December, 1926

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EDITOR

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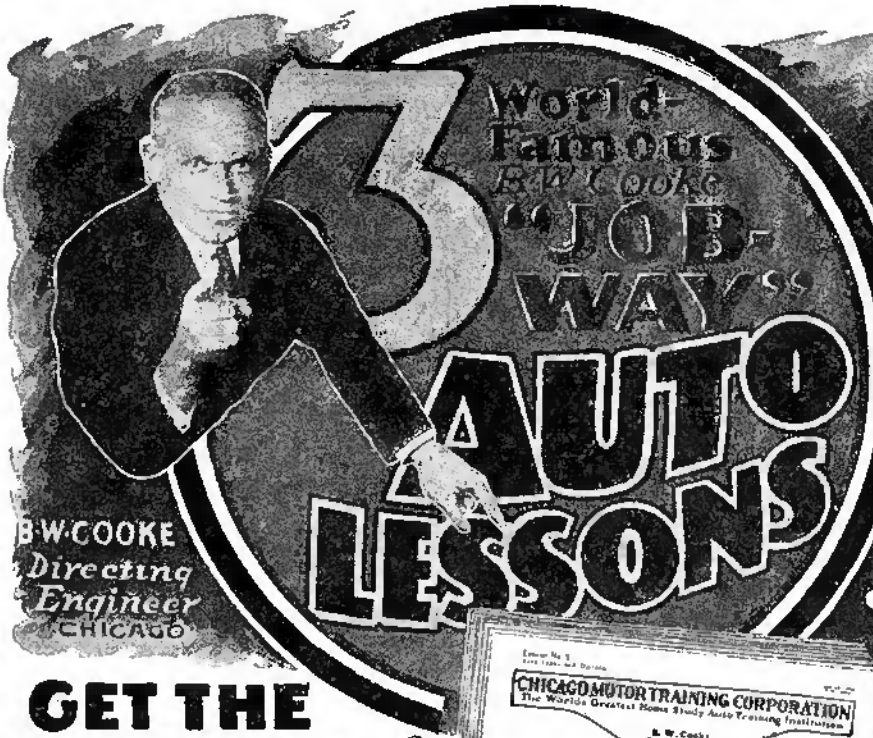

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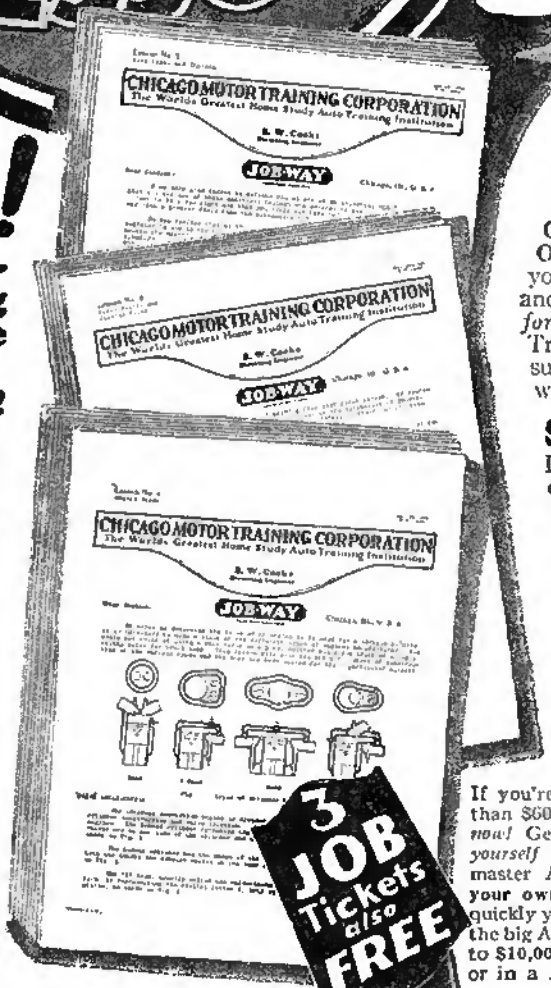

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AMAZING STORIES

Vol. 1 No. 9
Dec. 1926

EDITORIAL & GENERAL OFFICES: 53 Park Place, New York City
Published by Experimenter Publishing Company, Inc.

