is?"

"It is now eleven o'clock at night, and this is once more Sunday. It is now the ninth of the month of August. And I distinctly prohibit you from asking any more questions until the tenth of the same."

I was, if the truth were told, very weak indeed, and my eyes soon closed involuntarily. I did require a good night's rest, and I went off reflecting at the last moment that my perilous adventure in the interior of the earth, in total darkness, had lasted four days!

On the morning of the next day, at my awakening, I began to look around me. My sleeping-place, made of all our traveling bedding, was in a charming grotto, adorned with magnificent stalagmites, glittering in all the colors of the rainbow, the floor of soft and silvery sand. A dim obscurity prevailed. No torch, no lamp was lighted, and yet certain unexplained beams of light penetrated from without, and made their way through the opening of the beautiful grotto.

Moreover, I heard a vague and indefinite murmur, like the ebb and flow of waves upon a strand, and sometimes I verily believed I could hear the sighing of the wind. I began to believe that, instead of being awake, I must be dreaming. Surely my brain had not been affected by my fall, and all that occurred during the last twenty-four hours was not the frenzied visions of madness? And yet after some reflection, a trial of my faculties, I came to

the conclusion that I could not be mistaken. Surely, eyes and ears could not both deceive me.

"It is a ray of the blessed daylight," I said to myself, "which has penetrated through some mighty fissure in the rocks. But what is the meaning of this murmur of waves, this unmistakable moaning of the salt sea billows? I can hear, plainly enough, the whistling of the wind. But can I be altogether mistaken? If my uncle, during my illness, has but carried me back to the surface of the earth! Has he, on my account, given up his wondrous expedition, or in some strange manner has it come to an end?"

I was puzzling my brain over these and other questions, when the Professor joined me. "Good-day, Harry," he cried in a joyous tone. "I fancy you are quite well."

"I am very much better," I replied, actually sitting up in my bed.

"I knew that would be the result, as you slept both soundly and tranquilly. Hans and I have each taken turn to watch, and every hour we have seen visible signs of amelioration."

"You must be right, uncle," was my reply, "for I feel as if I could do justice to any meal you could put before me. I am really hungry."

"You shall eat, my boy, you shall eat. The fever has left you. Our excellent friend Hans has rubbed your wounds and bruises, with I know not what ointment, of which the Icelanders alone possess the secret. And they have healed your bruises in the most marvelous manner. Ah, he's a wise fellow, is Master Hans."

While he was speaking, my uncle was placing before me some articles of food, which following his earnest injunctions, I readily devoured. As soon as the first rage of hunger was appeased, I overwhelmed him with questions, to which he now no longer hesitated to give answers. I then learned, for the first time, that my providential fall had brought me to the bottom of an almost perpendicular gallery. As I came down, amidst a perfect shower of stones, the last of which falling on me would have crushed me to death, they came to the conclusion that I had carried with me an entire dislocated rock. Riding as it were on this terrible chariot, I was cast headlong into my uncle's arms. And into them I fell, insensible and covered with blood. "It is indeed a miracle," was the Professor's final remark, "that you were not killed a thousand times over. But let us take care never to separate; for surely we should risk never meeting again."

"Let us take care never again to separate." These words fell with a sort of chill upon my heart. The journey, then, was not over. I looked at my uncle with surprise and astonishment.

My uncle, after an instant's examination of my countenance, said—"What is the matter, Harry?"

"I want to ask you a very serious question. You say that I am all right in health?"

"Certainly you are."

"And all my limbs are sound and capable of new exertions?" I asked.

"Most undoubtedly."

"But what about my head?" was my next anxious question.

"Well, your head, except that you have one or two contusions, is exactly where it ought to be—on your shoulder," said my uncle, laughing.

"Well, my own opinion is that my head is not exactly right. In fact, I believe myself slightly delirious."

"What makes you think so?"

"I will explain why I fancy I have lost my senses," I cried. "Have we not returned to the surface of mother earth?"

"Certainly not."

"Then truly I must be mad, for do I not see the light of day? do I not hear the whistling of the wind? and can I not distinguish the wash of a great sea?"

"And that is all that makes you uneasy?" said my uncle, with a smile.

"Can you explain?"

"I will not make any attempt to explain; for the whole matter is utterly inexplicable. But you shall see and judge for yourself. You will then find that geological science is as yet in its infancy—and that we are doomed to enlighten the world."

"Let us advance, then," I cried eagerly, no longer able to restrain my curiosity.

"Wait a moment, my dear Harry," he responded; "you must take precautions after your illness before going into the open air."

"The open air?"

"Yes, my boy. I have to warn you that the wind is rather violent—and I have no wish for you to expose yourself without necessary precautions."

"But I beg to assure you that I am perfectly recovered from my illness."

"Have just a little patience, my boy. A relapse would be inconvenient to all parties. We have no time to lose—as our approaching sea voyage may be of long duration."

"Sea voyage?" I cried, more bewildered than ever.

"Yes. You must take another day's rest, and we shall be ready to go on board by to-morrow," replied my uncle, with a peculiar smile.

Go on board! The words utterly astonished me. Go on board—what? and how? Had we come upon a river, a lake, had we discovered some island sea? Was a vessel lying at anchor in some part of the interior of the earth?

My curiosity was worked up to the very highest pitch. My uncle made vain attempts to restrain me. When at last, however, he discovered that my feverish impatience would do more harm than good—and that the satisfaction of my wishes could alone restore me to a calm state of mind, he gave way.

I dressed myself rapidly—and then to please my uncle, taking the precaution of wrapping myself in one of the coverlets, I rushed out of the grotto.

CHAPTER XXVII

The Central Sea

At first I saw absolutely nothing. My eyes, wholly unused to the effulgence of light, could not bear the sudden brightness; and I was compelled to close them. When I was able to re-open them, I stood still, far more stupefied than astonished. Not all the wildest effects of imagination could have conjured up such a scene! "The sea—the sea," I cried.

"Yes," replied my uncle, in a tone of pardonable pride; "The Central Sea. No future navigator will

deny the fact of my having discovered it; and hence of acquiring a right of giving it a name."

It was quite true. A vast, limitless expanse of water, the end of a lake if not of an ocean, spread before us, until it was lost in the distance. The shore, which was very much indented, consisted of a beautiful soft golden sand, mixed with small shells, the long deserted homes of some of the creatures of a past age. The waves broke incessantly, and with a peculiarly sonorous murmur—to be found in underground localities. A slight frothy flake arose as the wind blew along the pellucid waters; and many a dash of spray was blown into my face. The mighty superstructure of rock which rose above to an inconceivable height, left only a narrow margin—but where we stood, there was a long beach of strand. On all sides were capes and promontories and enormous cliffs, partially worn by the eternal breaking of the waves, through countless ages! And as I gazed from side to side, the mighty rocks faded in the distance like a fleecy film of cloud.

It was in reality an ocean, with all the usual characteristics of an inland sea, only horribly wild—so rigid, cold and savage.

One thing startled and puzzled me greatly. How was it that I was able to look upon that vast sheet of water instead of being plunged in utter darkness? The vast landscape before me was lit up like day. But there was wanting the dazzling brilliancy, the splendid irradiation of the sun; the pale cold illumination of the moon; the brightness of the stars. The illuminating power in this subterranean region, from its trembling and flickering character, its clear dry whiteness, the very slight elevation of its temperature, its great superiority to that of the moon, was evidently electric; something in the nature of the aurora borealis, only that its phenomena were constant, and able to light up the whole of the ocean cavern.

The tremendous vault above our heads, the sky, so to speak, appeared to be composed of a conglomeration of nebulous vapors, in constant motion. I should originally have supposed, that under such an atmospheric pressure as must exist in that place, the evaporation of water could not really take place; yet there were heavy and dense clouds rolling along that mighty vault, partially concealing the roof. Electric currents produced astonishing play of light and shade in the distance, especially around the heavier clouds. Deep shadows were cast beneath, and then suddenly, between two clouds, there would come a ray of unusual beauty, and remarkable intensity. Yet it was not like the sun, for it gave no heat.

The effect was sad and excruciatingly melancholy. Instead of a noble firmament of blue, studded with stars, there was above me a heavy roof of granite, which seemed to crush me. Gazing around, I began to think of the theory of the English captain, who compared the earth to a vast hollow sphere in the interior of which the air is retained in a luminous state by means of atmospheric pressure, while two stars, Pluto and Proserpine, circle there in their mysterious orbits. After all, suppose the old fellow was right!

In truth, we were imprisoned—bound as it were, in a vast excavation. Its width it was impossible to

make out; the shore on either hand, widening rapidly until lost to sight; while its length was equally uncertain. A haze on the distant horizon bounded our view. As to its height we could see that it must be many miles to the roof. Looking upward, it was impossible to discover where the stupendous roof began. The lowest of the clouds must have been floating at an elevation of two thousand yards, a height greater than that of terrestrial vapors, which circumstance was doubtless owing to the extreme density of the air.

I use the word cavern in order to give an idea of the place. I cannot describe its awful grandeur; human language fails to convey an idea of its savage sublimity. Whether this singular vacuum had or had not been caused by the sudden cooling of the earth when in a state of fusion, I could not say. I had read of most wonderful and gigantic caverns—but none in any way like this.

The great grotto of Guachara, in Columbia, visited by the learned Humboldt; the vast and partially explored Mammoth Cave in Kentucky; what were these holes in the earth compared to that in which I stood in speechless admiration! with its vapory clouds, its electric light, and mighty ocean slumbering in its bosom! Imagination, not description, can alone give an idea of the splendor and vastness of the cave.

I gazed at these marvels in profound silence. Words were utterly wanting to indicate the sensations of wonder I experienced. I seemed, as I stood upon that mysterious shore, to be some wandering inhabitant of a distant planet, present for the first time at the spectacle of some terrestrial phenomena belonging to another existence. To give body and existence to such new sensations, would have required the coinage of new words—and here my feeble brain found itself wholly inadequate. I looked on, I thought, I reflected, I admired, in a state of stupefaction not altogether unmingled with fear!

The unexpected spectacle restored some color to my pallid cheeks. I seemed to be actually getting better under the influence of this novelty. Moreover, the vivacity of the dense atmosphere reanimated my body, by inflating my lungs with unaccustomed oxygen.

It will be readily conceived that after an imprisonment of forty-seven days, in a dark and miserable tunnel, it was with infinite delight that I breathed this saline air. It was like the genial, reviving influence of the salt sea waves. My uncle had already got over the first surprise. With the Latin poet, Horace, his idea was that—

“Not to admire, is all the art I know
To make man happy and to keep him so.”

“Well,” he said, after giving me time thoroughly to appreciate the marvels of this underground sea, “do you feel strong enough to walk up and down?”

“Certainly,” was my ready answer, “nothing would give me greater pleasure.”

“Well, then, my boy,” he said, “lean on my arm, and we will stroll along the beach.”

I accepted his offer eagerly, and we began to walk along the shores of this extraordinary lake. To our left were abrupt rocks, piled one upon the

other,—a stupendous titanic pile; down their sides leapt innumerable cascades, which at last, becoming limpid and murmuring streams, were lost in the waters of the lake. Light vapors, which rose here and there, and floated in fleecy clouds from rock to rock, indicated hot springs, which also poured their superfluity into the vast reservoir at our feet.

Among them I recognized our old and faithful stream, the Hans-bach, which, lost in that wild basin, seemed as if it had been flowing since the creation of the world.

“We shall miss our excellent friend,” I remarked, with a deep sigh.

“Bah!” said my uncle, testily, “what matters it. That or another, it is all the same.”

I thought the remark ungrateful, and felt almost inclined to say so; but I forbore. At this moment my attention was attracted by an unexpected spectacle. After we had gone about five hundred yards, we suddenly turned a steep promontory, and found ourselves close to a lofty forest! It consisted of straight trunks with tufted tops, in shape like parasols. The air seemed to have no effect upon these trees—which in spite of a tolerable breeze remained as still and motionless as if they had been petrified.

I hastened forward. I could find no name for these singular formations. Did they belong to the two thousand and more known trees—or were we to make the discovery of a new growth? When we at last reached the forest, and stood beneath the trees, my surprise gave way to admiration. In truth, I was simply in the presence of a very ordinary product of the earth, of singular and gigantic proportions. My uncle unhesitatingly called them by their real names. “It is only,” he said, in his coolest manner, “a forest of mushrooms.”

On close examination I found that he was not mistaken. Judge of the development attained by this product of damp hot soils. I had heard that the *lycoperdon giganteum* reaches nine feet in circumference, but here were white mushrooms, nearly forty feet high, and with tops of equal dimensions. They grew in countless thousands—the light could not make its way through their massive substance, and beneath them reigned a gloomy and mystic darkness.

Still I wished to go forward. The cold in the shades of this singular forest was intense. For nearly an hour we wandered about in this darkness visible. At length I left the spot, and once more returned to the shores of the lake, to light and comparative warmth.

The amazing vegetation of this subterraneous region was not confined to gigantic mushrooms. New wonders awaited us at every step. We had not gone many hundred yards, when we came upon a mighty group of other trees with discolored leaves—the common humble trees of mother earth, of an exorbitant and phenomenal size; mosses a hundred feet high; flowing ferns as tall as pines; gigantic grasses!

“Astonishing, magnificent, splendid!” cried my uncle; here we have before us the whole flora of the second period of the world, that of transition. Behold the humble plants of our gardens, which in the first ages of the world were mighty trees.

Look around you, my dear Harry. No botanist ever before gazed on such a sight!"

My uncle's enthusiasm, usually a little more than was required, was now excusable. "You are right, uncle," I remarked. "Providence appears to have designed the preservation in this vast and mysterious hot-house of antediluvian plants, to prove the sagacity of learned men in figuring them so marvelously on paper."

"Well said, my boy—very well said; it is indeed a mighty hot-house;—but you would also be within the bounds of reason and common sense, if you also added—a vast menagerie."

I looked rather anxiously around. If the animals were as exaggerated as the plants, the matter would certainly be serious. "A menagerie?"

"Doubtless. Look at the dust we are treading under foot—behold the bones with which the whole soil of the seashore is covered—"

"Bones," I replied, "yes, certainly, the bones of antediluvian animals." I stooped down as I spoke, and picked up one or two singular remains, relics of a by-gone age. It was easy to give a name to these gigantic bones, in some instances as big as trunks of trees.

"Here is, clearly, the lower jaw-bone of a mastodon," I cried, almost as warmly and enthusiastically as my uncle, "here are the molars of the dinotherium; here is a leg-bone which belonged to the megatherium. You are right, uncle, it is indeed a menagerie; for the mighty animals to which these bones once belonged, have lived and died on the shores of this subterranean sea, under the shadow of these plants. Look, yonder are whole skeletons—and yet—"

"And yet, nephew?" said my uncle, noticing that I suddenly came to a full stop.

"I do not understand the presence of such beasts in granite caverns, however vast and prodigious," was my reply.

"Why not?" said my uncle, with very much of his old professional impatience.

"Because it is well known that animal life only existed on earth during the second period, when the sedimentary soil was formed by the alluviums, and thus replaced the hot and burning rocks of the primitive age."

"I have listened to you earnestly and with patience, Harry, and I have a simple and clear answer to your objections: and that is, that this itself is a sedimentary soil."

"How can that be at such enormous depth from the surface of the earth?"

"The fact can be explained both simply and geologically. At a certain period, the earth consisted only of an elastic crust, liable to alternative upward and downward movements in virtue of the law of attraction. It is very probable that many a landslip took place in those days, and that large portions of sedimentary soil were cast into huge and mighty chasms."

"Quite possible," I dryly remarked. "But, uncle, if these antediluvian animals formerly lived in these subterranean regions, what more likely than that one of these huge monsters may at this moment be concealed behind one of yonder mighty rocks."

As I spoke, I looked keenly around, examining

with care every point of the horizon; but nothing alive appeared to exist on these deserted shores.

I now felt rather fatigued, and told my uncle so. The walk and excitement were too much for me in my weak state. I therefore seated myself at the end of a promontory, at the foot of which the waves broke in incessant swells. I looked around a bay formed by projections of vast granite rocks. At the extreme end was a little port protected by huge pyramids of stones. A brig and three or four schooners might have lain there with perfect ease. So natural did it seem, that every minute my imagination induced me to expect a vessel coming out under all sail and making for the open sea under the influence of a warm southerly breeze.

But the fantastic illusion never lasted more than a minute. We were the only living creatures in this subterranean world!

During certain periods there was an utter cessation of wind, when a silence deeper, more terrible than the silence of the desert fell upon these solitary and arid rocks—and seemed to hang like a leaden weight upon the waters of this singular ocean. I sought, amid the awful stillness, to penetrate through the distant fog, to tear down the veil which concealed the mysterious distance. What unspoken words were murmured by my trembling lips—what questions did I wish to ask and did not! Where did this sea end—to what did it lead? Should we ever be able to examine its distant shores?

But my uncle had no doubts about the matter. He was convinced that our enterprise would in the end be successful. For my part, I was in a state of painful indecision—I desired to embark on the journey and to succeed, and still I feared the result.

After we had passed an hour or more in silent contemplation of the wondrous spectacle, we rose and went down towards the bank on our way to the grotto, which I was not sorry to gain. After a slight repast, I sought refuge in slumber, and at length, after many and tedious struggles, sleep came over my weary eyes.

CHAPTER XXVIII

Launching the Raft

ON the morning of the next day, to my great surprise, I awoke completely restored. I thought a bath would be delightful after my long illness and sufferings. So, soon after rising, I went and plunged into the waters of this new Mediterranean. The bath was cool, fresh and invigorating.

I came back to breakfast with an excellent appetite. Hans, our worthy guide, thoroughly understood how to cook such eatables as we were able to provide; he had both fire and water at discretion, so that he was enabled slightly to vary the weary monotony of our ordinary repast. Our morning meal was like a capital English breakfast, with coffee by way of a wind-up. And never had this delicious beverage been so welcome and refreshing.

My uncle had sufficient regard for my state of health not to interrupt me in the enjoyment of the meal, but he was evidently delighted when I had finished. "Now then," said he, "come with me. It is the height of the tide, and I am anxious to study its curious phenomena."

"What," I cried, rising in astonishment, "did you say, the tide, uncle?"

"Certainly I did."

"You do not mean to say," I replied, in a tone of respectful doubt, "that the influence of the sun and moon is felt here below?"

"And pray why not? Are not all bodies influenced by the law of universal attraction? Why should this vast underground sea be exempt from the general law, the rule of the universe? Besides, there is nothing like that which is proved and demonstrated. Despite the great atmospheric pressure down here, you will notice that this inland sea rises and falls with as much regularity as the Atlantic itself."

As my uncle spoke, we reached the sandy shore, and saw and heard the waves breaking monotonously on the beach. They were evidently rising.

"This is truly the flood," I cried, looking at the water at my feet.

"Yes, my excellent nephew," replied my uncle, rubbing his hands with the gusto of a philosopher, "and you see by these several streaks of foam, that the tide rises at least ten or twelve feet."

"It is indeed marvelous."

"By no means," he responded; "on the contrary, it is quite natural."

"It may appear so in your eyes, my dear uncle," was my reply, "but the whole group of phenomena of the place appear to me to partake of the marvelous. It is almost impossible to believe that which I see. Who in his wildest dreams could have imagined that, beneath the crust of our earth, there could exist a real ocean, with ebbing and flowing tides, with its changes of winds, and even its storms. I for one should have laughed the suggestion to scorn."

"But, Harry, my boy, why not?" inquired my uncle, with a pitying smile, "is there any physical reason in opposition to it?"

"Not if we give up the great theory of the central heat of the earth. That point once granted, I certainly can see no reason for doubting the existence of seas and other wonders, even countries, in the interior of the globe."

"That is so—but of course these varied countries are uninhabited?"

"Well, I grant that it is more likely than not; still, I do not see why this sea should not have given shelter to some species of unknown fish."

"Hitherto we have not discovered any, and the probabilities are rather against our ever doing so," observed the Professor.

I was losing my skepticism in the presence of these wonders. "Well, I am determined to solve the question. It is my intention to try my luck with my fishing line and hook."

"Certainly; make the experiment," said my uncle, pleased with my enthusiasm. "While we are about it, it will certainly be only proper to discover all the secrets of this extraordinary region."

"But, after all, where are we now?" I asked; "all this time I have quite forgotten to ask you a question, which, doubtless, your philosophical instruments have long since answered."

"Well," replied the Professor, "examining the situation from only one point of view, we are now

distant three hundred and fifty leagues from Iceland."

"So much?" was my exclamation.

"I have gone over the matter several times, and am sure not to have made a mistake of five hundred yards," replied my uncle positively.

"And as to the direction—are we still going to the southeast?"

"Yes, with a western declination of nineteen degrees, forty-two minutes, just as it is above. As for the inclination I have discovered a very curious fact."

"What may that be, uncle? Your information interests me."

"Why that the needle, instead of dipping towards the pole as it does on earth, in the northern hemisphere, has an upward tendency."

"This proves," I cried, "that the great point of magnetic attraction lies somewhere between the surface of the earth and the spot we have succeeded in reaching."

"Exactly, my observant nephew," exclaimed my uncle, elated and delighted, "and it is quite probable that if we succeed in getting toward the polar regions—somewhere near the seventy-third degree of latitude, where Sir James Ross discovered the magnetic pole, we shall behold the needle point directly upward. We have therefore discovered that this great center of attraction is not situated at a very great depth."

"Well," said I, rather surprised, "this discovery will astonish experimental philosophers. It was never suspected."

"Science, great, mighty and in the end unerring," replied my uncle dogmatically, "science has fallen into many errors—errors which have been fortunate and useful rather than otherwise, for they have been the stepping-stones to truth."

After some further discussion, I turned to another matter. "Have you any idea of the depth we have reached?"

"We are now," continued the Professor, "exactly thirty-five leagues—above a hundred miles—down into the interior of the earth."

"So," said I, after measuring the distance on the map, "we are now beneath the Scottish Highlands, and have over our heads the lofty Grampian hills."

"You are quite right," said the Professor laughing, "it sounds very alarming, the weight being heavy—but the vault which supports this vast mass of earth and rock is solid and safe—the mighty Architect of the Universe has constructed it of solid materials. Man, even in his highest flights of vivid and poetic imagination, never thought of such things! What are the finest arches of our bridges, what the vaulted roofs of our cathedrals, to that mighty dome above us, and beneath which floats an ocean with its storms and calms and tides!"

"I admire it all as much as you can, uncle, and have no fear that our granite sky will fall upon our heads. But now that we have discussed matters of science and discovery, what are your future intentions? Are you not thinking of getting back to the surface of our beautiful earth?" This was said more as a feeler than with any hope of success.

"Go back, nephew," cried my uncle in a tone of

alarm, "you are not surely thinking of anything so absurd or cowardly. No, my intention is to advance and continue our journey. We have as yet been singularly fortunate, and henceforth I hope we shall be more so."

"But," said I, "how are we to cross yonder liquid plain?"

"It is not my intention to leap into it head foremost, or even to swim across it, like Leander over the Hellespont. But as oceans are, after all, only great lakes, inasmuch as they are surrounded by land, so does it stand to reason, that this central sea is circumscribed by granite surroundings."

"Doubtless," was my natural reply.

"Well, then, do you not think that when once we reach the other end, we shall find some means of continuing our journey?"

"Probably, but what extent do you allow to this internal ocean?"

"I should fancy it to extend about forty or fifty leagues—more or less."

"But even supposing this approximation to be a correct one—what then?" I asked.

"My dear boy, we have no time for further discussion. We shall embark to-morrow."

I looked around with surprise and incredulity. I could see nothing in the shape of boat or vessel. "What!" I cried, "we are about to launch out upon an unknown sea; and where, if I may ask, is the vessel to carry us?"

"Well, my dear boy, it will not be exactly what you would call a vessel. For the present we must be content with a good and solid raft."

"A raft!" I cried, incredulously, "but down here a raft is as impossible of construction as a vessel—and I am at a loss to imagine—"

"My good Harry—if you were to listen instead of talking so much, you would hear," said my uncle, waxing a little impatient.

"I should hear?"

"Yes—certain knocks with the hammer, which Hans is now employing to make the raft. He has been at work for many hours."

"But where has he found trees suitable for such a construction?"

"He found the trees all ready to his hand. Come, and you shall see our excellent guide at work."

More and more amazed at what I heard and saw, I followed my uncle like one in a dream. After a walk of about a quarter of an hour, I saw Hans at work on the other side of the promontory which formed our natural port. A few minutes more and I was beside him. To my great surprise, on the sandy shore lay a half-finished raft. It was made from beams of a very peculiar wood, and a great number of limbs, joints, boughs, and pieces lay about, sufficient to have constructed a fleet of ships and boats.

I turned to my uncle, silent with astonishment and awe. "Where did all this wood come from?" I cried; "what wood is it?"

"Well, there is pine-wood, fir, and the palms of the northern regions, mineralized by the action of the sea," he replied, sententiously.

"Can it be possible?"

"Yes," said the learned Professor, "what you see is called fossil wood."

"But then," cried I, after reflecting for a moment,

"like the agates, it must be as hard and as heavy as stone, and therefore will certainly not float."

"Sometimes that is the case. Many of these woods have become true anthracites, but others again, like those you see before you, have only undergone one phase of fossil transformation. But there is no proof like demonstration," added my uncle, picking one or two of these precious waifs and casting them into the sea.

The piece of wood, after having disappeared for a moment, came to the surface, and floated about with the oscillation produced by wind and tide. "Are you convinced?" said my uncle, with a self-satisfied smile.

"I am convinced," I cried, "that what I see is incredible."

The fact was that my journey into the interior of the earth was rapidly changing all preconceived notions, and day by day preparing me for the marvelous. I should not have been surprised to have seen a float of native canoes afloat upon that silent sea.

The very next evening, thanks to the industry and ability of Hans, the raft was finished. It was about ten feet long and five feet wide. The beams bound together with stout ropes, were solid and firm, and once launched by our united efforts, the improvised vessel floated tranquilly upon the waters of what the Professor had well named the Central Sea.

CHAPTER XXIX

On the Waters—A Raft Voyage

ON the 13th of August we were up betimes. There was no time to be lost. We now had to inaugurate a new kind of locomotion, which would have the advantage of being rapid and not fatiguing. A mast, made of two pieces of wood fastened together, to give additional strength, a yard made from another one, the sail a linen sheet from our bed. We were fortunately in no want of cordage, and the whole on trial appeared solid and seaworthy.

At six o'clock in the morning, when the eager and enthusiastic Professor gave the signal to embark, the victuals, the luggage, all our instruments, our weapons, and a goodly supply of sweet water, which we had collected from springs in the rocks, were placed on the raft. Hans had, with considerable ingenuity, contrived a rudder, which enabled him to guide the floating apparatus with ease. He took the tiller, as a matter of course. The worthy man was as good a sailor as he was a guide and duck-hunter. I then let go the painter which held us to the shore, the sail was brought to the wind, and we made a rapid offing. Our sea voyage had at length commenced; and once more we were making for distant and unknown regions.

Just as we were about to leave the little port where the raft had been constructed, my uncle, who was very strong as to geographic nomenclature, wanted to give it a name and among others, suggested mine.

"Well," said I, "before you decide I have another to propose."

"Well; out with it."

"I should like to call it Gretchen. Port Gretchen will sound very well on our future map."

"Well, then, Port Gretchen let it be," said the Professor. And thus it was that the memory of my dear girl was attached to our adventurous and memorable expedition.

When we left the shore the wind was blowing from the northward and eastward. We went directly before the wind at a much greater speed than might have been expected from a raft. The dense layers of atmosphere at that depth had great propelling power and acted upon the sail with considerable force. At the end of an hour, my uncle, who had been making careful observations, was enabled to estimate the rapidity with which we moved. It was far beyond anything seen in the upper world.

"If," he said, "we continue to advance at our present rate, we shall have traveled at least thirty leagues in twenty-four hours. With a mere raft this is an almost incredible velocity."

I certainly was surprised, and without making any reply went forward upon the raft. Already the northern shore was fading away on the edge of the horizon. The two shores appeared to separate more and more, leaving a wide and open space for our departure. Before me I could see nothing but the vast and apparently limitless sea—upon which we floated—the only living objects in sight.

Huge and dark clouds cast their gray shadows below—shadows which seemed to crush that colorless and sullen water by their weight. Anything more suggestive of gloom and of regions of nether darkness I never beheld. Silvery rays of electric light, reflected here and there upon some small spots of water, brought up luminous sparkles in the long wake of our cumbersome bark. Presently we were wholly out of sight of land, not a vestige could be seen, nor any indication of where we were going. So still and motionless did we seem without any distant point to fix our eyes on, that but for the phosphoric light at the wake of the raft I should have fancied that we were still and motionless.

But I knew that we were advancing at a very rapid rate.

About twelve o'clock in the day, vast collections of seaweed were discovered surrounding us on all sides. I was aware of the extraordinary vegetative power of these plants, which have been known to creep along the bottom of the great ocean, and stop the advance of large ships. But never were seaweeds ever seen, so gigantic and wonderful as those of the Central Sea. I could well imagine how, seen at a distance, tossing and heaving on the summit of the billows, the long lines of algæ have been taken for living things, and thus have been the fertile sources of the belief in sea serpents.

Our raft swept past great specimens of fuca or seawrack, from three to four thousand feet in length, immense, incredibly long, looking like snakes that stretched out far beyond our horizon. It afforded me great amusement to gaze on their variegated ribbon-like endless lengths. Hour after hour passed without our coming to the termination of these floating weeds. If my astonishment increased, my patience was well-nigh exhausted.

What natural force could possibly have produced such abnormal and extraordinary plants? What

must have been the aspect of the globe, during the first centuries of its formation, when under the combined action of heat and humidity, the vegetable kingdom occupied its vast surface to the exclusion of everything else? These were considerations of never-ending interest for the geologist and the philosopher.

All this while we were advancing on our journey; and at length night came; but as I had remarked the evening before, the luminous state of the atmosphere was in nothing diminished. Whatever was the cause, it was a phenomenon upon the duration of which we could calculate with certainty.

As soon as our supper had been disposed of, and some little speculative conversation indulged in, I stretched myself at the foot of the mast and presently went to sleep. Hans remained motionless at the tiller, allowing the raft to rise and fall on the waves. The wind being aft, and the sail square, all he had to do was to keep his rudder amidships.

Ever since we had taken our departure from the newly named Port Gretchen, my worthy uncle had directed me to keep a regular log of our day's navigation, with instructions to put down even the most minute particulars, every interesting and curious phenomenon, the direction of the wind, our rate of sailing, the distance we went; in a word, every incident of our extraordinary voyage. From our log, therefore, I tell the story of our voyage on the Central Sea.

FRIDAY, August 14th. A steady breeze from the northwest. Raft progressing with extreme rapidity, and going perfectly straight. Coast still dimly visible, about thirty miles to leeward. Nothing to be seen beyond the horizon in front. The extraordinary intensity of the light neither increases nor diminishes. It is singularly stationary. The weather remarkably fine; that is to say, the clouds have ascended very high, and are light and fleecy, and surrounded by an atmosphere resembling silver in fusion. Thermometer + 32 degrees centigrade.

About twelve o'clock in the day our guide, Hans, having prepared and baited a hook, cast his line into the subterranean waters. The bait he used was a small piece of meat, by means of which he concealed his hook. Anxious as I was, I was for a long time doomed to disappointment. Were these waters supplied with fish or not? That was the important question. No—was my decided answer. Then there came a sudden and rather hard tug. Hans coolly drew it in, and with it a fish, which struggled violently to escape.

"A fish," cried my uncle, putting on his spectacles to examine it.

"It is a sturgeon!" I cried, "certainly a small sturgeon."

The Professor examined the fish carefully, noting every characteristic; and he did not coincide in my opinion. The fish had a flat head, round body, and the lower extremities covered with bony scales; its mouth was wholly without teeth, the pectoral fins, which were highly developed, sprouted direct from the body, which properly speaking had no tail. The animal certainly belonged to the order in which naturalists class the sturgeon, but it differed from that fish in many essential particulars. My uncle, after all, was not mistaken. After a long

and patient examination, he said: "This fish, my dear boy, belongs to a family which has been extinct for ages, and of which no trace has ever been found on earth, except fossil remains in the Devonian strata."

"You do not mean to say," I cried, "that we have captured a live specimen of a fish belonging to the primitive stock that existed before the deluge?"

"We have," said the Professor, who all this time was continuing his observations, "and you may see by careful examination that these fossil fish have no identity with existing species. To hold in one's hand, therefore, a living specimen of the order, is enough to make a naturalist happy for life. Moreover this fish offers to our notice a remarkable peculiarity, never known to exist in any other fish but those which are the natives of subterranean waters, wells, lakes, in caverns, and such like hidden pools."

"And what may that be?"

"It is blind."

"Blind!" I cried, much surprised.

"Not only blind," continued the Professor, "but absolutely without organs of sight."

I now examined our discovery for myself. It was singular, to be sure, but it was really a fact. This, however, might be a solitary instance, I suggested. The hook was baited again and once more thrown into the water. This subterranean ocean must have been tolerably well supplied with fish, for in two hours we took a large number of similar fish. All, without exception were blind.

This unexpected capture enabled us to renew our stock of provisions in a very satisfactory way.

We were now convinced that this Subterranean Sea contained only fish known to us as fossil specimens—and fish and reptiles alike, were all the more perfect the farther back they dated their origin. We began to hope that we should find some of those saurians which science has succeeded in reconstructing from bits of bone or cartilage. I took up the telescope and carefully examined the horizon—looked over the whole sea; it was utterly and entirely deserted. Doubtless we were still too near the coast.

After an examination of the ocean, I looked upward, towards the strange and mysterious sky. Why should not one of the birds, reconstructed by the immortal Cuvier, flap his stupendous wings aloft in the dull strata of subterranean air? It would, of course, find quite sufficient food from the fish in the sea. I gazed for some time upon the void above. It was as silent and as deserted as the shores we had but lately left.

Nevertheless, though I could neither see nor discover anything, my imagination carried me away into wild hypotheses. I was in a kind of waking dream. I thought I saw on the surface of the water those enormous antediluvian turtles as big as floating islands. Upon those dull and somber shores passed a spectral row of the mammals of early days, the great Leptotherium found in the cavernous hollow of the Brazilian hills, the Mesicotherium, a native of the glacial regions of Siberia. Farther on, the pachydermatous Lophrodon, that gigantic tapir, which concealed itself behind rocks, ready to do battle for its prey with the Anoplotherium, a singular animal partaking of the nature of the rhin-

oceros, the horse, the hippopotamus and the camel.

I thought—such was the effect of my imagination—that I saw this whole tribe of antediluvian creatures. I carried myself back to far ages, long before man existed—when, the earth was in too imperfect a state for him to live upon it. The whole panorama of the world's life before the historic period, seemed to be born over again, and mine was the only human heart that beat in this unpeopled world! There were no more seasons; there were no more climates; the natural heat of the world increased unceasingly, and neutralized that of the great radiant Sun.

Next, unrolled before me like a panorama, came the great and wondrous series of terrestrial transformations. Plants disappeared; the granite rocks lost all trace of solidity; the liquid state was suddenly substituted for that which had before existed. This was caused by intense heat acting on the organic matter of the earth. The waters flowed over the whole surface of the globe; they boiled; they were volatilized, or turned into vapor; a kind of steam-cloud wrapped the whole earth, the globe itself becoming at last nothing but one huge sphere of gas, indescribable in color, between white heat and red, as big and as brilliant as the sun.

What an extraordinary dream! Where would it finally take me? My feverish hand began to write down the marvelous details—details more like the imaginings of a lunatic than anything sober and real. I had during this period of hallucination forgotten everything—the Professor, the guide, and the raft on which we were floating. My mind was in a state of semi-oblivion.

"What is the matter, Harry?" said my uncle, suddenly.

My eyes, which were wide opened like those of a somnambulist, were fixed upon him, but I did not see him, nor could I clearly make out anything around me.

"Take care, my boy," again cried my uncle, "you will fall into the sea."

As he uttered these words, I felt myself seized on the other side by the firm hand of our devoted guide. Had it not been for the presence of mind of Hans, I must surely have fallen into the waves and been drowned.

"Have you gone mad?" cried my uncle, shaking me on the other side.

"What—what is the matter?" I said at last, coming to myself.

"Are you ill, Harry?" continued the Professor in an anxious tone.

"No—no; but I have had an extraordinary dream. But it has passed away. All now seems well," I added, looking around me with strangely puzzled eyes.

"All right," said my uncle; "a beautiful breeze, a splendid sea. We are going along at a rapid rate, and if I am not out in my calculations we shall soon see land. I shall not be sorry to exchange the narrow limits of our raft for the mysterious strand of the Subterranean Ocean."

As my uncle uttered these words, I rose and carefully scanned the horizon. But the line of water was still confounded with the lowering clouds that hung aloft, and in the distance appeared to touch the edge of the water.

CHAPTER XXX

Terrific Saurian Combat

SATURDAY, August 15. The sea still retains its uniform monotony. The same leaden hue, the same eternal glare from above. No indication of land being in sight. The horizon appears to retreat before us, more and more as we advance.

My head is still dull and heavy from the effects of my extraordinary dream, which I cannot as yet banish from my mind. The Professor, who has not dreamed, is, however, in one of his morose and unaccountable humors. Spends his time in scanning the horizon, at every point of the compass. His telescope is raised every moment to his eyes, and when he finds nothing to give any clew to our whereabouts, he assumes a Napoleonic attitude and walks anxiously.

I remarked that my uncle, the Professor, had a strong tendency to resume his old impatient character, and I could not but make a note of this disagreeable circumstance. I saw clearly that it had required all the influence of my danger and suffering, to extract from him one scintillation of humane feeling. Now that I was quite recovered, his original nature had conquered and obtained the upper hand.

"You seem uneasy, uncle," said I, when for about the hundredth time he put down his telescope and walked up and down, muttering to himself.

"No, I am not uneasy," he replied in a dry harsh tone, "by no means."

"Perhaps I should have said impatient," I replied, softening the force of my remark.

"Enough to make me so, I think."

"And yet we are advancing at a rate seldom attained by a raft," I remarked.

"What matters that?" cried my uncle. "I am not vexed at the rate we go at, but I am annoyed to find the sea so much vaster than I expected."

I then recollected that the Professor, before our departure, had estimated the length of this Subterranean Ocean, as at most about fifty leagues. Now we had traveled at least over thrice that distance without discovering any trace of the distant shore. I began to understand my uncle's anger.

"We are not going down," suddenly exclaimed the Professor. "We are not progressing with our great discoveries. All this is utter loss of time. After all, I did not come from home to undertake a party of pleasure. This voyage on a raft over a pond annoys and wearies me."

He called this adventurous journey a party of pleasure, and this great Inland Sea a pond! "But," argued I, "if we have followed the route indicated by the great Saknussem, we cannot be going far wrong."

"That is the question," as the great, the immortal Shakespeare has it. Are we following the route indicated by that wondrous sage? Did Saknussem ever fall in with this great sheet of water? If he did, did he cross it? I began to fear that the rivulet we adopted for a guide has led us wrong."

"In any case, we can never regret having come thus far. It is worth the whole journey to have enjoyed this magnificent spectacle—it is something to have seen."

"I care nothing about seeing, nor about magni-

ficient spectacles. I came down into the interior of the earth with an object, and that object I mean to attain. Don't talk to me about admiring scenery, or any other sentimental trash."

After this I thought it well to hold my tongue, and allow the Professor to bite his lips until the blood came, without further remark.

At six o'clock in the evening, our matter-of-fact guide, Hans, asked for his week's salary, and receiving his three rix-dollars, put them carefully in his pocket. He was perfectly contented and satisfied.

SUNDAY, 16th August. Nothing new to record. The same weather as before. The wind has a slight tendency to freshen up, with signs of an approaching gale. When I awoke, my first observation was in regard to the intensity of the light. I keep on fearing, day after day, that the extraordinary electric phenomenon should become first obscured, and then go wholly out, leaving us in total darkness. Nothing of this kind occurs however. The shadow of the raft, its mast and sails, is clearly distinguishable on the surface of the water.

This wondrous sea is, after all, immense in extent. It must be quite as wide as the Mediterranean—or perhaps even as the great Atlantic Ocean. Why, after all, should it not be so? My uncle has on more than one occasion, tried deep sea soundings. He tied one of our heaviest crowbars to the end of a cord, which he allowed to run out to the extent of two hundred fathoms. We had the greatest difficulty in hoisting in our novel kind of lead.

When the crowbar was finally dragged on board, Hans called my attention to some singular marks upon its surface. The piece of iron looked as if it had been crushed between two very hard substances. I looked at our worthy guide with an inquiring glance. "Taender," said he.

Of course I was at a loss to understand. I turned round towards my uncle, absorbed in gloomy reflections. I had little wish to disturb him from his reverie. I accordingly turned once more toward our worthy Iclander. Hans very quietly and significantly opened his mouth once or twice, as if in the act of biting, and in this way made me understand his meaning.

"Teeth!" cried I, with stupefaction, as I examined the bar of iron with more attention.

Yes. There can be no doubt about the matter. The indentations on the bar of iron are the marks of teeth! What jaws must the owner of such molars be possessed of! Have we, then, come upon a monster of unknown species, which still exists within the vast waste of waters—a monster more voracious than a shark, more terrible and bulky than the whale. I am unable to withdraw my eyes from the bar of iron, actually half-crushed!

Is, then, my dream about to come true—a dread and terrible reality? All day my thoughts were bent upon these speculations, and my imagination scarcely regained a degree of calmness and power of reflection until after a sleep of many hours. This Sunday, as other Sundays, we observed as a day of rest and pious meditation.

MONDAY, August 17th. I have been trying to realize from memory the particular instincts of those antediluvian animals of the secondary period, which succeeding to the mollusca, to the crustacea,

and to the fish, preceded the appearance of the race of mammals. The generation of reptiles then reigned supreme upon the earth. These hideous monsters ruled everything in the seas of the secondary period, which formed the strata of which the Jura mountains are composed. What a gigantic structure was theirs; what vast and prodigious strength they possessed! The existing saurians, which include all such reptiles as lizards, crocodiles, and alligators, even the largest and most formidable of their class, are but feeble imitations of their mighty sires, the animals of ages long ago. If there were giants in the days of old, there were also gigantic animals.

I shuddered as I evolved from my mind the idea and recollection of these awful monsters. No eye of man had seen them in the flesh. They took their walks abroad upon the face of the earth thousands of ages before man came into existence, and their fossil bones, discovered in the limestone, have allowed us to reconstruct them anatomically, and thus to get some faint idea of their colossal formation.