(H. Gernsback, Pres.; S. Gernsback, Treas.; R. W. DeMott, Sec'y)
Publishers of SCIENCE & INVENTION, RADIO NEWS,
AMAZING STORIES, RADIO REVIEW, RADIO INTERNACIONAL
Owners of Broadcast Station WRNY.

Contents for December

Our Cover

this month represents the main illustration for a story as yet to be written by our readers. $500.00 in prizes will be given for the best scientifiction stories written around this picture. See editorial page for details of this absorbing contest.

Copyright Acknowledgment

In Our Next Issue:

THE RED DUST, by Murray Leinster. You have, of course, read "The Mad Planet." "The Red Dust" is a sequel to this all-absorbing and now famous story. Here we see further and more exciting adventures of the hero Burl.

THE MAN WHO COULD VANISH, by A. Hyatt Verrill. The author of "Beyond the Pole" and "Through the Crater's Rim" has written what is, to our mind, a real masterpiece. Mr. Verrill treats invisibility in a quaint manner and the science by which he does this seems correct in all respects. You will read and reread this story.

THE MAN WITH THE STRANGE HEAD, by Dr. Miles J. Breuer. When a medical doctor turns author, you may be sure that he will write a story that we can all enjoy. "The Man with the Strange Head" is certainly as amazing and strange a story as you would wish to have told.

THE FIRST MEN IN THE MOON, by H. G. Wells. Our adventurers are now on the moon, or, rather, inside of it, and are fast getting acquainted with the superhuman insect race which he pictures as reigning on our satellite. The second installment is packed full of weird and exciting incidents that you can never forget.

THE SECOND DELUGE, by Garrett P. Serviss. Cosmo Versál was right. The deluge covered the highest mountains of the Himalayas. Strange to say, some lives were spared—but how? You will find it out for yourself in reading the concluding chapters.

THE ELEVENTH HOUR, by Edwin Balmer and William B. MacHarg. Here is another one of the famous scientific detective stories by the well-known authors. There is good science and plenty of excitement in this short tale, and you will not know the full solution until the end.

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AMAZING STORIES is published on the 10th of each month. There are 12 numbers per year. Subscription price is $2.50 a year in U. S. and possessions. Canada and foreign countries $3.00 a year. U. S. coin as well as U. S. stamps accepted (no foreign coin or stamps). Single copies, 25 cents each.
All communications and contributions to this journal should be addressed to Editor AMAZING STORIES, 53 Park Place, New York, N. Y. Unaccepted contributions cannot be returned unless full postage has been included. ALL accepted contributions are paid for on publication.

AMAZING STORIES. Monthly. Entered as second class matter March 10, 1926, by the Post Office at New York, N. Y., under the act of March 3, 1879. Title Registered U. S. Patent Office.

AMAZING STORIES is for sale at all newsstands in the United States and Canada. European Agents, S. I. Wise Et Cie, 40 Place Verte, Antwerp, Belgium. Printed in U. S. A.

General Advertising Dept., 53 Park Place, New York City.

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FINUCAN & McCLURE, 720 Cass Street, Chicago, Ill.
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AS I passed the President's office I could not help hearing my name. Instinctively I paused to listen. "That human clam," he was saying, "can't represent us. He's a hard worker, but he seems to have no ability to express himself. I had hoped to make him a branch manager this fall, but he seems to withdraw farther and farther into his shell all the time. I've given up hopes of making anything out of him."

So that was it! That was the reason why I had been passed over time and again when promotions were being made! That was why I was just a plodder—a truck horse for our firm, capable of doing a lot of heavy work, but of no use where brilliant performance was required. I was a failure unless I could do what seemed impossible—learn to use words forcefully, effectively and convincingly.

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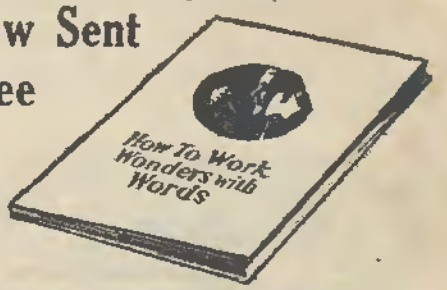