I recollect once seeing in the great Museum of Hamburg the skeleton of one of these wonderful saurians. It measured no less than thirty feet from the nose to the tail. Am I, then, an inhabitant of the earth of the present day, destined to find myself face to face with a representative of this antediluvian family? I can scarcely believe it possible; can hardly believe it true. And yet these marks of powerful teeth upon the bar of iron! can there be a doubt from their shape that the bite is the bite of a crocodile?

My eyes stare wildly and with terror upon the subterranean sea. Every moment I expect one of these monsters to rise from its vast cavernous depths. I fancy that the worthy Professor in some measure shares my notions, if not my fears, for, after an attentive examination of the crowbar, he cast his eyes rapidly over the mighty and mysterious ocean.

"What could possess him to leave the land," I thought, "as if the depth of this water was of any importance to us. No doubt he has disturbed some terrible monster in his watery home, and perhaps we may pay dearly for our temerity." Anxious to be prepared for the worst, I examined our weapons, and saw that they were in a fit condition for use. My uncle looked on at me and nodded his head approvingly. He, too, had noticed what we had to fear.

Already the uplifting of the waters on the surface indicates that something is in motion below. The danger approaches. It comes nearer and nearer. It behoves us to be on the watch.

TUESDAY, August 18. Evening came at last, the hour, when the desire for sleep caused our eyelids to be heavy. Night there is not, properly speaking, in this place, any more than there is in summer in the arctic regions. Hans, however, is immovable at the rudder. When he snatches a moment of rest I really cannot say. I took advantage of his vigilance to take some little repose.

Two hours after, I was awakened from a heavy sleep by a sudden shock. The raft appeared to have struck upon a sunken rock. It was lifted right out

of the water by some wondrous and mysterious power, and then started off twenty fathoms distant.

"Eh, what is it?" cried my uncle, starting up, "are we shipwrecked, or what?"

Hans raised his hand and pointed to where, about two hundred yards off, a huge black mass was moving up and down. I looked with awe. My worst fears were realized. "It is a colossal monster!" I cried, clapping my hands.

"Yes," cried the agitated Professor, "there yonder is a huge sea lizard of terrible size and shape."

"And farther on behold a prodigious crocodile. Look at his hideous jaws, and that row of monstrous teeth. Ha! he has gone."

"A whale! a whale!" shouted the Professor, "I can see his enormous fins. See, see, how he blows air and water!"

Two liquid columns rose to a vast height above the level of the sea, into which they fell with a terrific crash, waking up the echoes of that awful place. We stood still—surprised, stupefied, terror-stricken at the sight of what seemed a group of fearful marine monsters, more hideous in the reality than in my dream. They were of supernatural dimensions; the very smallest of the whole party could with ease have crushed our raft and ourselves with a single bite.

Hans, seizing the tiller which had flown out of his hand, puts it hard a-weather in order to escape from such dangerous vicinity; but no sooner does he do so, than he finds he is flying from Scylla to Charybdis. To leeward is a turtle about forty feet wide, and a serpent quite as long, with an enormous and hideous head peering from out the waters. Look which way we will, it is impossible for us to fly. The fearful reptiles advanced upon us; they turned and twisted about the raft with awful rapidity. They formed around our devoted vessel a series of concentric circles. I took up my rifle in desperation. But what effect can a rifle-ball produce upon the armor scales with which the bodies of these horrid monsters are covered?

We remain still and dumb from utter horror. They advance upon us, nearer and nearer. Our fate appears certain, fearful and terrible. On one side the mighty crocodile, on the other the great sea serpent. The rest of the fearful crowd of marine prodigies have plunged beneath the briny waves and disappeared!

I was about to risk all and fire, to try the effect of a shot. Hans, the guide, however, interfered by a sign to check me. The two hideous and ravenous monsters passed within fifty fathoms of the raft, and then made a rush at one another—their fury and rage preventing them from seeing us.

The combat commenced. We distinctly made out every action of the two hideous monsters. To my excited imagination the other animals appeared about to take part in the fierce and deadly struggle—the monster, the whale, the lizard, and the turtle. I distinctly saw them every moment. I pointed them out to the Icelander. But he only shook his head. "Tua," he said.

"What—two only does he say? Surely he is mistaken," I cried, in a tone of wonder.

"He is quite right," replied my uncle coolly and philosophically, examining the terrible duel with his

telescope and speaking as if he were in a lecture room.

"How can that be?"

"Yes, it is so. The first of these hideous monsters has the snout of a porpoise, the head of a lizard, the teeth of a crocodile; and it is this that has deceived us. It is the most fearful of all antediluvian reptiles, the world-renowned Ichthyosaurus or Great Fish Lizard."

"And the other?"

"The other is a monstrous serpent, concealed under the hard vaulted shell of the turtle, the terrible enemy of its fearful rival, the Plesiosaurus, or Sea Crocodile."

Hans was quite right. The two monsters only disturbed the surface of the sea! At last have mortal eyes gazed upon two reptiles of the great primitive ocean! I saw the flaming red eyes of the Ichthyosaurus, each as big, or bigger than a man's head. Nature in its infinite wisdom had gifted this wondrous marine animal with an optical apparatus of extreme power, capable of resisting the pressure of heavy layers of water which rolled over him in the depth of the ocean where he usually fed. It has by some authors truly been called the whale of the Saurian race, for it is as big and quick in its motions as our king of the seas. This one measured not less than a hundred feet in length, and I could form some idea of his girth, when I saw him lift his prodigious tail out of the waters. His jaw is of awful size and strength, and according to the best-informed naturalists, it does not contain less than a hundred and eighty-two teeth.

The other was the mighty Plesiosaurus, a serpent with a cylindrical trunk, a short stumpy tail, and fins like a bank of oars in a Roman galley. Its whole body was covered by a carapace or shell; and its neck, as flexible as that of a swan, rose more than thirty feet above the waves, a tower of animated flesh!

These animals attacked one another with inconceivable fury. Such a combat was never seen before by mortal eyes, and to us who did see it, it appeared more like the phantasmagoric creation of a dream than anything else. They raised mountains of water, which dashed in spray over the raft, already tossed to and fro by the waves. Twenty times we seemed on the point of being upset and hurled headlong into the waves. Hideous hisses appeared to shake the gloomy granite roof of that mighty cavern—hisses which carried terror to our hearts. The awful combatants held each other in a tight embrace. I could not make out one from the other. Still the combat could not last for ever; and we unto us, whichever became the victor.

One hour, two hours, three hours passed away, without any decisive result. The struggle continued with the same stark tenacity, but without apparent result. The deadly opponents now approached, now drew away from the raft. Once or twice we fancied they were about to leave us altogether, but instead of that, they came nearer and nearer. We crouched on the raft ready to fire at them at a moment's notice, poor as the prospect of hurting or terrifying them was. Still we were determined not to perish without a struggle.

Suddenly the Ichthyosaurus and the Plesiosaurus disappeared beneath the waves, leaving behind them

a maelstrom in the midst of the sea. We were very nearly drawn down by the indraught of the water!

Several minutes elapsed before anything was again seen. Was this wonderful combat to end in the depths of the ocean? Was the last act of this terrible drama to take place without spectators? It was impossible for us to say.

Suddenly, at no great distance from us, an enormous mass rose out of the waters—the head of the great Plesiosaurus. The terrible monster was wounded unto death. I could see nothing of his enormous body. All that could be distinguished was his serpent-like neck, which he twisted and curled in all the agonies of death. Now he struck the waters with it as if it had been a gigantic whip, and then again wriggled like a worm cut in two. The water was spurted up to a great distance in all directions. A great portion of it swept over our raft and nearly blinded us. But soon the end of the beast approached nearer and nearer; his movements slackened visibly; his contortions almost ceased; and at last the body of the mighty snake lay an inert, dead mass on the surface of the now calm and placid waters.

As for the Ichthyosaurus, has he gone down to his mighty cavern under the sea to rest, or will he reappear to destroy us? This question remained unanswered. Meanwhile we had breathing time.

CHAPTER XXXI

The Sea Monster

WEDNESDAY, August 19. Fortunately the wind, which at the present blows with great violence, allowed us to escape from the scene of the unparalleled and extraordinary struggle. Hans with his usual imperturbable calm remained at the helm. My uncle, who for a short time had been withdrawn from his absorbing reverie by the novel incidents of this sea-fight, fell back, apparently into a brown study. All this time, however, his eyes were fixed impatiently on the wide-spread ocean.

"Our voyage now became monotonous and uniform. Dull as it has become, I have no desire to have it broken by any repetition of the perils and adventures of yesterday.

THURSDAY, August 20. The wind is now N. N. E., and blows very irregularly. It has changed to fitful gusts. The temperature is exceedingly high. We are now progressing at the average rate of about ten miles and a half per hour. About twelve o'clock a distant sound as of thunder fell upon our ears. I make a note of the fact without even venturing a suggestion as to its cause. It was one continuous roar as of a sea falling over mighty rocks.

"Far off in the distance," said the Professor dogmatically, "there is some rock or some island against which the sea, lashed to fury by the wind, is breaking violently."

Hans, without saying a word, clambered to the top of the mast, but could make out nothing. The ocean was level in every direction as far as the eye could reach.

Three hours passed without any sign to indicate what might be before us. The sound began to assume that of a mighty cataract. I expressed my

opinion on this point strongly to my uncle. He merely shook his head. Are we advancing towards some mighty waterfall which shall cast us into the abyss? Probably this mode of descending into the abyss may be agreeable to the Professor, because it would be something like a vertical descent he is so eager to make. I entertain a very different view. Whatever be the truth, it is certain that not many leagues distant there must be some very extraordinary phenomenon, for as we advance the roar becomes more mighty and stupendous. Is it in the water, or in the air?

I cast hasty glances aloft at the suspended vapors, and I seek to penetrate their mighty depths. But the vault above is tranquil. The clouds, which are now elevated to the very summit, appear utterly still and motionless, and completely lost in the irradiation of electric light. It is necessary, therefore, to seek for the cause of this phenomenon elsewhere.

I examine the horizon, now perfectly calm, pure and free from all haze. Its aspect still remains unchanged. But if this awful noise proceeds from a cataract—if, so to speak this vast interior ocean is precipitated into a lower basin—if these tremendous roars are produced by the noise of falling waters, the current would increase in activity, and its increasing swiftness would give me some idea of the extent of the peril with which we are menaced. I consult the current. It simply does not exist: there is no such thing. An empty bottle cast into the water lies to leeward without motion.

About four o'clock Hans rises, clammers up the mast and reaches the truck itself. From this elevated position his looks are cast around. They take in a vast circumference of the ocean. At last, his eyes remain fixed. His face expresses no astonishment, but his eyes slightly dilate. "He has seen something at last," cried my uncle.

"I think so," I replied.

Hans came down, stood beside us and pointed with his right hand to the south. "*Der nere,*" he said.

"There," replied my uncle. And seizing his telescope he looked at it with great attention for about a minute, which to me appeared an age. I knew not what to think or expect.

"Yes, yes," he cried in a tone of considerable surprise, "there it is."

"What?" I asked.

"A tremendous spurt of water rising out of the waves."

"Some other marine monster," I cried, already alarmed.

"Perhaps."

"Then let us steer more to the westward, for we know what we have to expect from antediluvian animals," was my eager reply.

"Go ahead," said my uncle.

I turned towards Hans. Hans was at the tiller steering with his usual undisturbed calm. Nevertheless, if from the distance which separated us from this creature, a distance which must be estimated at no less than a dozen leagues, and this spurting of water proceeded from the pranks of some antediluvian animal, his dimensions must be preternatural. To fly is, therefore, the course to be suggested by ordinary prudence. But we have not

come into that part of the world to be prudent. Such is my uncle's determination.

We, accordingly, continue to advance. The nearer we come, the loftier is the spouting water. What monster can fill himself with such huge volumes of water, and then unceasingly spout them out in such lofty jets?

At eight o'clock in the evening, reckoning as above ground, where there is day and night, we are not more than two leagues from the mighty beast. Its long, black, enormous, mountainous body, lies on the top of the water like an island. But then sailors have been said to have gone ashore on sleeping whales, mistaking them for land. Is it illusion, or is it fear? Its length cannot be less than a thousand fathoms. What, then, is this cetaceous monster of which no Cuvier ever thought? It is quite motionless and presents the appearance of sleep. The sea seems unable to lift him upwards; it is rather the waves which break on his huge and gigantic frame. The water-spout, rising to a height of five hundred feet, breaks in spray with a dull, sullen roar. We advance, like senseless lunatics, towards this mighty mass.

I honestly confess that I was abjectly afraid. I declared that I would go no further. I threatened in my terror to cut the sheet of the sail. I attacked the Professor with considerable acrimony, calling him foolhardy, mad, I know not what. He made no answer. Suddenly the imperturbable Hans once more pointed his finger to the menacing object, "*Holme!*"

"An island!" cried my uncle.

"An island?" I replied, shrugging my shoulders at this poor attempt at deception.

"Of course it is," cried my uncle, bursting into a loud and joyous laugh.

"But the water spout?"

"Geyser," said Hans.

"Yes, of course—a geyser," replied my uncle, still laughing, "a geyser like those common in Iceland. Jets like this are the great wonders of the country."

At first I would not allow that I had been so grossly deceived. What could be more ridiculous than to have taken an island for a marine monster? But kick as one may, one must yield to evidence, and I was finally convinced of my error. It was nothing, after all, but natural phenomenon.

As we approached nearer and nearer, the dimensions of the liquid sheaf of water became truly grand and stupendous. The island had, at a distance, presented the appearance of an enormous whale, whose head rose high above the waters. The geyser, a word which signifies fury, rose majestically from its summit. Dull detonations are heard every now and then, and the enormous jet, taken as it were with sudden fury, shakes its plume of vapor, and bounds into the first layer of the clouds. It is alone. Neither spurts of vapor nor hot springs surround it, and the whole volcanic power of that region is concentrated in one sublime column. The rays of electric light mix with this dazzling sheaf, every drop as it falls assuming the prismatic colors of the rainbow.

"Let us go on shore," said the Professor, after some minutes of silence. It was necessary, however, to take great precaution, in order to avoid the

weight of falling waters, which would cause the raft to founder in an instant. Hans, however, steered admirably, and brought us to the other extremity of the island.

I was the first to leap on the rock. My uncle followed, while the elder-duck hunter remained still, like a man above any childish sources of astonishment. We were now walking on granite, mixed with silicious sandstone; the soil shivered under our feet like the sides of boilers in which over-heated steam is forcibly confined. It was burning. We soon came in sight of the little central basin from which rose the geyser. I plunged a thermometer into the water which ran bubbling from the center, and it marked a heat of a hundred and sixty-three degrees! This water, therefore, came from some place where the heat was intense. This was singularly in contradiction with the theories of Professor Hardwigg. I could not help telling him my opinion on the subject.

"Well," said he sharply, "and what does this prove against my doctrine?"

"Nothing," replied I dryly, seeing that I was running my head against a foregone conclusion. I am compelled to confess that until now we have been most remarkably fortunate, and that this voyage is being accomplished in most favorable conditions of temperature; but it appears evident, in fact, certain, that we shall sooner or later arrive at one of those regions, where the central heat will reach its utmost limits, and will go far beyond all the possible gradations of thermometers. Visions of the Hades of the ancients, believed to be in the center of the earth, floated through my imagination.

However, we shall see what we shall see. That is the Professor's favorite phrase now. Having christened the volcanic island by the name of his nephew, the leader of the expedition turned away and gave the signal for embarkation. We went carefully round the projecting, and rather dangerous, rocks of the southern side. Hans had taken advantage of this brief halt to repair the raft—not before it was required.

Before we took our final departure from the island, however, I made some observations to calculate the distance we had gone over, and I put them down in my Journal. Since we left Port Gretchen, we had traveled two hundred and seventy leagues—more than eight hundred miles—on this great inland sea; we were, therefore, six hundred and twenty leagues from Iceland, and exactly under England.

CHAPTER XXXII

The Battle of the Elements

FRIDAY, August 21st. This morning the magnificent geyser had wholly disappeared. The wind had freshened up, and we were fast leaving the neighborhood of Henry's Island. Even the roaring sound of the mighty column was lost to the ear.

The weather, if, under the circumstances, we may use such an expression, is about to change very suddenly. The atmosphere is being gradually loaded with vapors, which carry with them the electricity formed by the constant evaporation of the saline waters; the clouds are slowly but sensibly

falling towards the sea, and are assuming a dark olive texture; the electric rays can scarcely pierce through the opaque curtain which has fallen like a drop-scene before this wondrous theatre, on the stage of which another and terrible drama was soon to be enacted. This time it is no fight of animals; it is the fearful battle of the elements.

In the distance, the clouds have assumed the appearance of enormous balls of cotton, or rather pods, piled one above the other in picturesque confusion. By degrees, they appear to swell out, break, and gain in number what they lose in grandeur; their heaviness is so great that they are unable to lift themselves from the horizon; but under the influence of the upper currents of air, they are gradually broken up, become much darker, and then present the appearance of one single layer of a formidable character; now and then a lighter cloud, still lit up from above, rebounds upon this gray carpet, and is lost in the opaque mass.

There can be no doubt that the entire atmosphere is saturated with electric fluid; I am myself wholly impregnated; my hairs literally stand on end as if under the influence of a galvanic battery. If one of my companions ventured to touch me, I think he would receive rather a violent and unpleasant shock.

About ten o'clock in the morning, the symptoms of the storm became more thorough and decisive; the wind appeared to soften down as if to take breath for a renewed attack; the vast funereal pall above us looked like a huge bag—like the cave of Aeolus, in which the storm was collecting its forces for the attack. I tried all I could not to believe in the menacing signs of the sky, and yet I could not avoid saying, as it were involuntarily—"I believe we are going to have bad weather."

The Professor made me no answer. He was in a horrible, in a detestable humor—to see the ocean stretching interminably before his eyes. On hearing my words he simply shrugged his shoulders.

"We shall have a tremendous storm," I said again, pointing to the horizon. "These clouds are falling lower and lower upon the sea, as if to crush it."

A great silence prevailed. The wind wholly ceased. Nature assumed a dead calm, and ceased to breathe. Upon the mast, where I noticed a sort of slight *ignis fatuus*, the sail hung in loose heavy folds. The raft lay motionless in the midst of a dark heavy sea—without undulation, without motion. It was as still as glass. "Let us lower the sail," I said, "it is only an act of common prudence."

"No—no," cried my uncle, in an exasperated tone, "a hundred times, no. Let the wind strike us and do its worst, let the storm sweep us away where it will—only let me see the glimmer of some coast—of some rocky cliffs, even if they dash our raft into a thousand pieces. No! keep up the sail—no matter what happens."

These words were scarcely uttered, when the southern horizon underwent a sudden and violent change. The long accumulated vapors were resolved into water, and the air required to fill up the void produced became a wild and raging tempest. It came from the most distant corners of the mighty cavern. It raged from every point of the com-

pass. It roared; it yelled; it shrieked with glee as of demons let loose. The darkness increased and became indeed darkness visible.

The raft rose and fell with the storm, and bounded over the waves. My uncle was cast headlong upon the deck. With great difficulty I dragged myself towards him. He was holding on with might and main to the end of a cable, and appeared to gaze with pleasure and delight at the spectacle of the unchained elements.

Hans never moved a muscle. His long hair driven hither and thither by the tempest and scattered wildly over his motionless face, gave him a most extraordinary appearance—for every single hair was illuminated by little sparkling sprigs. His countenance presented the extraordinary appearance of an antediluvian man, a true contemporary of the megatherium.

Still the mast holds good against the storm. The sail spreads out and fills like a soap bubble about to burst. The raft rushes on at a pace impossible to estimate.

"The sail, the sail!" I cried, making a trumpet of my hands, and then endeavoring to lower it.

"Let it alone!" said my uncle, more exasperated than ever.

"*Nej,*" said Hans, gently shaking his head.

The rain formed a roaring cataract before this horizon of which we were in search, and to which we were rushing like madmen. But before this wilderness of waters reached us, the mighty veil of cloud was torn in twain; the sea began to foam wildly. To the fearful claps of thunder were added dazzling flashes of lightning, such as I had never seen. The flashes crossed one another, hurled from every side; while the thunder came pealing like an echo.

The mass of vapor becomes incandescent; the hail-stones which strike the metal of our boots and our weapons, are actually luminous; the waves as they rise appear to be fire-eating monsters, beneath which seethes an intense fire, their crests surmounted by combs of flame. My eyes are dazzled, blinded by the intensity of light, my ears are deafened by the awful roar of the elements. I am compelled to hold on to the mast, which bends like a reed beneath the violence of the storm, to which none ever before seen by mariners bore any resemblance.

Here my traveling notes become very incomplete, loose and vague. I have only been able to make out one or two fugitive observations, dotted down in a mere mechanical way. But even their brevity, even their obscurity, show the emotions which overcame me.

SUNDAY, August 23d. Where have we got to? In what region are we wandering? We are still carried forward with inconceivable rapidity. The night has been fearful, something not to be described. The storm shows no signs of cessation. We exist in the midst of an uproar which has no name. The detonations as of artillery are incessant. Our ears literally bleed. We are unable to exchange a word or hear each other speak. The light never ceases to flash for a single instant. I can see the zigzags after a rapid dart, strike the arched roof

of this mightiest of mighty vaults. If it were to give way and fall upon us! Other lightnings plunge their forked streaks in every direction, and take the form of globes of fire, which explode like bombshells over a beleaguered city. The general crash and roar do not apparently increase; it has already gone far beyond what human ear can appreciate. If all the powder-magazines in the world were to explode together, it would be impossible for us to hear worse noise.

There is a constant emission of light from the storm-clouds; the electric matter is incessantly released; innumerable columns of water rush up like waterspouts; and fall back upon the surface of the ocean in foam. Whether are we going? My uncle still lies at full length upon the raft, without speaking—without taking any note of time.

MONDAY, August 24. This terrible storm will never end. Why should not this state of the atmosphere, so dense and murky, once modified, become permanent?

We are utterly broken and harassed by fatigue. Hans remains just as usual. The raft runs to the south-east invariably. We have already gone two hundred leagues from the newly-discovered island.

About twelve o'clock the storm becomes worse than ever. We are obliged to fasten every bit of cargo tightly on the deck of the raft, or everything would be swept away. We tie ourselves to the mast, each man lashing the other. The waves drive over us, so that several times we are actually under water.

We had been under the painful necessity of abstaining from speech for three days and three nights. We opened our mouths, we moved our lips, but no sound came. Even when we placed our mouths to each other's ears it was the same. The wind carried the voice away. My uncle once contrived to get his head close to mine after several almost vain endeavors. He appeared to my nearly exhausted senses to articulate some word. I had a notion, more from intuition than anything else, that he said to me, "we are lost."

I took out my note book, from which under the most desperate circumstances I never parted, and wrote a few words as legibly as I could—"Take in sail." With a deep sigh he nodded his head and acquiesced.

His head had scarcely time to fall back in the position from which he had momentarily raised it, when a disc or ball of fire appeared on the very edge of the raft—our devoted, our doomed craft. The mast and sail were carried away bodily, and I saw them swept away to a prodigious height like a kite.

We were frozen, actually shivering with terror. The ball of fire, half white, half azure-colored, about the size of a ten-inch bomb-shell, moved along, turning with prodigious rapidity to leeward of the storm. It ran about here, there and everywhere, it clambered up one of the bulwarks of the raft, it leaped upon the sack of provisions, and then finally descended lightly, fell like a foot ball and landed on our powder barrel.

Horrible situation. An explosion now seemed inevitable. The dazzling disc moved to one side, it approached Hans, who looked at it with singular fixity; then it approached my uncle, who cast himself on his knees to avoid it; it came towards me, as

I stood pale and shuddering in the dazzling light and heat; it pirouetted round my feet, which I endeavored to withdraw. An odor of nitrous gas filled the whole air; it penetrated to the throat, to the lungs. I felt ready to choke.

Why is it that I cannot withdraw my feet? Are they riveted to the flooring of the raft? No. The fall of the electric globe has turned all the iron on board into loadstones—the instruments, the tools, the arms are clanging together with awful and horrible noise; the nails of my heavy boots adhere closely to the plate of iron imbedded in the wood. I cannot withdraw my foot.

At last, by a violent and almost superhuman effort, I tear it away just as the ball which is still executing its gyratory motions is about to run round it and drag me with it—if—

O what intense stupendous light! The globe of fire bursts—we are enveloped in cascades of living fire, which flood the space around with luminous matter.

Then all went out and darkness once more fell upon the deep! I had just time to see my uncle once more cast apparently senseless on the flooring of the raft, Hans at the helm, "spitting fire" under the influence of the electricity which seemed to have gone through him.

TUESDAY, August 25. I have just come out of a long fainting fit. The awful and hideous storm still continues; the lightning has increased in vividness, and pours out its fiery wrath like a brook of serpents let loose in the atmosphere.

Are we still upon the sea? Yes, and being carried along with incredible velocity. We have passed under England, under the Channel, under France, probably under the whole extent of Europe.

Another awful clamor in the distance. This time it is certain that the sea is breaking upon the rocks at no great distance. Then—

CHAPTER XXXIII

Our Route Reversed

HERE ends what I call My Journal of our voyage on board the raft, which Journal was happily saved from the wreck. I proceed with my narrative as I did before I commenced my daily notes.

What happened when the terrible shock took place, when the raft was cast upon the rocky shore, it would be impossible for me now to say. I felt myself precipitated violently into the boiling waves, and if I escaped from a certain and cruel death, it was wholly owing to the determination of the faithful Hans, who clutching me by the arm, saved me from the yawning abyss.

The courageous Icelander then carried me in his powerful arms, far out of the reach of the waves, and laid me down upon a burning expanse of sand, where I found myself some time afterwards in the company of my uncle the Professor. Then Hans quietly returned towards the fatal rocks, against which the furious waves were beating, in order to save any stray waifs from the wreck. This man was always practical and thoughtful.

I could not utter a word; I was quite overcome

with emotion; my whole body was broken and bruised with fatigue; it took hours before I was anything like myself. Meanwhile, there fell a fearful deluge of rain, drenching us to the skin. Its very violence, however, proclaimed the approaching end of the storm. Some overhanging rocks afforded us a slight protection from the torrents.

Under this shelter, Hans prepared some food, which, however, I was unable to touch; exhausted by the three weary days and nights of watching, we fell into a deep and painful sleep. My dreams were fearful, but at last exhausted nature asserted her supremacy, and I slumbered.

Next day when I awoke the change was magical. The weather was magnificent. Air and sea, as if by mutual consent, had regained their serenity. Every trace of the storm, even the faintest, had disappeared. I was saluted on my awakening by the first joyous tones I had heard from the Professor for many a day. His gayety, indeed, was something terrible. "Well, my lad," he cried, rubbing his hands together, "have you slept soundly?"

Might it not have been supposed that we were in the old house on the Königstrasse; that I had just come down quietly to my breakfast, and that my marriage with Gretchen was to take place that very day? My uncle's coolness was exasperating.

Alas, considering how the tempest had driven us in an easterly direction, we had passed under the whole of Germany, under the city of Hamburg where I had been so happy, under the very street which contained all I loved and cared for in the world. It was a positive fact that I was only separated from her by a distance of forty leagues. But these forty leagues were of hard impenetrable granite! All these dreary and miserable reflections passed through my mind, before I attempted to answer my uncle's question.

"Why, what is the matter?" he cried, "cannot you say whether you have slept well or not?"

"I have slept very well," was my reply, "but every bone in my body aches. I suppose that will lead to nothing."

"Nothing at all, my boy. It is only the result of the fatigue of the last few days—that is all."

"You appear—if I may be allowed to say so—to be very jolly this morning," I said.

"Delighted, my dear boy, delighted. Was never happier in my life. We have at last reached the wished-for port."

"The end of our expedition?" cried I, in a tone of considerable surprise.

"No; but to the confines of that sea which I began to fear would never end, but go round the whole world. We will now tranquilly resume our journey by land, and once again endeavor to dive into the center of the Earth."

"My dear uncle," I began, in a hesitating kind of way, "allow me to ask you one question?"

"Certainly, Harry; a dozen if you think proper." "One will suffice. How about getting back?" I asked.

"How about getting back? What a question to ask. We have not as yet reached the end of our journey."

"I know that. All I want to know is, how you propose we shall manage the return voyage?"

"In the most simple manner in the world," said

the imperturbable Professor. "Once we reach the exact center of this sphere, either we shall find a new road by which to ascend to the surface, or we shall simply turn around and go back by the way we came. I have every reason to believe that while we are traveling forward, it will not close behind us."

"Then one of the first matters to see to will be to repair the raft," was my rather melancholy response.

"Of course. We must attend to that above all things," continued the Professor.

"Then comes the all-important question of provisions," I urged. "Have we anything like enough left to enable us to accomplish such great, such amazing, designs as you contemplate carrying out?"

"I have seen into the matter, and my answer is in the affirmative. Hans is a very clever fellow, and has saved the greater part of the cargo. But the best way to satisfy your scruples, is to come and judge for yourself." Saying which, he led the way out of the kind of open grotto in which we had taken shelter. I had almost begun to hope that which I should rather have feared, the impossibility of such a shipwreck leaving even the slightest signs of what it had carried as freight.

As soon as I reached the shores of this inland sea, I found Hans standing gravely in the midst of a large number of things laid out in complete order. My uncle wrung his hands with deep and silent gratitude. His heart was too full for speech. This man, whose superhuman devotion to his employers, I never saw surpassed, nor even equaled, had been hard at work all the time we slept, and at the risk of his life had succeeded in saving the most precious articles of our cargo.

Of course, under the circumstances, we necessarily experienced several severe losses. Our weapons had wholly vanished. But experience had taught us to do without them. The provision of powder had, however, remained intact, after nearly blowing us all to atoms in the storm.

"Well," said the Professor, who was now ready to make the best of everything, "as we have no guns, all we have to do is to give up all idea of hunting."

"Yes, my dear sir, we can do without them, but what about all our instruments?"

"Here is the manometer, the most useful of all, which I gladly accept in lieu of the rest. With it alone I can calculate the depth as we proceed; by its means alone I shall be able to decide when we have reached the center of the earth. Ha, ha! but for this little instrument we might make a mistake, and run the risk of coming out at the antipodes!" All this was said amid bursts of unnatural laughter.

"But the compass," I cried, "without that what can we do?"

"Here it is safe and sound!" he cried, with real joy, "ah, ah, and here we have the chronometer and the thermometers. Hans the hunter was indeed an invaluable man!"

It was impossible to deny this fact. As far as the nautical and other instruments were concerned nothing was wanting. Then on further examination, I found ladders, cords, pickaxes, crowbars, and shovels, all scattered about on the shore. "But what are we to do for food?" I asked.

"Let us see to the commissariat department," replied my uncle gravely. The boxes which contained our supply of food for the voyage were placed in a row along the strand, and proved in a capital state of preservation; the sea had in every case respected their contents. Taking into consideration biscuits, salt meat, schiedam and dried fish, we could still calculate on having about four months' supply, if used with prudence and caution.

"Four months," cried the sanguine Professor, in high glee, "then we shall have plenty of time both to go and to come, and with what remains I undertake to give a grand dinner to my colleagues of the *Johanneum*."

I sighed. I should by this time have accustomed myself to the temperament of my uncle, and yet this man astonished me more and more every day. He was the greatest human enigma I had ever known.

"Now," said he, "before we do anything else we must lay in a stock of fresh water. The rain has fallen in abundance, and filled the hollows of the granite. There is a rich supply of water, and we have no fear of suffering from thirst, which in our circumstances is of the last importance. As for the raft, I shall recommend Hans to repair it to the best of his abilities; though I have every reason to believe we shall not require it again."

"How is that?" I cried, more amazed than ever at my uncle's style of reasoning.

"I have an idea, my dear boy; it is none other than this simple fact: we shall not come out by the same opening as that by which we entered."

I began to look at my uncle with vague suspicion. An idea had more than once taken possession of me; and this was, that he was going mad. Little did I know how true and prophetic his words were doomed to be.

"And now," he said, "having seen to all these matters of detail, to breakfast." I followed him to a sort of projecting cape, after he had given his last instructions to our guide. In this original position, with dried meat, biscuit, and a delicious cup of tea, we made a satisfactory meal—I may say one of the most welcome and pleasant I ever remember. Exhaustion, the keen atmosphere, the state of calm after so much agitation, all contributed to give me an excellent appetite. Indeed, it contributed very much to producing a pleasant and cheerful state of mind.

While breakfast was in hand, and between the sips of warm tea, I asked my uncle if he had any idea of how we now stood in relation to the world above. "For my part," I added, "I think it will be rather difficult to determine."

"Well, if we were compelled to fix the exact spot," said my uncle, "it might be difficult, since during the three days of that awful tempest I could keep no account either of the quickness of our pace, or of the direction in which the raft was going. Still, we will endeavor to approximate to the truth. We shall not, I believe, be so very far out."

"Well, if I recollect rightly," I replied, "our last observation was made at the Geyser island."

"Harry's Island, my boy! Harry's Island. Do not decline the honor of having named it; having given your name to an island discovered by us, the first human beings who trod it since the creation of the world!"

"Let it be so, then. At Harry's Island we had already gone over two hundred and seventy leagues of sea, and we were, I believe, about six hundred leagues, more or less, from Iceland."

"Good. I am glad to see that you remember so well. Let us start from that point, and let us count four days of storm, during which our rate of traveling must have been very great. I should say that our velocity must have been about eighty leagues to the twenty-four hours."

I agreed that I thought this a fair calculation. There were then three hundred leagues to be added to the grand total.

"Yes, and the Central Sea must extend at least six hundred leagues from side to side. Do you know my boy, Harry, that we have discovered an inland lake larger than the Mediterranean?"

"Certainly, and we only know of its extent in one way. It may be hundreds of miles in length."

"Very likely."

"Then," said I, after calculating for some minutes, "if your provisions are right, we are at this moment exactly under the Mediterranean itself."

"Do you think so?"

"Yes, I am almost certain of it. Are we not nine hundred leagues distant from Reykjavik?"

"That is perfectly true, and a famous bit of road we have traveled, my boy. But why we should be under the Mediterranean more than under Turkey or the Atlantic Ocean can only be known when we are sure of not having deviated from our course; and of this we know nothing."

"I do not think we were driven very far from our course: the wind appears to me to have been always about the same. My opinion is that this shore must be situated to the southeast of Port Gretchen."

"Good—I hope so. It will, however, be easy to decide the matter by taking the bearings from our departure by means of the compass. Come along, and we will consult that invaluable invention." The Professor now walked eagerly in the direction of the rock where the indefatigable Hans had placed the instruments in safety. My uncle was gay and light-hearted; he rubbed his hands, and assumed all sorts of attitudes. He was to all appearances once more a young man. Since I had known him never had he been so amiable and pleasant. I followed him, rather curious to know whether I had made any mistake in my estimation of our position. As soon as we had reached the rock, my uncle took the compass, placed it horizontally before him and looked keenly at the needle. As he had at first shaken it to give vivacity, it oscillated considerably, and then slowly assumed its right position under the influence of the magnetic power.

The Professor bent his eyes curiously over the wondrous instrument. A violent start immediately showed the extent of his emotion. He closed his eyes, rubbed them, and took another and keener survey. Then he turned slowly round to me, stupefacted depicted on his countenance.

"What is the matter?" said I, beginning to be alarmed.

He could not speak. He was too overwhelmed for words. He simply pointed to the instrument. I examined it eagerly according to his mute directions, and a loud cry of surprise escaped my lips. The needle of the compass pointed due north, in the

direction we expected was the south! It pointed to the shore instead of to the high seas.

I shook the compass; examined it with a curious and anxious eye. It was in a state of perfection. No blemish in any way explained the phenomenon. Whatever position we forced the needle into, it returned invariably to the same unexpected point.

It was useless attempting to conceal from ourselves the fatal truth. There could be no doubt, unwelcome as was the fact, that during the tempest, there had been a sudden slant of wind, of which we had been unable to take any account, and thus the raft had carried us back to the shores we had left, apparently for ever, so many days before!

CHAPTER XXXIV

A Voyage of Discovery

IT would be altogether impossible for me to give any idea of the utter astonishment which overcame the Professor on making this extraordinary discovery. Amazement, incredulity, and rage were blended in such a way as to alarm me. During the whole course of my life I had never seen a man at first so chapfallen; and then so furiously indignant.

The terrible fatigues of our sea voyage, the fearful dangers we had passed through, had all, all, gone for nothing. We had to begin them all over again. Instead of progressing, as we fondly expected, during a voyage of so many days, we had retreated. Every hour of our expedition on the raft had been so much lost time!

Presently, however, the indomitable energy of my uncle overcame every other consideration. "So," he said, between set teeth, "fatality will play me these terrible tricks. The elements themselves conspire to overwhelm me with mortification. Air, fire, and water combine their united efforts to oppose my passage. Well, they shall see what the earnest will of a determined man can do. I will not yield, I will not retreat even one inch; and we shall see who shall triumph in this great contest—man or nature."

Standing upright on a rock, irritated and menacing, Professor Hardwigg, like the ferocious Ajax, seemed to defy the fates. I, however, took upon myself to interfere, and to impose some sort of check upon such insensate enthusiasm.

"Listen to me, uncle," I said, in a firm but temperate tone of voice, "there must be some limit to ambition here below. It is utterly useless to struggle against the impossible. Pray listen to reason. We are utterly unprepared for a sea voyage; it is simple madness to think of performing a second journey of five hundred leagues upon a wretched pile of beams, with a counterpane for a sail, a paltry stick for a mast, and a tempest to contend with. As we are totally incapable of steering our frail craft, we shall become a mere plaything of the storm, and it is acting the part of madmen if we, a second time, run any risk upon this dangerous and treacherous Central Sea."

These are only a few of the reasons and arguments I put together—reasons and arguments which to me appeared unanswerable. I was allowed to go on without interruption for about ten minutes. The explanation to this I soon discovered. The Profes-

sor was not even listening, and did not hear a word of all my eloquence.

"To the raft!" he cried, in a hoarse voice, when I paused for a reply.

Such was the result of my strenuous effort to resist his iron will. I tried again; I begged and implored him; I got into a passion; but I had to deal with a will more determined than my own. I seemed to feel like the waves which fought and battled against the huge mass of granite at our feet, which had smiled grimly for so many ages at their puny efforts.

Hans, meanwhile, without taking part in our discussion, had been repairing the raft. One would have supposed that he instinctively guessed at the further projects of my uncle. By means of some fragments of cordage, he had again made the raft sea-worthy. While I had been speaking he had hoisted a new mast and sail, the latter already fluttering and waving in the breeze.

The worthy Professor spoke a few words to our imperturbable guide, who immediately began to put our baggage on board, and to prepare for our departure. The atmosphere was now tolerably clear and pure, and the northeast wind blew steadily and serenely. It appeared likely to last for some time.

What, then, could I do? Could I undertake to resist the iron will of two men? It was simply impossible; if even I could have hoped for the support of Hans. This, however, was out of the question. It appeared to me that the Icelander had set aside all personal will and identity. He was a picture of abnegation. I could hope for nothing from one so infatuated with and devoted to his master. All I could do, therefore, was to swim with the stream. In a mood of stolid and sullen resignation, I was about to take my accustomed place on the raft, when my uncle placed his hand upon my shoulder. "There is no hurry, my boy," he said, "we shall not start until to-morrow."

I looked the picture of resignation to the dire will of fate. "Under the circumstances," he said, "I ought to neglect no precautions. As fate has cast me upon these shores, I shall not leave without having completely examined them."

In order to understand this remark, I must explain that though we had been driven back to the northern shore, we had landed at a very different spot from that which had been our starting point. Port Gretchen must, we calculated, be very much to the westward. Nothing, therefore, was more natural and reasonable than that we should reconnoitre this new shore upon which we had so unexpectedly landed. "Let us go on a journey of discovery," I cried.

And leaving Hans to his important operation, we started on our expedition. As we trudged along, our feet crushed innumerable shells of every shape and size—once the dwelling place of animals of every period of creation. I particularly noticed some enormous shells—carapaces (turtle and tortoise species) the diameter of which exceeded fifteen feet.

They had in past ages belonged to those gigantic glyptodonts of the pliocene period, of which the modern turtle is but a minute specimen. In addition, the whole soil was covered by a vast quantity of stony relics, having the appearance of flints worn by the action of the waves, and lying in successive

layers one above the other. It appeared clear that we were walking upon a kind of sediment, formed like all the soils of that period, so frequent on the surface of the globe, by the subsidence of the waters. The Professor, who was now in his element, carefully examined every rocky fissure. Let him only find an opening and it directly became important to him to examine its depth.

For a whole mile we followed the windings of the Central Sea, when suddenly an important change took place in the aspect of the soil. It seemed to have been rudely cast up, convulsionized, as it were, by a violent upheaving of the lower strata. In many places, hollows here, and hillocks there, attested great dislocations at some other period of the terrestrial mass. We advanced with great difficulty over the broken masses of granite mixed with flint, quartz and alluvial deposits, when a large field, more even than a field, a plain of bones, appeared suddenly before our eyes. It looked like an immense cemetery, where generation after generation had mingled their mortal dust.

Lofty barrows of early remains rose at intervals. They undulated away to the limits of the distant horizon and were lost in a thick and brown fog. On that spot, some three square miles in extent, was accumulated the whole history of animal life—scarcely one creature still a habitant of the comparatively modern soil of the upper and inhabited world, had there existed.

We were drawn forward by an all-absorbing and impatient curiosity. Our feet crushed with a dry and crackling sound the remains of those prehistoric fossils, for which the museums of great cities quarrel, even when they obtain only rare and curious morsels. I was utterly confounded. My uncle stood for some minutes with his arms raised on high towards the thick granite vault which served us for a sky. His mouth was wide open; his eyes sparkled wildly behind his spectacles (which he had fortunately saved), his head bobbed up and down and from side to side, while his whole attitude and mien expressed unbounded astonishment.

He stood in the presence of an endless, wondrous and inexhaustibly rich collection of antediluvian monsters, piled up for his own private and peculiar satisfaction. Fancy an enthusiastic lover of books carried suddenly into the very midst of the famous library of Alexandria burned by the sacrilegious Omar, and which some miracle had restored to its pristine splendor! Such was the state of mind in which uncle Hardwigg was now placed.

For some time he stood thus, literally aghast at the magnitude of his discovery.

But it was even a greater excitement when, darting wildly over this mass of organic dust, he caught up a naked skull and addressed me in a quivering voice—"Harry, my boy—Harry—this is a human head!"

CHAPTER XXXV

Discovery Upon Discovery

IT will be easy to understand the Professor's mingled astonishment and joy when, on advancing about twenty yards further, he found himself in the presence of, I may say face to face with

an entire fossil of the human race, actually belonging to the quarternary period!

The human skull was perfectly recognizable. Had a soil of very peculiar nature, like that of the cemetery of St. Michel at Bordeaux, preserved it during countless ages? This was the question I asked myself, but which I was wholly unable to answer. This head with stretched and parchmenty skin, with the teeth whole, the hair abundant, was before our eyes as in life!

I stood mute, almost paralyzed with wonder and awe before this dread apparition of another age. My uncle, who on almost every occasion was a great talker, remained for a time completely dumfounded. He was too full of emotion for speech to be possible. After a while, however, we raised up the body to which the skull belonged. We stood it on end. It seemed, to our excited imaginations, to look at us with its terrible hollow eyes.

After some minutes of silence, the man was vanquished by the Professor. Human instincts succumbed to scientific pride and exultation. Professor Hardwig, carried away by his enthusiasm, forgot all the circumstances of our journey, the extraordinary position in which we were placed, the immense cavern which stretched far away over our heads. There can be no doubt that he thought himself at the institution addressing his attentive pupils, for he put on his most doctoral style, waved his hand, and began—

"Gentlemen, I have the honor on this auspicious occasion to present to you a man of the quarternary period of our globe. Many learned men have denied his very existence, while other able persons, perhaps of even higher authority, have affirmed their belief in the reality of his life. If the St. Thomases of Paleontology were present, they would reverentially touch him with their fingers and believe in his existence, thus acknowledging their obstinate heresy. I know that science should be careful in relation to all discoveries of this nature. I am not without having heard of the many Barnums and other quacks who have made a trade of such like pretended discoveries. I have, of course, heard of the discovery of the knee-bones of Ajax, of the pretended finding of the body of Orestes by the Spartiates, and of the body of Asterius, ten spas long, fifteen feet—of which we read in Pausanias.

"I have read everything in relation to the skeleton of Trapani, discovered in the fourteenth century, which many persons chose to regard as that of Polyphemus, and the history of the giant dug up during the sixteenth century in the environs of Palmyra. You are as well aware as I am, gentlemen, of the existence of the celebrated analysis made near Lucerne, in 1577, of the great bones which the celebrated Doctor Felix Plater declared belonged to a giant about nineteen feet high. I have devoured all the treatises of Cassanion, and all those memoirs, pamphlets, speeches, and replies, published in reference to the skeleton of Teutobochus, king of the Cimbric, the invader of Gaul, dug out of a gravel pit in Dauphiny, in 1613. In the eighteenth century I should have denied, with Peter Campet the existence of the preadamites of Scheuchzer. I have had in my hands the writing called Gigans—"

Here my uncle was afflicted by the natural infirmity which prevented him from pronouncing difficult

words in public. It was not exactly stuttering, but a strange sort of constitutional hesitation. "The writing named Gigans—" he repeated.

He, however, could get no further. "*Giganteo*—" Impossible! The unfortunate word would not come out. There would have been great laughter at the Institution, had the mistake happened there. "Gigantostology!" at last exclaimed Professor Hardwig, between two savage growls.

"Yes, gentlemen, I am well acquainted with all these matters, and know, also, that Cuvier and Blumenbach fully recognized in these bones, the undeniable remains of mammoths of the quarternary period. But after what we now see, to allow a doubt is to insult scientific inquiry. There is the body; you can see it; you can touch it. It is not a skeleton, it is a complete and uninjured body, preserved with an anthropological object." I did not attempt to controvert this singular and astounding assertion.

"If I could but wash this corpse in a solution of sulphuric acid," continued my uncle, "I would undertake to remove all the earthly particles, and these resplendent shells, which are incrustated all over this body. But I am without this precious dissolving medium. Nevertheless, such as it is, this body will tell its own history."

Here the Professor held up the fossil body, and exhibited it with rare dexterity. No professional showman could have shown more activity.

"As on examination you will see," my uncle continued, "it is only about six feet in length, which is a long way from the pretended giants of early days. As to the particular race to which it belonged, it is incontestably Caucasian. It is of the white race, that is, of our own. The skull of this fossil being is a perfect ovoid without any remarkable or prominent development of the cheek bones, and without any projection of the jaw. But I will advance still farther on the road of inquiry and deduction, and I dare venture to say that this human sample or specimen belongs to the Japhetic family, which spread over the world from India to the uttermost limits of western Europe. There is no occasion, gentlemen, to smile at my remarks."

Of course nobody smiled. But the excellent Professor was so accustomed to beaming countenances at his lectures, that he believed he saw all his audience laughing during the delivery of his learned dissertation.

"Yes," he continued, with renewed animation, "this is a fossil man, a contemporary of the mastodons, with the bones of which this whole amphitheatre is covered. But if I am called on to explain how he came to this place, how these various strata by which he is covered have fallen into this vast cavity, I can undertake to give you no explanation. But there is the man, surrounded by the works of his hands, his hatchets, and his carved flints, which belong to the stone period; and the only rational supposition is, that, like myself, he visited the center of the earth as a traveling tourist, a pioneer of science. At all events, there can be no doubt of his great age, and of his being one of the oldest race of human beings."

The Professor with these words ceased his oration, and I burst forth into loud and "unanimous" applause. Besides, after all, my uncle was right.

Much more learned men than his nephew would have found it rather hard to refute his facts and arguments.

Another circumstance soon presented itself. This fossilized body was not the only one in this vast plain of bones—the cemetery of an extinct world. Other bodies were found, as we trod the dusty plain, and my uncle was able to choose the most marvelous of these specimens in order to convince the most incredulous.

In truth, it was a surprising spectacle, the successive remains of generations and generations of men and animals confounded together in one vast cemetery. But a great question now presented itself to our notice, and one we were actually afraid to contemplate in all its bearings. Had these once

animated beings been buried so far beneath the soil by some tremendous convulsion of nature, after they had been earth to earth and ashes to ashes, or had they lived here below, in this subterranean world, under this factitious sky, born, married, and given in marriage, and dying at last, just like ordinary inhabitants of the earth?

Up to the present moment, marine monsters, fish, and such like animals, had alone been seen alive! The question which rendered us rather uneasy, was a pertinent one. Were any of these men of the abyss wandering about the deserted shores of this wondrous sea of the center of the earth? This was a question which rendered me very uneasy and uncomfortable. How, should they really be in existence, would they receive us men from above?

(To be concluded)

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In SCIENCE AND INVENTION, the serial, "Tarrano the Conqueror," by Ray Cummings, has been running for several months.

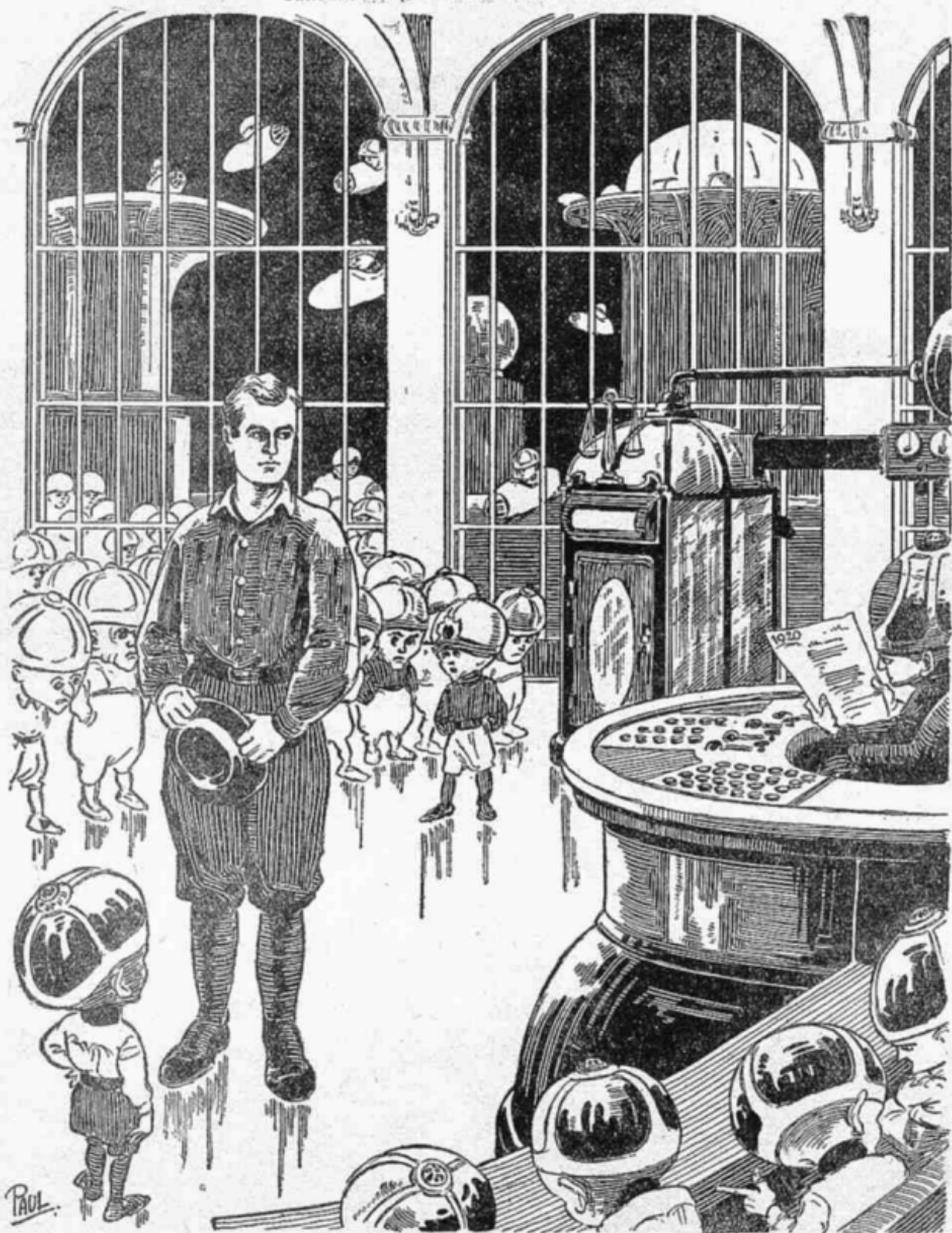
The author of this story also wrote "The Girl in the Golden Atom," "Around the Universe," and "The Man on the Meteor." "Tarrano the Conqueror" is one of the weirdest and most amazing stories it has ever been our good fortune to read.

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The COMING of the ICE

By G. Peyton Wertenbaker

Author of "The Man From the Atom"



Strange men, these creatures of the hundredth century, men with huge brains and tiny, shrivelled bodies, atrophied limbs, and slow, ponderous movements on their little conveyances. . . . It was then that I was forced to produce my tattered old papers, proving my identity and my story.



It is strange to be alone, and so cold. To be the last man on earth. . . .

The snow drives silently about me, ceaselessly, drearily. And I am isolated in this tiny white, indistinguishable corner of a blurred world, surely the loneliest creature in the universe. How many thousands of years is it since I last knew the true companionship? For a long time I have been lonely, but there were people, creatures of flesh and blood. Now they are gone. Now I have not even the stars to keep me company, for they are all lost in an infinity of snow and twilight above, as the earth is lost in its grey infinity here below.

If only I could know how long it has been since first I was imprisoned upon the earth. It cannot matter now. And yet some vague dissatisfaction, some faint instinct, asks over and over in my throbbing ears: What year? What year?

It was in the year 1930 that the great thing began in my life. There was then a very great man who performed operations upon his fellows to compose their vitals—we called such men surgeons. John Granden wore the title "Sir" before his name, in indication of nobility by birth according to the prevailing standards in England. But surgery was only a hobby of Sir John's, if I must be precise, for, while he had achieved an enormous reputation as a surgeon, he always felt that his real work lay in the experimental end of his profession. He was, in a way, a dreamer, but a dreamer who could make his dreams come true.

I was a very close friend of Sir John's. In fact, we shared the same apartments in London. I have never forgotten that day when he first mentioned to me his momentous discovery. I had just come in from a long sleigh-ride in the country with Alice, and I was seated drowsily in the window-seat, writing idly in my mind a description of the wind and the snow and the grey twilight of the evening. It is strange, is it not, that my tale should begin and end with the snow and the twilight.

Sir John opened suddenly a door at one end of the room and came hurrying across to another door. He looked at me, grinning rather like a triumphant maniac.

"It's coming!" he cried, without pausing, "I've almost got it!" I smiled at him: he looked very ludicrous at that moment.

"What have you got?" I asked.

"Good Lord, man, the Secret—the Secret!" And then he was gone again, the door closing upon his victorious cry, "The Secret!"

I was, of course, amused. But I was also very much interested. I knew Sir John well enough to realize that, however amazing his appearance might be, there would be nothing absurd about his "Secret"—whatever it was. But it was useless to speculate. I could only hope for enlightenment at dinner. So I immersed myself in one of the sur-

geons' volumes from his fine Library of Imagination, and waited.

I think the book was one of Mr. H. G. Wells', probably "The Sleeper Awakes," or some other of his brilliant fantasies and predictions, for I was in a mood conducive to belief in almost anything when, later, we sat down together across the table. I only wish I could give some idea of the atmosphere that permeated our apartments, the reality it lent to whatever was vast and amazing and strange. You could then, whoever you are, understand a little the ease with which I accepted Sir John's new discovery.

He began to explain it to me at once, as though he could keep it to himself no longer.

"Did you think I had gone mad, Dennell?" he asked. "I quite wonder that I haven't. Why, I have been studying for many years—for most of my life—on this problem. And, suddenly, I have solved it! Or, rather, I am afraid I have solved another one much greater."

"Tell me about it," I suggested. "But for God's sake don't be technical." He smiled.

"Right," he said. Then he paused. "Dennell, it's magnificent! It will change the whole social order of the world. It will change everything that is in the world." His eyes held mine suddenly with the fatality of an hypnotist's. "Dennell, it is the Secret of Eternal Life," he said.

"Good Lord, Sir John!" I cried, half inclined to laugh.

"I mean it," he said. "You know I have spent most of my life studying the processes of birth, trying to find out precisely what went on in the whole history of conception."

"You have found out?"

"No, that is just what amuses me. I have discovered something else without knowing yet what causes either process.

"I don't want to be technical, and I know very little of what actually takes place myself. But I can try to give you some idea of it."

.. It is thousands, perhaps millions of years since Sir John explained to me. What little I understood at the time I may have forgotten since. Yet I try to reproduce what I can of his theory.

"In my study of the processes of birth," he began, "I discovered the rudiments of an action which takes place in the bodies of both men and women. There are certain properties in the foods we eat that remain in the body for the reproduction of life, two distinct Essences, so to speak, of which one is retained by the woman, another by the man. It is the union of these two properties that, of course, creates the child.

"Now, I made a slight mistake one day in experimenting with a guinea-pig, and I re-arranged certain organs which I need not describe so that I thought I had completely messed up the poor creature's abdomen. It lived, however, and I laid it aside.

THIS powerful and tragic story by the author of "The Man from the Atom" tells of a man who acquired terrestrial immortality—tells of a world many centuries hence—a time when everything is changed. This one man remains as a relic of the 20th century. He is alone with strangely developed human beings, the product of ages of evolution. Climatic changes are taking place. The world begins to grow cold. New York is almost in the Arctic region and Italy is covered with snow all the year around. In spite of their enormous intellectual development, all human beings must perish. Our hero alone can withstand the intense cold. He wanted eternal life and he got it—eternal life, purely intellectual. What does he do with all his years? And how does he enjoy them? Read this powerful story.

It was some years later that I happened to notice it again. It had not given birth to any young, but I was amazed to note that it had apparently grown no older: it seemed precisely in the same state of growth in which I had left it.

"From that I built up. I re-examined the guinea-pig, and observed it carefully. I need not detail my studies. But in the end I found that my 'mistake' had in reality been a momentous discovery. I found that I had only to close certain organs, to re-arrange certain ducts, and to open certain dormant organs, and, *mirabile dictu*, the whole process of reproduction was changed.

"You have heard, of course, that our bodies are continually changing, hour by hour, minute by minute, so that every few years we have been literally reborn. Some such principle as this seems to operate in reproduction, except that, instead of the old body being replaced by the new, and in its form, approximately, the new body is created apart from it. It is the creation of children that causes us to die, it would seem, because if this activity is, so to speak, dammed up or turned aside into new channels, the reproduction operates on the old body, renewing it continually. It is very obscure and very absurd, is it not? But the most absurd part of it is that it is true. Whatever the true explanation may be, the fact remains that the operation can be done, that it actually prolongs life indefinitely, and that I alone know the secret."

Sir John told me a very great deal more, but, after all, I think it amounted to little more than this. It would be impossible for me to express the great hold his discovery took upon my mind the moment he recounted it. From the very first, under the spell of his personality, I believed, and I knew he was speaking the truth. And it opened up before me new vistas. I began to see myself become suddenly eternal, never again to know the fear of death. I could see myself storing up, century after century, an amplitude of wisdom and experience that would make me truly a god.

"Sir John!" I cried, long before he was finished, "You must perform that operation on me!"

"But, Dennell, you are too hasty. You must not put yourself so rashly into my hands."

"You have perfected the operation, haven't you?"

"That is true," he said.

"You must try it out on somebody, must you not?"

"Yes, of course. And yet—somehow, Dennell, I am afraid. I cannot help feeling that man is not yet prepared for such a vast thing. There are sacrifices. One must give up love and all sensual pleasure. This operation not only takes away the mere fact of reproduction, but it deprives one of all the things that go with sex, all love, all sense of beauty, all feeling for poetry and the arts. It leaves only the few emotions, selfish emotions, that are necessary to self-preservation. Do you not see? One becomes an intellect, nothing more—a cold apotheosis of reason. And I, for one, cannot face such a thing calmly."

"But, Sir John, like many fears, it is largely horrible in the foresight. After you have changed your nature you cannot regret it. What you are would be as horrible an idea to you afterwards as the thought of what you will be seems now."

"True, true. I know it. But it is hard to face, nevertheless."

"I am not afraid to face it," I said, a little boastfully.

"You do not understand it, Dennell, I am afraid. And I wonder whether you or I or any of us on this earth are ready for such a step. After all, to make a race deathless, one should be sure it is a perfect race."

"Sir John," I said, "it is not you who have to face this, nor any one else in the world till you are ready. But I am firmly resolved, and I demand it of you as my friend."

Well, we argued much further, but in the end I won. Sir John promised to perform the operation three days later.

... But do you perceive now what I had forgotten during all that discussion, the one thing I had thought I could never forget so long as I lived, not even for an instant? It was my love for Alice—I had forgotten that!

I cannot write here all the infinity of emotions I experienced later, when, with Alice in my arms, it suddenly came upon me what I had done. Ages ago—I have forgotten how to feel. I could name now a thousand feelings I used to have, but I can no longer even understand them. For only the heart can understand the heart, and the intellect only the intellect.

With Alice in my arms, I told the whole story. It was she who, with her quick instinct, grasped what I had never noticed.

"But Carl!" she cried, "Don't you see?—It will mean that we can never be married!" And, for the first time, I understood. If only I could re-capture some conception of that love! I have always known, since the last shred of comprehension slipped from me, that I lost something very wonderful when I lost love. But what does it matter? I lost Alice too, and I suppose I could not have known love again without her.

We were very sad and very tragic that night. For hours and hours we argued the question over. But I felt somewhat that I was inextricably caught in my fate, that I could not retreat now from my resolve. I was, perhaps, very school-boyish, but I felt that it would be cowardice to back out now. But it was Alice again who perceived a final aspect of the matter.

"Carl," she said to me, her lips very close to mine, "it need not come between our love. After all, ours would be a poor sort of love if it were not more of the mind than of the flesh. We shall remain lovers, but we shall forget mere carnal desire. I shall submit to that operation too!"

And I could not shake her from her resolve. I would speak of danger that I could not let her face. But, after the fashion of women, she disarmed me with the accusation that I did not love her, that I did not want her love, that I was trying to escape from love. What answer had I for that, but that I loved her and would do anything in the world not to lose her?

I have wondered sometimes since whether we might have known the love of the mind. Is love something entirely of the flesh, something created by an ironic God merely to propagate His race? Or can there be love without emotion, love without

passion—love between two cold intellects? I do not know. I did not ask them. I accepted anything that would make our way more easy.

There is no need to draw out the tale. Already my hand wavers, and my time grows short. Soon there will be no more of me, no more of my tale—no more of Mankind. There will be only the snow, and the ice, and the cold. . . .

Three days later I entered Sir John's Hospital, with Alice on my arm. All my affairs—and they were few enough—were in order. I had insisted that Alice wait until I had come safely through the operation, before she submitted to it. I had been carefully starved for two days, and I was lost in an unreal world of white walls and white clothes and white lights, drunk with my dreams of the future. When I was wheeled into the operating room on the long, hard table, for a moment it shone with brilliant distinctness, a neat, methodical white chamber, tall and more or less circular. Then I was beneath the glare of soft white lights, and the room faded into a misty vagueness from which little steel rays flashed and quivered from silvery cold instruments. For a moment our hands, Sir John's and mine, gripped, and we were saying good-bye—for a little while—in the way men say these things. Then I felt the warm touch of Alice's lips upon mine, and I felt sudden painful things that I cannot describe, that I could not have described then. For a moment I felt that I must rise and cry out that I could not do it. But the feeling passed, and I was passive.

Something was pressed about my mouth and nose, something with an ethereal smell. Staring eyes swam about me from behind their white masks. I struggled instinctively, but in vain—I was held securely. Infinitesimal points of light began to wave back and forth on a pitch-black background; a great hollow buzzing echoed in my head. My head seemed suddenly to have become all throat, a great, cavernous, empty throat in which sounds and lights were mingled together, in a swift rhythm, approaching, receding eternally. Then, I think, there were dreams. But I have forgotten them. . . .

I began to emerge from the effect of the ether. Everything was dim, but I could perceive Alice beside me, and Sir John.

"Bravely done!" Sir John was saying, and Alice, too, was saying something, but I cannot remember what. For a long while we talked, I speaking the nonsense of those who are coming out from under ether, they teasing me a little solemnly. But after a little while I became aware of the fact that they were about to leave. Suddenly, God knows why, I knew that they must not leave. Something cried in the back of my head that they *must* stay—one cannot explain these things, except by after events. I began to press them to remain, but they smiled and said they must get their dinner. I commanded them not to go; but they spoke kindly and said they would be back before long. I think I even wept a little, like a child, but Sir John said something to the nurse, who began to reason with me firmly. and then they were gone, and somehow I was asleep. . .

When I awoke again, my head was fairly clear, but there was an abominable reek of ether all about me. The moment I opened my eyes, I felt that something had happened. I asked for Sir John and for Alice. I saw a swift, curious look that I could not

interpret come over the face of the nurse, then she was calm again, her countenance impassive. She reassured me in quick meaningless phrases, and told me to sleep. But I could not sleep: I was absolutely sure that something had happened to them, to my friend and to the woman I loved. Yet all my insistence profited me nothing, for the nurses were a silent lot. Finally, I think, they must have given me a sleeping potion of some sort, for I fell asleep again.

For two days, two endless, chaotic days, I saw nothing of either of them, Alice or Sir John. I became more and more agitated, the nurse more and more taciturn. She would only say that they had gone away for a day or two.

And then, on the third day, I found out. They thought I was asleep. The night nurse had just come in to relieve the other.

"Has he been asking about them again?" she asked.

"Yes, poor fellow. I have hardly managed to keep him quiet."

"It is going to be very hard to tell him."

"We will have to keep it from him until he is recovered fully." There was a long pause, and I could hardly control my laboured breathing.

"How sudden it was!" one of them said. "To be killed like that—" I heard no more, for I leapt suddenly up in bed, crying out.

"Quick! For God's sake, tell me what has happened!" I jumped to the floor and seized one of them by the collar. She was horrified. I shook her with a superhuman strength.

"Tell me!" I shouted, "Tell me—Or I'll—!" She told me—what else could she do.

"They were killed in an accident," she gasped, "in a taxi—a collision—the Strand—!" And at that moment a crowd of nurses and attendants arrived, called by the other frantic woman, and they put me to bed again.

I have no memory of the next few days. I was in delirium, and I was never told what I said during my ravings. Nor can I express the feelings I was saturated with when at last I regained my mind again. Between my old emotions and any attempt to put them into words, or even to remember them, lies always that insurmountable wall of my Change. I cannot understand what I must have felt, I cannot express it.

I only know that for weeks I was sunk in a misery beyond any misery I had ever imagined before. The two only friends I had on earth were gone to me. I was left alone. And, for the first time, I began to see before me all these endless years that would be the same, dull, lonely.

Yet I recovered. I could feel each day the growth of a strange new vigour in my limbs, a vast force that was something tangibly expressive of eternal life. Slowly my anguish began to die. After a week more, I began to understand how my emotions were leaving me, how love and beauty and everything of which poetry was made—how all this was going. I could not bear the thought at first. I would look at the golden sunlight and the blue shadow of the wind, and I would say,

"God! How beautiful!" And the words would echo meaninglessly in my ears. Or I would remember Alice's face, that face I had once loved

so inextinguishably, and I would weep and clutch my forehead, and clench my fists, crying,

"O God, how can I live without her!" Yet there would be a little strange fancy in my head at the same moment, saying,

"Who is this Alice? You know no such person." And truly I would wonder whether she had ever existed.

So, slowly, the old emotions were shed away from me, and I began to joy in a corresponding growth of my mental perceptions. I began to toy idly with mathematical formulæ I had forgotten years ago, in the same fashion that a poet toys with a word and its shades of meaning. I would look at everything with new, seeing eyes, new perception, and I would understand things I had never understood before, because formerly my emotions had always occupied me more than my thoughts.

And so the weeks went by, until, one day, I was well.

. . . What, after all, is the use of this chronicle? Surely there will never be men to read it. I have heard them say that the snow will never go. I will be buried, it will be buried with me; and it will be the end of us both. Yet, somehow, it eases my weary soul a little to write. . . .

Need I say that I lived, thereafter, many thousands of thousands of years, until this day? I cannot detail that life. It is a long round of new, fantastic impressions, coming dream-like, one after another, melting into each other. In looking back, as in looking back upon dreams, I seem to recall only a few isolated periods clearly; and it seems that my imagination must have filled in the swift movement between episodes. I think now, of necessity, in terms of centuries and milleniums, rather than days and months. . . . The snow blows terribly about my little fire, and I know it will soon gather courage to quench us both. . . .

Years passed, at first with a sort of clear wonder. I watched things that took place everywhere in the world. I studied. The other students were much amazed to see me, a man of thirty odd, coming back to college.

"But Judas, Dannel, you've already got your Ph.D! What more do you want?" So they would all ask me. And I would reply;

"I want an M.D. and an F.R.C.S." I didn't tell them that I wanted degrees in Law, too, and in Biology and Chemistry, in Architecture and Engineering, in Psychology and Philosophy. Even so, I believe they thought me mad. But poor fools! I would think. They can hardly realize that I have all of eternity before me for study.

I went to school for many decades. I would pass from University to University, leisurely gathering all the fruits of every subject I took up, revelling in study as no student revelled ever before. There was no need of hurry in my life, no fear of death too soon. There was a magnificence of vigour in my body, and a magnificence of vision and clarity in my brain. I felt myself a super-man. I had only to go on storing up wisdom until the day should come when all knowledge of the world was mine, and then I could command the world. I had no need for hurry. O vast life! How I gloried in my eternity! And how little good it has ever done me, by the irony of God.

For several centuries, changing my name and passing from place to place, I continued my studies. I had no consciousness of monotony, for, to the intellect, monotony cannot exist: it was one of those emotions I had left behind. One day, however, in the year 2132, a great discovery was made by a man called Zarentzov. It had to do with the curvature of space, quite changing the conceptions that we had all followed since Einstein. I had long ago mastered the last detail of Einstein's theory, as had, in time, the rest of the world. I threw myself immediately into the study of this new, epoch-making conception.

To my amazement, it all seemed to me curiously dim and elusive. I could not quite grasp what Zarentzov was trying to formulate.

"Why," I cried, "the thing is a monstrous fraud!" I went to the professor of Physics in the University I then attended, and I told him it was a fraud, a huge book of mere nonsense. He looked at me rather pityingly.

"I am afraid, Modovski," he said, addressing me by the name I was at the time using, "I am afraid you do not understand it, that is all. When your mind has broadened, you will. You should apply yourself more carefully to your Physics." But that angered me, for I had mastered my Physics before he was ever born. I challenged him to explain the theory. And he did! He put it, obviously, in the clearest language he could. Yet I understood nothing. I stared at him dumbly, until he shook his head impatiently, saying that it was useless, that if I could not grasp it I would simply have to keep on studying. I was stunned. I wandered away in a daze.

For do you see what had happened? During all those years I had studied ceaselessly, and my mind had been clear and quick as the day I first had left the hospital. But all that time I had been able only to remain what I was—an extraordinarily intelligent man of the twentieth century. And the rest of the race had been progressing! It had been swiftly gathering knowledge and power and ability all that time, faster and faster, while I had been only remaining still. And now here was Zarentzov and the teachers of the Universities, and, probably, a hundred intelligent men, who had all outstripped me! I was being left behind.

And that is what happened. I need not dilate further upon it. By the end of that century I had been left behind by all the students of the world, and I never did understand Zarentzov. Other men came with other theories, and these theories were accepted by the world. But I could not understand them. My intellectual life was at an end. I had nothing more to understand. I knew everything I was capable of knowing, and, therefore, I could only play wearily with the old ideas.

Many things happened in the world. A time came when the East and West, two mighty unified hemispheres, rose up in arms: the civil war of a planet. I recall only chaotic visions of fire and thunder and hell. It was all incomprehensible to me: like a bizarre dream, things happened, people rushed about, but I never knew what they were doing. I lurked during all that time in a tiny shuddering hole under the city of Yokohama, and by a miracle I survived. And the East won. But it seems to

have mattered little who did win, for all the world had become, in all except its few remaining prejudices, a single race, and nothing was changed when it was all rebuilt again, under a single government.

I saw the first of the strange creatures who appeared among us in the year 6371, men who were later known to be from the planet Venus. But they were repulsed, for they were savages compared with the Earthmen, although they were about equal to the people of my own century, 1900. Those of them who did not perish of the cold after the intense warmth of their world, and those who were not killed by our hands, those few returned silently home again. And I have always regretted that I had not the courage to go with them.

I watched a time when the world reached perfection in mechanics, when men could accomplish anything with a touch of the finger. Strange men, these creatures of the hundredth century, men with huge brains and tiny, shriveled bodies, atrophied limbs, and slow, ponderous movements on their little conveyances. It was I, with my ancient compunctions, who shuddered when at last they put to death all the perverts, the criminals, and the insane, ridding the world of the scum for which they had no more need. It was then that I was forced to produce my tattered old papers, proving my identity and my story. They knew it was true, in some strange fashion of theirs, and, thereafter, I was kept on exhibition as an archaic survival.

I saw the world made immortal through the new invention of a man called Kathol, who used somewhat the same method "legend" decreed had been used upon me. I observed the end of speech, of all perceptions except one, when men learned to communicate directly by thought, and to receive directly into the brain all the myriad vibrations of the universe.

All these things I saw, and more, until that time when there was no more discovery, but a Perfect World in which there was no need for anything but memory. Men ceased to count time at last. Several hundred years after the 154th Dynasty from the Last War, or, as we would have counted in my time, about 200,000 A.D., official records of time were no longer kept carefully. They fell into disuse. Men began to forget years, to forget time at all. Of what significance was time when one was immortal?

After long, long uncounted centuries, a time came when the days grew noticeably colder. Slowly the winters became longer, and the summers diminished to but a month or two. Fierce storms raged endlessly in winter, and in summer sometimes there was severe frost, sometimes there was only frost. In the high places and in the north and the sub-equatorial south, the snow came and would not go.

Men died by the thousands in the higher latitudes. New York became, after awhile, the furthest habitable city north, an arctic city, where warmth seldom penetrated. And great fields of ice began to make their way southward, grinding before them the brittle remains of civilizations, covering over relentlessly all of man's proud work.

Snow appeared in Florida and Italy one summer. In the end, snow was there always. Men left New York, Chicago, Paris, Yokohama, and everywhere

they traveled by the millions southward, perishing as they went, pursued by the snow and the cold, and that inevitable field of ice. They were feeble creatures when the Cold first came upon them, but I speak in terms of thousands of years; and they turned every weapon of science to the recovery of their physical power, for they foresaw that the only chance for survival lay in a hard, strong body. As for me, at last I had found a use for my few powers, for my physique was the finest in that world. It was but little comfort, however, for we were all united in our awful fear of that Cold and that grinding field of Ice. All the great cities were deserted. We would catch silent, fearful glimpses of them as we sped on in our machines over the snow—great hungry, haggard skeletons of cities, shrouded in banks of snow, snow that the wind rustled through desolate streets where the cream of human life once had passed in calm security. Yet still the Ice pursued. For men had forgotten about that Last Ice Age when they ceased to reckon time, when they lost sight of the future and steeped themselves in memories. They had not remembered that a time must come when Ice would lie white and smooth over all the earth, when the sun would shine bleakly between unending intervals of dim, twilight snow and sleet.

Slowly the Ice pursued us down the earth, until all the feeble remains of civilization were gathered in Egypt and India and South America. The deserts flowered again, but the frost would come always to bite the tiny crops. For still the Ice came. All the world now, but for a narrow strip about the equator, was one great silent desolate vista of stark ice-plains, ice that brooded above the hidden ruins of cities that had endured for hundreds of thousands of years. It was terrible to imagine the awful solitude and the endless twilight that lay on these places, and the grim snow, sailing in silence over all. . . .

And so we existed, hoping still that the Ice might go again, until at last it closed in upon us. From north and south it came, from every side, and the boundaries of east and west were the frozen oceans, fathoms deep in Ice. It closed about us. . . .

It surrounded us on all sides, until life remained only in a few scattered clearings all about that equator of the globe, with an eternal fire going to hold away the hungry Ice. Perpetual winter reigned now; and we were become terror-stricken beasts that preyed on each other for a life already doomed. Ah, but I, I the archaic survival, I had my revenge then, with my great physique and strong jaws—God! Let me think of something else. Those men who lived upon each other—it was horrible. And I was one.

So inevitably the Ice closed in. . . . One day the men of our tiny clearing were but a score. We huddled about our dying fire of bones and stray logs. We said nothing. We just sat, in deep, wordless, thoughtless silence. We were the last outpost of Mankind.

I think suddenly something very noble must have transformed these creatures to a semblance of what they had been of old. I saw, in their eyes, the question they sent from one to another, and in every eye I saw that the answer was, Yes. With

(Continued on page 288)

The SCIENTIFIC ADVENTURES of MR. FOSDICK

By *Jacque Morgan*

MR. FOSDICK INVENTS the "SEIDLITZMOBILE"



In seven of the nine towns it passed through, it was reported as a comet; the other two wired the Weather Bureau of the visitation of that most unusual phenomenon of nature, a dry cloud-burst.



PARDON me."

Mr. Hiram Snodgrass did not look up from his desk. It was Saturday and nearly noon and the automobile was panting outside to take him out to the country club where he had a golf game on with his son-in-law.

"Pardon me."

The president of the Ajax Manufacturing Company only dipped his pen again in the violet ink and scribbled the faster. A half hundred letters still remained to be signed and Mr. Snodgrass figured that even with the simplest of luncheons he would be an hour late upon the green. And this afternoon he purposed having his revenge, for the Saturday before the husband of his offspring had stung him to the tune of eight up.

"Pardon me."

Mr. Snodgrass swung in his chair. "Well, what is it?" The inquiry came explosively and with a fierce, sudden heat like the momentary opening of a furnace door. It was Mr. Snodgrass' way—a manner to which none in the office ever paid the slightest heed.

"You are Mr. Snodgrass?"

"Yes, I am," snapped that individual. "What of it?"

The stranger, a man with mild blue eyes and vague, rambling whiskers, seated himself. "Did you ever," he began, "take first the blue and then the white of a common, ordinary Seidlitz powder?"

Mr. Snodgrass threw his head back aghast at the query. "No, I have not," he bellowed.

The stranger was unperturbed. "Well, then try it," and drawing from his pocket one of the powders

in question walked coolly over to the water filter and filling the glass dropped in the blue powder which he stirred with a long, index finger. "The result will surprise you."

"I'll do nothing of the dashed kind," roared Mr. Snodgrass. "And say," he demanded, as he caught the stenographer tittering behind her note book, "who the devil are you and how did you get in here?"

For answer the stranger laid upon the president's desk a card.

JASON Q. FOSDICK
Inventor

Mr. Snodgrass' features experienced a sudden transformation: the belligerent expression faded away and a smile of genuine pleasure suffused all of the countenance visible above and in front of the mutton-chop whiskers. "My dear Mr. Fosdick, I am delighted to meet you!" he ejaculated. "I suppose you dropped in to see how the nut-crackers

are getting along. The device was an utter failure as a curling iron—but as a nut-cracker it has been an unqualified success. It is going to make you a rich man, Mr. Fosdick. Your royalties are now amounting to over a hundred dollars a week."

Mr. Fosdick shook his head. "No, I am not here on that account. I have a new invention that I want to interest you in."

"And the nature of it is what?" inquired Mr. Snodgrass.

"An automobile run by these," and the inventor held up a Seidlitz powder. "There is a wonderful lot of power in a Seidlitz powder, Mr. Snodgrass. Just take first the blue and then the white," he said, offering the glass and at the same time unfolding the white paper containing the other half of the powder.

Mr. Snodgrass drew back in some alarm. "No, I'll take your word for it."

"Please take it," insisted Mr. Fosdick. "It's a beautiful experiment. It gives a pressure of ten atmospheres—one hundred and fifty pounds."

"Damn it, man, I'm not built for a hundred and fifty pounds. I couldn't stand it—I'd blow up—I haven't any safety valve."

The inventor shook his head solemnly. "In that, Mr. Snodgrass, you are mistaken. The human diaphragm will stand one hundred and sixty pounds. You see, there is a margin of safety of ten pounds—the experiment is perfectly safe."

"I tell you I won't," cried Mr. Snodgrass, overcome by a sudden fear that he might be persuaded into such a rash adventure. "I won't, I tell you."

"Then I will," said Mr. Fosdick, calmly lifting the glass. "Just watch."

"Here, stop that!" cried the horrified Mr. Snodgrass. "Don't do that in here. Go down into the engine room where we have boiler insurance."

But the inventor was not to be thwarted. With cool deliberation he quaffed off first the one powder and then the other. "Right here," he said, after a minute's wait, "there is power enough to run my Seidlitzmobile eleven and two-tenths miles, if my calculations are not wrong," and he placed his hand

upon the pit of his stomach. "Just feel the pressure."

Mr. Snodgrass extended his arm and gingerly prodded the compelling stranger under the ribs.

"Not hard," said the inventor warningly. "Remember, the margin of safety is only ten pounds."

Mr. Snodgrass withdrew his hand with lightning-like rapidity and the perspiration broke out upon his forehead. "Couldn't you go outside and sit around for awhile?" he inquired with some trepidation. "Our building is not very strong and an accident would doubtlessly maim many of our clerks."

"I usually don't stir," replied Mr. Fosdick solemnly. "If I should walk about and stumble—or if I should even cough or sneeze, why then——"

"Yes, yes," interrupted Mr. Snodgrass. "Just sit perfectly still," he said, turning off the electric fan. "Keep out of all draughts and please try not to cough. I'll telephone the fire department and the police as a precaution."

"Not necessary," said the inventor. "The pressure will sink to forty pounds in ten minutes."

It was a harrowing ten minutes for the president of the Ajax Manufacturing Company. When one has reached the mature age of sixty years and has a large family, even to grand-children, the staking of one's life against the mere sneeze or cough of an utter stranger is an unnerving thing and the shock and suspense of it all is more than apt to leave the faculties in a numb and dazed condition. At any rate, when Mr. Fosdick left the office a few minutes after the ordeal, he had in his pocket Mr. Snodgrass' check of one thousand dollars for the building of the first Seidlitzmobile.

* * *

One month later a team drew a queer looking vehicle in front of the Ajax Manufacturing Company and were unhitched.

"I brought it over here from the shop by mule-power," explained Mr. Fosdick, "as I wanted you to take the very first ride in the Seidlitzmobile under its own steam—or gas, rather."

Mr. Snodgrass looked the machine over dubiously. "It looks like a fire extinguisher," he ventured.

"That's the very principle that it works on," said the inventor. "You see this reservoir," and he pointed to a large burnished brass cylinder under the hood, "is the mixing chamber—the stomach of the machine, as it were. Into it the powders are dropped and the carbonic acid gas actuates the two-cylinder engine geared to the back axle. This link motion controls the cut-off and the reverse, and the throttle here permits you to give the engine any head of gas. But climb in," he added, "and we'll be off."

Mr. Snodgrass with some reluctance stepped into the machine and seated himself. Mr. Fosdick followed him and then fishing out of his pocket a Seidlitz powder he unscrewed a brass cap from a tube that protruded from the floor of the machine, dropped the powder through, tooted the horn, released the brakes, and they were off. It was a downhill road and for two miles—in fact for the entire length of the hill—the Seidlitzmobile behaved splendidly.

Mr. Snodgrass became enthusiastic. "It's the most silent machine I ever rode in!" he ejaculated. "It's as quiet as an electric."

"And just think," put in Mr. Fosdick, "the machine can be retailed at two hundred dollars. It will make us millions! All there is to it is a ten dollar engine, a brass cylinder, four wheels, and a Seidlitz powder. The horse is bound to become as extinct as the dodo. Every family in the land will possess one. It will be a convenience to the rich, a blessing to the poor, a——" They had reached the bottom of the hill and the machine stopped.

"What's the matter?" demanded Mr. Snodgrass, his vision of riches suddenly fading away.

Mr. Fosdick got out and looked the machine over wisely. "I think the engine has slipped an eccentric," he remarked after a few moments of professional study.

"Why, man, you've no pressure!" exclaimed the passenger. "Look at the gauge."

It was true. The gauge registered not a single pound.

Mr. Fosdick fumbled in his pockets, but could not find another powder.

"I guess that last powder must have been a weak one," he said. "But see, there is a drug store—and every drug store carries Seidlitz powders. As long as you keep near the drug stores you need never run out of power."

Mr. Snodgrass' spirits rose. "We can turn that remark into profit," he said. We will copyright it. The very first thing we will do will be to spend one million dollars in advertising this sentence throughout the entire world: 'The Seidlitzmobile—the machine that can get its power at any drug store.'"