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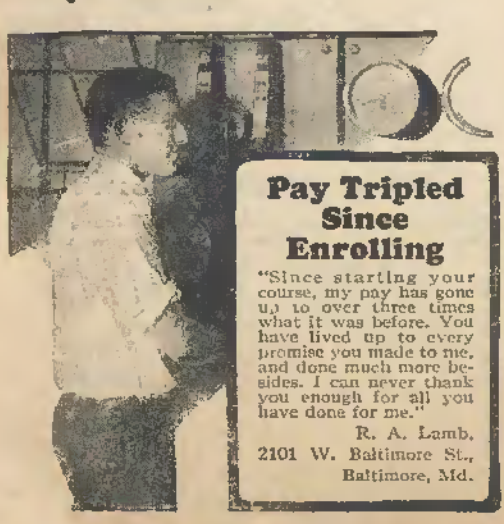

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VOLUME 1

AMAZING STORIES

THE MAGAZINE OF SCIENTIFICTION

DECEMBER, 1926
No. 9

HUGO GERNSBACK, *Editor*
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WILBUR C. WHITEHEAD, *Literary Editor*
C. A. BRANDT, *Literary Editor*

Editorial and General Offices: 53 Park Place, New York, N. Y.

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

$500.00 PRIZE STORY CONTEST

By HUGO GERNSBACK

SINCE the first appearance of AMAZING STORIES, we have received a great many manuscripts for publication in our magazine. We wish to state at this point that at present the magazine is not in the market for full length novels, because the editors have a great many on hand that await publication. They do, however, want short stories under 10,000 words, stories that would occupy nine or ten pages in AMAZING STORIES.

Furthermore, we receive an increasing number of letters, asking if we are in the market for short stories, and to these we wish to reply in the affirmative. We can not get too many real short scientifiction stories. To encourage this, we are starting a rather unique contest this month.

We have composed on our front cover a picture which illustrates a story to be written by our readers. We are frank to say that we haven't the slightest idea what the picture is supposed to show. The editors' ideas pertaining to the real solution,—if one there be,—based upon the picture, are necessarily vague.

There is for instance the strange race of people which you see in the left foreground, while in the distance there is an equally strange city which may or may not be on this planet, and there is the still stranger ball-like machine floating in space which apparently has captured a modern ocean greyhound in some amazing manner. What is going to happen to the ocean liner is the great secret. Does the ocean liner contain human beings, or have they been left behind? What force has lifted the steamship into space, in this incredible way, and where is it being transported? All these are vital questions that all of us should like to have answered.

Now, some one of our readers is going to write a *real* short story of less than 10,000 words, around this picture. He is going to study the picture from all perspectives and, knowing a bit about science, he will not have much trouble writing a most convincing story. We know it will be so convincing that we will actually believe it. And the author who is going to write the best story will be a good observer, because he will miss no detail of the picture, and will take cognizance of even the smallest detail.

It is in the very nature of this contest that there can not be a great many prize winners. The editors have limited the prizes to three, and only three stories will be chosen, and only three will be printed. The reading of the three prize-winning stories will, we know be most interesting, because each will very likely be entirely different in plot and in treatment.

Here, then, is a great chance for you to become an author. It is a great opportunity to try your hand in an imaginative story of the scientifiction type. But before you jump to any conclusions, be sure that you read the rules carefully so as not to be disqualified.

$500.00 IN PRIZES

The following cash prizes will be awarded, and will be paid for on publication of the prize-winning stories in AMAZING STORIES:

First Prize	$250.00
Second Prize	150.00
Third Prize	100.00

The stories will appear in subsequent issues in their correct order of merit.

1 The purpose of this contest is to have you write a story around the illustration on the front cover of this issue.

2 The story should be between 5,000 and 10,000 words.

3 The story must be of the scientifiction type and must contain correct scientific facts to make it appear plausible and within the realm of present-day knowledge of science.

4 The story must be typewritten or in pen and ink. No penciled matter will be considered.

5 All stories submitted to this contest must be received flat, not rolled.

6 Unused manuscripts will be returned if return postage has been enclosed.

7 AMAZING STORIES can not enter into any correspondence as to stories.

8 Three cash prizes will be awarded,—First Prize, $250.00; Second Prize, $150.00; Third Prize, $100.00.

9 This contest closes on January 5th at noon, at which time all manuscripts must be in.

10 In awarding the prizes, AMAZING STORIES acquires full rights of all kinds, including those of translation into foreign languages, second rights, as well as motion picture rights. The Editors will be the judges.