Together the two men walked into the drug shop. "A Seidlitz powder, if you please," said Mr. Fosdick, laying ten cents upon the soda counter.

The apothecary dived back into the mysterious region behind the prescription case and hibernated. An hour later he emerged and pleasantly inquired what was wanted.

"A Seidlitz powder, please," reiterated Mr. Fosdick, pointing to the dime.

The druggist rubbed his hands unctuously. "I'm sorry that we're out of Seidlitz powders," he said, "but we have something just as good. We have—"

"Nothing but Seidlitz," roared Mr. Snodgrass, giving way to one of his sudden outbursts.

The druggist smiled blandly. "How old is the patient?" he asked.

"It's a machine," cried Mr. Snodgrass.

"Ah, indeed," remarked the druggist, looking at Mr. Snodgrass queerly. "And may I ask what is the matter with it?"

"It won't go!" bellowed Mr. Snodgrass.

"Yes, yes," agreed the druggist, "It won't go," and he backed behind the counter and reached for the telephone. "I'll have a nice man in a pretty blue suit with bright brass buttons here in just a few minutes, and he will make your head stop aching," he promised them soothingly.

"You think we are crazy," accused Mr. Snodgrass.

"Oh, not at all," reassured the clerk. "You are just merely overheated."

Mr. Fosdick intervened: "The machine is an automobile run by carbonic acid gas," he explained, "and that's why we wanted the Seidlitz powder."

A sigh of relief escaped the druggist. "Why didn't you say so at first?" he said. "I haven't had such a scare in years."

Mr. Fosdick explained the principle of the machine. Mr. Snodgrass bought a handful of cigars and gave the druggist one, who immediately put it back in stock and abstracted a dime out of the cash register, and good feeling was restored.

"As I understand it," said the druggist, "your machine generates gas in the same manner as a fire extinguisher or a soda-water charger."

"Precisely," agreed Mr. Fosdick.

"In that case," said the druggist, "you should use bicarbonate of soda and sulphuric acid."

Mr. Fosdick, with the invariable reluctance of all inventors to adopt the suggestions of outsiders, demurred. "It spoils the name of the machine," he said, "and the name is worth a million in itself."

But the druggist had caught the contagion of his own idea. Diving back again behind the prescription case he emerged with a bottle of acid and a large sack of bicarbonate. "Come on," he said, enthusiastically, "we'll give it a good dose."

Before Mr. Fosdick could remonstrate further the druggist had emptied a peck of the alkali into the mixing chamber and stood ready with the bottle of acid. "Get in the machine and get all ready to pull out," he said cheerfully, "for when I pour in the sulphuric acid the pressure will generate very quickly."

Mr. Snodgrass looked at Mr. Fosdick and Mr. Fosdick looked at Mr. Snodgrass.

"Hurry!" said the druggist.

There was a compelling ring in the apothecary's voice and slowly and with the greatest of reluctance the men climbed into the machine.

"I hope nothing happens," groaned Mr. Snodgrass.

Mr. Fosdick made no reply. Although his face was pale there was a set to his jaw that expressed a determination to stay with his machine to the end.

No sooner were they seated than the druggist eagerly poured in five gallons of acid and then quickly screwed down the cap.

There was a sudden click of the pressure gauge and the hand flew around to the extreme limit.

"My God!" ejaculated Mr. Snodgrass. "The index shows the limit of the gauge—six hundred pounds. At what point is your safety set?"

"There is no safety valve," confessed Mr. Fosdick weakly. "I didn't think it would be necessary."

"The pressure is fine!" exclaimed the druggist as his eye caught the gauge. "And agitating the reservoir always increases the action of the acid," and catching hold of the wheel he gave the machine a vigorous shaking back and forth.

"Stop that!" screamed Mr. Fosdick. "Do you want to blow us up?"

The druggist suddenly stopped and scratched his chin. "I forgot something," he said cheerfully. "It is this: The acid will eat out your brass reservoir in a few minutes and will probably blow you into the next county."

"Here," yelled Mr. Snodgrass, "let me out," and he made a desperate effort to climb out of the machine.

But the frightened Mr. Fosdick knew there was but one thing to do and that was to reduce the pressure of the reservoir by exhausting the gas through the engine. With a sudden movement he threw the throttle wide open and then with the roar of a mogul engine the Seidlitzmobile took down the dusty road at better than a hundred-mile-an-hour clip.

Never has there been such a ride chronicled in the annals of automobiling as the maiden effort of the Seidlitzmobile. It made the ninety-three miles between Jonesboro and Smith's Corner in twenty-seven minutes, and in seven of the nine towns it passed through it was reported as a comet; the other two wired the Weather Bureau of the visitation of that most unusual phenomenon of nature, a dry cloud-burst. As the machine tore its way across the state, spouting carbonic acid gas from its exhaust pipes, it asphyxiated thirty-seven dogs that endeavored to pursue it and killed all vegetation on both sides of the road for a distance of two hundred yards. Goose Creek, which paralleled the road for forty miles, ran pure soda-water for two weeks afterwards, and it cost Mr. Snodgrass seven thousand dollars to have the oxygen replaced in forty-three townships, which he did only after suit had been filed.

How far the machine would have traveled is difficult to determine, although old Prof. Snooks, Mr. Fosdick's implacable enemy, calculated that the Seidlitzmobile would have gone three and a fraction times around the earth before becoming winded. But as a matter of history, it did not go this distance; it made one hundred and eleven miles before the druggist's prediction came true. At Smither's Junction the reservoir exploded. It changed the course of Wild Cat run. The concussion was felt in nine states and the seismograph at the University of Tokio reported an earthquake somewhere in the Aleutian Islands.

Mr. Snodgrass and Mr. Fosdick finally came to earth on a haystack in an adjoining township after having made an ascent of two hours and fifteen minutes, missing luncheon en route. The Aero Club of France, which sent a special representative to the spot, calculated their flight at something over two million kilometers and presented both men with a pilot's license and an honorary membership in the club, which, it must be told, they both refused, saying that their flight was unpremeditated and that they could not honorably accept the licenses.

When Mr. Snodgrass alighted upon the haystack he found that Mr. Fosdick had preceded him by some minutes. There was a dazed, dreamy look upon Mr. Fosdick's face that somewhat alarmed his companion.

"What's the matter, Fosdick?" he inquired, shaking him. "Are you unconscious?"

"No," replied the genius, coming out of his musing with an appreciable effort, "I have just thought of a new invention."

"Well, you can leave me out," retorted Mr. Snodgrass, sourly.

The STAR

By H.G. Wells

Author of "The War of the Worlds", "The Time Machine", Etc.



Above were the lava, hot gases, and ash, and below the scorching floods and the whole earth swayed and rumbled with the earthquake.

L was on the first day of the new year that the announcement was made, almost simultaneously from three observatories, that the motion of the planet Neptune, the outermost of all the planets that wheeled about the sun, had become erratic. Ogilvy had already called attention to a suspected retardation in its velocity in December. Such a piece of news was scarcely calculated to interest the world the greater portion of whose inhabitants were unaware of the existence of the planet Neptune, nor outside the astronomical profession did the subsequent discovery of a faint remote speck of light in the region of the perturbed planet cause any great excitement.

Scientific people, however, found the intelligence remarkable enough, even before it became known that the new body was rapidly growing larger and brighter, that its motion was quite different from the orderly progress of the planets, and that the deflection of Neptune and its satellite was becoming now of an unprecedented kind.

Few people without training in science can realize the huge isolation of the solar system. The sun with its specks of planets, its dust of planetoids, and its impalpable comets swims in vacant immensity that almost defeats the imagination. Beyond the orbit of Neptune there is space, vacant so far as human observation has penetrated, without warmth or light or sound, blank emptiness, for twenty billion times a million miles. That is the smallest estimate of the distance to be traversed before the nearest of the stars is attained. And, saving a few comets, more unsubstantial than the thinnest flame, no matter had ever to human knowledge crossed the gulf of space, until early in the twentieth century this wanderer appeared.

A vast mass of matter it was, bulky, heavy, rushing without warning out of the black mystery of the sky into the radiance of the sun. By the second day it was clearly visible to any decent instrument, as a speck with a barely sensible diameter, in the constellation. Leo near Regulus. In a little while an opera glass could attain it.

On the third day of the new year the newspaper readers of two hemispheres were made aware for the first time of the real importance of this unusual apparition in the heavens. "A Planetary Collision," one London paper headed the news, and proclaimed Duchine's opinion that this strange new planet would probably collide with Neptune. The leader writers enlarged upon the topic. So that in most of the capitals of the world, on Jan. 3, there was an expectation, however vague, of some eminent phenomenon in the sky; and as the night followed the sunset round the globe thousands of men turned their eyes skyward to see—the old familiar stars just as they had always been.

Until it was dawn in London and Pollux setting, and the stars overhead grown pale. The winters dawn it was, a sickly filtering accumulation of daylight, and the light of gas and candles shone yellow in the windows to show where people were astir. But the yawning policeman saw the thing, the busy crowds in the market stopped agape, workmen going to their work betimes, milkmen, the drivers of news carts, dissipation going home jaded and pale, homeless wanderers, sentinels on their beats, and in the country, laborers trudging afield, poachers slinking home, all over the dusky quickening country it would be seen—and out at sea by seamen watching for the day—a great white star, come suddenly into the westward sky!

Brighter it was than any star in our skies; brighter than the evening star at its brightest. It still glowed out white and large, no mere twinkling spot of light but a small round clear shining disk, an hour after the day had come. And where science has not reached, men stared and feared, telling one another of the wars and pestilences that are foreshadowed by these fiery signs in the heavens, Sturdy Boers, dusky Hottentots, Gold Coast negroes, Frenchmen, Spaniards, Portuguese, stood in the glow of the sunrise watching the setting of this strange new star.

And in a hundred observatories there had been suppressed excitement, rising almost to shouting pitch, as the two remote bodies had rushed together. There had been a hurrying to and fro to gather photographic apparatus and spectroscope; to gather this appliance and that, to record the novel astonishing sight, the destruction of a world,—for

it was a world, a sister planet of our earth, far greater than our earth indeed, that had so suddenly flashed into flaming death. Neptune it was, which had been struck, fairly, and squarely, by the planet from outer space and the heat of concussion had incontinently turned two solid globes into one vast mass of incandescence.

Round the world that day, two hours before the dawn, went the pallid great white star, fading only as it sank westward and the sun mounted

above it. Everywhere man marveled at it, but of all those who saw it none could have marveled more than those sailors, habitual watchers of the stars, who far away at sea had heard nothing of its advent and saw it now rise like a pigmy moon and climb zenithward and hang overhead and sink westward with the passing of the night.

And when next it rose over Europe everywhere were crowds of watchers on hilly slopes, on house roofs, in open spaces, staring eastward, waiting for the rising of the new star. It rose with a white glow in front, like the glare of a white fire, and those who had seen it come into existence the night before cried out at the sight of it. "It is larger,"

*H*ERE is an impressive story based on the interaction of planetary bodies and of the sun upon them. A great star is seen approaching the earth. At first it is only an object of interest to the general public, but there is an astronomer on the earth, who is watching each phase and making mathematical calculations, for he knows the intimate relation of gravitation between bodies and the effect on rotating bodies of the same force from an outside source. He fears all sorts of wreckage on our earth. He warns the people, but they, as usual, discount all he says and label him mad. But he was not mad. H. G. Wells, in his own way, gives us a picturesque description of the approach of the new body through long days and nights—he tells how the earth and natural phenomena of the earth will react. Though this star never touches our sphere, the devastation and destruction wrought by it are complete and horrible. The story is correct in its astronomical aspects.

they cried. "It is brighter!" And, indeed, the moon a quarter full and sinking in the west was in its apparent size beyond comparison, but scarcely in all its breadth had it as much brightness now as the little circle of the strange new star.

"It is brighter!" cried the people clustering in the streets. But in the dim observatories the watchers held their breath and peered at one another. "It is nearer," they said. "Nearer!"

And voice after voice repeated. "It is nearer," and the clicking telegraph took that up, and it trembled along telephone wires, and in a thousand cities grimy compositors fingered the type. "It is nearer." Men writing in offices, struck with strange realization, flung down their pens, men talking in a thousand places suddenly came upon a grotesque possibility in those words, "It is nearer." It hurried along awakening streets, it was shouted down the frost-stilled ways of quiet villages, men who had read these things, from the throbbing tape stood in yellow-lit doorways shouting the news to the passers-by. "It is nearer." Pretty women flushed and glittering, heard the news told jestingly between dances, and feigned an intelligent interest they did not feel. "Nearer! Indeed. How curious! How clever people must be to find out things like that!"

Lonely tramps faring through the wintry night murmured those words to comfort themselves—looking skyward. "It has need to be nearer, for the night's as cold as charity. Don't seem much warmth from it if it is nearer, all the same."

"What is a new star to me?" cried the weeping woman kneeling beside her dead.

The schoolboy, rising early for his examination work, puzzled it out for himself—with the great white star shining broad and bright through the frost-flowers of his window. "Centrifugal, centripetal," he said, with his chin on his fist. "Stop a planet in its flight, rob it of its centrifugal force, what then? Centripetal has it, and down it falls into the sun! And this—!"

"Do we come in the way? I wonder—"

The light of that day went the way of its brethren, and with the later watches of the frosty darkness rose the strange star again. And it was now so bright that the waxing moon seemed but a pale yellow ghost of itself, rising huge in the sunset hour. In a South African city a great man had married, and the streets were alight to welcome his return with his bride. "Even the skies have illuminated," said the flatterer. Under Capricorn, two negro lovers, daring the wild beasts and evil spirits, for love of one another, crouched together in a cane brake where the fireflies hovered. "That is our star," they whispered, and felt strangely comforted by the sweet brilliancy of its light.

The master mathematician sat in his private room and pushed the papers from him. His calculations were already finished. In a small white phial there still remained a little of the drug that had kept him awake and active for four long nights. Each day, serene, explicit, patient as ever, he had given his lecture to his students, and then had come back at once to this momentous calculation. His face was grave, a little drawn, and hectic from his drugged activity. For some time he seemed lost in thought. Then he went to the window, and the blind went up

with a click. Half way up the sky, over the clustering roofs, chimneys, and steeples of the city, hung the star.

He looked at it as one might look into the eye of a brave enemy. "You may kill me," he said after a silence. "But I can hold you—and all the universe for that matter—in the grip of this little brain. I would not change even now."

He looked at the little phial. "There will be no need of sleep again," he said. The next day at noon, punctual to the minute, he entered his lecture theater, put his hat on the end of the table as his habit was, and carefully selected a large piece of chalk. It was a joke among his students that he could not lecture without that piece of chalk to fumble in his fingers, and once he had been stricken to impotence by their hiding his supply. He came and looked under his gray eyebrows at the rising tiers of young fresh faces, and spoke with his accustomed studied commonness of phrasing. "Circumstances have arisen—circumstances beyond my control," he said and paused, "which will debar me from completing the course I had designed. It would seem, gentlemen, if I may put the thing clearly and briefly, that—man has lived in vain."

The students glanced at one another. Had they heard aright? Mad? Raised eyebrows and grinning lips there were, but one or two faces remained intent upon his calm gray-fringed face. "It will be interesting," he was saying, "to devote this morning to an exposition, so far as I can make it clear to you, of the calculations that have led me to this conclusion. Let us assume—"

He turned toward the blackboard, meditating a diagram in the way that was usual to him. "What was that about 'lived in vain'?" whispered one student to another. "Listen," said the other, nodding toward the lecturer.

And presently they began to understand.

That night the star rose later, for its proper eastward motion had carried it some way across Leo toward Virgo, and its brightness was so great that the sky became a luminous blue as it rose, and every star and planet was hidden, save only Jupiter near the zenith, Capella, Aldebaran, Sirius, and the pointers of the Bear. It was white and beautiful. In many parts of the world that night a pallid halo encircled it about. It was perceptibly larger; in the clear refractive sky of the tropics it seemed as if it were nearly a quarter of the size of the moon. The frost was still on the ground in England, but the world was as brightly lit as if it were midsummer moonlight. One could see to read quite ordinary print by that cold clear light, and in the cities the lamps burnt yellow and wan.

And everywhere the world was awake that night, and throughout Christendom a somber murmur hung in the keen air over the countryside like the buzzing of the bees in the heather, and this murmurous tumult grew to a clangor in the cities. It was the tolling of the bells in a million belfry towers and steeples, summoning the people to sleep no more, to sin no more, but to gather in their churches and pray. And overhead, growing larger and brighter, as the earth rolled on its way and the night passed, rose the dazzling star.

And the streets and houses were alight in all the cities, the shipyards glared, and whatever roads led

to high country were lit and crowded all night long. And in all the seas about the civilized lands ships with throbbing engines, and ships with bellying sails, crowded with men and living creatures, were standing out to ocean and the north. For already the warning of the master mathematician had been telegraphed over the world, and translated into a hundred tongues. The new planet and Neptune, locked in a fiery embrace, were whirling headlong, ever faster and faster, toward the sun. Already every second this blazing mass flew a hundred miles, and every second its terrific velocity increased. As it flew its course, it must pass a hundred million of miles wide of the earth and scarcely affect it.

But near its destined path, as yet only slightly perturbed, spun the mighty planet Jupiter and his moons sweeping splendid around the sun. Every moment now the attraction between the fiery star and the greatest of the planets grew stronger. And the result of that attraction? Inevitably Jupiter, would be deflected from its orbit to a new elliptical path, and the burning star, swung by his attraction wide of its sunward rush, would "describe a curved path" and perhaps collide with and certainly pass close to, our earth. "Earthquakes, volcanic outbreaks, cyclones, sea waves, floods, and a steady rise in temperature to I know not what limit"—so prophesied the master mathematician.

And overhead, to carry out his words, lonely and cold and livid, blazed the star of the coming doom.

To many who stared at it that night until their eyes ached, it seemed that it was visibly approaching. And that night, too, the weather changed, and the frost that had gripped all Central Europe and France and England softened towards a thaw.

But you must not imagine because I have spoken of people praying through the night and people going aboard ships and people fleeing towards mountainous country that the whole world was already in a terror because of the star. As a matter of fact, use and wont still ruled the world, and save for the talk of idle moments and the splendor of the night, nine human beings out of ten were still busy at their common occupations. In all the cities the shops, save one here and there, opened and closed at their proper hours, the doctor and the undertaker plied their trades, and workers gathered in the factories, soldiers drilled, scholars studied, lovers sought one another, thieves lurked and fled, politicians planned their schemes. The presses of the newspapers roared through the nights, and many a priest of this church and that would not open his holy building to further what he considered a foolish panic.

The newspapers insisted on the lesson of the year 1000—for then, too, people had anticipated the end. The star was no star—mere gas—a comet; and were it a star it could not possibly strike the earth. There was no precedent for such a thing. Common sense was sturdy everywhere, scornful, jesting, a little inclined to persecute the obdurate fearful. That night at 7:15 by Greenwich time the star would be at its nearest to Jupiter. Then the world would see the turn things would take. The master mathematician's grim warnings were treated by many as so much mere elaborate self-advertisement. Common sense at last, a little heated by argument, signified its unalterable convictions by going to bed. So, too, barbarism and savagery, already tired of the novel-

ty, went about their nightly business, and save for a howling dog here and there the beast-world left the star unheeded.

And yet, when at last the watchers in the European states saw the star rise, an hour later, it is true, but no larger than it had been the night before, there were still plenty awake to laugh at the master mathematician—to take the danger as if it had passed.

But hereafter the laughter ceased. The star grew—it grew with a terrible steadiness hour after hour, a little larger each hour, a little nearer the midnight zenith, and brighter and brighter, until it had turned night into day. Had it come straight to the earth instead of in a curved path, had it lost no velocity to Jupiter, it must have leapt the intervening gulf in a day; but as it was it took five days altogether to come by our planet. The next night it had become a third the size of the moon before it set to English eyes, and the thaw was assured.

It rose over America nearly the size of the moon, but blinding white to look at, and hot; and a breath of hot wind blew now with its rising and gathering strength, and in Virginia and Brazil and down the St. Lawrence valley it shone intermittently through a driving reek of thunder clouds, flickering violet lightning, and hail unprecedented. In Manitoba were a thaw and devastating floods. And upon all the mountains of the earth the snow and ice began to melt that night, and all the rivers coming out of high country flowed thick and turbid, and soon—in their upper reaches—with swirling trees and the bodies of beasts and men. They rose steadily, steadily in the ghostly brilliance, and came trickling over their banks at last, behind the flying population of their valleys.

And along the coast of Argentina and up the South Atlantic tides were higher than they had ever been in the memory of man, and the storms drove the waters in many cases scores of miles inland, drowning whole cities. And so great grew the heat during the night that the rising of the sun was like the coming of a shadow. The earthquakes began and grew until all down America from the Arctic Circle to Cape Horn hillsides were sliding, fissures were opening, and houses and walls crumbling to destruction.

China was lit glowing white, but over Japan and Java and all the islands of eastern Asia the great star was a ball of dull red fire because of the steam and smoke and ashes the volcanoes were spouting forth to salute its coming. Above were the lava, hot gases, and ash, and below the seething floods, and the whole earth swayed and rumbled with the earthquake shocks. Soon the immemorial snows of Tibet and the Himalayas were melting and pouring down by ten million deepening converging channels upon the plains of Burma and Hindustan. The tangled summits of the Indian jungles were aflame in a thousand places, and below the hurrying waters around the stems were dark objects that struggled feebly and reflected the blood red tongues of fire. And in ungovernable confusion a multitude of men and women fled down the broad riverways to that one last hope of men—the open sea.

Larger grew the star, and larger, hotter, and brighter with a terrible swiftness now. The tropical ocean had lost its phosphorescence, and the whirl-

ling steam rose in ghostly wreaths from the black waves that plunged incessantly, speckled with storm-tossed ships.

And then came a wonder. It seemed to those who in Europe watched for the rising of the star that the world must have ceased its rotation. In a thousand open spaces of down and upland the people who had fled thither from the floods and the falling houses and sliding slopes of hill watched for that rising in vain. Hour followed hour through a terrible suspense, and the star rose not. Once again men set their eyes upon the old constellations they had counted lost to them forever. In England it was hot and clear overhead, though the ground quivered perpetually; but in the tropics Sirius and Capella and Aldebaran showed through a veil of steam. And when at last the great star rose, near ten hours late, the sun rose close upon it, and in the center of its white heart was a disk of black.

Over Asia the star had begun to fall behind the movement of the sky, and then suddenly, as it hung over India, its light had been veiled. All the plain of India from the mouth of the Indus to the mouths of the Ganges was a shallow waste of shining water that night, out of which rose temples and palaces, mounds and hills, black with people. Every minaret was a clustering mass of people, who fell one by one into the turbid waters as heat and terror overcame them. The whole land seemed a-wailing, and suddenly there swept a shadow across that furnace of despair, and a breath of cold wind, and a gathering of clouds out of the cooling air. Men looking up, nearly blinded, at the star, and saw that black disk creeping across the light. It was the moon, coming between the star and the earth. And even as men cried to God at this respite, out of the east with a strange, inexplicable swiftness sprang the sun. And then star, sun, and moon rushed together across the heavens.

So it was that presently, to the European watchers, star and sun rose close upon each other, drove headlong for a space, and then slower, and at last came to rest, star and sun merged into one glare of flame at the zenith of the sky. The moon no longer eclipsed the star, but was lost to sight in the brilliance of the sky. And though those who were still alive regarded it for the most part with that dull stupidity that hunger, fatigue, heat, and despair engender, there were still men who could perceive the meaning of these signs. Star and earth had been at their nearest, had swung about one another, and the star had passed. Already it was receding, swifter and swifter, in the last stage of its headlong journey downward into the sun.

And then the clouds gathered, blotting out the

vision of the sky; the thunder and lightning wore a garment around the world; all over the earth was such a downpour of rain as men had never seen before; and where the volcanoes flared red against the cloud canopy there descended torrents of mud. Everywhere the waters were pouring off the land, leaving mud stilted ruins, and the earth littered like a storm-worn beach with all that had floated, and the dead bodies of the men and brutes, its children.

For days the water streamed off the land, sweeping away soil and trees and houses in the way and piling huge dikes and scooping out titanic gullies over the countryside. Those were the days of darkness that followed the star and the heat. All through them, and for many weeks and months, the earthquakes continued.

But the star had passed, and men, hunger-driven and gathering courage only slowly, might creep back to their ruined cities, buried granaries, and sodden fields. Such few ships as had escaped the storms of that time came stunned and shattered and sounding their way cautiously through the new marks and shoals of once familiar ports. And as the storms subsided men perceived that everywhere the days were hotter than of yore, and the sun larger, and the moon, shrunk to a third of its former size, took now fourscore days between its new and new.

But of the new brotherhood that grew presently among men, of the saving of laws and books and machines, of the strange change that had come over Iceland and Greenland the shores of Baffin's Bay, so that the sailors coming there presently found them green and gracious, and could scarce believe their eyes, this story does not tell. Nor of the movement of mankind, now that the earth was hotter, northward and southward towards the poles of the earth. It concerns itself only with the coming and the passing of the star.

The Martian astronomers—for there are astronomers on Mars, although they are different beings from men—were naturally profoundly interested by these things. They saw them from their own standpoint, of course. "Considering the mass and temperature of the missile that was flung through our solar system into the sun," one wrote, "it is astonishing what little damage the earth, which it missed so narrowly, has sustained. All the familiar continental markings and the masses of the seas remain intact, and indeed the only difference seems to be a shrinkage of the white discoloration (supposed to be frozen water) round either pole." Which only shows how small the vastest of human catastrophes may seem at a distance of a few million miles.

THE END

— NEXT MONTH —

Two fascinating new stories which you won't forget for a long time:

BLASPHEMER'S PLATEAU, by Alexander Snyder.

THE TELEPATHIC PICK-UP, by Samuel M. Sargent, Jr.

Also these well-known reprints:

THE MOON METAL, by Professor Garrett P. Serviss.

THE MAGNETIC STORM, by Hugo Gernsback, F.R.S.

"WHISPERING ETHER"

By Charles S. Wolfe



I Point It Right At His Head, and Makin' My Voice As Hard As I Can I Says, Tense-like, "You Speak One Word and You'll Eat Your Breakfast in Hell." And Proctor Smiles. Get That? With My Gat Aimed At His Head He Smiles. And, Fellow, When Proctor Smiles It Gives You the Creeps.

I'M NOT a scientist. "Cans" is my line. Safes, you know. "Soup," nitro-glycerine, that kind of thing, get me? "Shoe-maker stick to your last." Them is my sentiments, and I stick to my own trade. But now that they got me tied up in this confounded jail, and I ain't got much to do with my spare time I got a notion to jot down what I know about that Proctor affair that you maybe read about in the papers. Reporters was after me thick when it happened, but I was the silent kid. It pays to keep your mouth shut in the circles I move in.

Proctor's in the bug house. Three alienists, or

AN amazing story by that versatile author, Mr. Wolfe, *The ether is something we know nothing about. But its action and its waves give a basis for the strange mystery we are told of here. It touches on the world of ether waves to which our radio fans are appealing and while this of course is in the realm of abstruse science, we have again in this story, the everyday crude thinker mystified by it all, and this is the history of the world. The intelligence of each of us is very limited, and our habits and ways of thought are only a little more clumsy than our author's characters, whom he uses to bring out as always a wonderful contrast. The story is well worth reading.*

whatever you call those ginks that admit they're sane and prove you're not, pronounced him hopelessly insane. I ain't disputing no jury of my peers. If they say he's a nut, he's a nut, that's all. But—

I didn't get introduced to Proctor in the regular way. We didn't have no mutual acquaintances to slip us the knock-down. It all came about thru me droppin' in one night, casual like, to blow his safe. You might wonder what a yegg would want out of a laboratory safe. Maybe you'll wise up when I tip you it was a contract job. Not my own, see? I'm namin' no names, but there was a gang of big guys that wanted old Proctor's formula for Chero, and thought it would

be cheaper to buy it off me than him. Anyway, I'm after the paper with the makeup of this explosive when I jimmed the laboratory window.

I'm sayin' this right here: Proctor may be a nut, but he's no boob. I was expecting burglar alarms, scientific thief traps, all that kind of stuff. And I was all fixt for an electrified box. Proctor put one over on me just the same. And if he didn't do it with the mind machine, how in Hell else do you account for it?

I was workin' on the old can. She was a fairly respectable affair, and I make up my mind to blow her. I was drillin' away when click goes a switch and the sudden flare of light dazzled me. Were you ever caught working on a guy's safe, brother? No? Well, take it from Oscar, it's like nothing you ever felt before.

Even before I can see right my mind's workin' overtime hunting for a way out. And then I can see again, and there stands Proctor, a long cord trailing behind him and 'phones over his ears like the wireless men. And I notice with joy that he ain't got a gat—not that I can see.

Anyway, I risk it. Just as quick as I can draw I flashes my automatic. I point it right at his head, and makin' my voice as hard as I can I says, tense-like, "You speak one word and you'll eat your breakfast in Hell."

And Proctor smiles. Get that? With my gat at his head he smiles. And, fellow, when Proctor smiles it gives you the creeps. And then he says—s' help me—I'm not bullyin' you—"Put your gun away, my man, its not loaded."

Can you beat that? It wasn't either, but how did he know it? Bluffing? That's what I thought, and I sees his bet and raises him. "You move," I growls, "and you'll discover you're a bad guesser."

He smiles again. Say, I can feel my flesh creep yet. "It's not loaded," he says, very calm, and he walks a few steps toward me. I don't shoot. You can't, you know, with an empty gun, and I see that he's called my bluff.

"You win," I says. "It ain't. But I can beat the life out of you with it."

That smile again. His hand goes to his pocket. He pulls out a little bottle, just about the size they sell you pills in. "That, my friend," he says, "is full of Chero. If I just toss it at your feet, you'll never attempt to steal a formula again on this planet."

Does he win? He owns the building. "Call the officer," and I chucks the gun on the floor. "I'll go quietly."

"Sensible," he remarks; "very sensible. You possess judgment, even if you do lack courage. Who sent you here?"

"Call in the bulls," I growls. "I'm not squealing."

He takes no notice. "I know who sent you. I knew you were coming."

"Look here," I blurts, "if that gang framed me, I'll talk. They sent for me, I didn't go to them. I—"

"No one informed me, if that's what you mean," he says, coldly. "It is not necessary for any one to inform me of anything. The world is an open book to me."

(That's just what he told that gang of saw-bones afterwards, and they said he was looney. But if they had seen him as I seen him—)

He was talking again. "My man," I wriggled when he spoke, "the men for whom you work are imbeciles. I have named my price for Chero, and they don't want to pay it. They believe they can wrest it from me by force or trickery. You are their first emissary, and it is my wish that you be their last. I am going to convince them that it is useless to attempt anything of the kind with me. I am not going to turn you over to the police. I am going to show you something, and then I am going to send you back to your masters to tell them what you have seen. After that," he smiled, "I don't think I shall be troubled by them. Come!"

He stalked into the next room, me at his heels. There wasn't much in that room—just a table covered with apparatus. I have seen a wireless set. It looked something like that, only—well there was something different about it.

He pointed to it. Oh! I can see him yet, with his flashing eyes, and his big dome. "There," says he, "is the mind machine. And you, a criminal, are the first man to see it except its creator."

I'm getting on my feet again, and not so scared, and so I gazes at it curious. "What is it, Doc?" I asks.

"It reads your thoughts," he says, just as solemn as an owl.

That's right, laugh. I don't blame you. I grinned myself. He saw me grin, and he turned on me like a tiger.

"Dolt," he hollers. "Clod! You doubt. Pig! Your type has retarded the progress of mankind throughout the ages. You sneer—you imbecile!"

Well, just then I'm like the doctors. "A nut!" I thinks, "and loose with that bottle of Chero in his pocket!" And it's up to me to soothe him.

"How does it work?" I asks, to gain time. When you're in a room with a nut that's nursin' a bottle of H. E. your one thought is to go away from there. And this particular nut don't want me to. But I have hopes.

By dumb luck I hits the right chord. "How does it work?" gets results. Right away he seems to forget he's mad. He seems to forget I'm a yegg. He gets kind of dreamy, and he runs a caressin' hand over the shiny brass of the nearest instrument.

"Simple," he says, "very simple. It is based on the electro-magnetic wave and the conducting ether theories." It's over my head, but I listen. "Have you ever considered just what happens when you think intensely? By an effort of what you call the Will, you concentrate on what you are thinking. Emotion, too, plays its part. You are intensely angry, intensely worried, intensely interested. This concentrating acts physically on the brain. There is a call on the heart for more blood. And the heart responds, sending a thicker, faster stream to the affected locality. Now what happens?" He turns to me like my teacher used to do in school when there was a question to be answered.

"Search me," I murmurs.

But he doesn't even see me, I guess. "The increased stream, rushing at an unusual rate, rubs against the walls of the veins and arteries of the head, producing friction."

"I see," I says, politely. But I don't.

"This friction is the physical result of the mental action. Your purely mental process has, by the membership of the rushing blood and its attending

friction, been transformed into, or has produced, a physical manifestation."

His voice sank to a whisper. "It is this fact that makes my great invention possible. The friction set up produces faint currents of electricity. It is Nature's own generator. The currents are faint, weak, but they are there. And they vary in intensity in proportion as the rushing blood stream surges and ebbs. Thus they have imprinted on them all the characteristics of the thought that gives rise to them. They vary in the individual. Some minds can generate a current one hundred—yes, one thousand—times greater than others, but all minds generate to some extent.

"And these electrical impulses are thrown out into space in wave trains, exactly as the radio telegraph throws them out. This accounts for the phenomena of mental telepathy. If conditions are just right, the receiving mind in perfect tune with the transmitting mind, and sensitive enough to interpret the received impulses, you have accomplished telepathy. All that remained for me to do was to measure the intensity and characteristics of the generated current, its frequency—and it is high—and——"

He paused and fixt me with that fishy stare. I didn't know just what to say, so I took a Brody. "And what, Doc? Slip it to me quick."

"*And the length of the emitted wave,*" he comes back at me, triumphantly. "It might be one millionth of a meter or it might be one million meters. Or it might be any length between those extremes. Or beyond them, for that matter. I succeeded in making these measurements."

He laughed. Or, rather, he laughed and snarled all at once. I'm telling you straight, fellow, your hair stands on end when Proctor laughs like that.

"I fancy some of your radio experts would gape if they were permitted to see my wave meter. I believe it would cause some excitement in the laboratories of Lodge or Marconi. I—Proctor—I measured these waves which, of course, means that I found a detector for them. Our friend DeForest thinks that he has a monopoly on ultra-sensitive detectors. Proctor's detector is to the audion what a stop watch is to a wheel barrow!

"And the frequency. It is beyond the limits of audibility, as that term is understood. I wound phones that will render the received signals audible. And the task was done."

Most of that stuff had gone over, but like a lightning flash the big idea burst thru' my shrapnel-proof cranium. I fairly stuttered as I got his drift. I'll bet my eyes popped as I gaped at that machine. "Good God!" I spluttered. "Do you mean that that thing can hear you think?"

Proctor smiled the nearest to a human smile that I ever saw on his mug. "You have glimmerings of intelligence," he said, in a gratified way; "I mean just that."

And then he went off his handle again. "And I mean," he roared, "that you are to go back to the scum that sent you and tell them that it is useless for them to plot against me, for I can hear their very thoughts as they think them. I can read their miserable souls! That's how I knew you were coming here to-night! That's how I knew that your lethal weapon contained no charge! And," he seized me and shook me until my heels nearly broke my neck, "And that's how I know, you swine, that even now you don't know whether to believe me or not."

He released me and tore the telephone things from off his ears. "Here!" he bellowed, clamping them over my ears, "here! Listen, and be convinced."

He wheeled to the table and whirled knobs and dials. A continuous humming and buzzing sounded in the 'phones.

And then it happened. Listen to me close. I know they labeled Proctor "squirrel food" for telling them less than this, but— This was *July of 1914*. Get that?

Suddenly something like a voice—no, not like a voice, either—like a voice inside my own head, if you can get me, said masterfully, *with a strong German accent, "Serbia will, because she dare not submit. France must, because she will see my hand behind it. England must as a last desperate effort to save herself. But my armies will grind them like grain in the mill. And then——"*

Proctor tore the 'phones from me. I was like a stuffed doll and I never raised a mitt. He grabbed me, and it was just like being caught in the jaws of a vise. "You have heard," he thundered. "Now go."

The last thing I remember was that he heaved me toward the door. I remember spinning toward it. And that's all.

The next thing I remember is waking up in that hospital ward. It was July of 1914 when Proctor chucked me, and it was late August when I found myself in that hospital.

As near as I can learn I missed the door, hit the wall and a bottle of that Chero stuff got knocked off a shelf. They dug Proctor and I out of the ruins, and we were both pretty well messed up.

Proctor raved about his ruined mind machine, and it got him a pass to the squirrel cage.

If you read the papers at the time you'll remember Proctor wanted me to back him up, but I wouldn't talk. Least said, easiest remedied.

Now you got all I know about it. I spilled it once to Gentleman Joe, a high-browed crook, who soaked up all they pass you at Harvard when he was young. Joe said maybe Proctor fooled me with a camouflaged phonograph.

Maybe he did. I might think so myself if it had happened in *September* instead of *July, 1914*. Get me?

The RUNAWAY SKYSCRAPER

By Murray Leinster



. . . And before the wigwam were two or three brown-skinned Indians, utterly petrified with astonishment. Behind the first wigwam were others, painted like the first with daubs of brightly colored clay. From them, too, Indians issued, and stared in incredulous amazement, their eyes growing wider and wider.



HE whole thing started when the clock on the Metropolitan Tower began to run backward. It was not a graceful proceeding. The hands had been moving onward in their customary deliberate fashion, slowly and thoughtfully, but suddenly the people in the offices near the clock's face heard an ominous creaking and groaning. There was a slight, hardly discernible shiver through the tower, and then something gave with a crash. The big hands on the clock began to move backward.

Immediately after the crash all the creaking and groaning ceased, and instead, the usual quiet again hung over everything. One or two of the occupants of the upper offices put their heads out into the halls, but the elevators were running as usual, the lights were burning, and all seemed calm and peaceful. The clerks and stenographers went back to their ledgers and typewriters, the business callers returned to the discussion of their errands, and the ordinary course of business was resumed.

Arthur Chamberlain was dictating a letter to Estelle Woodward, his sole stenographer. When the crash came he paused, listened, and then resumed his task.

It was not a difficult one. Talking to Estelle Woodward was at no time an onerous duty, but it must be admitted that Arthur Chamberlain found it difficult to keep his conversation strictly upon his business.

He was at this time engaged in dictating a letter to his principal creditors, the Gary & Milton Company, explaining that their demand for the immediate payment of the instalment then due upon his office furniture was untimely and unjust. A young and budding engineer in New York never has too much money, and when he is young as Arthur Chamberlain was, and as fond of pleasant company, and not too fond of economizing, he is liable to find all demands for payment untimely and he usually considers them unjust as well. Arthur finished dictating the letter and sighed.

"Miss Woodward," he said regretfully, "I am afraid I shall never make a successful man."

Miss Woodward shook her head vaguely. She did not seem to take his remark very seriously, but then, she had learned never to take any of his remarks seriously. She had been puzzled at first by his manner of treating everything with a half-joking pessimism, but soon ignored it.

She was interested in her own problems. She had suddenly decided that she was going to be an old maid, and it bothered her. She had discovered that she did not like any one well enough to marry, and she was in her twenty-second year.

She was not a native of New York, and the few young men she had met there she did not care for. She had regretfully decided she was too finicky, too fastidious, but could not seem to help herself. She

could not understand their absorption in boxing and baseball and she did not like the way they danced.

She had considered the matter and decided that she would have to reconsider her former opinion of women who did not marry. Heretofore she had thought there must be something the matter with them. Now she believed that she would come to their own estate, and probably for the same reason. She could not fall in love and she wanted to.

She read all the popular novels and thrilled at the love-scenes contained in them, but when any of the young men she knew became in the slightest degree sentimental she found herself bored, and disgusted with herself for being bored. Still, she could not help it, and was struggling to reconcile herself to a life without romance.

She was far too pretty for that, of course, and Arthur Chamberlain often longed to tell her how pretty she really was, but her abstracted air held him at arms' length.

He lay back at ease in his swivel-chair and considered, looking at her with unfeigned pleasure. She did not notice it, for she was so much absorbed in her own thoughts that she rarely noticed anything he said or did when they were not in the line of her duties.

"Miss Woodward," he repeated, "I said I think I'll never make a successful man. Do you know what that means?"

She looked at him mutely, polite inquiry in her eyes.

"It means," he said gravely, "that I am going broke. Unless something turns up in the next three weeks, or a month at the latest, I'll have to get a job."

"And that means—" she asked.

"All this will go to pot," he explained with a sweeping gesture. "I thought I'd better tell you as much in advance as I could."

"You mean you're going to give up your office—and me?" she asked, a little alarmed.

"Giving up you will be the harder of the two," he said with a smile, "but that's what it means. You'll have no difficulty finding a new place, with three weeks in which to look for one, but I'm sorry."

"I'm sorry, too, Mr. Chamberlain," she said, her brow puckered.

She was not really frightened, because she knew she could get an-

other position, but she became aware of rather more regret than she had expected.

There was silence for a moment.

"Jove!" said Arthur, suddenly. "It's getting dark, isn't it?"

It was. It was growing dark with unusual rapidity. Arthur went to his window and looked out.

"Funny," he remarked in a moment or two. "Things don't look just right, down there, somehow. There are very few people about."

WE have all heard of and read about the Einstein theory, which involves the use in its calculations of the mysterious "fourth dimension." Here our author gives a wonderfully effective picture of what the fourth dimension did in the annihilation of time, in the wiping out of the centuries, where it brings a company of twentieth century business men and women to a time centuries back from the days of modern New York—they are transferred with great rapidity of receding time to the days when Indians were the only inhabitants of Manhattan, until at last the recession of the centuries ceases and gives them pause for a while. The modern skyscraper has accompanied them on their way, but problems of food and support have to be worked out for them in their new position in the ages. As last they evolve a way to return, to get their skyscraper back to familiar old Madison Square. Read and see how they do it.

He watched in growing amazement. Lights came on in the streets below, but none of the buildings lighted up. It grew darker and darker.

"It shouldn't be dark at this hour!" Arthur exclaimed.

Estelle went to the window by his side.

"It looks awfully queer," she agreed. "It must be an eclipse or something."