11 From this contest are excluded the employees of the Experimenter Publishing Company and their families.

12 Anyone may join this contest even though not a subscriber to the magazine.

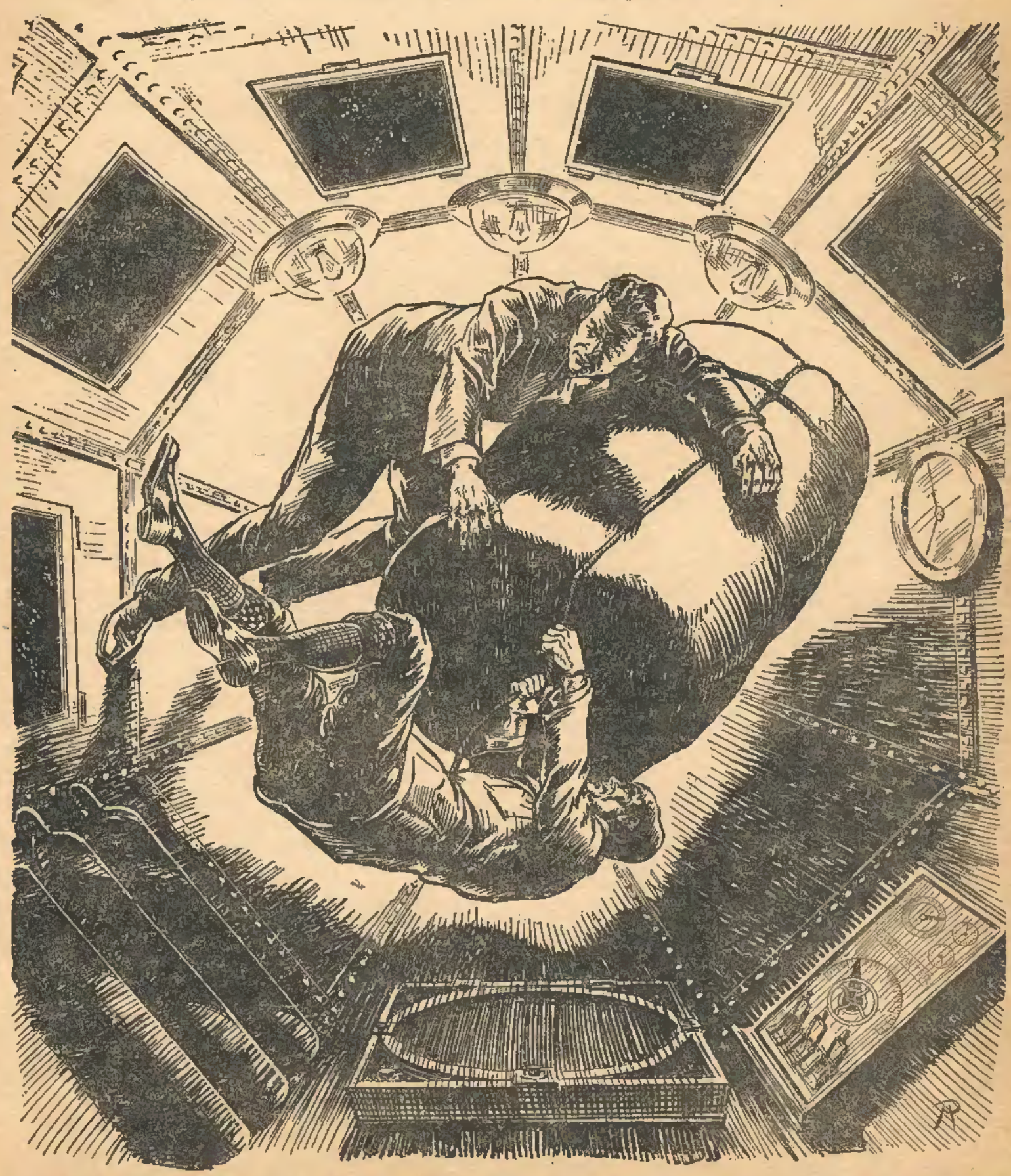
Address all manuscripts to *Editor, Cover Contest,* AMAZING STORIES, New York City.

Mr. Hugo Gernsback speaks every Monday at 9 P. M. from WRNY on various scientific and radio subjects.

The FIRST MEN in the MOON

By H. G. Wells

Author of "The Island of Dr. Moreau," "The Empire of the Ants," etc.



We were binding all our luggage together with the blankets about it, against the concussion of our descent. That, too, was a strange business; we two men floating loose in that spherical space, and packing and pulling ropes. No up or down, and every effort resulting in unexpected movements.