They heard doors open in the hall outside, and Arthur ran out. The halls were beginning to fill with excited people.

"What on earth's the matter?" asked a worried stenographer.

"Probably an eclipse," replied Arthur. "Only it's odd we didn't read about it in the papers."

He glanced along the corridor. No one else seemed better informed than he, and he went back into his office.

Estelle turned from the window as he appeared. "The streets are deserted," she said in a puzzled tone. "What's the matter? Did you hear?"

Arthur shook his head and reached for the telephone.

"I'll call up and find out," he said confidently. He held the receiver to his ear. "What the—" he exclaimed. "Listen to this!"

A small sized roar was coming from the receiver. Arthur hung up and turned a blank face upon Estelle.

"Look!" she said suddenly, and pointed out of the window.

All the city was now lighted up, and such of the signs as they could see were brilliantly illumined. They watched in silence. The streets once more seemed filled with vehicles. They darted along, their headlamps lighting up the roadway brilliantly. There was, however, something strange even about their motion. Arthur and Estelle watched in growing amazement and perplexity.

"Are—are you seeing what I am seeing?" asked Estelle breathlessly. "I see them *going backward!*"

Arthur watched and collapsed into a chair.

"For the love of Mike!" he exclaimed softly.

Rotation of the Earth Reversed

HE was roused by another exclamation from Estelle.

"It's getting light again," she said.

Arthur rose and went eagerly to the window. The darkness was becoming less intense, but in a way Arthur could hardly credit.

Far to the west, over beyond the Jersey hills—easily visible from the height at which Arthur's office was located—a faint light appeared in the sky, grew stronger and then took on a reddish tint. That, in turn, grew deeper, and at last the sun appeared, rising unconcernedly *in the west*.

Arthur gasped. The streets below continued to be thronged with people and motor-cars. The sun was traveling with extraordinary rapidity. It rose overhead, and as if by magic the streets were thronged with people. Every one seemed to be running at top-speed. The few teams they saw moved at a breakneck pace—backward! In spite of the suddenly topsy-turvy state of affairs there seemed to be no accidents.

Arthur put his hand to his head.

"Miss Woodward," he said pathetically, "I'm

afraid I've gone crazy. Do you see the same things I do?"

Estelle nodded. Her eyes wide open.

"What is the matter?" she asked helplessly.

She turned again to the window. The square was almost empty once more. The motor-cars still traveling about the streets were going so swiftly they were hardly visible. Their speed seemed to increase steadily. Soon it was almost impossible to distinguish them, and only a grayish blur marked their paths along Fifth Avenue and Twenty-third Street.

It grew dusk, and then rapidly dark. As their office was on the western side of the building they could not see the sun had sunk in the east, but subconsciously they realized that this must be the case.

In silence they watched the panorama grow black except for the street-lamps, remain thus for a time, and then suddenly spring into brilliantly illuminated activity.

Again this lasted for a little while, and the west once more began to glow. The sun rose somewhat more hastily from the Jersey hills and began to soar overhead, but very soon darkness fell again. With hardly an interval the city became illuminated, and the west grew red once more.

"Apparently," said Arthur, steadying his voice with a conscious effort, "there's been a cataclysm somewhere, the direction of the earth's rotation has been reversed, and its speed immensely increased. It seems to take only about five minutes for a rotation now."

As he spoke darkness fell for the third time. Estelle turned from the window with a white face.

"What's going to happen?" she cried.

"I don't know," answered Arthur. "The scientist fellows tell us if the earth were to spin fast enough the centrifugal force would throw us all off into space. Perhaps that's what's going to happen."

Estelle sank into a chair and stared at him, appalled. There was a sudden explosion behind them. With a start, Estelle jumped to her feet and turned. A little gilt clock over her typewriter-desk lay in fragments. Arthur hastily glanced at his own watch.

"Great bombs and little cannon-balls!" he shouted. "Look at this!"

His watch trembled and quivered in his hand. The hands were going around so swiftly it was impossible to watch the minute-hand, and the hour-hand traveled like the wind.

While they looked, it made two complete revolutions. In one of them the glory of daylight had waxed, waned, and vanished. In the other, darkness reigned except for the glow from the electric light overhead.

There was a sudden tension and catch in the watch. Arthur dropped it instantly. It flew to pieces before it reached the floor.

"If you've got a watch," Arthur ordered swiftly, "stop it this instant!"

Estelle fumbled at her wrist. Arthur tore the watch from her hand and threw open the case. The machinery inside was going so swiftly it was hardly visible. Relentlessly, Arthur jabbed a pen-holder in the works. There was a sharp click, and the watch was still.

Arthur ran to the window. As he reached it the sun rushed up, day lasted a moment, there was darkness, and then the sun appeared again.

"Miss Woodward!" Arthur ordered suddenly, "look at the ground!"

Estelle glanced down. The next time the sun flashed into view she gasped.

The ground was white with snow!

"What has happened?" she demanded, terrified. "Oh, what has happened?"

Arthur fumbled at his chin awkwardly, watching the astonishing panorama outside. There was hardly any distinguishing between the times the sun was up and the times it was below now, as the darkness and light followed each other so swiftly the effect was the same as one of the old flickering motion-pictures.

As Arthur watched, this effect became more pronounced. The tall Fifth Avenue Building across the way began to disintegrate. In a moment, it seemed, there was only a skeleton there. Then that vanished, story by story. A great cavity in the earth appeared, and then another building became visible, a smaller, brown-stone, unimpressive structure.

With bulging eyes Arthur stared across the city. Except for the flickering, he could see almost clearly now.

He no longer saw the sun rise and set. There was merely a streak of unpleasantly brilliant light across the sky. Bit by bit, building by building, the city began to disintegrate and become replaced by smaller, dingier buildings. In a little while those began to disappear and leave gaps where they vanished.

Arthur strained his eyes and looked far downtown. He saw a forest of masts and spars along the waterfront for a moment and when he turned his eyes again to the scenery near him it was almost barren of houses, and what few showed were mean, small residences, apparently set in the midst of farms and plantations.

Estelle was sobbing.

"Oh, Mr. Chamberlain," she cried. "What is the matter? What has happened?"

Arthur had lost his fear of what their fate would be in his absorbing interest in what he saw. He was staring out of the window, wide-eyed, lost in the sight before him. At Estelle's cry, however, he reluctantly left the window and patted her shoulder awkwardly.

"I don't know how to explain it," he said uncomfortably, "but it's obvious that my first surmise was all wrong. The speed of the earth's rotation can't have been increased, because if it had to the extent we see, we'd have been thrown off into space long ago. But—have you read anything about the Fourth Dimension?"

Estelle shook her head hopelessly.

"Well, then, have you ever read anything by Wells? The 'Time Machine,' for instance?"

Again she shook her head.

"I don't know how I'm going to say it so you'll understand, but time is just as much a dimension as length and breadth. From what I can judge, I'd say there has been an earthquake, and the ground has settled a little with our building on it, only instead of settling down toward the center of the earth, or sidewise, it's settled in this fourth dimension."

"But what does that mean?" asked Estelle incomprehendingly.

"If the earth had settled down, we'd have been lower. If it had settled to one side we'd have been moved one way or another, but as it's settled back in the Fourth Dimension, we're going back in time."

"Then—"

"We're in a runaway skyscraper, bound for some time back before the discovery of America!"

The Seasons Are Reversed in Order

IT was very still in the office. Except for the flickering outside everything seemed very much as usual. The electric light burned steadily, but Estelle was sobbing with fright and Arthur was trying vainly to console her.

"Have I gone crazy?" she demanded between her sobs.

"Not unless I've gone mad, too," said Arthur soothingly. The excitement had quite a soothing effect upon him. He had ceased to feel afraid, but was simply waiting to see what had happened. "We're way back before the founding of New York now, and still going strong."

"Are you sure that's what has happened?"

"If you'll look outside," he suggested, "you'll see the seasons following each other in reverse order. One moment the snow covers all the ground, then you catch a glimpse of autumn foliage, then summer follows, and next spring."

Estelle glanced out of the window and covered her eyes.

"Not a house," she said despairingly. "Not a building. Nothing, nothing, nothing!"

Arthur slipped his arm about her and patted hers comfortingly.

"It's all right," he reassured her. "We'll bring up presently, and there we'll be. There's nothing to be afraid of."

She rested her head on his shoulder and sobbed hopelessly for a little while longer, but presently quieted. Then, suddenly, realizing that Arthur's arm was about her and that she was crying on his shoulder, she sprang away, blushing crimson.

Arthur walked to the window.

"Look there!" he exclaimed, but it was too late. "I'll swear to it I saw the Half-Moon, Hudson's ship," he declared excitedly. "We're way back now, and don't seem to be slackening up, either."

Estelle came to the window by his side. The rapidly changing scene before her made her gasp. It was no longer possible to distinguish night from day.

A wavering streak, moving first to the right and then to the left, showed where the sun flashed across the sky.

"What makes the sun wobble so?" she asked.

"Moving north and south of the equator," Arthur explained casually. "When it's farthest south—to the left—there's always snow on the ground. When it's farthest right it's summer. See how green it is?"

A few moments' observation corroborated his statement.

"I'd say," Arthur remarked reflectively, "that it takes about fifteen seconds for the sun to make the round trip from farthest north to farthest south." He felt his pulse. "Do you know the normal rate of the heart-beat? We can judge time that way. A clock will go all to pieces, of course."

"Why did your watch explode—and the clock?" "Running forward in time unwinds a clock, doesn't it?" asked Arthur. "It follows, of course, that when you move it backward in time it winds up. When you move it too far back, you wind it so tightly that the spring just breaks to pieces."

He paused a moment, his fingers on his pulse.

"Yes, it takes about fifteen seconds for all the four seasons to pass. That means we're going backward in time about four years a minute. If we go on at this rate in another hour we'll be back in the time of the Northmen, and will be able to tell if they did discover America, after all."

"Funny we don't hear any noises," Estelle observed. She had caught some of Arthur's calmness.

"It passes so quickly that though our ears hear it, we don't separate the sounds. If you'll notice, you do hear a sort of humming. It's very high-pitched, though."

Estelle listened, but could hear nothing.

"No matter," said Arthur. "It's probably a little higher than your ears will catch. Lots of people can't hear a bat squeak."

"I never could," said Estelle. "Out in the country, where I come from, other people could hear them, but I couldn't."

They stood a while in silence, watching.

"When are we going to stop?" asked Estelle uneasily. "It seems as if we're going to keep on indefinitely."

"I guess we'll stop all right," Arthur reassured her. "It's obvious that whatever it was, it only affected our own building, or we'd see some other one with us. It looks like a fault or a flaw in the rock the building rests on. And that can only give so far."

Estelle was silent for a moment.

"Oh, I can't be sane!" she burst out semi-hysterically. "This can't be happening!"

"You aren't crazy," said Arthur sharply. "You're sane as I am. Just something queer is happening. Buck up. Say your multiplication tables. Say anything you know. Say something sensible and you'll know you're all right. But don't get frightened now. There'll be plenty to get frightened about later."

The grimness in his tone alarmed Estelle.

"What are you afraid of?" she asked quickly.

"Time enough to worry when it happens," Arthur retorted briefly.

"You—you aren't afraid we'll go back before the beginning of the world, are you?" asked Estelle in sudden access of fright.

Arthur shook his head.

"Tell me," said Estelle more quietly, getting a grip on herself. "I won't mind. But please tell me."

Arthur glanced at her. Her face was pale, but there was more resolution in it than he had expected to find.

"I'll tell you, then," he said reluctantly. "We're going back a little faster than we were, and the flaw seems to be a deeper one than I thought. At the roughest kind of an estimate, we're all of a thousand years before the discovery of America now, and I think nearer three or four. And we're gaining speed all the time. So, though I am as sure as I can be of anything that we'll stop this cave-in eventually, I don't know where. It's like

a crevasse in the earth opened by an earthquake which may be only a few feet deep, or it may be hundreds of yards, or even a mile or two. We started off smoothly. We're going at a terrific rate. *What will happen when we stop?*"

Estelle caught her breath.

"What?" she asked quietly.

"I don't know," said Arthur in an irritated tone, to cover his apprehension. "How could I know?"

Estelle turned from him to the window again.

"Look!" she said, pointing.

The flickering had begun again. While they stared, hope springing up once more in their hearts, it became more pronounced. Soon they could distinctly see the difference between day and night.

They were slowing up! The white snow on the ground remained there for an appreciable time, autumn lasted quite a while. They could catch the flashes of the sun as it made its revolutions now, instead of its seeming like a ribbon of fire. At last day lasted all of fifteen or twenty minutes.

It grew longer and longer. Then half an hour, then an hour. The sun wavered in midheaven and was still.

Far below them, the watchers in the tower of the skyscraper saw trees swaying and bending in the wind. Though there was not a house or a habitation to be seen and a dense forest covered all of Manhattan Island, what of the world as they could see looked normal. Whatever, or rather in whatever epoch of time they were, they had arrived.

Indians Occupy Madison Square

ARTHUR caught at Estelle's arm and the two made a dash for the elevators. Fortunately one was standing still, the door open, on their floor. The elevator-boy had deserted his post and was looking with all the rest, at the strange landscape that surrounded them.

No sooner had the pair reached the car, however, than the boy came hurrying along the corridor, three or four other people following him also at a run. Without a word the boy rushed inside, the others crowded after him, and the car shot downward, all of the newcomers panting from their sprint.

Theirs was the first car to reach the bottom. They rushed out and to the western door.

Here, where they had been accustomed to see Madison Square spread out before them, a clearing of perhaps half an acre in extent showed itself. Where their eyes instinctively looked for the dark bronze fountain, near which soap-box orators aforesaid held sway, they saw a tent, a wigwam of hides and bark gaily painted. And before the wigwam were two or three brown-skinned Indians, utterly petrified with astonishment.

Behind the first wigwam were others, painted like the first with daubs of brightly colored clay. From them, too, Indians issued, and stared in incredulous amazement, their eyes growing wider and wider. When the group of white people confronted the Indians there was a moment's deathlike silence. Then, with a wild yell, the redskins broke and ran, not stopping to gather together their belongings, nor pausing for even a second glance at the weird strangers who invaded their domain.

Arthur took two or three deep breaths of the

fresh air and found himself even then comparing its quality with that of the city. Estelle stared about her with unbelieving eyes. She turned and saw the great bulk of the office building behind her, then faced this small clearing with a virgin forest on its farther side.

She found herself trembling from some undefined cause. Arthur glanced at her. He saw the trembling and knew she would have a fit of nerves in a moment if something did not come up demanding instant attention.

"We'd better take a look at this village," he said in an off-hand voice. "We can probably find out how long ago it is from the weapons and so on."

He grasped her arm firmly and led her in the direction of the tents. The other people, left behind, displayed their emotions in different ways. Two or three of them—women—sat frankly down on the steps and indulged in tears of bewilderment, fright and relief in a peculiar combination defying analysis. Two or three of the men swore, in shaken voices.

Meantime, the elevators inside the building were rushing and clanging, and the hall filled with a white-faced mob, desperately anxious to find out what had happened and why. The people poured out of the door and stared about blankly. There was a peculiar expression of doubt on every one of their faces. Each one was asking himself if he were awake, and having proved that by pinches, openly administered, the next query was whether they had gone mad.

Arthur led Estelle cautiously among the tents.

The village contained about a dozen wigwams. Most of them were made of strips of birch-bark, cleverly overlapping each other, the seams cemented with gum. All had hide flaps for doors, and one or two were built almost entirely of hides, sewed together with strips of sinew.

Arthur made only a cursory examination of the village. His principal motive in taking Estelle there was to give her some mental occupation to ward off the reaction from the excitement of the cataclysm.

He looked into one or two of the tents and found merely couches of hides, with minor domestic utensils scattered about. He brought from one tent a bow and quiver of arrows. The workmanship was good, but very evidently the maker had no knowledge of metal tools.

Arthur's acquaintance with archeological subjects was very slight, but he observed that the arrowheads were clipped, and not rubbed smooth. They were attached to the shafts with strips of gut or tendon.

Arthur was still pursuing his investigation when a sob from Estelle made him stop and look at her.

"Oh, what are we going to do?" she asked tearfully. "What are we going to do? Where are we?"

"You mean, when are we," Arthur corrected with a grim smile. "I don't know. Way back before the discovery of America, though. You can see in everything in the village that there isn't a trace of European civilization. I suspect that we are several thousand years back. I can't tell, of course, but this pottery makes me think so. See this bowl?"

He pointed to a bowl of red clay lying on the ground before one of the wigwams.

"If you'll look, you'll see that it isn't really pot-

tery at all. It's a basket that was woven of reeds and then smeared with clay to make it fire-resisting. The people who made that didn't know about baking clay to make it say put. When America was discovered nearly all the tribes knew something about pottery."

"But what are we going to do?" Estelle tearfully insisted.

"We're going to muddle along as well as we can," answered Arthur cheerfully, "until we can get back to where we started from. Maybe the people back in the twentieth century can send a relief party after us. When the skyscraper vanished it must have left a hole of some sort, and it may be possible for them to follow us down."

"If that's so," said Estelle quickly, "why can't we climb up it without waiting for them to come after us?"

Arthur scratched his head. He looked across the clearing at the skyscraper. It seemed to rest very solidly on the ground. He looked up. The sky seemed normal.

"To tell the truth," he admitted, "there doesn't seem to be any hole. I said that more to cheer you up than anything else."

Estelle clenched her hands tightly and took a grip on herself.

"Just tell me the truth," she said quietly. "I was rather foolish, but tell me what you honestly think."

Arthur eyed her keenly.

"In that case," he said reluctantly, "I'll admit we're in a pretty bad fix. I don't know what has happened, how it happened, or anything about it. I'm just going to keep on going until I see a way clear to get out of this mess. There are two thousand of us people, more or less, and among all of us we must be able to find a way out."

Estelle had turned very pale.

"We're in no great danger from Indians," went on Arthur thoughtfully, "or from anything else that I know of—except one thing."

"What is that?" asked Estelle quickly.

Arthur shook his head and led her back toward the skyscraper, which was now thronged with the people from all the floors who had come down to the ground and were standing excitedly about the concourse asking each other what had happened.

Arthur led Estelle to one of the corners.

"Wait for me here," he ordered. "I'm going to talk to this crowd."

He pushed his way through until he could reach the confectionery and news-stand in the main hallway. Here he climbed up on the counter and shouted:

"People, listen to me! I'm going to tell you what's happened!"

In an instant there was dead silence. He found himself the center of a sea of white faces, every one contorted with fear and anxiety.

"To begin with," he said confidently, "there's nothing to be afraid of. We're going to get back to where we started from! I don't know how, yet, but we'll do it. Don't get frightened. Now I'll tell you what's happened."

He rapidly sketched out for them, in words as simple as he could make them, his theory that a flaw in the rock on which the foundations rested had developed and let the skyscraper sink, not downward, but into the Fourth Dimension.

"I'm an engineer," he finished. "What nature can do, we can imitate. Nature let us into this hole. We'll climb out. In the mean time, matters are serious. We needn't be afraid of not getting back. We'll do that. What we've got to fight is—starvation!"

Planning For the Food-Supply

"WE'VE got to fight starvation, and we've got to beat it," Arthur continued doggedly. "I'm telling you this now because I want you to begin right at the beginning and pitch in to help. We have very little food and a lot of us to eat it. First, I want some volunteers to help with rationing. Next, I want every ounce of food in this place put under guard where it can be served to those who need it most. Who will help?"

The swift succession of shocks had paralyzed the faculties of most of the people there, but half a dozen moved forward. Among them was a single gray-haired man with an air of accustomed authority. Arthur recognized him as the president of the bank on the ground floor.

"I don't know who you are or if you're right in saying what has happened," said the gray-haired man. "But I see something's got to be done, and—well, for the time being I'll take your word for what that is. Later on we'll thrash this matter out."

Arthur nodded. He bent over and spoke in a low voice to the gray-haired man, who moved away.

"Grayson, Walters, Terhune, Simpson, and Forsythe come here," the gray-haired man called at a doorway.

A number of men began to press dazedly toward him. Arthur resumed his harangue.

"You people—those of you who aren't too dazed to think—are remembering there's a restaurant in the building and no need to starve. You're wrong. There are nearly two thousand of us here. That means six thousand meals a day. We've got to have nearly ten tons of food a day, and we've got to have it at once."

"Hunt," someone suggested.

"I saw Indians," some one else shouted. "Can we trade with them?"

"We can hunt and we can trade with the Indians," Arthur admitted, "but we need food by the ton—by the ton, people! The Indians don't store up supplies, and, besides, they're much too scattered to have a surplus for us. But we've got to have food. Now, how many of you know anything about hunting, fishing, trapping, or any possible way of getting food?"

There were a few hands raised—pitifully few. Arthur saw Estelle's hand up.

"Very well," he said. "Those of you who raised your hands then come with me up on the second floor and we'll talk it over. The rest of you try to conquer your fright, and don't go outside for a while. We've got some things to attend to before it will be quite safe for you to venture out. And keep away from the restaurant. There are armed guards over that food. Before we pass it out indiscriminately, we'll see to it there's more for to-morrow and the next day."

He stepped down from the counter and moved toward the stairway. It was not worth while to use the elevator for the ride of only one floor. Estelle

managed to join him, and they mounted the steps together.

"Do you think we'll pull through all right?" she asked quietly.

"We've got to!" Arthur told her, setting his chin firmly. "We've simply got to."

The gray-haired president of the bank was waiting for them at the top of the stairs.

"My name is Van Deventer," he said, shaking hands with Arthur, who gave his own name.

"Where shall our emergency council sit?" he asked.

"The bank has a board room right over the safety vault. I dare say we can accommodate everybody there—everybody in the council, anyway."

Arthur followed into the board-room, and the others trooped in after him.

"I'm just assuming temporary leadership," Arthur explained, "because it's imperative some things be done at once. Later on we can talk about electing officials to direct our activities. Right now we need food. How many of you can shoot?"

About a quarter of the hands were raised. Estelle's was among the number.

"And how many are fishermen?"

A few more went up.

"What do the rest of you do?"

There was a chorus of "gardener." "I have a garden in my yard," "I grow peaches in New Jersey," and three men confessed that they raised chickens as a hobby.

"We'll want you gardeners in a little while. Don't go yet. But the most important are huntsmen and fishermen. Have any of you weapons in your offices?"

A number had revolvers, but only one man had a shotgun and shells.

"I was going on my vacation this afternoon straight from the office," he explained, "and have all my vacation tackle."

"Good man!" Arthur exclaimed. "You'll go after the heavy game."

"With a shotgun?" the sportsman asked, aghast.

"If you get close to them a shotgun will do as well as anything, and we can't waste a shell on every bird or rabbit. Those shells of yours are precious. You other fellows will have to turn fishermen for a while. Your pistols are no good for hunting."

"The watchmen at the bank have riot guns," said Van Deventer, "and there are one or two repeating-rifles there. I don't know about ammunition."

"Good! I don't mean about the ammunition, but about the guns. We'll hope for the ammunition. You fishermen get to work to improvise tackle out of anything you can get hold of. Will you do that?"

A series of nods answered his question.

"Now for the gardeners. You people will have to roam through the woods in company with the hunters and locate anything in the way of edibles that grows. Do all of you know what wild plants look like? I mean wild fruits and vegetables that are good to eat."

A few of them nodded, but the majority looked dubious. The consensus of opinion seemed to be that they would try. Arthur seemed a little discouraged.

"I guess you're the man to tell about the restaurant," Van Deventer said quietly. "And as this is the food commission, or something of that sort,

everybody here will be better for hearing it. Anyway, everybody will have to know it before night. I took over the restaurant as you suggested, and posted some of the men from the bank that I knew I could trust about the doors. But there was hardly any use in doing it.

"The restaurant stocks up in the afternoon, as most of its business is in the morning and at noon. It only carries a day's stock of foodstuffs, and the—the cataclysm, or whatever it was, came at three o'clock. There is practically nothing in the place. We couldn't make sandwiches for half the women that are caught with us, let alone the men. Everybody will go hungry to-night. There will be no breakfast to-morrow, nor anything to eat until we either make arrangements with the Indians for some supplies or else get food for ourselves."

Arthur leaned his jaw on his hand and considered. A slow flush crept over his cheek. He was getting his fighting blood up.

At school, when he began to flush slowly his schoolmates had known the symptom and avoided his wrath. Now he was growing angry with mere circumstances, but it would be none the less unfortunate for those circumstances.

"Well," he said at last deliberately, "we've got to— What's that?"

There was a great creaking and groaning. Suddenly a sort of vibration was felt under foot. The floor began to take on a slight slant.

"Great Heaven!" some one cried. "The building's turning over and we'll be buried in the ruins!"

The tilt of the floor became more pronounced. An empty chair slid to one end of the room. There was a crash.

Arthur and Estelle in Conference

ARTHUR woke to find some one tugging at his shoulders, trying to drag him from beneath the heavy table, which had wedged itself across his feet and pinned him fast, while a flying chair had struck him on the head.

"Oh, come and help," Estelle's voice was calling deliberately. "Somebody come and help! He's caught in here!"

She was sobbing in a combination of panic and some unknown emotion.

"Help me, please!" she gasped, then her voice broke despondently, but she never ceased to tug ineffectually at Chamberlain, trying to drag him out of the mass of wreckage.

Arthur moved a little, dazedly.

"Are you alive?" she called anxiously. "Are you alive? Hurry, oh, hurry and wriggle out. The building's falling to pieces."

"I'm all right," Arthur said weakly. "You get out before it all comes down."

"I won't leave you," she declared. "Where are you caught? Are you badly hurt? Hurry, please hurry!"

Arthur stirred, but could not loosen his feet. He half-rolled over, and the table moved as if it had been precariously balanced, and slid heavily to one side. With Estelle still tugging at him, he managed to get to his feet on the slanting floor and started about him.

Arthur continued to stare about.

"No danger," he said weakly. "Just the floor

of the one room gave way. The aftermath of the rock-flaw."

He made his way across the splintered flooring and piled-up chairs.

"We're on top of the safe-deposit vault," he said. "That's why we didn't fall all the way to the floor below. I wonder how we're going to get down?"

Estelle followed him, still frightened for fear of the building falling upon them. Some of the long floor-boards stretched over the edge of the vault and rested on a tall, bronze grating that protected the approach to the massive strong-box. Arthur tested them with his foot.

"They seem to be pretty solid," he said tentatively.

His strength was coming back to him every moment. He had been no more than stunned. He walked out on the planking to the bronze grating and turned.

"If you don't get dizzy, you might come on," he said. "We can swing down the grille here to the floor."

Estelle followed gingerly and in a moment they were safely below. The corridor was quite empty.

"When the crash came," Estelle explained, her voice shaking with the reaction from her fear of a moment ago, "every one thought the building was coming to pieces, and ran out. I'm afraid they've all run away."

"They'll be back in a little while," Arthur said quietly.

They went along the big marble corridor to the same western door, out of which they had first gone to see the Indian village. As they emerged into the sunlight they met a few of the people who had already recovered from their panic and were returning.

A crowd of respectable size gathered in a few moments, all still pale and shaken, but coming back to the building which was their refuge. Arthur leaned wearily against the cold stone. It seemed to vibrate under his touch. He turned quickly to Estelle.

"Feel this!" he exclaimed.

She did so.

"I've been wondering what that rumble was," she said. "I've been hearing it ever since we landed here, but didn't understand where it came from."

"You hear a rumble?" Arthur asked, puzzled. "I can't hear anything."

"It isn't as loud as it was, but I hear it," Estelle insisted. "It's very deep, like the lowest possible bass note of an organ."

"You couldn't hear the shrill whistle when we were coming here," Arthur exclaimed suddenly, "and you can't hear the squeak of a bat. Of course your ears are pitched lower than usual, and you can hear sounds that are lower than I can hear. Listen carefully. Does it sound in the least like a liquid rushing through somewhere?"

"Y-yes," said Estelle hesitatingly. "Somehow, I don't quite understand how, it gives me the impression of a tidal flow or something of that sort."

Arthur rushed indoors. When Estelle followed him she found him excitedly examining the marble floor about the base of the vault.

"It's cracked," he said excitedly. "It's cracked! The vault rose all of an inch!"

Estelle looked and saw the cracks.

"What does that crack in the floor mean?" "It means we're going to get back where we belong," Arthur cried jubilantly. "It means I'm on the track of the whole trouble. It means everything's going to be all right."

He prowled about the vault exultantly, noting exactly how the cracks in the flooring ran and seeing in each a corroboration of his theory.

"I'll have to make some inspections in the cellar," he went on happily, "but I'm nearly sure I'm on the right track and can figure out a corrective."

"How soon can we hope to start back?" asked Estelle eagerly.

Arthur hesitated, then a great deal of the excitement ebbed from his face, leaving it rather worried and stern.

"It may be a month, or two months, or a year," he answered gravely. "I don't know. If the first thing I try will work, it won't be long. If we have to experiment, I don't guess how long we may be. But"—his chin set firmly—"we're going to get back."

Estelle looked at him speculatively. Her own expression grew a little worried, too.

"But in a month," she said dubiously, "we—there is hardly any hope of our finding food for two thousand people for a month, is there?"

"We've got to," Arthur declared. "We can't hope to get that much food from the Indians. It will be days before they'll dare to come back to their village, if they ever come. It will be weeks before we can hope to have them earnestly at work to feed us, and that's leaving aside the question of how we'll communicate with them, and how we'll manage to trade with them. Frankly, I think everybody is going to have to draw his belt tight before we get through—if we do. Some of us will get along, anyway."

Estelle's eyes opened wide as the meaning of his last sentence penetrated her mind.

"You mean—that all of us won't—"

"I'm going to take care of you," Arthur said gravely, "but there are liable to be lively doings around here when people begin to realize they're really in a tight fix for food. I'm going to get Van Deventer to help me organize a police band to enforce martial law. We mustn't have any disorder, that's certain, and I don't trust a city-bred man in a pinch unless I know him."

He stooped and picked up a revolver from the floor, left there by one of the bank watchmen when he fled, in the belief that the building was falling.

Wild Pigeons Dash Against the Building

ARTHUR stood at the window of his office and stared out toward the west. The sun was setting, but upon what a scene!

Where, from this same window Arthur had seen the sun setting behind the Jersey hills, all edged with the angular roofs of factories, with their chimneys emitting columns of smoke, he now saw the same sun sinking redly behind a mass of luxuriant foliage. And where he was accustomed to look upon the tops of high buildings—each entitled to the name of "skyscraper"—he now saw miles and miles of waving green branches.

The wide Hudson flowed on placidly, all unruffled

by the arrival of this strange monument upon its shores—the same Hudson Arthur knew as a busy thoroughfare of puffing steamers and chugging launches. Two or three small streams wandered unconcernedly across the land that Arthur had known as the most closely built-up territory on earth. And far, far below him—Arthur had to lean well out of his window to see it—stood a collection of tiny wigwams. Those small bark structures represented the original metropolis of New York.

His telephone rang. Van Deventer was on the wire. The exchange in the building was still working. Van Deventer wanted Arthur to come down to his private office. There were still a great many things to be settled—the arrangements for commandeering offices for sleeping quarters for the women, and numberless other details. The men who seemed to have best kept their heads were gathering there to settle upon a course of action.

Arthur glanced out of the window again before going to the elevator. He saw a curiously compact dark cloud moving swiftly across the sky to the west.

"Miss Woodward," he said sharply, "What is that?"

Estelle came to the window and looked.

"They are birds," she told him. "Birds flying in a group. I've often seen them in the country, though never as many as that."

"How do you catch birds?" Arthur asked her. "I know about shooting them, and so on, but we haven't guns enough to count. Could we catch them in traps, do you think?"

"I wouldn't be surprised," said Estelle thoughtfully. "But it would be hard to catch many."

"Come down-stairs," directed Arthur. "You know as much as any of the men here, and more than most, apparently. We're going to make you show us how to catch things."

Estelle smiled, a trifle wanly. Arthur led the way to the elevator. In the car he noticed that she looked distressed.

"What's the matter?" he asked. "You aren't really frightened, are you?"

"No," she answered shakily, "but—I'm rather upset about this thing. It's so—so terrible, somehow, to be back here, thousands of miles, or years, away from all one's friends and everybody."

"Please"—Arthur smiled encouragingly at her—"please count me your friend, won't you?"

She nodded, but blinked back some tears. Arthur would have tried to hearten her further, but the elevator stopped at their floor. They walked into the room where the meeting of cool heads was to take place.

No more than a dozen men were in there talking earnestly but dispiritedly. When Arthur and Estelle entered Van Deventer came over to greet them.

"We've got to do something," he said in a low voice. "A wave of homesickness has swept over the whole place. Look at those men. Every one is thinking about his family and contrasting his cozy fire side with all that wilderness outside."

"You don't seem to be worried," Arthur observed with a smile.

Van Deventer's eyes twinkled.

"I'm a bachelor," he said cheerfully, "and I live in a hotel. I've been longing for a chance to see some real excitement for thirty years. Business

has kept me from it up to now, but I'm enjoying myself hugely."

Estelle looked at the group of dispirited men.

"We'll simply have to do something," she said with a shaky smile. "I feel just as they do. This morning I hated the thought of having to go back to my boarding-house to-night, but right now I feel as if the odor of cabbage in the hallway would seem like heaven."

Arthur led the way to the flat-topped desk in the middle of the room.

"Let's settle a few of the more important matters," he said in a businesslike tone. "None of us has any authority to act for the rest of the people in the tower, but so many of us are in a state of blue funk that those who are here must have charge for a while. Anybody any suggestions?"

"Housing," answered Van Deventer promptly. "I suggest that we draft a gang of men to haul all the upholstered settees and rugs that are to be found on one floor, for the women to sleep on."

"M-m. Yes. That's a good idea. Anybody a better plan?"

No one spoke. They all still looked much too homesick to take any great interest in anything but they began to listen more or less half-heartedly.

"I've been thinking about coal," said Arthur. "There's undoubtedly a supply in the basement, but I wonder if it wouldn't be well to cut the lights off most of the floors, only lighting up the ones we're using."

"That might be a good idea later," Estelle said quietly, "but light is cheering, somehow, and every one feels so blue that I wouldn't do it to-night. Tomorrow they'll begin to get up their resolution again, and you can ask them to do things."

"If we're going to starve to death," one of the other men said gloomily, "we might as well have plenty of light to do it by."

"We aren't going to starve to death," retorted Arthur sharply. "Just before I came down I saw a great cloud of birds, greater than I had ever seen before. When we get at those birds—"

"When," echoed the gloomy one.

"They were pigeons," Estelle explained. "They shouldn't be hard to snare or trap."

"I usually have my dinner before now," the gloomy one protested, "and I'm told I won't get anything to-night."

The other men began to straighten their shoulders. The peevishness of one of their number seemed to bring out their latent courage.

"Well, we've got to stand it for the present," one of them said almost philosophically. "What I'm most anxious about is getting back. Have we any chance?"

Arthur nodded emphatically.

"I think so. I have a sort of idea as to the cause of our sinking into the Fourth Dimension, and when that is verified, a corrective can be looked for and applied."

"How long will that take?"

"Can't say," Arthur replied frankly. "I don't know what tools, what materials, or what workmen we have, and what's rather more to the point, I don't even know what work will have to be done. The pressing problem is food."

"Oh, bother the food," some one protested impatiently. "I don't care about myself. I can go hun-

gry to-night. I want to get back to my family."

"That's all that really matters," a chorus of voices echoed.

"We'd better not bother about anything else unless we find we can't get back. Concentrate on getting back," one man stated more explicitly.

"Look here," said Arthur incisively. "You've a family, and so have a great many of the others in the tower, but your family and everybody else's family has got to wait. As an inside limit, we can hope to begin to work on the problem of getting back when we're sure there's nothing else going to happen. I tell you quite honestly that I think I know what is the direct cause of this catastrophe. And I'll tell you even more honestly that I think I'm the only man among us who can put this tower back where it started from. And I'll tell you most honestly of all that any attempt to meddle at this present time with the forces that let us down here will result in a catastrophe considerably greater than the one that happened to-day."

"Well, if you're sure—" some one began reluctantly.

"I am so sure that I'm going to keep to myself the knowledge of what will start those forces to work again," Arthur said quietly. "I don't want any impatient meddling. If we start them too soon God only knows what will happen."

Organizing the Food Supply

VAN Deventer was eyeing Arthur Chamberlain keenly.

"It isn't a question of your wanting pay in exchange for your services in putting us back, is it?" he asked coolly.

Arthur turned and faced him. His face began to flush slowly. Van Deventer put up one hand.

"I beg your pardon. I see."

"We aren't settling the things we came here for," Estelle interrupted.

She had noted the threat of friction and hastened to put in a diversion. Arthur relaxed.

"I think that as a beginning," he suggested, "we'd better get sleeping arrangements completed. We can get everybody together somewhere, I dare say, and then secure volunteers for the work."

"Right," Van Deventer was anxious to make amends for his blunder of a moment before. "Shall I send the bank watchmen to go on each floor in turn and ask everybody to come down-stairs?"

"You might start them," Arthur said. "It will take a long time for every one to assemble."

Van Deventer spoke into the telephone on his desk. In a moment he hung up the receiver.

"They're on their way," he said.

Arthur was frowning to himself and scribbling in a note-book.

"Of course," he announced abstractedly, "the pressing problem is food. We've quite a number of fishermen, and a few hunters. We've got to have a lot of food at once, and everything considered, I think we'd better count on the fishermen. At sunrise we'd better have some people begin to dig bait and wake our anglers. They'd better make their tackle to-night, don't you think?"

There was a general nod.

"We'll announce that, then. The fishermen will go to the river under guard of the men we have

who can shoot. I think what Indians there are will be much too frightened to try to ambush any of us, but we'd better be on the safe side. They'll keep together and fish at nearly the same spot, with our hunters patrolling the woods behind them, taking pot-shots-at game, if they see any. The fishermen should make more or less of a success, I think. The Indians weren't extensive fishers that I ever heard of, and the river ought fairly to swarm with fish."

He closed his note-book.

"How many weapons can we count on altogether?" Arthur asked Van Deventer.

"In the bank, about a dozen riot-guns and half a dozen repeating rifles. Elsewhere I don't know. Forty or fifty men said they had revolvers, though."

"We'll give revolvers to the men who go with the fishermen. The Indians haven't heard firearms and will run at the report, even if they dare attack our men."

"We can send out the gun-armed men as hunters," some one suggested, "and send gardeners with them to look for vegetables and such things."

"We'll have to take a sort of census, really," Arthur suggested, "finding what every one can do and getting him to do it."

"I never planned anything like this before," Van Deventer remarked, "and I never thought I should, but this is much more fun than running a bank."

Arthur smiled.

"Let's go and have our meeting," he said cheerfully.

But the meeting was a gloomy and despairing affair. Nearly every one had watched the sun set upon a strange, wild landscape. Hardly an individual among the whole two thousand of them had ever been out of sight of a house before in his or her life. To look out at a vast, untouched wilderness where hitherto they had seen the most highly civilized city on the globe would have been startling and depressing enough in itself, but to know that they were alone in a whole continent of savages and that there was not, indeed, in all the world a single community of people they could greet as brothers was terrifying.

Few of them thought so far, but there was actually—if Arthur's estimate of several thousand years' drop back through time was correct—there was actually no other group of English-speaking people in the world. The English language was yet to be invented. Even Rome, the synonym for antiquity of culture, might still be an obscure village inhabited by a band of tatterdemalions under the leadership of an upstart Romulus.

Soft in body as these people were, city-bred and unaccustomed to face other than the most conventionalized emergencies of life, they were terrified. Hardly one of them had even gone without a meal in all his life. To have the prospect of having to earn their food, not by the manipulation of figures in a book, or by expert juggling of profits and prices, but by literal wrestling of that food from its source in the earth or stream was a really terrifying thing for them.

In addition, every one of them was bound to the life of modern times by a hundred ties. Many of them had families, a thousand years away. All had interests, engrossing interests, in modern New York.

One young man felt an anxiety that was really

ludicrous because he had promised to take his sweetheart to the theater that night, and if he did not come she would be very angry. Another was to have been married in a week. Some of the people were, like Van Deventer and Arthur, so situated that they could view the episode as an adventure, or, like Estelle, who had no immediate fear because all her family was provided for without her help and lived far from New York, so they would not learn of the catastrophe for some time. Many, however, felt instant and pressing fear for the families whose expenses ran always so close to their incomes that the disappearance of the breadwinner for a week would mean actual want or debt. There are very many such families in New York.

The people, therefore, that gathered hopelessly at the call of Van Deventer's watchmen were dazed and spiritless. Their excitement after Arthur's first attempt to explain the situation to them had evaporated. They were no longer keyed up to a high pitch by the startling thing that had happened to them.

Nevertheless, although only half comprehending what had actually occurred, they began to realize what that occurrence meant. No matter where they might go over the whole face of the globe, they would always be aliens and strangers. If they had been carried away to some unknown shore, some wilderness far from their own land, they might have thought of building ships to return to their homes. They had seen New York vanish before their eyes, however. They had seen their civilization disappear while they watched.

They were in a barbarous world. There was not, for example, a single safety match on the whole earth except those in the runaway skyscraper.

A Food-Riot in the Building

ARTHUR and Van Deventer, in turn with the others of the cooler heads, thundered at the apathetic people, trying to waken them to the necessity for work. They showered promises of inevitable return to modern times, they pledged their honor to the belief that a way would ultimately be found by which they would all yet find themselves safely back home again.

The people, however, had seen New York disintegrate, and Arthur's explanation sounded like some wild dream of an imaginative novelist. Not one person in all the gathering could actually realize that his home might yet be waiting for him, though at the same time he felt a pathetic anxiety for the welfare of its inmates.

Every one was in a turmoil of contradictory beliefs. On the one hand they knew that all of New York could not be actually destroyed and replaced by a splendid forest in the space of a few hours, so the accident or catastrophe must have occurred to those in the tower, and, on the other hand, they had seen all of New York vanish by bits and fragments, to be replaced by a smaller and dingier town, had beheld that replaced in turn, and at last had landed in the midst of this forest.

Every one, too, began to feel an unusual and uncomfortable sensation of hunger. It was a mild discomfort as yet, but few of them had experienced it before without an immediate prospect of assuaging the craving, and the knowledge that there was

no food to be had somehow increased the desire for it. They were really in a pitiful state.

Van Deventer spoke encouragingly, and then asked for volunteers for immediate work. There was hardly any response. Every one seemed sunk in despondency. Arthur then began to talk straight from the shoulder and succeeded in rousing them a little, but every one was still rather too frightened to realize that work could help at all.

In desperation the dozen or so men who had gathered in Van Deventer's office went about among the gathering and simply selected men at random, ordering them to follow and begin work. This began to awaken the crowd, but they awakened to fear rather than resolution. They were city-bred, and unaccustomed to face the unusual or the alarming.

Arthur noted the new restlessness, but attributed it to growing uneasiness rather than selfish panic. He was rather pleased that they were outgrowing their apathy. When the meeting had come to an end he felt satisfied that by morning the latent resolution among the people would have crystallized and they would be ready to work earnestly and intelligently on whatever tasks they were directed to undertake.

He returned to the ground floor of the building feeling much more hopeful than before. Two thousand people all earnestly working for one end are hard to down even when faced with such a task as confronted the inhabitants of the runaway skyscraper. Even if they were never able to return to modern times they would still be able to form a community that might do much to hasten the development of civilization in other parts of the world.

His hope received a rude shock when he reached the great hallway on the lower floor. There was a fruit and confectionery stand here, and as Arthur arrived at the spot, he saw a surging mass of men about it. The keeper of the stand looked frightened, but was selling off his stock as fast as he could make change. Arthur forced his way to the counter.

"Here," he said sharply to the keeper of the stand, "stop selling this stuff. It's got to be held until we can dole it out where it's needed."

"I—I can't help myself," the keeper said. "They're takin' it anyway."

"Get back there," Arthur cried to the crowd. "Do you call this decent, trying to get more than your share of this stuff? You'll get your portion tomorrow. It is going to be divided up."

"Go to hell!" some one panted. "You c'n starve if you want to, but I'm goin' to look out f'r myself."

The men were not really starving, but had been put into a panic by the plain speeches of Arthur and his helpers, and were seizing what edibles they could lay hands upon in preparation for the hunger they had been warned to expect.

Arthur pushed against the mob, trying to thrust them away from the counter, but his very effort intensified their panic. There was a quick surge and a crash. The glass front of the show-case broke in.

In a flash of rage Arthur struck out viciously. The crowd paid not the slightest attention to him, however. Every man was too panic-stricken, and too intent on getting some of this food before it was all gone to bother with him.

Arthur was simply crushed back by the bodies of the forty or fifty men. In a moment he found him-

self alone amid the wreckage of the stand, with the keeper wringing his hands over the remnants of his goods.

Van Deventer ran down the stairs.

"What's the matter?" he demanded as he saw Arthur nursing a bleeding hand cut on the broken glass of the show-case.

"Bolsheviki!" answered Arthur with a grim smile. "We woke up some of the crowd too successfully. They got panic-stricken and started to buy out this stuff here. I tried to stop them, and you see what happened. We'd better look to the restaurant, though I doubt if they'll try anything else just now."

He followed Van Deventer up to the restaurant floor. There were picked men before the door, but just as Arthur and the bank president appeared two or three white-faced men went up to the guards and started low-voiced conversations.

Arthur reached the spot in time to forestall bribery.

Arthur collared one man, Van Deventer another, and in a moment the two were sent reeling down the hallway.

"Some fools have got panic-stricken!" Van Deventer explained to the men before the doors in a casual voice, though he was breathing heavily from the unaccustomed exertion. "They've smashed up the fruitstand on the ground floor and stolen the contents. It's nothing but blue funk! Only, if any of them start to gather around here, hit them first and talk it over afterward. You'll do that?"

"We will!" the men said heartily.

"Shall we use our guns?" asked another hopefully. Van Deventer grinned.

"No," he replied, "we haven't any excuse for that yet. But you might shoot at the ceiling, if they get excited. They're just frightened!"

He took Arthur's arm, and the two walked toward the stairway again.

"Chamberlain," he said happily, "tell me why I've never had as much fun as this before!"

Arthur smiled a bit wearily.

"I'm glad you're enjoying yourself!" he said. "I'm not. I'm going outside and walk around. I want to see if any cracks have appeared in the earth anywhere. It's dark, and I'll borrow a lantern down in the fire-room, but I want to find out if there are any more developments in the condition of the building."

Theorizing On the Strange Occurrence

DESPITE his preoccupation with his errand, which was to find if there were other signs of the continued activity of the strange forces that had lowered the tower through the Fourth Dimension into the dim and unrecorded years of aboriginal America, Arthur could not escape the fascination of the sight that met his eyes. A bright moon shone overhead and silvered the white sides of the tower, while the brightly-lighted windows of the offices within glittered like jewels set into the shining shaft.

From his position on the ground he looked into the dimness of the forest on all sides. Black obscurity had gathered beneath the dark masses of moonlit foliage. The tiny birch-bark teepees of the now deserted Indian village glowed palely. Above,

the stars looked calmly down at the accusing finger of the tower pointing upward, as if in reproach at their indifference to the savagery that reigned over the whole earth.

Like a fairy tower of jewels the building rose. Alone among a wilderness of trees and streams it towered in a strange beauty; moonlit to silver, lighted from within to a mass of brilliant gems, it stood serenely still.

Arthur, carrying his futile lantern about its base, felt his own insignificance as never before. He wondered what the Indians must think. He knew there must be hundreds of eyes fixed upon the strange sight—fixed in awe-stricken terror or superstitious reverence upon this unearthly visitor to their hunting grounds.

A tiny figure, dwarfed by the building whose base he skirted, Arthur moved slowly about the vast pile. The earth seemed not to have been affected by the vast weight of the tower.

Arthur knew, however, that long concrete piles reached far down to bedrock. It was these piles that had sunk into the Fourth Dimension, carrying the building with them.

Arthur had followed the plans with great interest when the Metropolitan was constructed. It was an engineering feat, and in the engineering periodicals, whose study was a part of Arthur's business, great space had been given to the building and the methods of its construction.

While examining the earth carefully he went over his theory of the cause for the catastrophe. The whole structure must have sunk at the same time, or it, too, would have disintegrated, as the other buildings had appeared to disintegrate. Mentally, Arthur likened the submergence of the tower in the oceans of time to an elevator sinking past the different floors of an office building. All about the building the other sky-scrappers of New York had seemed to vanish. In an elevator, the floors one passes seem to rise upward.

Carrying out the analogy to its logical end, Arthur reasoned that the building itself had no more cause to disintegrate, as the buildings it passed seemed to disintegrate, than the elevator in the office building would have cause to rise because its surroundings seemed to rise.

Within the building, he knew, there were strange stirrings of emotions. Queer currents of panic were running about, throwing the people to an fro as leaves are thrown about by a current of wind. Yet, underneath all those undercurrents of fear, was a rapidly growing resolution, strengthened by an increasing knowledge of the need to work.

Men were busy even then shifting all possible comfortable furniture to a single story for the women in the building to occupy. The men would sleep on the floor for the present. Beds of boughs could be improvised on the morrow. At sunrise on the following morning many men would go to the streams to fish, guarded by other men. All would be frightened, no doubt, but there would be a grim resolution underneath the fear. Other men would wander about to hunt.

There was little likelihood of Indians approaching for some days, at least, but when they did come Arthur meant to avoid hostilities by all possible means. The Indians would be fearful of their strange visitors, and it should not be difficult to

convince them that friendliness was safest, even if they displayed unfriendly desires.

The pressing problem was food. There were two thousand people in the building, soft-bodied and city-bred. They were unaccustomed to hardship, and could not endure what more primitive people would hardly have noticed.

They must be fed, but first they must be taught to feed themselves. The fishermen would help, but Arthur could only hope that they would prove equal to the occasion. He did not know what to expect from them. From the hunters he expected but little. The Indians were wary hunters, and game would be shy if not scarce.

The great cloud of birds he had seen at sunset was a hopeful sign. Arthur vaguely remembered stories of great flocks of wood-pigeons which had been exterminated, as the buffalo was exterminated. As he considered the remembrance became more clear.

They had flown in huge flocks which nearly darkened the sky. As late as the forties of the nineteenth century they had been an important article of food, and had glutted the market at certain seasons of the year.

Estelle had said the birds he had seen at sunset were pigeons. Perhaps this was one of the great flocks. If it were really so, the food problem would be much lessened, provided a way could be found to secure them. The ammunition in the tower was very limited, and a shell could not be found for every bird that was needed, nor even for every three or four. Great traps must be devised, or bird-lime might possibly be produced. Arthur made a mental note to ask Estelle if she knew anything of bird-lime.

A vague, humming roar, altering in pitch, came to his ears. He listened for some time before he identified it as the sound of the wind playing upon the irregular surfaces of the tower. In the city the sound was drowned by the multitude of other noises, but here Arthur could hear it plainly.

He listened a moment, and became surprised at the number of night noises he could hear. In New York he had closed his ears to incidental sounds from sheer self-protection. Somewhere he heard the ripple of a little spring. As the idea of a spring came into his mind, he remembered Estelle's description of the deep-toned roar she had heard.

He put his hand on the cold stone of the building. There was still a vibrant quivering of the rock. It was weaker than before, but was still noticeable.

He drew back from the rock and looked up into the sky. It seemed to blaze with stars, far more stars than Arthur had ever seen in the city, and more than he had dreamed existed.

As he looked, however, a cloud seemed to film a portion of the heavens. The stars still showed through it, but they twinkled in a peculiar fashion that Arthur could not understand.

He watched in growing perplexity. The cloud moved very swiftly. Thin as it seemed to be, it should have been silvery from the moonlight, but the sky was noticeably darker where it moved. It advanced toward the tower and seemed to obscure the upper portion. A confused motion became visible among its parts. Wisps of it whirled away from the brilliantly lighted tower, and then returned swiftly toward it.

Arthur heard a faint tinkle, then a musical scraping, which became louder. A faint scream sounded, then another. The tinkle developed into the sound made by breaking glass, and the scraping sound became that of the broken fragments as they rubbed against the sides of the tower in their fall.

The scream came again. It was the frightened cry of a woman. A soft body struck the earth not ten feet from where Arthur stood, then another, and another.

Arthur and Estelle in Conference Again

ARTHUR urged the elevator boy to greater speed. They were speeding up the shaft as rapidly as possible, but it was not fast enough. When they at last reached the height at which the excitement seemed to be centered, the car stopped with a jerk and Arthur dashed down the hall.

Half a dozen frightened stenographers stood there, huddled together.

"What's the matter?" Arthur demanded. Men were running from the other floors to see what the trouble was.

"The—the windows broke, and—and something flew in at us!" one of them gasped. There was a crash inside the nearest office and the women screamed again.

Arthur drew a revolver from his pocket and advanced to the door. He quickly threw it open, entered, and closed it behind him. Those left out in the hall waited tensely.

There was no sound. The women began to look even more frightened. The men shuffled their feet uneasily, and looked uncomfortably at one another. Van Deventer appeared on the scene, puffing a little from his haste.

The door opened again and Arthur came out. He was carrying something in his hands. He had put his revolver aside and looked somewhat foolish but very much delighted.

"The food question is settled," he said happily. "Look!"

He held out the object he carried. It was a bird, apparently a pigeon of some sort. It seemed to have been stunned, but as Arthur held it out it stirred, then struggled, and in a moment was flapping wildly in an attempt to escape.

"It's a wood-pigeon," said Arthur. "They must fly after dark sometimes. A big flock of them ran afoul of the tower and were dazed by the lights. They've broken a lot of windows, I dare say, but a great many of them ran into the stonework and were stunned. I was outside the tower, and when I came in they were dropping to the ground by hundreds. I didn't know what they were then, but if we wait twenty minutes or so I think we can go out and gather up our supper and breakfast and several other meals, all at once."

Estelle had appeared and now reached out her hands for the bird.

"I'll take care of this one," she said. "Wouldn't it be a good idea to see if there aren't some more stunned in the other offices?"

In half an hour the electric stoves of the restaurant were going at their full capacity. Men, cheerfully excited men now, were bringing in pigeons by armfuls, and other men were skinning them. There was no time to pluck them, though a great

many of the women were busily engaged in that occupation.

As fast as the birds could be cooked they were served out to the impatient but much cheered cast-aways, and in a little while nearly every person in the place was walking casually about the halls with a roasted, broiled, or fried pigeon in his hands. The ovens were roasting pigeons, the frying-pans were frying them, and the broilers were loaded down with the small but tender birds.

The unexpected solution of the most pressing question cheered every one amazingly. Many people were still frightened, but less frightened than before. Worry for their families still oppressed a great many, but the removal of the fear of immediate hunger led them to believe that the other problems before them would be solved, too, and in as satisfactory a manner.

Arthur had returned to his office with four broiled pigeons in a sheet of wrapping-paper. As he somehow expected, Estelle was waiting there.

"Thought I'd bring lunch up," he announced. "Are you hungry?"

"Starving!" Estelle replied, and laughed.

The whole catastrophe began to become an adventure. She bit eagerly into a bird. Arthur began as hungrily on another. For some time neither spoke a word. At last, however, Arthur waved the leg of his second pigeon toward his desk.

"Look what we've got here!" he said.

Estelle nodded. The stunned pigeon Arthur had first picked up was tied by one foot to a paper-weight.

"I thought we might keep him for a souvenir," she suggested.

"You seem pretty confident we'll get back, all right," Arthur observed. "It was surely lucky those blessed birds came along. They've heartened up the people wonderfully!"

"Oh, I knew you'd manage somehow!" said Estelle confidently.

"I manage?" Arthur repeated, smiling. "What have I done?"

"Why, you've done everything," affirmed Estelle stoutly. "You've told the people what to do from the very first, and you're going to get us back."

Arthur grinned, then suddenly his face grew a little more serious.

"I wish I were as sure as you are," he said. "I think we'll be all right, though, sooner or later."

"I'm sure of it," Estelle declared with conviction. "Why, you—"

"Why I?" asked Arthur again. He bent forward in his chair and fixed his eyes on Estelle's. She looked up, met his gaze and stammered:

"You—you do things," she finished lamely.

"I'm tempted to do something now," Arthur said. "Look here, Miss Woodward, you've been in my employ for three or four months. In all that time I've never had anything but the most impersonal comments from you. Why the sudden change?"

The twinkle in his eyes robbed his words of any impertinence.

"Why, I really—I really suppose I never noticed you before," said Estelle.

"Please notice me hereafter," said Arthur. "I have been noticing you. I've been doing practically nothing else."

Estelle flushed again. She tried to meet Arthur's

eyes and failed. She bit desperately into her pigeon drumstick, trying to think of something to say.

"When we get back," went on Arthur meditatively, "I'll have nothing to do—no work or anything. I'll be broke and out of a job."

Estelle shook her head emphatically. Arthur paid no attention.

"Estelle," he said, smiling, "would you like to be out of a job with me?"

Estelle turned crimson.

"I'm not very successful," Arthur went on soberly. "I'm afraid I wouldn't make a very good husband, I'm rather worthless and lazy!"

"You aren't," broke in Estelle; "you're—you're—"

Arthur reached over and took her by the shoulders.

"What?" he demanded.

She would not look at him, but she did not draw away. He held her from him for a moment.

"What am I?" he demanded again. Somehow he found himself kissing the tips of her ears. Her face was buried against his shoulder.

"What am I?" he repeated sternly.

Her voice was muffled by his coat.

"You're—you're dear!" she said.

There was an interlude of about a minute and a half, then she pushed him away from her.

"Don't!" she said breathlessly. "Please don't!"

"Aren't you going to marry me?" he demanded. Still crimson, she nodded shyly. He kissed her again.

"Please don't!" she protested.

She fondled the lapels of his coat, quite content to have his arms about her.

"Why mayn't I kiss you if you're going to marry me?" Arthur demanded.

She looked up at him with an air of demure primness.

"You—you've been eating pigeon," she told him in mock gravity, "and—and your mouth is greasy!"

A Geyser Effects A Happy Return

IT was two weeks later. Estelle looked out over the now familiar wild landscape. It was much the same when she looked far away, but near by there were great changes.

A cleared trail led through the woods to the waterfront, and a raft of logs extended out into the river for hundreds of feet. Both sides of the raft were lined with busy fishermen—men and women, too. A little to the north of the base of the building a huge mound of earth smoked sullenly. The coal in the cellar had given out and charcoal had been found to be the best substitute they could improvise. The mound was where the charcoal was made.

It was heart-breaking work to keep the fires going with charcoal, because it burned so rapidly in the powerful draft of the furnaces, but the original fire-room gang had been recruited to several times its original number from among the towerites, and the work was divided until it did not seem hard.

As Estelle looked down two tiny figures sauntered across the clearing from the woods with a heavy animal slung between them. One was using a gun as a walking-stick. Estelle saw the flash of the sun on its polished metal barrel.

There were a number of Indians in the clearing,

watching with wide-open eyes the activities of the whites. Dozens of birch-bark canoes dotted the Hudson, each with its load of fishermen, industriously working for the white people. It had been hard to overcome the fear in the Indians, and they still paid superstitious reverence to the whites, but fair dealings, coupled with a constant readiness to defend themselves, had enabled Arthur to institute a system of trading for food that had so far proved satisfactory.

The whites had found spare electric-light bulbs valuable currency in dealing with the redmen. Picture-wire, too, was highly prized. There was not a picture left hanging in any of the offices. Metal paper-knives bought huge quantities of provisions from the eager Indian traders, and the story was current in the tower that Arthur had received eight canoe-loads of corn and vegetables in exchange for a broken-down typewriter. No one could guess what the savages wanted with the typewriter, but they had carted it away triumphantly.

Estelle smiled tenderly to herself as she remembered how Arthur had been the leading spirit in all the numberless enterprises in which the castaways had been forced to engage. He would come to her in a spare ten minutes, and tell her how everything was going. He seemed curiously boylike in those moments.

Sometimes he would come straight from the fire-room—he insisted on taking-part in all the more arduous duties—having hastily cleaned himself for her inspection, snatch a hurried kiss and then go off, laughing to help chop down trees for the long fishing-raft. He had told them how to make charcoal, had taken a leading part in establishing and maintaining friendly relations with the Indians, and was now down in the deepest sub-basement, working with a gang of volunteers to try to put the building back where it belonged.

Estelle had said, after the collapse of the flooring in the board-room, that she heard a sound like the rushing of waters. Arthur, on examining the floor where the safe-deposit vault stood, found it had risen an inch. On these facts he had built up his theory. The building, like all modern skyscrapers, rested on concrete piles extending down to bedrock. In the center of one of those piles there was a hollow tube originally intended to serve as an artesian well. The flow had been insufficient and the well had been stopped up.

Arthur, of course, as an engineer, had studied the construction of the building with great care, and happened to remember that this partly hollow pile was the one nearest the safe-deposit vault. The collapse of the board-room floor had suggested that some change had happened in the building itself, and that was found when he saw that the deposit-vault had actually risen an inch.

He at once connected the rise in the flooring above the hollow pile with the pipe in the pile. Estelle had heard liquid sounds. Evidently water had been forced into the hollow artesian pipe under an unthinkable pressure when the catastrophe occurred.

From the rumbling and the suddenness of the whole catastrophe a volcanic or seismic disturbance was evident. The connection of volcanic or seismic action with a flow of water suggested a geyser or a hot spring of some sort, probably a spring which

had broken through its normal confines some time before, but whose pressure had been sufficient to prevent the accident until the failure of its flow.

When the flow ceased the building sank rapidly. For the fact that this "sinking" was in the fourth direction—the Fourth Dimension—Arthur had no explanation. He simply knew that in some mysterious way an outlet for the pressure had developed in that fashion, and that the tower had followed the spring in its fall through time.

The sole apparent change in the building had occurred above the one hollow concrete pile, which seemed to indicate that if access were to be had to the mysterious, and so far only assumed spring, it must be through that pile. While the vault retained its abnormal elevation, Arthur believed that there was still water at an immense and incalculable pressure in the pipe. He dared not attempt to tap the pipe until the pressure had abated.

At the end of a week he found the vault slowly settling back into place. When its return to the normal was complete he dared begin boring a hole to reach the hollow tube in the concrete pile.

As he suspected, he found water in the pile—water whose sulfurous and mineral nature confirmed his belief that a geyser reaching deep into the bosom of the earth, as well as far back in the realms of time, was at the bottom of the extraordinary jaunt of the tower.

Geysers were still far from satisfactory things to explain. There are many of their vagaries which we cannot understand at all. We do know a few things which affect them, and one thing is that "soaping" them will stimulate their flow in an extraordinary manner.

Arthur proposed to "soap" this mysterious geyser when the renewal of its flow should lift the runaway skyscraper back to the epoch from which the failure of the flow had caused it to fall.

He made his preparations with great care. He confidently expected his plan to work, and to see the skyscraper once more towering over mid-town New York as was its wont, but he did not allow the fishermen and hunters to relax their efforts on that account. They labored as before, while deep down in the sub-basement of the colossal building Arthur and his volunteers toiled mightily.

They had to bore through the concrete pile until they reached the hollow within it. Then, when the evidence gained from the water in the pipe had confirmed his surmises, they had to prepare their "charge" of soapy liquids by which the geyser was to be stirred to renewed activity.

Great quantities of the soap used by the scrub-women in scrubbing down the floors was boiled with water until a sirupy mess was evolved. Means had then to be provided by which this could be quickly introduced into the hollow pile, the hole then closed, and then braced to withstand a pressure unparalleled in hydraulic science. Arthur believed that from the hollow pile the soapy liquid would find its way to the geyser proper, where it would take effect in stimulating the lessened flow to its former proportions. When that took place he believed that the building would return to normal, modern times, as swiftly and as surely as it had left them.

The telephone rang in his office, and Estelle answered it. Arthur was on the wire. A signal was being hung out for all the castaways to return

to the building from their several occupations. They were about to soap the geyser.

Did Estelle want to come down and watch? She did! She stood in the main hallway as the excited and hopeful people trooped in. When the last was inside the doors were firmly closed. The few friendly Indians outside stared perplexedly at the mysterious white strangers.

The whites, laughing excitedly, began to wave to the Indians. Their leave-taking was premature.

Estelle took her way down into the cellar. Arthur was awaiting her arrival. Van Deventer stood near, with the grinning, grimy members of Arthur's volunteer work gang. The massive concrete pile stood in the center of the cellar. A big steam-boiler was coupled to a tiny pipe that led into the heart of the mass of concrete. Arthur was going to force the soapy liquid into the hollow pile by steam.

At a signal steam began to hiss in the boiler. Live steam from the fire-room forced the soapy sirup out of the boiler, through the small iron pipe, into the hollow that led to the geyser far underground. Six thousand gallons in all were forced into the opening in a space of three minutes.

Arthur's grimy gang began to work with desperate haste. Quickly they withdrew the iron pipe and inserted a long steel plug, painfully beaten from a bar of solid metal. Then, girding the colossal concrete pile, ring after ring of metal was slipped on, to hold the plug in place.

The last of the safeguards was hardly fastened firmly when Estelle listened intently.

"I hear a rumbling!" she said quietly.

Arthur reached forward and put his hand on the mass of concrete.

"It is quivering!" he reported as quietly. "I think we'll be on our way in a very little while."

The group broke for the stairs, to watch the panorama as the runaway sky-scraper made its way back through the thousands of years to the times that had built it for a monument to modern commerce.

Arthur and Estelle went high up in the tower. From the window of Arthur's office they looked eagerly, and felt the slight quiver as the tower got under way. Estelle looked up at the sun, and saw it mend its pace toward the west.

Night fell. The evening sounds became high-pitched and shrill, then seemed to cease altogether.

In a very little while there was light again, and the sun was speeding across the sky. It sank hastily, and returned almost immediately, *via* the east. Its pace became a breakneck rush. Down behind the hills and up in the east. Down in the west and up in the East. Down and up—The flickering began. The race back toward modern time had started.

Arthur and Estelle stood at the window and looked out as the sun rushed more and more rapidly across the sky until it became but a streak of light, shifting first to the right and then to the left as the seasons passed in their turn.

With Arthur's arms about her shoulders, Estelle stared out across the unbelievable landscape, while the nights and days, the winters and summers, and the storms and calms of a thousand years swept past them into the irrevocable aeons.

Presently Arthur drew her to him and kissed her. While he kissed her, so swiftly did the days and

(Continued on page 285)

AN EXPERIMENT in GYRO-HATS

By Ellis Parker Butler

Author of "Pigs is Pigs," etc.



"I was able to place the end of one toe on the point of one picket, and thus balanced, wave the other leg in the air . . . When Walsingham pulled my hand I inclined gently toward him until I was at right angles to the picket fence, with my feet still on top of the picket; and when he released my hand, I slowly swung upright again."

THE idea of a gyro-hat did not come to me all at once, as some great ideas come to inventors. In fact I may say that but for a most unpleasant circumstance I might never have thought of gyro-hats at all, although I had for many years been considering the possibility of utilizing the waste space in the top of silk hats in some way or other. As a practical hat dealer and lover of my kind, it had always seemed to me a great economical waste to have a large vacant space inside the upper portion of top hats, or high hats, or "stovepipe" hats, as they are variously called. When a shoe is on, it is full of foot, and when a glove is on, it is full of hand; but a top hat is not, and never can be, full of head, until such a day as heads assume a cylindrical shape, perfectly flat on top. And no sensible man ever expects that day to come.

I had, therefore, spent much of my leisure in devising methods by which the vacant space above the head in high hats might be turned to advantage, and my patents ranged all the way from a small filing cabinet that just occupied the waste space, to an extensible hat rack on the accordion plan that could be pushed compactly into the top of the hat when the hat was worn, but could be extended into a hat and coat rack when the hat was not in use. This device should have been very popular, but I may say that the public received the idea coldly.

My attention had been for some time drawn away from this philanthropic work by certain symptoms of uneasiness I noticed in my daughter Anne, and my wife and I decided after careful consideration that Anne must be in love, and that her love must be unhappy. Otherwise we could not account for the strange excitability of our usually imperturbable daughter. As a practical hat dealer my time has been almost exclusively devoted to hats and, as a good wife, my companion's attention has been almost exclusively devoted to her husband, while Anne was usually so calm and self-contained that she did not take my attention from my hat business at all. But when such a daughter suddenly develops signs of weeping and sighs and general nervousness, any father, no matter how devoted to the hat trade, must pay attention.

One of the primary necessities of a dealer in good hats is calm. An ordinary hat dealer may not need calm. He may buy his hats as another dealer buys flour, in the bulk, and then trust to advertisements to sell them; but I am not that kind of hat dealer. Hat dealing is an art with me, and great art requires calm and peace in order that it may reach its highest development. When I buy hats I do not think of dozens and dollars. No, indeed; I think of noses and ears. To be able to buy of a manufacturer a hat that will make the pug nose and big ears of a man I have never seen seem normal

and beautiful when that man enters my store and buys a hat, requires calm. And no hatter can have calm in his soul while his daughter is love-sick and unhappy. I demand happiness about and around me, and I must have it. So I told my wife, and I told her so most emphatically, and I informed her that Anne must become happy at once.

Perhaps you can imagine the shock I received when my wife, after making the necessary inquiries of Anne, informed me that Anne was indeed in love, and in love with Walsingham Gribbs. It was not because Walsingham Gribbs had never bought a hat of me that I was shocked. Bad hats are a common failing of mankind, and a man will try a hundred hatters before he at last comes to me.

The trouble was deeper than this. The thing that staggered me was that Walsingham was a staggere. (This is a joke, but I hold that a hatter has as good a right to make a joke as the next man.)

That my daughter had fallen in love with Walsingham Gribbs without having met him was altogether to her credit. She first saw him when she was crossing the ocean (for she travels where she pleases, my hat business affording her such pleasures) and that he reeled and staggered about the boat did not impress her, for it was a stormy trip and everyone aboard reeled and staggered, even the captain of the boat. But when she returned to New York and saw Walsingham Gribbs on the firm pavement of Fifth Avenue, she had a harsh, cruel disillusionment. Walsingham Gribbs reeled and staggered on *terra firma*.

I am glad to say that my daughter saw at once the impossibility of the daughter of a high-class hatter mating with a permanent staggere. As she realized this, she became sad and nervous, thus creating an atmosphere in my home that was quite

opposed to the best high-class hatting, irritating my faculties and threatening to reduce me to the state of a mere commercial hatter.

Further investigation only made the matter seem worse, for quiet inquiries brought out the information that Walsingham Gribbs had been staggering since the year his father died. He had been constantly in a reeling, staggering state since his twentieth birthday. For such a man reform is,

indeed, impossible. And what made the case more sad was that all proof seemed to point to the fact that Walsingham Gribbs was not a "bounder" nor a "rounder," two classes of men who occasionally acquire a stagger and a reel in company with hearty boon companions.

In short, no one had ever seen Walsingham Gribbs take a drink in public, and I was forced to conclude that he was of that horrid type that drinks alone—"Alone but with unabated zeal" as that great poet, Sir Walter Scott, has remarked in one of his charming poems.

THAT mechanical marvel, the gyroscope, is being used successfully today to keep big ocean liners from rolling. It is being used for the same purpose in submarines, and for many other stabilization purposes.

So Ellis Parker Butler, of "Pigs Is Pigs" fame, in this story, seizes upon this almost mechanical miracle—and makes it the feature of his story. Charged with his characteristic humor, the story goes along deliberately from point to point, ludicrous in its absurdity, but having the aspect of a true tale nevertheless. The contrast between the sober man, who cannot help staggering and reeling as he progresses, and the thoroughly drunken man who must walk rigorously straight, is admirably shown, and contributes not a little toward making the story both humorous and interesting.

If all these investigations of mine were conducted without the knowledge of Walsingham Gribbs, you must admit I did only what was right in keeping them secret from him; for since he had never met my daughter he might have considered the efforts of a perfect stranger to peer into his life as being uncalled for. My wife did what she could to comfort Anne, but Anne sadly replied that she could never marry a man that staggered and reeled day in and day out. Thus day by day she became more sad, and I became so upset that I actually sold a narrow-brimmed derby hat to a man with wide, outstanding ears.

Of course this could not go on. No highgrade hat business could support it, and I was standing in my shop door looking gloomily out when I chanced to see Walsingham Gribbs stagger by. I had seen him many times, but now, for the first time I noticed what I should have noticed before—that he invariably wore a high hat, or "topper," as our customers like to call them.

I observed that the shape was awful, and that the hat badly needed the iron, and then my mind recurred to the old problem of the vacant space in the top of top hats; but I found I could not concentrate. Whenever I tried to think of top hats I thought of Walsingham Gribbs in one of them, staggering and reeling up the street, and gradually the thought came that it would be an excellent idea should I be able so to use the space in the top of Walsingham's hat that he would no longer stagger and reel, and then the thought of the gyroscope hat came to me.

I admit that at first I put the idea aside as futile, but it came back again and again, and at length it seemed to force me into enthusiasm. I dropped everything and went to work on the gyro-hat.

The gyroscope is, as everyone knows, a top, and I might have called the hat I invented a top hat, except that any tall cylindrical silk or beaver hat is called a top hat, so I was forced to adopt the name of gyro-hat.

A gyroscope is not an ordinary top. It is like a heavy fly wheel, revolving on an axle; and if it is spun, the speed of the revolutions maintains the axle in the perpendicular. A huge gyroscope is used to steady the channel steamers, which would otherwise stagger and reel. A gyroscope has been adopted to the monorail cars, and so long as the gyroscope gyrates the monorail car cannot stagger or reel. If a proper gyroscope was fastened on the end of a knitting needle and gyrated at full speed, that knitting needle could be stood on end and it would not fall over.

Therefore, if a gyroscope was placed in the top of a top hat, and the top hat firmly fastened to the head of a man, and the gyroscope set going, that man would remain perpendicular in spite of anything. He could not stagger. He could not reel. He could walk a line as straight as a crack.

When I had completed this gyro-hat I showed it to my wife, and briefly explained what it was and what I meant to do with it. The small but wonderfully powerful motor and the gyroscope itself were all concealed inside the hat, and I explained to my wife that Walsingham Gribbs need but fasten the hat firmly on his head and he would never stagger again. At first my wife seemed doubtful, but as I

continued she became more and more enthusiastic.

The only thing she disliked was the method of fastening the hat to the head, for as it was quite necessary that the hat be very firmly fixed to the head, I had sewed ear tabs to the hat, and these I tied firmly under my chin. My wife said she feared it would require some time to persuade the public to take to silk hats with ear tabs, and that the sight of a man in a silk hat with ear tabs would be a sign that he was a staggerer. She wanted another method of holding the hat on the head.

"Vacuum suction," I said, for I am quick to catch an idea. A man has to be, in the hat business. "But," I added, "where would you get the vacuum? A man cannot be expected to carry a can of vacuum, or whatever he would need to carry a vacuum in, around with him; especially the kind of man that would need the gyro-hat."

"My dear," said my wife, after a minute of thought, during which we both studied the gyro-hat, "I have it! Let the hat make its own vacuum. If the hat is lined with air-tight aluminum, and has a rubber sweatband, and an expulsion valve, the gyroscope motor could pump the air out itself. It could create its own vacuum."

"Of course it could!" I exclaimed. "I could rig it up so that putting the hat on the head would start the gyroscope, and the gyroscope would pump a vacuum. All any staggerer would need to do would be to put on his hat, and the hat would do the rest. It would stay on his head and it would keep him evenly on his keel." (Of course I would not use a nautical term like "keel" in my hat shop, but at home I allow myself some liberties of that sort.)

I set to work at once to perfect the gyro-hat on the plan suggested by my wife and in a few days I was able to say it was a success. By this I mean it was a success in-so-far as the eye could judge by looking at the hat, and all that was needed was a practical trial.

As the hat had been invented for Walsingham Gribbs more than for any other man, I proposed to my wife that Walsingham—we had spoken of him so often that we now mentioned him as Walsingham—should be the man to try it out. But my wife is better posted in social matters than I, and she said it would not do at all to attempt such a thing.

In the first place, none of us knew Walsingham; and in all other places, it would be insulting to suggest such a thing to him, and might ruin Anne's chances. I then assured my wife that I did not mean to allow any ordinary intoxicated man to experiment with the only gyro-hat I possessed, and possibly wreck and ruin it. We had too much at stake for that. So, after considerable discussion, my wife and I decided upon what was, after all, the only rational course—I should try out the gyro-hat myself.

I admit here that I am not much of a drinker. Although not so by principle, I am by action a teetotaler. I consider that the highest good of a hat shop demands it. As a matter of fact I had never up to this time tasted intoxicating liquor, but it was evident to my wife and me that the time had arrived when the hat business demanded this sacrifice on my part. Evidently, if a gyro-hat is meant to keep a staggerer and reeler steady on his keel,

the only test of the gyro-hat must be on the head of a man who, without the hat, could not help staggering and reeling—a thoroughly intoxicated man.

We did not, of course, admit Anne into our little conspiracy, and we chose a restaurant where we were sure intoxicants would be sold. We proceeded to the restaurant about the dinner hour; and after studying the waiters carefully, I selected one that seemed likely to know something about intoxicants, and we seated ourselves at his table. I placed the gyro-hat carefully across my knees, first setting the starter, and beckoned the waiter to us.

"My good fellow," I said, when he had approached with his pencil and order card in hand, "I desire to become intoxicated this evening, and I presume you know something about intoxicating liquors."

"Yes, sir," said the waiter.

"Tell him, Henry," said my wife, "that we also wish something to eat, but that as our principal object in coming here is to secure intoxicants, we wish him to be particular about them."

"You have heard what the lady said," I told the waiter, "and you will be guided accordingly."

"Yes, sir," said the waiter, politely. "Does the lady desire to become intoxicated also?"

"Heavens, no!" exclaimed my wife.

"Certainly not," said the waiter.

"Now," I said to the waiter, "you doubtless have different kinds of intoxicating liquors here—some strong and some not so strong—and I do not desire to drink a great quantity to obtain the result I desire. What would you recommend to give the required reeling and staggering condition as quickly as possible?"

"Well, sir," he said, "if you will let me advise, I would advise a certain brandy we have. Of that brandy, sir, a little goes a long way. I have seen it work, sir, and I can assure you that a small quantity of that will make you stagger and reel to your heart's content."

"Very well," I said, "you may bring me some. I suppose a quart would be enough."

"I beg your pardon, sir," he said, "but have you ever tried the brandy of which I speak?"

"I have not," I said.

"Then, sir," said the waiter apologetically, "unless you are a very heavy drinker I would not advise a quart of that brandy. A quart of that brandy, sir, would, if I may so speak, lay you out flat. You would not reel and stagger, sir. You would be paralyzed stiff, sir, dead to the world."

I thanked the waiter warmly.

"You observe," I said, "that I am not used to this sort of thing, and I appreciate the interest you are taking. I am inclined to leave the matter entirely in your hands. I may not know when I have had exactly the right quantity, but you, with your larger experience, will know, sir."

"Yes, sir. And I think the lady will know, sir," said the waiter.

I found the brandy most unpleasant to the taste, but certain symptoms assured me that the waiter had not belied its effectiveness. Long before the waiter was satisfied that I would stagger and reel, my long lost vocal prowess returned and I caroled gaily some songs that had been favorites of my youth. Many of these were affectionate songs, and when I sang them I had a great longing to hold

my wife's hand, and did so; but as she would not let me kiss her, I felt the need of kissing the waiter. Here again I was repulsed, but it did not make me angry. I merely slid down into my chair and waved my hand at him coquettishly.

"If you please, sir," said the waiter, when I had finished another burst of song, "I think you are pretty ripe, now. If you would just get up and walk a few steps I can tell more definitely."

My wife smiled at me reassuringly and nodded to me that what the waiter proposed had her full sanction; but even so, I was filled with a fear that we were about to be parted forever, and for a few minutes I clung to her neck, weeping bitter tears. I then tore myself away, and I did indeed stagger and reel. I believe I knocked over two small tables and ended by seating myself in the lap of a young man who was dining alone. He accepted my apology before I had spoken more than fifteen minutes of it, and then he aided the waiter in steering me back to my table.

Whatever may have been my past opinion of Walsingham Gribbs—for it was he—I loved him most dearly at that moment, and in my incoherent manner I tried to tell him so. I think he understood. At any rate, he spoke to my wife like a true gentleman.

"Madame," he said, "I can sincerely sympathize with your husband, and if you will allow me, I will gladly help you assist him to a cab. I beg you not to be frightened by his condition. I myself am subject to the same trouble, and although he may seem drunk—"

"Seem drunk!" exclaimed my wife. "Seem drunk! I beg you to know that my husband is as drunk as a man can become without being senseless. Either that, or we have been defrauded by this waiter!"

Walsingham Gribbs looked at my wife, and then smiled.

"Very well," he said, "if what you wanted was to have him drunk, I'll admit that he is about the drunkest man I have ever seen. I only spoke as I did in order that I might spare your feelings, for most wives object to seeing their husbands stagger and reel. I myself stagger and reel continually, and I have never tasted intoxicating liquor in my life, but I can share the feelings of one who staggers and reels, or who has a relative that staggers and reels."

At this my wife said:

"Are you not Walsingham Gribbs? If you are I am delighted to meet you, even in this unconventional manner, for what brought us here will interest you."

She then told him of the gyro-hat I had invented, and explained just why I had come to this place and had swallowed the strong brandy. I took no part in this conversation, but Walsingham gladly agreed to accompany us, and he put my gyro-hat on my head.

The result was indeed marvelous. Instantly the vacuum pump began to work and the gyroscope to revolve. My head, which had been lying on one side, straightened up. The rubber sweat band gripped my head tightly with a slight pulling sensation. Without assistance I arose from my chair and stood erect. My brain was still confused, but I walked as straight as a string direct to the door of the restaurant, and stood holding it open while my wife

passed out with the ever staggering Walsingham.

The gyroscope was revolving at the rate of three thousand revolutions a minute, and the slight humming was hardly noticeable. I did not stagger and I did not reel. When I reached Gramercy Park I was full of glee. I had been walking on the edge of the curb, but I now desired to climb atop of the iron fence that surrounds the park, and walk on the points of the pickets.

My wife and Walsingham tried to dissuade me, but I climbed to the top of the fence. I not only walked on the points of the pickets easily, but I was able to place the end of one toe on the point of one picket, and thus balanced, wave the other leg in the air. My wife and Walsingham Gribbs coaxed me to come down to the level of the walk, but as I saw no reason to do so, I flatly refused, and at last Walsingham reached up and took me by the hand and pulled me.

Ordinarily a man that had imbibed a quantity of brandy would have fallen to the street if pulled by one hand while standing on the top of a row of pickets, but I did not. When Walsingham pulled my hand I inclined gently toward him until I was at right angles to the picket fence, with my foot still on top of the picket; and when he released my hand I slowly swung upright again, without any effort whatever on my part. I got down off that fence when I was ready, and not before.

There could be no doubt whatever that I was far more intoxicated than Walsingham Gribbs, and all the way home I gave vent to tremendous bursts of laughter over the idea that while Walsingham thought he was seeing me safely home I walked as straight and true as a general, and he staggered and reeled except when he clung closely to my arm.

Many persons stopped and looked at us, and I cannot wonder at it. For Walsingham is a young man of most dignified countenance, and it must have seemed strange to see a young man of such sober mien reeling drunkenly, while a dignified and steadily walking hatter laughed and shouted drunkenly. It was as if the two of us had been able to afford but one spree, and had divided it in that way, he taking the stagger and I taking the boisterousness.

My wife was much touched by the kind attentions of Walsingham, and when we reached home she invited him in, and while I found a little harmless amusement in walking up the stairbanisters and sliding down them standing on my feet, which I was enabled to do because of the steadying effect of the gyro-hat, she took Walsingham into the parlor and introduced him to Anne formally.

My poor daughter was quite overcome with embarrassment and pleasure, but when Walsingham was sitting he showed no evidence of his stagger and reel whatever, and they managed to become quite well acquainted while my wife was assisting me to bed.

Unfortunately I had neglected to arrange any method for letting the vacuum out of the gyro-hat, and although my wife tugged and pulled at the hat, the suction held it fast to my head and it refused to come off unless my scalp came with it. My wife decided that I must sleep in the hat, since I was in no condition of mind to do anything about it myself.

I was dying for sleep, and my wife tumbled me

into bed and pulled the sheet over me, and that same instant I fell into a heavy slumber, but the moment my wife released her grasp on me I began arising to my feet, irresistibly drawn to the perpendicular by the action of the gyro-hat. I continued to arise until I was standing upright. I can only liken the manner in which I arose to the way a man might raise a stiff arm slowly until it pointed straight upward.

My wife immediately pushed me down onto the pillow again, but it was unavailing. Again the gyro-hat drew me to a standing position, and my wife was forced to let me continue my night's rest in that position.

The next morning I did not feel very well, but I never saw my wife in better spirits. She told me she was sure Walsingham had taken a great fancy to Anne, for he had asked permission to call again that evening, and my wife said that in her opinion it would be well to take up the matter of the marriage with Walsingham at once, before it went any further. If he meant business he would be glad to wear the hat and be rid of his stagger and reel; and if he meant nothing it would be a good thing to know it, and the sooner we were rid of him the better. I agreed with her fully, but I spent the day perfecting the vacuum outlet on the hat.

I must admit that Walsingham seemed somewhat surprised when I made the suggestion to him that evening. For a few minutes he did not seem to know what to say. Perhaps it was a little over-coming to have the parents of Anne suggest the idea of a marriage in this offhand manner and at the same time propose the wearing of a gyro-hat; but Walsingham was a gentleman, and when he glanced up, after his first surprise, and saw Anne gazing at him appealingly, with her hands clasped, I could see that love had won. But instead of acquiescing immediately, Walsingham Gribbs took one of Anne's hands in his, and after patting it, spoke directly to me.

"Sir," he said, "I cannot but appreciate the delicate manner in which you have handled this matter, but if I am only too glad to find that there is a hat that will correct my unfortunate staggering and reeling, and if I am to accept your offer of that hat, I feel it due to myself to assure you that liquor has nothing whatever to do with my staggering and reeling. I am the victim of an unfortunate experience of my youthful days.

"My father was a man of many ideas, and always trying to make the world better. He had a neighbor that had a mule. It was a mouse-colored mule and very stubborn, and it used to wring my father's heart to see the neighbor belabor that mule with a heavy whip, trying to make the mule proceed in a direction in which it did not wish to go. The mule was quite willing to go toward the barn, where the feed was kept; but it often refused to go in the opposite direction, although it would go well enough if it once started.

"My father, therefore, conceived the idea of what he called the Gribbs Mule Reverser. This was a circular platform large enough to hold a mule and his loaded wagon, and beneath the platform was a motor capable of revolving the platform. All that was necessary was to place the mule and the wagon on the platform and start the mule in the direction

of home, and then suddenly turn the platform in the direction the mule was desired to go, and the mule would proceed, unwittingly in that direction."

"A very excellent idea," I said.

"Except that it would not work in the least," said Walsingham. "In the first place, it was necessary to dig a pit five feet square beneath the revolving platform to contain the motor, and this was not always convenient. In the second place, the platform and motor would hardly ever happen to be where the mule balked, and it would have been a great deal easier to load the mule on a wagon than to load the platform and motor on three wagons. And in the third place, if the mule would not start homeward, neither would it start towards the platform of the Mule Reverser.

"So, after my father had tried the platform in our back yard, with a mule on it, and the revolutions had thrown the mule up against the side of the barn, breaking both the mule and the barn, he decided that other things were better to invent and abandoned the platform. I and the lads of the neighborhood found this a good place to play, and one day I was standing exactly in the center of the platform when one of the boys happened to start the motor. I had sense enough to remain exactly in the center of the platform, or I would have been thrown off, and possibly killed, for the platform was revolving at the rate of eight-thousand revolutions a minute. The motor had power to revolve the platform slowly when loaded with a mule and loaded wagon, so it was capable of immense speed with only a small boy on it.

"When my companions saw what they had done," continued Walsingham, "they all ran away, and for four hours I remained in the center of that platform, being revolved at an enormous speed, and when my father came home and stopped the platform I staggered and reeled and fell in a heap at his feet. That is how I acquired my unfortunate stagger and unpleasant reel, and I have only told you this that you may have no unjust suspicions."

"But why," asked my wife, who had been greatly interested by Walsingham's story, "do you not revolve in the opposite direction, and 'unwind' yourself as we used to say?"

"Madame," said Walsingham, "I have. Every night, for one hour before I go to bed I revolve, but it requires an immense number of revolutions to overcome such a spin as I had in my youth." He waited a moment and then said: "But I am now ready to try the gyro-hat."

I looked out of the window, and hesitated. A thin rain was falling and was freezing as it fell, and I hated to have a good, silk, gyro-hat go out into such weather; but as a leading hatter I felt that it would never do for me to seem small and picayunish in regard to hats. I remembered that a really good silk hat would not be ruined by a few drops of water; and I saw that if anything could convince Anne and Walsingham that the gyro-hat held their happiness, it would be a trial on such slippery walks as the evening had provided.

So I brought down the hat and pressed it on Walsingham's head. Instantly the vacuum creator began to work and the hat clung fast to his head. He arose to his feet and walked across the parlor in a perfectly steady manner, and out into the hall. I

held open the front door and he stepped out.

Walsingham crossed the porch with as steady a tread as ever any man crossed the porch of a high-class hatter, but when he reached the top step his foot struck the ice and he slipped. He did not stagger nor reel. If he fell, he fell steadily. I can best liken his fall to the action of a limber reed when the wind strikes it. He inclined slowly, with his feet still on the top step, and continued to incline until his head touched the walk below with considerable violence; then his feet slipped down the edges of the steps until they rested on the walk.

I never saw a more graceful fall, and I was about to congratulate Walsingham, when he began to incline toward the perpendicular again, in the same slow manner. But this was not the reason I held my words. The reason was that the gyro-hat and Walsingham were behaving in a most unaccountable manner. Walsingham was revolving.

I discovered later that the fall had jammed the gyroscope on the pivot so that the gyroscope could not revolve without revolving the whole hat, and as the hat was firmly suctioned to Walsingham, the hat could not revolve without revolving Walsingham. For an instant Walsingham revolved away from us down the walk, and Anne gave a great cry; but almost at that moment Walsingham regained the upright and began to revolve rapidly. The icy walk offered no purchase for his feet, and this was indeed lucky; for if it had, his head would have continued to revolve none the less, and the effect would have been fatal.

I estimated that Walsingham was revolving at a rate of perhaps fifteen hundred revolutions a minute, and it was some minutes before my wife was able so far to recover from the shock of seeing her prospective son-in-law whirl thus as to ask me to stop him. My first impulse was to do so, but my long training as a hatter had made me a careful, thoughtful man, and I gently pushed my wife back.

"My dear," I said, "let us pause and consider this case. Here we have Walsingham revolving rapidly. He is revolving in one of the only two directions in which he can revolve—the direction in which he revolved on the Mule Reverser, or the opposite direction. If it is the opposite direction all is well, for he will be unwound in a few hours, if his neck is not wrung in the meantime. If it is in the same direction it is no use to stop him now, for by this time he will be in such a condition of reeling and staggering that we would not have him as a son-in-law on any terms. I propose, therefore, to let him spin here for a few hours, when he will have had a full recovery or be permanently too dizzy for any use."

My wife, and Anne too, saw the wisdom of this course, and as it was very miserable weather outside we all withdrew to my parlor, from the window of which we could watch Walsingham revolve. Occasionally, when he seemed about to revolve off the walk, I went out and pushed him on again.

I figured that by six o'clock in the morning he would be sufficiently revolved—provided he was revolving in the right direction—and at midnight I sent my wife and Anne to bed. I fear Anne slept but little that night, for she must have had a lover's natural anxiety as to how all was to turn out.

(Continued on page 287)

The MALIGNANT ENTITY

By Otis Adelbert Kline



"The nucleus!" cried the doctor excitedly, shifting the flask. "Pour it on the nucleus!" The thing upreared itself, and lopped over the edge of the tank. We dropped the nearly-emptied bottle into the tank . . .



TELL you, Evans," said Dr. Dorp, banging his fist on the arm of his chair for emphasis, "the science of psychology is in much the same stage of development today as were the material sciences in the dark ages."

"But surely," I objected, "the two centuries of investigation just past have yielded some fruit. It cannot be that the eminent men who have devoted the greater part of their lives to this fascinating subject have labored in vain."

The doctor stroked his iron-gray Van Dyke meditatively.

"With a few—a very few exceptions, I'm afraid they have," he replied, "at least so far as their own deductions from observed phenomena are concerned."

"Take Sir Oliver Lodge, for example—" I began. "The conclusions of Sir Oliver will serve as an excellent example for my analogy," said the doctor. "No doubt you are familiar with the results of his years of painstaking psychical research as expounded in his books."

"I believe he has become a convert to spiritism," I replied.

"With all due respect to Sir Oliver," said the doctor, "I should say that he has rather singled out such facts as suited his purpose and assembled them as evidence to support the spiritistic theory. It may seem paradoxical to add that I believe he has always been thoroughly conscientious in his investigation and sincere in his deductions."

"I'm afraid I do not quite follow you."

"There are times in the life of every man," continued the doctor, "when emotion dethrones reason. At such crisis the most keen-witted of scientists may be blinded to truth by the overpowering influence of his own desires. Sir Oliver lost a beloved son. Only those who have suffered similar losses can appreciate the keen anguish that followed his bereavement, or sympathize with his intense longing to communicate with Raymond. Most men are creatures of their desires. They believe what they want to believe. Under the circumstance it was not difficult for a clever psychic to read the mind of the scientist and tell him the things he wanted to hear."

"But what of the many investigators who have not been similarly influenced?" I inquired. "Surely they must have found some basis—"

I was interrupted by the entrance of the doctor's housekeeper who announced—

"Beggin' your pardon, sir, a gentleman to see you, sir."

"Show him in," Dr. Dorp said rather petulantly.

His frown of annoyance changed to a welcoming smile of recognition at sight of the tall, bulky individual who strode through the doorway.

"How are you, Doc," roared the big man as they shook hands cordially. "Haven't bothered you for a

long time, have I? Got a case for you now that will make you put on your thinking cap all right."

"Sounds interesting," replied the doctor. "Let me present an old friend of mine, Mr. Evans, who writes a story every now and then when the spirit moves him. Mr. Evans, Chief McGraw of the detective bureau. We were just discussing our mutual hobby, psychic phenomena, when you came in," he continued after we had acknowledged the introduction.

"No doubt Chief McGraw's communication is of a confidential nature—" I began, with the purpose of taking leave of my host.

"Nothing secret about it so far as Dr. Dorp and his friends are concerned," interrupted the chief. "It may be that if you are a psychologist you can offer some solution of the mystery. Of course, I don't exactly know whether it's a case for a psychologist or not. Damned curious thing, and ghastly too."

"Stay and listen if you are interested," said the doctor.

"If it has any smattering of psychology or the occult, you know my falling," I responded.

"Can't say as to that," said the chief. "It's queer enough, though—and horrible. You gentlemen have heard of Professor Townsend, I presume."

"You mean Albert Townsend, the chemist and inventor?" asked the doctor. "Assuredly. Who hasn't heard of him and his queer theories about creating life from inert matter? What has he done now?"

"I don't know whether it's something he did or something that was done to him, but anyway he's dead."

"Murdered?"

"That's the point I want you to help me clear up. I don't know. His daughter 'phoned the office this morning and asked for me. When I got on the wire I could hardly understand her, she was so hysterical.

Sobbed out something about her father being gone and a human skeleton lying on the floor of his laboratory. I jumped in the car and took Hirsch, the finger-print expert out there with me. We found the frightened girl weeping in the arms of a motherly neighbor, who informed us that the laboratory was on the second floor.

"The whitened skeleton of Professor Townsend,

fully clothed in garments that hung like rags on a scarecrow, lay on the floor of the laboratory."

"You made sure, of course, that it really was the skeleton of the Professor."

"Beyond the least shadow of doubt. In the first place it was clothed in the professor's garments. His watch with his name in the back was ticking in the vest pocket. His monogrammed ring, a present from his daughter, circled a bony finger. On the bones of his right forearm were the marks of a fracture that had healed and the skull was slightly indented above the right temple. These marks re-

SCIENTISTS and inventors have made enormous strides for—and in many ways, against—humanity, for they have discovered and invented powerful destructive materials—in that way sometimes courting their own destruction.

So many "impossible" things have been done, why is it not possible that the venture into the realms of the infinite may sometime prove fruitful—that some day life may be implanted in unorganized matter? "The Malignant Entity" is the story of such a venture—carried to a dreadful success. This is a gripping tale, marvelously well told. Read it.

sulted from an automobile accident in which the professor was injured two years ago. To make assurance doubly sure, we called in his dentist who readily identified his own work on the teeth."

"When was the professor last seen alive?"

"That is the feature that makes the affair so uncanny. He was alive, and apparently normal mentally and physically, at dinner last evening."

"Most amazing!" exclaimed Dr. Dorp. "Suppose we go out—"

"Just what I was going to suggest," replied the chief. "My car is waiting outside. Would you care to accompany us, Mr. Evans?"

"He would perish from curiosity if he couldn't see the thing through now," said the doctor when I hesitated. "Come along with us, old man. If two minds are better than one, then surely three minds are superior to two."

We piled into the chief's roomy roadster and were soon speeding toward the house of mystery.

Two Mysterious Deaths

PRESENTLY the car stopped before a two-story brick house. Its upper windows, with shades half drawn, appeared to stare down at us with a look of sly cunning as if endeavoring to conceal some fearful secret.

A short chunky individual, smooth-faced and with a decidedly florid complexion, met us at the door. Chief McGraw introduced him as Hirsch, the fingerprint expert.

"All alone, Hirsch?" asked the chief, looking about as we entered the spacious living room.

"Might as well be," replied Hirsch. "Miss Townsend is in her room with a neighbor. The cook and housemaid are out in the kitchen, scared green."

"Coroner been here?"

"No. He called me up about twenty minutes ago and said he had an inquest to attend to on the south side. Told me he didn't know how soon he could get here, but it would be several hours, at least."

"How about the prints?"

"All the finger prints in the laboratory seem to have been made by the same person, evidently the professor!"

"Hum. Better 'phone headquarters right away and have them send Rooney out. He might come in handy to guard the death room in case the coroner is late."

"All right sir. I'll call up right away."

"Now gentlemen," said the chief, turning to the doctor and me, "let us go upstairs."

We followed him up the thickly carpeted stairway and along a broad corridor at the end of which he opened a door.

I started involuntarily at sight of the grinning, ghastly thing that lay on the floor. Not so Dr. Dorp. He knelt beside it and examined it minutely, his keen gray eyes alert for every detail. He even touched his fingers to the white forehead and probed the shadowy depths of the empty eye sockets.

At length he rose and washed his hands at the porcelain lavatory.

"It seems incredible," he said, "that this man could have been alive yesterday."

"Just what I was thinking," responded the chief.

"Those bones could not have been drier or whiter if

they had bleached in the sunlight for the last ten years."

The doctor now turned his attention to the contents of the laboratory. He examined the collection of retorts, test tubes, breakers, jars, dishes and other paraphernalia spread on a porcelain-topped table set against the wall and reaching half the length of the room. The walls were shelved clear to the ceiling, and every shelf was crowded to its utmost capacity with bottles, jars and cans containing a multitude of chemicals. To these he gave but scant attention.

In the center of the immaculate white tile floor stood an open, glass-lined vat. From its height and diameter I estimated its capacity at about sixty gallons. This vat was more than a third full of a colorless, viscous liquid that gave off a queer, musty odor.

"What do you suppose that stuff is?" I asked Dr. Dorp.

"Looks like a heavy albuminous or gelatinous solution," he said. "Possibly it is some special compound the professor employed in his experiments. Mediums of this nature are often used in the cultivation of colonies of bacteria and it is possible that he intended to use it as a carrier and food for the organisms it was his ambition to create synthetically."

"Any idea what caused the death of the professor?" asked the chief.

"I have a theory," replied Dr. Dorp, "but it seems so illogical, so wildly impossible, so—er, contrary to the teachings of science that I prefer to keep it to myself for the present, at least."

A heavy tread sounded in the hallway and a moment later a blue-uniformed officer entered.

"Hello, Rooney," greeted Chief McGraw. "I want you to see that no one disturbs this room or its contents until the coroner arrives. We are going downstairs now. Keep a weather eye on things and I'll send a man to relieve you soon. If either of these gentlemen wants to come in at any time you may admit him."

"Yes, sir. I'll remember them."

We trooped down stairs. Two women were seated in the living room. Chief McGraw presented us to the younger, who proved to be the professor's daughter, Dorothy Townsend. She was a slender girl about twenty years of age with pale, regular features and a wealth of gold-brown hair. Her large, expressive eyes were red with recent weeping and her lips quivered slightly as she bowed to us in turn and introduced us to the stout, middle-aged neighbor, Mrs. Harms, who had been endeavoring to comfort her.

"Hirsch and I are going to run down to headquarters for a couple of hours," said the chief. "Would you prefer to come with us or stay here and look around?"

"I think we had better look around a bit if you don't mind," replied the doctor.

"All right. I'm going to send a man to relieve Rooney at six. Will be along myself a little later. If you discover anything new call me up."

When the two men were gone the doctor bowed before Miss Townsend.

"May I have a few words with you in private?" he asked.

"Certainly," she replied, rising, "in Father's study if you wish."

They entered the study, which was directly off the living room, and closed the door. They must have been gone about a half hour, but it seemed like two hours to me as, fidgeting inwardly, I listened to Mrs. Harms' family history, her account of the death of her beloved husband, and minute descriptions of six operations she had undergone, each time, to use her own expression, "standing at the entrance of death's door." She assured me, also, that she knew what it was to have death in the home. The Grim Reaper had visited her family a score of times, she averred, and only three weeks before, one of her roomers had been found dead in bed.

She prattled on with scarce a pause until the door of the study opened. I was glad when she went upstairs with Miss Townsend and left Dr. Dorp and me together.

"Come into the study," he said. "I have learned some interesting things, and it is possible that more awaits us in here."

Professor Townsend's study was neither large nor pretentious. It was obviously the retreat of a profound student as attested by the book-lined walls, many of the volumes of which were worn with much handling. The furniture consisted of a large, roll-top desk, a smaller typewriter desk on which stood a hooded machine, a filing cabinet, two office chairs and three comfortable overstuffed chairs, one beside the window, the other two placed conveniently under wall lights for reading.

A thick pile of typewritten manuscripts lay on the roll-top desk. The doctor divided them, handing me half and settling himself comfortably in one of the overstuffed chairs with the other half.

"Miss Townsend kindly brought these out of the files for me," explained the doctor. "I think it possible that they may shed some light on the mysterious cause of the death of their author. We can save time dividing the work."

"I believe I can conduct a more intelligent search if you will give me some idea of what I am to look for," I said.

"Quite so," he agreed. "I had forgotten for the moment that you were not familiar with the details of my interview with Miss Townsend. Let me review it briefly.

"She finished school nearly a year ago, and since that time has been acting as her father's secretary, typing his manuscripts and attending to much of his voluminous correspondence.

"He had been working day and night in his effort to prove his theory that a living organism can be created from inorganic matter. During their months of close association she found him extremely irritable until one morning about three weeks ago. It appeared that his very nature had changed over night and she assumed that he had made some important discovery. She remembers the exact date owing to the fact that Mrs. Harms' roomer was found dead in bed on the night of the supposed discovery. This roomer, who was living under an alias, was found to be a notorious character known as Immune Benny, and is alleged to have committed numerous crimes, among which were several re-

volting murders, without ever having been convicted.

"After that night the professor's jubilant attitude kept up until death. He paid no attention to his correspondence or manuscripts and spent the greater part of his time in his laboratory, presumably experimenting with numerous live animals which he had delivered each day. His first experiments, she stated, were with mice, rats and guinea pigs. He next used cats, rabbits and small dogs, then larger dogs until, on the day before his death he had two huge mastiffs brought to the house and took them into the laboratory. None of the animals taken behind the door ever reappeared, and she quite naturally assumed that they had been the subjects of vivisection. My theory, is that he—"

The doctor was interrupted by a loud rap at the study door. He rose and opened it, revealing a sturdy uniformed policeman. A frightened housemaid peered around his huge bulk. The man seemed greatly perturbed. His voice shook as he asked—

"Where's Rooney?"

"He's on guard in the laboratory," replied the doctor. "Are you the man sent to relieve him?"

"I'm Officer Burke. The maid, here, showed me to the laboratory, but Rooney ain't there. It's a horrible place. Don't blame him for leavin'."

"Yes. That skeleton on the floor isn't exactly pretty."

"That skeleton? You mean *them* skeletons. There was two of them, and one was dressed in a cop's uniform!"

With an exclamation of surprise and horror, the doctor threw down the manuscripts he was holding and rushed for the stairway. I followed breathlessly.

A Strange Diary

WHAT we saw in that awful room of death confirmed our wildest fears. A skeleton, with the bones whitened like those of the professor, lay on the floor facing the doorway. One bony arm was stretched across the threshold as if its owner had been attempting to drag himself from the room when struck down. A blue uniform bagged loosely over the bones, and on the feet were the heavy, hobnailed, square-toed shoes I had noticed on Rooney's feet some time before.

The doctor squinted at the star on the breast of the recumbent figure. Then he turned to Officer Burke who had come up behind us.

"What was Rooney's number?" he asked.

"942."

"Then this is Rooney's uniform and it probably is his skeleton. Call up the chief and tell him what happened. This is horrible—diabolical!"

"Your theory," I said, "does this shed any light on it?"

"On the contrary," he replied, "It makes the case more baffling than ever. It seems incredible that such things can really happen. I tell you, Evans, there is some mysterious force at work here—something new and unheard of in the annals of scientific research. It is my opinion that the late Professor Townsend chanced upon some force hitherto unknown to scientists and played with it

like a little child with fire until it suddenly destroyed him. The death of Officer Rooney is ample proof that this terrible force, whatever it may be, survived him.

"Now let us conjecture regarding the nature of this thing that has taken the lives of two human beings. We know that the professor's chief ambition was to create life from inert matter. All of his experiments in the laboratory were made with this object in view. All his printed works show plainly his firm belief that the thing could be accomplished, some of them going so far as to point out the processes by which he believed protoplasm, the primitive basic life substance, might be analyzed. As protoplasm is a compound of almost unlimited complexity in its physical and chemical constitution, our most skilled chemists have been unable to unravel its secrets. In fact, the further a chemist gets in his attempts at analysis the more baffling and complex he finds it to be. Being a compound composed of complex substances which are in turn composed of others still more complex, and so on, ad infinitum, its secrets are fully as inscrutable as those of the starry universe.

"The professor's first step, therefore, in this seemingly impossible undertaking, would be to analyze protoplasm. Assuming that he succeeded in reducing it to its basic elements his next problem would be to take similar elements and, through a process even more complex than the previous one, assemble and re-assemble them until they were capable of sustaining life.

"Let us suppose that he did these things. Let us assume that he has succeeded in creating protoplasm. What next? We will say that he has taken some primitive form of life for a pattern, a moneron, perhaps, the most simple type of animal, consisting of a single cell of protoplasm. There still exists a difference between the moneron and the synthetically created cell. Chemically and physically they are the same, but the moneron is *alive*.

"What is life? Broadly defined as we recognize it on this earth, it is a temporary union of mind and matter. There may be, and probably is another kind of life which is simply mind without matter, but we of the material world know it not. To us, mind without matter or matter without mind are equally dead. The moneron has a mind—a soul—a something that makes it a living individual. Call it what you will. The professor's cell of man-made protoplasm has not. Can you conceive of any possible way in which he could, having reached this stage, create an individual mind or soul, an essence of life that, once united with his cell of protoplasm would form an entity?"

"It seems impossible," I admitted.

"So it seems," he replied, "yet it is only on such a hypothesis that I can account for the mysterious deaths of the professor and Officer Rooney."

"But I don't see how a moneron or a creature remotely resembling one could kill and completely devour a man in less than two hours," I objected.

"Nor I," agreed the doctor. "In fact I am of the opinion that, if the professor did succeed in creating life, the result was unlike any creature large or small, now inhabiting the earth—a hideous monster, perhaps, with undreamed of powers and possibilities—an alien organism among billions of

other organisms, hating them all because it has nothing in common with them—a malignant entity governed solely by the primitive desire for food and growth with only hatred of and envy for the more fortunate *natural* creatures around it."

"If the professor did succeed in creating or discovering such a creature," I said, "it is evidently in this house at this very moment. Unless it has the faculty of making itself invisible a thorough search should reveal its whereabouts, for having consumed two men it must be a monster of no mean proportions."

"That is true," replied the doctor, "however, we have another hypothesis that is equally worthy of our consideration if we accept the premise that the professor created a living creature. Judging from his writings he spent a considerable portion of his time studying and experimenting in microbiology. Suppose he succeeded in creating a microscopic organism, and that organism had the power to reproduce its kind. If it reproduced by fission, that is, by simply dividing itself after it had attained a certain size, the only check to its increase would be death or lack of food. The more food it could obtain that much more rapidly would it and its descendants multiply. Countless billions of such creatures might occupy this room and yet be invisible without the aid of a compound microscope. There is ample room for a swarm of such creatures numerous enough to devour a man to float in the air above our heads without revealing its presence."

The words of the doctor affected me strangely. Involuntarily I looked upward, half expecting a swarm of man-eating microbes to descend and devour me. For a moment I was seized with a feeling of panic so strong I could scarcely restrain myself from leaping for the door. The fact that the sun had just set and dusky shadows were thickening in the room augmented the illusion. I crossed the floor nervously and pressed the switch beside the door. Instantly the place was flooded with blue-white light from a cluster of powerful globes depending from the middle of the ceiling.

As I was recrossing the room my eyes fell on the contents of the glass-lined tank. I stared unbelievably for a moment, then called Dr. Dorp.

"What is it, Evans?" he asked.

"The liquid in this tank," I replied. "It has changed color. Something has turned it pink."

"The effect of the artificial light, no doubt," he said, coming up beside me. Then I saw the expression of doubt on his face change to one of surprise and wonder.

"You are right," he exclaimed. "It has not only changed color but a still more remarkable transformation has taken place. When we noticed it this afternoon, the tank was a third full of the colorless liquid. *This pink fluid reaches half way to the top!*"

A Drawer Filled With Bones

THE tread of many feet sounded in the hall. Chief McGraw paused in the doorway, staring down at the blue-clad skeleton on the floor, a look of horror on his face. Behind him were four policemen in uniform.

"Is—is that the skeleton of poor old Rooney?"

McGraw asked. It's too ghastly a thing to believe. "I'm afraid it is," replied Dr. Dorp.

The chief knelt and examined the star on the bagging blue coat.

"It's hellish, positively hellish," he said, rising. "Do you know what killed him?"

"We are working on a theory—" began the doctor, but was interrupted by the chief.

"Theories be damned!" he snapped. "Work on your theories if you want to. This thing has gone too far. I'm going to get some facts." He swung on the four men behind him. "Search the house," he said. "Look sharp for anything of a suspicious nature. An infernal machine, perhaps, or a blood sucking animal. There is a man-killer of some kind, human or otherwise, hidden in this house, and it's our business to find it."

When the men had departed he stepped over Rooney's skeleton.

"I'll search this room myself," he said.

He did, with professional thoroughness, looking for hidden panels and sounding the walls, both in the open areas and behind the shelves, for hollow spaces. Then he began opening the drawers in a tall cabinet that stood in one corner, disclosing surgical and dissecting instruments of various kinds, an indexed set of microscope slides with some extra lenses, platinum dishes; porcelain drying pans, crucibles, glass rods and tubing, pipettes, rubber tubing and stoppers, rubber gloves and aprons, and other miscellaneous laboratory paraphernalia.

The bottom drawer of the cabinet was quite large and deep. The chief cried out excitedly when he saw its contents.

"Good Lord! Look at that!" he exclaimed.

It was filled to the top with dry, white bones.

"Nothing but the bones of small animals," said Dr. Dorp, picking up a skull. "This, for instance, is the skull of a dog." Then, taking up another: "Here is the skull of a rabbit. Notice the characteristic chisel-shaped teeth. This one beside it once supported the be-whiskered countenance of a common house cat."

"What do you suppose he was doing with them?" asked the chief.

"It is my belief that they were brought here to be killed and devoured by the same thing that killed the professor and Rooney."

"And that thing is—"

"At present, merely a shadowy theory, although it most certainly has an existence. There is a power in this house that is a menace to everyone under this roof—a malignant entity that destroys human beings in some mysterious manner unparalleled in the annals of science or human experience. This much we know, reasoning from effects. Reasoning from possible causes we are aware that the hobby of Professor Townsend was the endeavor to create a living thing from inorganic matter, and putting the two together it seems to me that the logical hypothesis would be that he either succeeded in creating a monster of a sort unknown to biologists, or discovered and developed unheard of powers and habits in a creature already known."

"If there's such a thing in this house, believe me I'm going to find it," said the chief, stamping out of the room.

"Now that we have a few moments to ourselves,"

said Dr. Dorp when McGraw had departed, "let us conduct a search, or rather an inquiry on our own account. I perceive that we have a very excellent compound microscope at our disposal and am curious to examine the liquid which has so mysteriously risen and changed color in the tank."

He took a blank slide from the cabinet drawer and a small glass rod from the table. As he was about to dip the rod in the liquid he uttered a low exclamation of surprise.

"What's up now?" I asked.

"This amazing liquid has again become transparent," he replied. "The red tint is gone."

He plunged the tip of the rod into the viscous liquid, twisted it slightly and withdrew it. Although the liquid seemed quite heavy it slipped from the end of the rod much after the manner of the white of an egg. After considerable juggling he succeeded in obtaining a small amount which he smeared on the slide. He then placed the slide in position and adjusted the microscope with a practiced hand.

"Well," I asked, after he had peered into the eyepiece for a full ten minutes, "what is the stuff, anyway?"

"Here, look for yourself," he replied.

What I saw in the field of the microscope appeared to be a mesh work or foam work of exceedingly fine bubbles or perhaps globules. Granules of different sizes and shapes seemed imbedded in these globules and the whole was dotted at intervals with small white objects. While I watched several of these white objects seemed to dissolve and disappear. All of them apparently were endowed with life, for I noticed that they expanded or contracted spasmodically and seemed endeavoring to push their way through the surrounding bubbles.

"Seems to be a sort of foam," I said, "with something alive floating in it."

"The foam, as you call it, bears a singular resemblance to the basic life principle, protoplasm, when seen under the microscope," replied the doctor.

"But those white things—" I began.

"The white things," he went on, "are the living remnants of a complex organism that has been destroyed. They are waging an unequal and hopeless battle against assimilation by the globules that surround them. These faithful guardians of the organism when alive still fight, and will continue to fight the enemy until, figuratively speaking, the last man falls."

"But what are they?" I demanded.

"Unless I am very much mistaken," he replied, "they are—"

His answer was cut short by the appearance of Chief McGraw.

"Coroner and jury are downstairs," he said tersely. "I suppose they'll want your testimony. I'll leave a couple of men on guard here if you want to come down."

"Let us go down to the study and complete our perusal of the professor's manuscripts while the jury is in session," said the doctor. "We can thus save considerable time and will be on hand when they are ready to question us."

We met Coroner Haynes and his jurors at the

foot of the stairs. They were about to go up for an inspection of the laboratory and its gruesome contents.

Dr. Dorp switched on one of the reading lamps and closed the door. Then he established himself in a comfortable chair with a pile of manuscripts and I followed his example. We found essays and articles on almost every subject pertaining to the transmission or generation of life. There were papers on anatomy, bacteriology, cell-structure, microbiology and embryology. There were treatises on evolution, spontaneous generation, and the structures and habits of micro-organisms. A forceful and extremely impressive essay set forth the astounding theory that all life was merely a form of force generated from matter. The reasoning was, of course, purely analogical. The professor's contention, stated briefly, was that just as electricity, a force that is invisible and indefinable, is generated by the friction of particles of certain kinds of matter, so life is generated and springs into being when certain other types of matter come together in the right proportions and combinations.

"What is your opinion of this theory?" I asked Dr. Dorp.

"It is most cleverly put, but false because based on the false premise of the materialists that there are but two things in the universe, matter and force. They do not recognize the power that controls the force which moves the matter toward a fixed objective. That power is mind. Thus, to them, all life and all mind are merely forms of force generated originally from inert matter."

"If the professor succeeded in creating a living thing from inert matter," I said, "it seems to me that he has demonstrated his proposition."

"Why?"

"Because he was experimenting with dead matter and not with mind or living creatures. There would be no mind or soul involved to inherit its being from a parent mind or soul. A new life entity would be generated, as it were, from matter which formerly contained no life."

"I think," said the doctor quietly, "you would have stated the proposition more accurately had you said that a life entity—a mind without a body—had been induced to enter the body synthetically created."

Our discourse was interrupted by Chief McGraw, who informed us that we were wanted by the coroner.

The Coroner's Jury

DR. DORP did the talking before the coroner's jury. All the way through his testimony was negative. When asked if he had any idea what killed the professor and the policeman he replied that he had several ideas, but none of them would be worth bringing before the jury without more facts to substantiate them. I could see that his purpose was to get the inquest over with as soon as possible so we might continue the investigation.

After due deliberation a verdict of "Death from cause or causes unknown," was brought in and the coroner departed with his men.

"Now that the inquest is over, what do you suggest?" McGraw asked the doctor.

"My suggestion is that we immediately destroy the liquid in the glass-lined tank in the laboratory."

"Why?"

"Because I am convinced that it is at least one of the causes of the deaths that have taken place in this house."

"I suppose you have a good reason for your assumption."

"An excellent one, I believe. While you and your men were searching the house, Mr. Evans and I conducted a little investigation of our own. We put some of the liquid under the compound microscope and as we both saw the same things I am convinced that my eyes did not deceive me. Tell the chief what you saw, Evans."

I described the foam work, the granules and the white objects which appeared to be alive and struggling to escape.

"All Greek to me," said the chief. "What was it?"

"The foam work with its accompanying granules closely resembled protoplasm, the basic life substance."

"And the white things—"

"Were white blood corpuscles from the veins of a human being. They were the strongest of the human body cells to resist assimilation and consequently the last to succumb. The red corpuscles turned the liquid pink for a while but they had disappeared before we made our microscopic examination."

"Good Lord, why didn't you tell me this before?" demanded the chief. "Let's go up and destroy the stuff now. Those two men up there might be killed any minute."

We found the two policemen unharmed and made our plans for the destruction of the substance in the tank. Several demijohns of acid stood under the table and the doctor selected one nearly full of sulphuric acid.

"Open the windows," he ordered. "This is going to make a horrible stench."

Then he removed the rubber stopper from the mouth of the demijohn and I helped him hoist it to the edge of the tank. The searing liquid struck the heavy fluid in the tank with a hissing sound and bored into it like hot water poured in a snow bank. The jelly-like mass quivered slightly, and pungent, nauseating fumes arose to torment our nostrils.

Then, suddenly, as if in horrible pain and awakened to the danger of its dissolution, the plasmic substance began to heave and billow toward the top of the tank with a movement suggestive of the writhing of a huge coiled serpent in its death agony. By directing the stream of acid at the various peaks that arose we endeavored to keep it all washed down to a common level. Then a dozen peaks rose simultaneously and I noticed that one was capped with a round ball in the center of which was a black spot.

"The nucleus!" cried the doctor excitedly, shifting the demijohn. "Pour it on the nucleus!"

We were too late. The thing upheaved itself with amazing speed and lopped over the edge of the tank opposite us. We dropped the nearly-emptied demijohn into the tank and rushed around to intercept it, just in time to see the ball containing the black

spot separate itself from the stringy mass by which it was suspended, drop to the floor and roll under the table.

An exciting chase of several minutes ensued. The thing darted, or rather, rolled from place to place with amazing rapidity. The tile floor was cracked in a dozen places by blows from the clubs of the two policemen who assisted us. At length we drove it into the corner beneath the lavatory and advanced in close formation. I had armed myself with a large spatula, the doctor gripped a heavy pestle, the two policemen had their clubs and the chief held his automatic pistol in readiness.

As we drew close we moved with extreme caution, our nerves taut, our weapons ready to strike when the thing should make its dash for liberty. We waited breathlessly, but no movement came from the corner. I prodded the space behind the water pipes with my spatula. Still no sign of the thing we were after. Then I peered behind them and saw the reason—a hole an inch in diameter in the tile floor, probably drilled in the wrong place by a careless plumber and left unfilled because it was out of sight.

When I pointed it out to Dr. Dorp he shook his head solemnly.

"The Malignant Entity has escaped," he said. "No one in this house—in this community, even—is safe until it is captured or killed."

"You don't mean to tell me that little thing we were chasing around the room could kill anybody," said the chief.

"I am not so sure that it could kill any one now that it has been reduced to the size of a golf ball, although the cytoplasm surrounding the nucleus evidently has the power of quickly dissolving and assimilating living tissues. Its growth, apparently, is only limited by the amount of food it can find."

"Maybe we'd better get the women out of the house," said the chief.

"The sooner, the better. I suggest also that you surround the place with men armed with shotguns. If that thing gets out and starts to grow I shudder to think of what may happen. Children will not be safe outside their own homes, and perhaps not even within them. Adults will be attacked as soon as the creature has attained sufficient size, and there is always the possibility that it may have the power to reproduce its kind. Organisms of this kind, as a rule, multiply with exceeding rapidity. Think of a thousand or perhaps a million such monsters roaming through the land. It is almost impossible to kill them because of the power we have just witnessed, of leaving the body, no matter how large it has grown, taking with it only enough cytoplasm to protect the nucleus and make a new start."

We were all gasping from the fumes that came out of the tank, and glad to get out of the laboratory.

When all were assembled in the living room the chief phoned headquarters for men and shotguns while Dr. Dorp and I explained what we had found to Miss Townsend.

After we had described our adventure in detail, the doctor said:

"It seems strange that your father left no records of his experiments with the monster."

"I feel quite sure that he left a record of some sort, though I have never seen it," replied Miss Townsend.

"Have you any idea where it is?"

"Perhaps in his safe in the study."

"I do not remember seeing a safe in the study."

"Naturally. It is hidden. Come and I will show you where it is."

We followed her into the study and she swung back one of the bookcases which was hung on concealed hinges, revealing a small wall safe.

"Would you mind opening it for us?" asked the doctor.

She turned the dial to number twelve, then pulled the lever. It did not move. She seemed surprised, set the dial more carefully and tried again with the same result.

"It's no use, I guess," she said. "The last number of the combination is twelve. He usually turned it back to one and then it was only necessary to turn it to twelve to open it. He must have locked it last night."

"Don't you know the combination?"

"No. Father was the only one who knew that."

"I wonder if you would object to our blowing the safe," he asked.

"Not if it will be of any assistance to you."

Chief McGraw, who had just finished calling headquarters, came into the room.

"Think you can get us a safe-cracker tonight, Chief?" asked the doctor.

"Get you most anything you want. What's in the safe?"

"We believe it contains some valuable information regarding the thing we were chasing a while ago."

"I'll get a man out here right away," said McGraw, going once more to the phone.

Officer Burke escorted Miss Townsend, Mrs. Harms and the two servants to the Harms home, where they were to spend the night.

Shortly afterward there arrived twenty policemen armed with shotguns and carrying several dozen bulls-eye lanterns. They brought extra weapons which were distributed to all of us who remained in the house, the chief, the doctor, the four policemen and myself. Burke was to remain on guard next door.

A ring of lanterns was placed around the house and the twenty armed men were posted at intervals between them. We then divided our forces as follows: One policeman was placed on guard in the laboratory. Chief McGraw with another policeman patrolled the upper rooms and halls. The doctor and one policeman remained on the first floor and I, accompanied by a strapping young fellow named Black, who had recently been admitted to the force, did sentry duty in the basement.

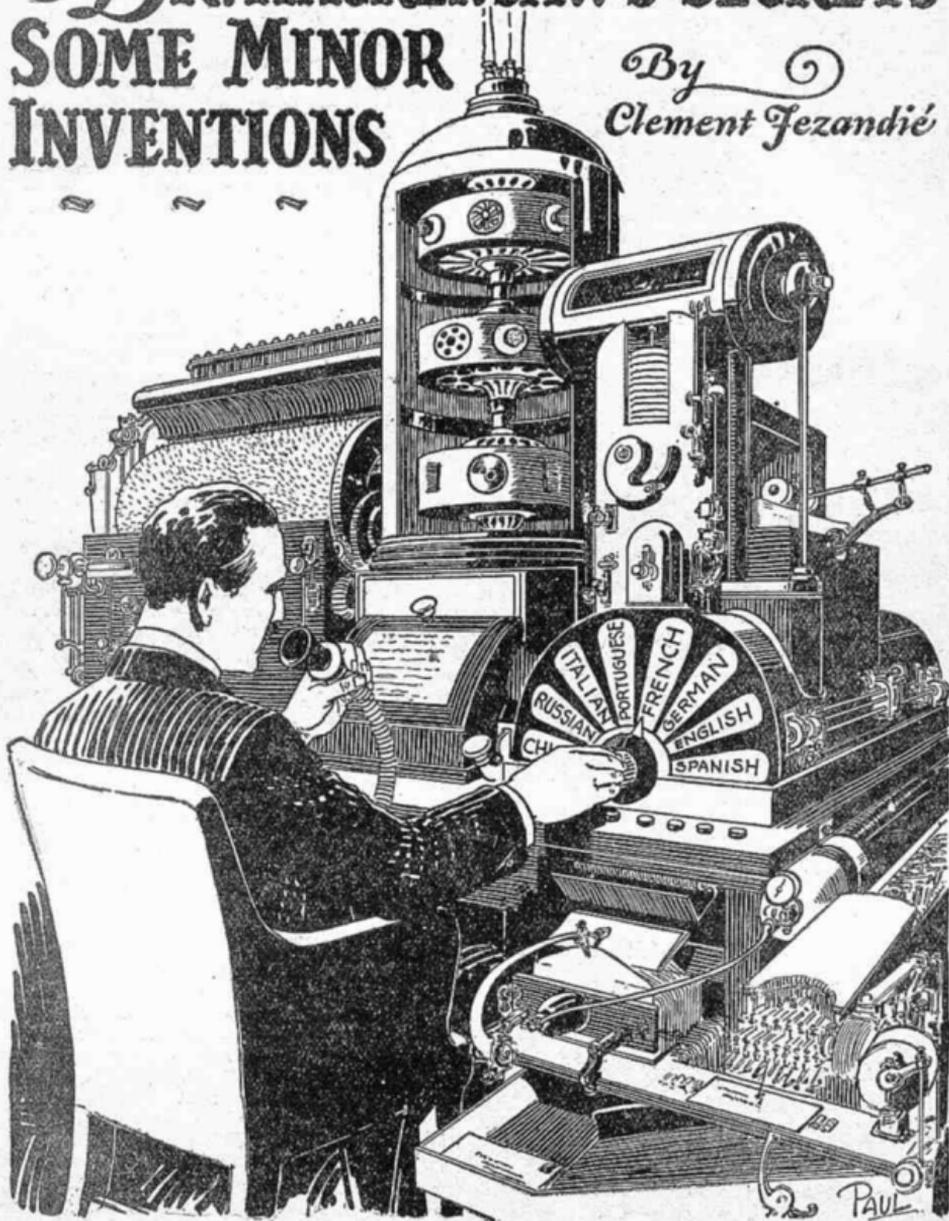
Theorizing

THE Townsend basement was divided into three rooms, each lighted rather dimly by the yellow rays from an incandescent globe suspended on a short drop-cord. The furnace room and coal bins were situated at the rear end. The middle compartment contained a miscellaneous assortment of boxes, barrels, garden tools, household

(Continued on page 286)

DR. HACKENSAW'S SECRETS SOME MINOR INVENTIONS

By
Clement Fezandie



"This machine you see here is only useful for commercial purposes. All my French business letters are dictated to it in English, and the French translations it makes are wonderfully good."



"WHAT are you doing there, Pop?" asked Pep Perkins, bursting into Doctor Hackensaw's sanctum and finding him busily working a peculiar looking machine.

Doctor Hackensaw looked up with a smile: "I'm spending five minutes spare time in writing a few thousand autographs for that class of people of whom one is born every minute, if not oftener."

"But what's that queer machine you're using?"

"This, Pep, is one of my minor inventions—a little device designed to save the time of authors, movie-stars, and other celebrities. As you see, the machine is simplicity itself. It consists of one hundred stylographic pens connected in ten rows of ten pens each, rigidly held in a frame-work. I write my autograph with an extra pen, a master-pen, which is attached to the frame-work, thus causing each of the other pens to make the same motions. By writing my name once, with the master pen on a sheet of cardboard on the table, I get one hundred signatures on the cardboard, which is then cut by machine into a hundred separate visiting cards, each bearing my autograph. I can thus write a thousand autographs in the time it would take another man to write ten. I may add," continued the doctor, chuckling, "that I have made some life-long friends among actors and other celebrities, and even among business men and government officials who have numerous documents to sign, by making them a present of one of these machines. Many of these people are so grateful that they would be willing to do anything for me."

"You must have made a lot of inventions in your life-time!" observed Pep.

"Yes, hundreds of them," returned the doctor.

"As I happen to have some spare time now, I can show you a few, if you care to see them. The first one you see is what I call a 'Dictation Typewriter.'"

"A what?"

"A 'Dictation Typewriter'. It's a substitute for the gum-chewing, face-powdering, flirting stenographer, and type-writer. This machine is warranted never to have a fit of the sulks."

"That's great! But how did you do it?"

"Of course I understand that you can do away with a stenographer by dictating into a phonograph, but how can you do away with the person who hammers the keys?"

"The problem is not as difficult as it seems. My object was to do away entirely with the young lady. An employer is often obliged to let his stenographer see letters which he would prefer to keep confidential. Then too, think of the sums spent yearly for stenographers and typists. Go into any large business house and you will see a roomful of girls busily typewriting, when the work could be automatically done by machinery."

"How so?"

"I will explain. My first idea was merely to simplify the work of the type-writer. At present her delicate hands have to hammer at the keys all day and she is subject to the malady known as 'type-writer's cramp.' It struck me that the work could be made much less fatiguing by pressing the keys by electricity instead of by the fingers. I found that by dipping the tips of my fingers in a solution of copper I could make sufficient contact, by touching a type-writer key to switch on an electric current that would press down the desired letter. The keys, you understand, remained stationary, it was only the type that moved. There was no time or energy lost in pushing down the keys and letting them rise again. A dexterous person could write several times as fast as with the most rapid present-day typewriter. Every touch meant a letter. As the keys were motionless they could be crowded close together, separated only by insulating material. I saved so much space that even using separate keys for the capitals and shift-letters, my keyboard was smaller than the standard size. The typewriter itself was greatly simplified as all moving parts were done away with except the few simple ones necessary to turn the type-wheel which contained the letter on its rim. Each touch released a plunger that forced the wheel against the paper, writing the character desired.

"So compact was my machine and so simple, that I found it desirable to duplicate the letters most often used. For example, there are five 'E's' on my keyboard at different convenient places so there is always one at hand when desired. This increased speed so much that the typist could take dictation as fast as a stenographer.

Of course, with electricity it was a simple matter to connect all five keys to the letter 'E' on the wheel in such a way that making the contact on any one of the keys would close the circuit.

"If I place my finger, coated with metallic copper, on any one of the five keys the circuit is closed and the letter 'E' is struck."

"But," objected Pep, "no girl would be willing to copper-plate her fingers

DOCTOR HACKENSAW has his secrets, but most of our readers make no secret of the fact that they appreciate the doctor's work. The author has the knack—or perhaps we should call it, the quality—of helping the doctor present the most extraordinary, wonderful things in such a manner as to make them appear both plausible and possible. Here this ingenious inventor explains to us some of his comparatively simple inventions, giving us a machine with which to can bread, another to do away with the human typist—and even translator entirely—etc.—all useful machines. Still he is dissatisfied—so he always goes ahead, ever seeking new improvements. Usually he succeeds. Here is food for thought—and experimentation—even if the story is humorously told. It is full of interest and new ideas.

like that!"

"No, that was just my first rough idea. My next improvement was to do away with any touch at all. I wanted a vocal typewriter—one that could be worked entirely by the voice. The mere articulation of each letter must be sufficient to close the proper circuit and print the letter."

"Would that be possible?"

"Entirely so. My first model consisted of a series of gas jets so constructed that each flame flared up as soon as some particular letter was spoken. This flaring up closed an electric circuit and the letter was typed. In practice, however, such a machine was too delicate for general use, the great difficulty being, keeping the gas jets properly adjusted, in spite of differences of temperature. But I finally

devised a machine that worked with a phonograph. When the letter was spoken the vibration of the diaphragm would turn on the proper current to strike the letter."

"How about capital letters?"

"In dictating, it is necessary to use the prefix 'cap' when you wish the next letter to be a capital. Thus, if you were dictating the name 'Dickens' you would have to say: 'Cap D-i-c-k-e-n-s' and the machine would write the word properly with the capital 'D.'

"Flushed with my success I decided to go further and write whole syllables instead of letters. By using the phonograph there was no limit to the number of different keys I would use; hence I could have separate keys for thousands of syllables, although the typewriter itself needed but twenty-six letters."

"How did you manage that?"

"Each syllable key was so arranged that when depressed it switched on in turn all the letters which spelt the syllable. Thus when I spoke the syllable 'be,' the key tuned to work when this sound was uttered, received the electric current and, in descending it switched a second electric current on to the letters 'b' and 'e' in turn so that these two letters were written on the paper. A man could then dictate his letters to the machine just as he would to a stenographer."

"How about syllables that sound alike but are spelt differently, like 'Pa' in 'Paper' and 'Pay'?"

"Ah, that was the stumbling block. To avoid it I made my first machine to write Italian, as in that language, words are spelt as they are pronounced. But I found that even in English there were not so many syllables that sound alike and are spelt differently, and I realized it would be a very easy matter for the dictator to learn to pronounce them slightly different. Thus, the syllables 'dough,' 'doe,' and 'do' could be pronounced somewhat as they are spelt. A man could learn the proper pronunciation in an hour and the machine would then spell each properly."

"Then you succeeded?"

"Perfectly. My first machine had to be tuned to suit the voice of the dictator, but experience soon taught me to leave enough play so that the machine would answer to any voice. Try it yourself, and see how it works. Don't shout, just speak quietly into the mouthpiece just as you would at a telephone."

Pep accordingly took up the mouthpiece and spoke a few sentences, with some coaching from the doctor as to the proper pronunciation, and was delighted to see that the machine typewrote from her dictation without a single error.

"That's great!" cried Pep.

"Isn't it! I was so delighted with my success that I didn't stop there. It was an easy matter to make a phonographic record that would repeat the dictation automatically as often as required and thus make a thousand typewritten copies from dictation, if desired.

"Even this didn't satisfy me. I resolved to go a step further and build a typewriter that would translate my dictation automatically into several different languages. I dictated in English and the machine, at my dictation typewrote copies in English, French,

German and whatever other language I desired."

"But," objected Pep, "that is impossible! You can't make a machine think! You can't translate without thinking and no steel springs or electric currents can ever be made to think!"

Doctor Hackensaw laughed. "That isn't the first impossible thing that I've made possible, Pep," said he. "As a matter of fact, the thing is simple in theory—though it is complex in practice. If it were sufficient to translate word for word, the problem would be easy. Say there are a hundred thousand words in use in the English language. It would only be necessary to have one hundred thousand keys to spell the corresponding word in the foreign language. It would be no more difficult than my dictation typewriter, though it would require more keys.

"But the problem is far more complex. Words spelt alike in English such as 'row,' (a line) and 'row' (the verb) would have to be translated differently into German or French. It is therefore necessary to make these similar words different when dictating. I accomplish this by saying 'row 1,' 'row 2,' 'row 3,' according to the meaning of the word I use. The proper German equivalent is then released. Of course this means that the dictator must spend months in learning to dictate, but he need know only English and his dictation will be automatically translated into any language desired."

"How about idioms, special phrases, proverbs and so on?"

"Each idiom must, of course, have a key of its own. This necessarily multiplies the number of keys. All the keys you see in this room are parts of my machine for translating into French. My 'inversion' keys will give you some idea of the many problems I had to meet and solve. In French every noun is either masculine or feminine, and its adjectives must agree with the noun in gender. For example: Horse is masculine and table is feminine, so a 'good horse' must be translated 'un bon cheval' and a 'good table' 'une bonne table.'

"In French, too, most adjectives follow the noun instead of preceding it as in English. A Frenchman does not say 'a black horse,' he says 'un cheval noir' (i.e.) 'a horse black.' Also, French verbs must agree with their subject. Then, as you remarked, there are a large number of idiomatic phrases. All these difficulties, however, I overcome by an arrangement by which no typewriting is done before a complete sentence is dictated. Automatic 'inversion' keys enable me to get the proper construction of words and their proper terminations."

"I don't understand you."

"I will explain. The adjective 'black,' in French may be either noir, noire, noirs or noires, according to the gender and number of the noun that follows. My key for the adjective 'black' can write any one of these four words. If the first noun-key that follows is masculine, plural, it is provided with a finger that turns around the key 'black' so as to write the word noirs. As the adjective 'black' must always follow the noun, the key 'black' is also provided with an inversion device that prevents it from typewriting its word until the noun that follows it is typewritten, so that if I dictate the words:

'black horses,' the machine will write automatically 'chevaux noirs.'"

"Isn't that awfully complicated?"

"Yes, but not as complicated as it seems. However, this machine you see here, is only useful for commercial purposes. All my French business letters are dictated to it in English, and the French translations it makes are wonderfully good. Some day, when I have time, I shall construct a translating machine that will make really literary translations, but I cannot at present spare either the patience or the time and money required. Besides there would be little demand for such a machine. These commercial machines, however, fill a real need. Every large business house needs one. The expense is not prohibitive as business letters require only simple sentences and stock phrases that keep recurring all the time. My machine can translate business letters and simple phrases like, 'Have you the parrot of your grandmother's cousin?' That's about the highest limit of real literature that my machine will translate."

Pep laughed. "Your idea seems good," said she, "but this machine is much too complicated. Couldn't your efficiency experts simplify it a little?"

At the words "*Efficiency expert*" Doctor Hackensaw snorted.

"Don't talk to me of efficiency experts, Pep," said he, "unless you want to drive me crazy. I have no use for them! Understand me, I believe in organization. Organization is necessary for everything—even for a college-yell. And I highly honor the efficiency expert who organizes a business so that the article to be manufactured enters at one door, passes in turn to each of the men who have to work at it, and goes out to the delivery wagon without traveling a single unnecessary foot. I also honor the man who lowers the cost of goods without sacrificing the quality. But the efficiency expert who spends his time seeking to save one screw on a machine, or a button or a stitch on a garment is a menace to society. In making any machine, engineers allow for what is called the 'factor of safety.' They know that every machine at times will be called on to sustain undue strains or stresses, and they allow a margin of strength to meet these unusual demands. The efficiency expert, however, spends his time paring down this factor of safety, cutting out a screw here, a nail there, and producing an article that will give way at the least unusual strain, leaving the owner in the lurch at a time when the idle machine means a loss to him many thousands of times the cost of the extra screw. Such experts are the bane of my existence. Only once in my life did I ever have occasion to bless an efficiency expert."

"When was that?"

"When I was a young man, Pep, I fell in love with a pretty girl and I bought a new suit of clothes on the day when I decided to propose to her. But the tailor I bought it from was an efficiency expert who had found means of saving three stitches on every pair of trousers he made, and thus increasing his gains one-tenth of a cent on each pair. The consequence was that when I got down on my knees to propose to the idol of my heart, there was a ripping and tearing sound heard as the trousers gave way at the seams. Burning with shame and confusion

I jumped up and backed out of the room in as much haste as was possible under the circumstances, and I never dared go near the young lady again."

"Well, I understand now why you don't like the efficiency experts!"

"Not at all. At the time I felt like strangling the fellow, but afterwards I would have done anything for him. The girl married another man, and I remained free all my life!"

Pep laughed, and Doctor Hackensaw continued:

"There is one field where efficiency experts could do useful work, and that is in the standardizing of the parts of different machinery. At the present day we have standard sizes of screws, nails, bolts, etc., and this standardization has proved a great blessing. It would, however, be possible to extend it to a great many castings and other parts of machinery. Certain parts of one automobile, for example, should be capable of use on others or on aeroplanes or other machinery. Very slight changes in the patterns would often make this possible and lower the cost of production while at the same time it would facilitate repairs."

"What is that next machine you have there?" asked Pep.

"That's a simple little attachment to prevent the theft of automobiles. When you leave your car, press a hidden switch. The burglar comes, starts the auto without trouble and makes off. But as soon as the car begins to move, a sign appears at the back! 'THIS CAR IS STOLEN!'"

"The sign disappears as soon as the car stops. But you will have no trouble tracing your car, for a crowd will gather, and the driver seeing how much attention he is getting will take the first opportunity to escape. Yet he won't know what caused the excitement as the sign has already vanished."

"Next to that machine you will see another, canning bread."

"Canning bread!" echoed Pep.

"Yes; while traveling abroad, I often found it difficult to obtain nice fresh rolls, and to attempt to carry a supply was out of the question as they became stale in a few hours. Travelers in the wilderness are obliged to carry flour and bake their own bread frequently or else consent to live on hard-tack and crackers. They would willingly pay the small additional cost for canned rolls or canned sandwiches. If they were put up in tins filled with nitrogen instead of ordinary air, the rolls will keep perfectly for years. If properly sterilized and sufficiently moist when packed, they will be as fresh when opened as when first sealed."

"And that very peculiar machine next to the sandwich canning machine?" asked Pep.

"That," replied Doctor Hackensaw proudly, "is one of my greatest triumphs in inventing. That is an Automatic Judge. Our courts are now all overcrowded with cases. This machine will automatically listen to the pleadings of the contending parties and give a just decision. In fact I'll guarantee the decisions of the machine to be equitable in 999 cases out of a thousand—which is a larger proportion than any judge I ever heard of can boast."

"How ridiculous!" retorted Pep, "Whoever heard of an 'automatic judge!' Why such a thing is im-

possible! A machine can't possibly *think*—or have judgment!"

Doctor Hackensaw chuckled. "It would seem so, Pep," said he, "but I assure you I am perfectly serious when I say the machine will do what I claim for it. It seems impossible, but as in the case of the translating machine this is only one of many 'impossible' things made possible."

"But how does it work?"

"I'll tell you, for the basic principle is extremely simple. I have had a great deal of experience in the courts and I have noticed that the man who is in the wrong always secures the best lawyer. The man who knows he is right will be satisfied with a poor lawyer, trusting to the justice of his cause to persuade the jury. His opponent, however, knows his only hope is to secure a better lawyer than his adversary, and will spare no pains or expense to secure it. Consequently, if I were a judge, I would let both lawyers talk five minutes each, and then decide the case in favor of the poorer lawyer."

"But in that case, why do you need a machine?"

"The machine is useful as an aid to tell which lawyer is really the cleverer. It registers their brain capacity, their intelligence, their energy, etc."

"But," objected Pep, "It seems to me that people would soon learn your system and then both sides would try to engage the poorest lawyers they could find."

"Precisely! To avoid that, I must keep my method secret. My machine does the real judging. But I should hire cheap men to listen quietly to the cases, and at the end they would secretly draw a slip from the machine which would tell them what verdict to give. And, as I said, I would guarantee the judgment to be equitable in 999 cases out of a thousand."

"What's that little instrument that looks like a match?" asked Pep.

"That's a gynaionometer. It's an instrument for measuring a woman's age."

"A gynaionometer!"

"Yes, that's Greek, and means 'The measure of a woman's age.'"

"Great Scott! How does it work?"

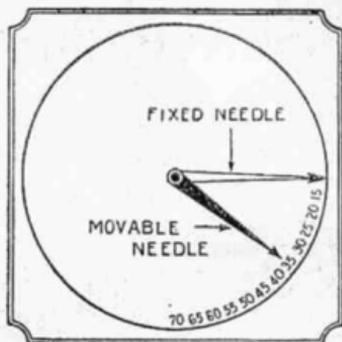
"I got the idea from an author who wrote under the pen name of Diogenes Tubb, who some forty years ago wrote the story of an inventor (Mr. P. Q. Jones) of an instrument for ascertaining a woman's age. At that time, about 1885, the ladies all wore long skirts. Well, this Mr. P. Q. Jones was a philosopher. He had often stood on a street corner on a muddy day, and he noticed that the ladies, in crossing, always raised their skirts a little, in order to keep them out of the mud."

"Well, there's nothing very extraordinary in that."

"No, but Mr. Jones noticed the remarkable fact that the extent to which the skirt was raised, varied with the age of the woman—in fact he found that the amount of stocking displayed was directly proportional to the woman's age—the older the woman, the higher she raised her skirts. It was another

instance of the law of compensation—making up in quantity for what was lacking in quality.

"Mr. P. Q. Jones used this fact as the basis for an instrument which he called a 'gynaionometer' and which he used for measuring the ages of the ladies he met. In this match-like instrument on the table you see an improvement of mine on Mr. Jones' idea—a very simple means for ascertaining the age of your mother-in-law or any other of your female friends.



"As you see, my device was simplicity itself. It consisted merely of a dial on which was a fixed needle and a movable needle. On a muddy day you could stand exactly ten feet away from the curb and place the instrument so the fixed needle is perfectly horizontal three feet from the ground. Then you wait for the lady to come along, and when she raises her skirt you move the movable needle until it points directly at the highest visible portion of her stocking and you could at once read her exact age on the dial in years, months and days."

"Good heavens! But the thing wouldn't work nowadays when we all wear short skirts!"

"No, the fashions changed and I was obliged to modify my instrument. As a person's arteries harden with age, I tried to make one that would work according to the degree of hardness of the artery, but I failed. When the audion was invented however, I succeeded by making a 'gynaionometer' that worked by electricity. Every human being is an electrical machine—continually generating electrical currents. Careful study showed me that these currents vary with age. By the use of an audion I could amplify these currents and I constructed the rather complicated machine you see here which enables me to tell a lady's exact age in an instant.

"I expected to make a fortune from my device, but would you believe it, the thing has brought me nothing but trouble and vexation. Like Mr. Jones, I have lost all my lady friends and have become estranged from my female relatives because I claimed to know their ages better than they did themselves.

"No, Pep, there are some things it doesn't pay to monkey with. One of them is the buzz-saw. Another is a woman's age!"

The Runaway Skyscraper

By MURRAY LEINSTER

(Concluded)

years flee by, three generations were born, grew and begot children, and died again!

Estelle, held fast in Arthur's arms, thought nothing of such trivial things. She put her arms about his neck and kissed him, while the years passed them unheeded.

Of course you know that the building landed safely, in the exact hour, minute, and second from which it started, so that when the frightened and excited people poured out of it to stand in Madison Square and feel that the world was once more right side up, their hilarious and incomprehensible conduct made such of the world as was passing by think a contagious madness had broken out.

Days passed before the story of the two thousand was believed, but at last it was accepted as truth, and eminent scientists studied the matter exhaustively.

There has been one rather queer result of the journey of the runaway skyscraper. A certain Isidore Eckstein, a dealer in jewelry novelties, whose office was in the tower when it disappeared into the past, has entered suit in the courts of the United States against all holders of land on Manhattan Island. It seems that during the two weeks in which the tower rested in the wilderness he traded independently with one of the Indian chiefs, and in exchange for two near-pearly necklaces, sixteen finger-rings, and one dollar in money, received a title-deed to the entire island. He claims that his

deed is a conveyance made previous to all other sales whatever.

Strictly speaking, he is undoubtedly right, as his deed was signed before the discovery of America. The courts, however, are deliberating the question with a great deal of perplexity.

Eckstein is quite confident that in the end his claim will be allowed and he will be admitted as the sole owner of real-estate on Manhattan Island, with all occupiers of buildings and territory paying him ground-rent at a rate he will fix himself. In the mean time, though the foundations are being reinforced so the catastrophe cannot occur again, his entire office is packed full of articles suitable for trading with the Indians. If the tower makes another trip back through time, Eckstein hopes to become a landholder of some importance.

No less than eighty-seven books have been written by members of the memorable two thousand in description of their trip to the hinterland of time, but Arthur, who could write more intelligently about the matter than any one else, is so extremely busy that he cannot bother with such things. He has two very important matters to look after. One is, of course, the reinforcement of the foundations of the building so that a repetition of the catastrophe cannot occur, and the other is to convince his wife—who is Estelle, naturally—that she is the most adorable person in the universe. He finds the latter task the more difficult, because she insists that *he* is the most adorable person—

THE END

TO OUR READERS

SINCE the second issue of AMAZING STORIES appeared, we have been literally overwhelmed with the most flattering and enthusiastic letters from our readers that it has been our good fortune to see in the twenty years of our experience as publishers. There are so many letters that it is physically impossible to answer all of them, and we again wish to thank all of our good friends who have taken the trouble to write us.

In going through these letters we have been pleasantly surprised that so many of our readers think that the magazine should come out oftener than once a month. Some have even gone as far as to demand that AMAZING STORIES become a weekly, while most of them want to see it a bi-monthly; that is, appearing every fortnight.

We have given this a good deal of consideration, and while there were several hundred such letters, we would like to put the matter to a popular vote—which we are doing herewith. We ask you to be kind enough to fill out the blank at the bottom of this page, paste it on a post card, or enclose it in an envelope, and mail to us. If you do not wish to mutilate the magazine page, it will be all right to use a post card, copying the voting coupon.

You may rest assured that we shall accede to the wishes of the majority. If by a decisive vote it is found that we should publish the magazine twice a month, this request will be complied with in due time. Of course no reader obligates himself in any way by filling in and returning the coupon.

VOTING COUPON

Publishers of AMAZING STORIES,
53 Park Place, New York City.

Gentlemen:—I like the magazine as it is now—a monthly

I would like to see AMAZING STORIES come out twice a month (at 25c for each copy)

NAME

STREET and ADDRESS

CITY

STATE

The Malignant Entity

By OTIS ADELBERT KLINE

(Continued)

tools, canned fruits, empty fruit jars, bottles, and what not. The front room was used as a laundry.

Officer Black and I searched each room thoroughly, using a flash light in the dark corners and moving everything that wasn't fastened to the floor or walls. Several mice jumped out from behind boxes and barrels, but we saw no sign of the creature we were hunting.

We were peering behind the furnace when several loud squeaks came to us from the middle room.

With shotgun held in readiness, I moved stealthily toward the point from which the sound came. There, in the center of the floor almost under the yellow electric light bulb, I saw the fast disappearing body of a mouse under a mass of plasmic jelly.

My first impulse was to shoot, but on second thought, I decided to attempt to capture the thing alive if possible. Instructing Black to hold his weapon in readiness in case I failed, I unscrewed the lid from a large empty fruit jar and walked softly toward the center of the floor. I expected the thing to spring away, but to my surprise it lay almost motionless on the body of its victim. I could see streaks of bright red flowing through the jelly-like mass as blood of the mouse was drawn up for assimilation.

I clapped the mouth of the jar over the creature and still it made no effort to escape. Then, sliding a fire shovel which Black brought me, under the thing and its victim, I turned the jar right side up. It fell to the bottom of the receptacle, still clinging to the now formless mass that had once been a mouse and making no effort to escape. I put the lid in place and screwed it down tight.

"Now try to get away, you devil!" I cried, shaking the jar exultantly.

I almost dropped it a moment later as a muffled explosion jarred the building. Then I remembered Chief McGraw's safe-cracker, and hurried upstairs.

When I reached the living-room, Dr. Dorr was emerging from the study in a cloud of plaster dust. In his hand was a thick, loose-leaf book.

"I have the professor's diary," he called excitedly. "Don't get fussed over such trifles," I replied. "Look what I've got. Caught it alive, too."

I put the jar on the table and he squinted at it for a moment. The blood-bloated monstrosity had separated its shapeless hulk from the whitened bones of its victim and was sluggishly crawling up the side of the glass.

"You caught it, sure enough," he said. "I only hope it hasn't any little sons or daughters about."

"I'll keep the house under guard for a couple of days," said Chief McGraw, who had come down to learn the result of the cracksman's labors. "If there are any more of these things around they ought to show themselves by that time."

The doctor drew a chair up to the table and eagerly scanned the pages of the diary while we watched the antics of the thing in the jar. It kept getting lighter colored all the time, and more lively. By the time the cytoplasm had become transparent it was racing around, contorting its body into all kinds of shapes—flat, oval, and round. At times it

put forth pseudopods, sometimes elongating them until it resembled a small cuttle fish.

"September twenty-third was the night Immune Benny died wasn't it, Chief?" asked the doctor.

"Right. Why?"

"Then this diary tallies with Miss Townsend's testimony. Here is the professor's entry.

"September 23, Nearly Midnight.

"Eureka! I have succeeded. I placed a tiny drop of syntheplasm on the slide tonight as I have done a thousand times before, and covered it with a weak, sterile solution of gelatine.

"I watched it steadily for a half hour but nothing happened until, suddenly, I noticed a tiny black spot forming in its center. I am positive there were no animalcules either in the syntheplasm or the solution, yet no sooner had the black spot become readily distinguishable than my speck of syntheplasm began moving about as if searching for food. Evidently it cannot subsist on gelatine.

"I next introduced a rhizopod into the solution. My animal slightly resembles it, but is larger and gets about much faster. I wanted to compare the two but the rhizopod was quickly devoured. Now I know what to feed it."

"It is growing late so I will not read all the details to you," continued the doctor. "Suffice to say that the professor discovered his synthetically created creature would feed on nothing but living creatures. He fed it so many microscopic animals the second day that it grew to a size visible to the naked eye. Then he fed it gnats, mosquitoes, flies, beetles, and finally mice, when it became so large he was forced to transfer it from the small porcelain dish in which he kept it, to a much larger one.

"The thing grew at a prodigious rate of speed. Its growth seemed only limited by the amount of living creatures it was permitted to devour. At length he was compelled to keep it in the glass-lined tank which he had been using for the culture of infusoria. Its victims were thrown into the tank alive and were quickly killed by the monster. He noticed that it was sluggish while assimilating its food, but moved with cat-like quickness when hungry. Though it had no eyes it seemed to sense the approach of food in some way and, toward the last, stretched forth pseudopods and snatched the animals from his hands.

"Yesterday the professor led two mastiffs into the room. Hardly had he closed the door of the laboratory before the monster was out of the tank. It killed and devoured the two big dogs in less than a half hour—then crawled back sluggishly into the tank to digest its meal. Thus ends the written record of the professor's adventures with the Malignant Entity. His whitened bones on the floor of the laboratory are mute testimony of what occurred."

There was a moment of awed silence when the doctor finished his narrative. His eyes fell on the struggling thing in the glass jar.

"What are you going to do with it?" I asked.

"Come," he said, taking up the jar and starting for the basement. "I will show you."

The chief and I followed him down the besement stairs and into the furnace room. He opened the fire-door and tossed the jar on the glowing coals.

The thing raced about spasmodically for a moment in the intense heat, then fell huddled in the bottom of the jar. Suddenly, as if inflated from beneath, it puffed upward and outward, almost filling the receptacle in a shape that resembled a human head.

At that only a fligment of my imagination at first — blinked — and faded a second time. The face of a man stared back at me from behind the curved glass, eyes glowing with malevolent hatred and lips drawn back in a snarl that revealed crooked, yellow fangs. For a moment only the vision held. The next instant the jar was empty of all save a tiny pile of white, flaky ash and the bones of the mouse.

Dr. Dorp shut the door suddenly and noisily.

"That face," I exclaimed. "Did you see it also?"

"A queer distortion of the gas-inflated protoplasm," he replied.

Chief McGraw seemed greatly perturbed. He drew a long black cigar from his pocket, lighted it and puffed nervously for a moment.

"Distortion, hell," he muttered. "It was a perfect double for the face of Immune Benny!"

THE END

An Experiment in Gyro-Hats

By ELLIS PARKER BUTLER
(Concluded)

At six the next morning Anne, my wife, and I all went into the yard to stop Walsingham. Then it came to me that I had no way of stopping him. To add to my dismay I knew that when the sun arose the thin ice would melt, and as Walsingham's feet could no longer slip easily, he would in all probability be wrenched in two, a most unsatisfactory condition for a son-in-law.

But while I was standing in dismay, love found a way, as love always will, and Anne rushed to the cellar and brought out the stepladder and the ice-pick. Placing the stepladder close to Walsingham she climbed it, and holding the point of the ice pick at the exact center of the top of the hat she pushed down. A sizzling noise told us that she had bored a hole in the hat, letting the vacuum escape, and the hat flew from Walsingham's head.

Slower and slower he revolved, until he stood quite still, and then, without a reel or a stagger he walked up to me and grasped my hand, while tears told me the thanks he could not utter. He had revolved in the right direction! He was cured!

THE END

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The Coming of the Ice

By G. PEYTON WERTENBAKER

(Concluded)

one accord they rose before my eyes and, ignoring me as a baser creature, they stripped away their load of tattered rags and, one by one, they stalked with their tiny shriveled limbs into the shivering gale of swirling, gusting snow, and disappeared. And I was alone. . . .

So am I alone now. I have written this last fantastic history of myself and of Mankind upon a substance that will, I know, outlast even the snow and the Ice—as it has outlasted Mankind that made it. It is the only thing with which I have never parted. For is it not irony that I should be the historian of this race—I, a savage, an "archaic survival"? Why do I write? God knows, but some instinct prompts me, although there will never be men to read.

I have thought here, waiting, and I have thought often of Sir John and Alice, whom I loved. Can it be that I am feeling again, after all these ages, some tiny portion of that emotion, that great passion I once knew? I see her face before me, the face I have lost from my thoughts for eons, and something is in it that stirs my blood again. Her eyes are half-closed and deep, her lips are parted as though I could crush them with an infinity of wonder and discovery. O God! It is love again, love that I thought was lost! They have often smiled upon me when I spoke of God, and muttered about my foolish, primitive superstitions. But they are gone, and I am left who believe in God, and surely there is purpose in it.

I am cold, I have written. Ah, I am frozen. My breath freezes as it mingles with the air, and I can hardly move my numbed fingers. The Ice is closing over me, and I cannot break it any longer. The storm cries wildly all about me in the twilight, and I know this is the end. The end of the world. And I—I, the last man. . . .

Thou art man. . . .
I am cold—cold. . . .
But is it you, Alice, is it you?

THE END



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Immediate Test of New NAB Not Expected; President, Secretary Still To Be Chosen

Sixteenth annual convention surprises attendants by peace and quiet—no battles on reorganization plans—new dues adopted—Loucks' temporary in charge

By JERRY FRANKEN

WASHINGTON, Feb. 19.—The net results and values accruing from reorganizational measures adopted by the 16th annual convention of the National Association of Broadcasters were not evaluated until the close of the future. The old NAB, a loosely knit, largely impotent trade association, has been replaced by a strong organization able to show tangible benefits for its members. The broadest hope will be the adoption of an NAB that could do and did little.

The first crucial test confronting the old NAB—the demands for further musician employment by the musician industry—started the beginning of the end. Now, to establish the actual differences in strength between the old and the new, the new must be similarly confronted with a major industry problem.

No such problem seems to be an immediate factor. A possibility exists that it may not crop up until the reorganization of Musicians starts to get after unaffiliated indie stations for musician employment. There are many indies who claim the Independent Radio Network affords employment for their own NAB down to the river—sold the unaffiliated indie stations for making a net-advance deal with the Society, and largely extended through the industry. Thus the new NAB may soon face two tests: strong internal strife and outside pressure from a powerful union. The latter is a more serious problem, already.

Even these two tests not develop. In all likelihood the association will avoid a crucial period until 1940, when it meets with Congress, the National Composers, Authors and Publishers and the AFM, both expire. However, there is still a possibility to be considered in discussing any unified industry action. That is that radio probably more so than any other trade group in the United States is quite vulnerable. An international war might result in radio stations in a strike might cripple the business to a great extent; a stoppage of ASCAP made radio a dead end, with no real answer, and that is a truly potent trade association. A strike by the unions, even this might not suffice. There was the usual amount of grumbling after the reorganization, and protests on the new radio deal were quite proper in reorganizing with this action, demanding that the new NAB be given time to prove itself.

Fenceful Ouch

Before the convention was much talk that the reorganization plans, which had been in the works for months, would involve a complete and total lack of discussion and the complete unanimity with which the new corporation would set up fabricated practices for everyone at the convention. Many took this as an unhealthy sign, a sign of disinterest. Many familiar with organizations, trade and otherwise, favored a certain amount of "stirring" and a healthy omen—that the members were thinking about and concerned over industry pressure. Other, however, said that the concern and thinking had been expressed before the reorganization, and the broadcasters had finished making up the new set-up and came to the convention prepared to do specific job. Voting for the new plan was that job.

Reorganization was enabled through adoption of a new set-up bylaws, the aspects of the latter are a paid president, a paid secretary, a paid treasurer, a paid treasurer, doing away with the present managing director's office; establishment of a board of directors for the states of Alaska and Hawaii; a board of directors of 23, 17 coming from the district associations of new set-up bylaws, and six to be two each from large, medium and small stations; a new set-up of dues, and a new and higher scale of dues, based on net receipts of time sales.

Committee

The reorganization committee of Edith W. Allen, WVA, and Tracy (KOH), Dist. Chair (WNSB), Walter Damann (WJLA), and J. H. G. (WJLA) (all in New York), Mark Ehrhardt (WJIA), with (See IMMEDIATE TEST on page 8)

Welcome Josef Cherniavsky
CINCINNATI, Feb. 19.—Josef Cherniavsky, who joins WLW's musical staff tomorrow as co-director with William Brown, was tendered a reception at the Netherlands Plaza here last night by officials of the National Association of local newspaper men and trade-paper editors as guests. Speakers welcoming the Russian master, in a special broadcast were Mayor James C. Stewart, William Brown, WLW-WNSA musical director, and James D. Showen, new Crosby general manager.

New NAB Directorate

WASHINGTON, Feb. 19.—List below shows both the districts and district directors approved by the 16th annual NAB convention.

- | | |
|---|---|
| <p>DISTRICT</p> <p>1.—Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont, —New York.</p> <p>2.—Delaware, New Jersey and Pennsylvania.</p> <p>3.—North Carolina, South Carolina, Virginia and West Virginia.</p> <p>4.—District of Columbia, Maryland, Maryland, Florida, Georgia, South Carolina, South Dakota.</p> <p>5.—Alabama, Louisiana, Mississippi, Texas.</p> <p>6.—Kentucky, Ohio.</p> <p>7.—Indiana, Michigan.</p> <p>8.—Illinois, Wisconsin.</p> <p>9.—Iowa, Missouri, Nebraska.</p> <p>10.—Minnesota, North Dakota.</p> <p>11.—Kansas, Oklahoma.</p> <p>12.—Texas.</p> <p>13.—Colorado, Idaho, Utah, Wyoming.</p> <p>14.—California, excluding the counties of San Luis Obispo, Kern, San Bernardino, Santa Barbara, Ventura, Los Angeles, Orange, Riverside, San Diego, Imperial, Nevada, Hawaii.</p> <p>15.—Arizona, California, including the counties of San Luis Obispo, Kern, San Bernardino, Santa Barbara, Ventura, Los Angeles, Orange, Riverside, San Diego, Imperial, New Mexico.</p> <p>17.—Alaska, Oregon, Washington.</p> | <p>DIRECTOR</p> <p>John Shepard III, Yankee network.</p> <p>Harry C. Wilder, WYEL, Syracuse; WFTN, Jamestown.</p> <p>Clair J. Colburn, WDEL, Wilmington; WORX, York; WQAL, Lancaster; WAGL, Haxton; WEST, Easton.</p> <p>John A. Kenney, WCBS, Charleston; WBB, Parkersburg; WBLE, Clarksville.</p> <p>W. Walter Tans, WFLA, Tampa.</p> <p>Edwin W. Craig, WSM, Nashville.</p> <p>Mark Ehrhardt, WKLO, Louisville.</p> <p>John F. Petzer, WKZO, Kalamazoo.</p> <p>Wesley J. Damm, WTMJ, Milwaukee.</p> <p>John J. Gillin Jr., WOIC, Omaha.</p> <p>Earl H. Gammons, WCCO, Minneapolis.</p> <p>Herb Hollister, KANS, Wichita.</p> <p>O. L. Taylor, KOCB, Amarillo; KPVO, Denver.</p> <p>Gene O'Palton, KPFL, Denver.</p> <p> Ralph R. Brunton, KJBS, San Francisco; KQW, San Jose.</p> <p>Donald W. Thornburgh, KNX, Los Angeles.</p> <p>G. W. Myers, KOIN-KALE, Portland.</p> |
|---|---|

The other six district directors were chosen from 12 nominees. It was explained by Mark Ehrhardt that when the tickets drawn for the NAB officials, the slate was "rigged" to place Frank Russell and Kenneth Berkeley, both of NBC in Washington, in opposition, with Russell winning. These six directors follow, the names in parenthesis being those who ran against them. In the clear channel field—Robert Hough, WJAP, Fort Worth (J. O. Maland, WHO, Des Moines), and Lester Kay, WRB, Atlanta (Earl Glend, KXL, San Luis Obispo). In the regional station field, Frank Russell, WJBC, Washington (Kenneth Berkeley, WMLA, Washington), and Elliot Roosevelt, Hearst Radio (Samuel Rosenbaum, WJTL, Philadelphia). Local stations in the field were WJBC, Baltimore (Lester Benson, WJL, St. Louis), and Edward Allen, WJVA, Lynchburg, Va. (James Hopkins, WJKB, Detroit).

Stations in 3d NAB District Burned at Caucus Vote Switch

WASHINGTON, Feb. 19.—Owners of stations in the National Association of Broadcasters' newly created District Three (Pennsylvania, Delaware and New Jersey) are plenty burned at the election of Clair McCullough, who was elected to the directorship of the board of the organization. Election of the Lancaster man was said to have been made possible by WIP's Benedict Zimber, who was reported pledged with others to have voted for McCullough. Zimber, who was elected Mutual Broadcasting System and general manager of WOR.

McCullough is a publisher and operator of New Jersey and up-State Pennsylvania stations held a caucus prior to the election. Many of his associates are reported to vote for Strickland. The election seemed to be in the bag. However, when the ballot was taken two members of the caucus were away and when the vote was counted McCullough had been elected by a vote of seven to five. A count of noses was made and it was learned that Glendeb had decided to change his vote.

McCullough, who is a political power in central Pennsylvania, is reported to favor a Pennsylvania radio chain with WIP as the eastern terminus.

WIP now has several important accounts that are fed the stations over the Mutual network. Mutual lately has severed its relation with WIP, eliminating possibilities of a schism between WIP and the Mutual network. It may evolve that Mutual business now on WIP may no longer get that clearance and revert in to vote for WFL. Later has dropped its close WLN line attention.

NAB Coverage

WASHINGTON, Feb. 19.—Importance of the 16th annual convention of the NAB is well illustrated by numbers of trade papers covering the meeting. In these were, of course, the usual show business and radio publications which have covered previous meetings. The following are the titles of Advertising Age, Business Week and Printer's Ink, each sent a man to cover the convention. The first two were by the editor, David Fredericks. News magazine will write an active, popular article on the subject. The other species of the biggest trade paper, Radio Age, was getting kind of miffed when they were told they'd have to pay \$10 for registration. This decision, however, was overruled by the board, overruled with the exception, NAB figures that this is necessary and the trade told 'em it seemed funny newspaper men to have to pay for stories.

Report Chi Hotels In No-Radio Pact

CHICAGO, Feb. 19.—Authoritative sources revealed this week that local hotel men have signed an agreement with the radio industry which will stop off the air for a period of one year unless the \$100 weekly service charge imposed after March 15 by the radio stations is lifted.

Lewis B. Erling, secretary of Chicago's Good Housekeeping Club, flatly denied the report, however, and stated that the matter occurred only in a position to know if such a pact had been signed. Reason given for conflict of reports is assuming hotel managers had agreed to the year's ban on paid reports, it would be a bad piece of publicity for Erling. He stated that a radio wire would steer clear of Chi until the year's process ended. Therefore hotels are tightlipped about this. "They fear, too, that such a move might be frowned upon by the music clubs' local, claiming the agreement would make it tough for traveling bands. With the Edgewater Company and the Medinah Club leaving WBBM sent week due to cancellations of contracts made privately by the January radio pact, it is not one Chi hotel with a remote view. Only spots so far to return to the air since the pact started. The fact that 800 are Coleman's and Three Deuces, night spots, on WBBM. Others that remain right along are the Blackhawk Restaurant, Yae, Swineland, Grand Terrace and Chase Pines. Melody Mill Ballroom is kicking in with a century note to WGN.

Met Life Decides To Stay Off Air

NEW YORK, Feb. 19.—Metropolitan Life Insurance Company has decided to shun radio in favor of printed media. The company has decided to stay off the air to save a large share of its income to York. The company and station men were hoping that the insurance company would buy advertising. Radio hopes were mixed this week, however, when it was stated that radio was not.

Further hope that insurance firms would take to the air to defend themselves remains in the finger-crossing stage. Insurance companies have been out of the radio business for several months. Latest in series of articles in the Scripps-Howard New York World-Telegram and Sun, which has been investigated are also expected to embarrass the underwriter-payers. Several books are being written by the industry caused stations to hope for a positive word from the insurance industry. It is a "staying hot."

A Fast No

PHILADELPHIA, Feb. 19.—In an effort to cut down its overburdened WFN last week asked permission to broadcast a program with WFL and Musicians to cut its house band from 12 men to eight.

WFL's president, William A. Tummel, APM's president, "It was, "Nothing doing."