CHAPTER I

Mr. Bedford Meets Mr. Cavor at Lympne

AS I sit down to write here amidst the shadows of vine-leaves under the blue sky of southern Italy, it comes to me with a certain quality of astonishment that my participation in these amazing adventures of Mr. Cavor was, after all, the outcome of the purest accident. It might have been any one. I fell into these things at a time when I thought myself removed from the slightest possibility of disturbing experiences. I had gone to Lympne because I had imagined it the most uneventful place in the world. "Here, at any rate," said I, "I shall find peace and a chance to work!"

And this book is the sequel. So utterly at variance is Destiny with all the little plans of men.

I may perhaps mention here that very recently I had come an ugly cropper in certain business enterprises. Sitting now surrounded by all the circumstances of wealth, there is a luxury in admitting my extremity, I can admit, even, that to a certain extent my disasters were conceivably of my own making. It may be there are directions in which I have some capacity, but the conduct of business operations is not among these. But in those days I was young, and my youth among other objectionable forms took that of a pride in my capacity for affairs. I am young still in years, but the things that have happened to me have rubbed something of the youth from my mind. Whether they have brought any wisdom to light below it is a more doubtful matter.

It is scarcely necessary to go into the details of the speculations that landed me at Lympne, in Kent. Nowadays even about business transactions there is a strong spice of adventure. I took risks. In these things there is invariably a certain amount of give and take, and it fell to me finally to do the giving. Reluctantly enough. Even when I had got out of everything, one cantankerous creditor saw fit to be malignant. Perhaps you have met that flaming sense of outraged virtue, or perhaps you have only felt it. He ran me hard. It seemed to me, at last, that there was nothing for it but to write a play, unless I wanted to drudge for my living as a clerk. I have a certain imagination, and luxurious tastes, and I meant to make a vigorous fight for it before that fate overtook me. In addition to my belief in my powers as a business man, I had always in those days had an idea that I was equal to writing a very good play. It is not, I believe, a very uncommon persuasion. I knew there is nothing a man can do outside legitimate business transactions that has such opulent possibilities, and very probably that biased my opinion. I had, indeed, got into the habit of regarding this unwritten drama as a convenient little reserve put by for a rainy day. That rainy day had come, and I set to work.

I soon discovered that writing a play was a longer business than I had supposed; at first I had reckoned ten days for it, and it was to have a *pied-à-terre* while it was in hand, that I came to Lympne. I reckoned myself lucky in getting that little bungalow. I got it on a three years' agreement. I put in a few sticks of furniture, and while the play was in hand I did my own cooking. My cooking would have shocked Mrs. Bond. And yet, you know, it had flavour. I had a coffee-pot, a saucepan for eggs, and one for potatoes, and a frying pan for sausages and bacon—such was the simple apparatus of my comfort. One cannot always be magnificent, but simplicity is always a possible alternative. For the rest I laid in an eighteen-gallon cask of beer on credit, and a trustful baker came each day. It was not, perhaps, in the style of Sybaris, but I have had worse times. I was a little sorry for the baker, who was a very decent man indeed, but even for him I hoped.

Certainly if any one wants solitude, the place is Lympne. It is in the clay part of Kent, and my bungalow stood on the edge of an old sea cliff and stared across the flats of Romney Marsh at the sea. In very wet weather the place is almost inaccessible, and I have heard that at times the postman used to traverse the more succulent portions of his route with boards upon his feet. I never saw him doing so, but I can quite imagine it. Outside the doors of the few cottages and houses that make up the present village big birch besoms are stuck, to wipe off the worst of the clay, which will give some idea of the texture of the district. I doubt if the place would be there at all, if it were not a fading memory of things gone for ever. It was the big port of England in Roman times, Portus Lemanus, and now the sea is four miles away. All down the steep hill are boulders and masses of Roman brickwork, and from it old Watling Street, still paved in places, starts like an arrow to the north. I used to stand on the hill and think of it all, the galleys and legions, the captives and officials, the women and traders, the

BESIDES being one of his masterpieces, this amazing story, by H. G. Wells, is undoubtedly one of the greatest moon tales of adventure ever written. For ages speculation has been rife as to what sort of creatures the moon could harbor. We of today know that the moon has no atmosphere, at least not on the surface. We know the moon to be a dead world, having long cooled down, its volcanic activities stopped long before the first living creature crawled upon this earth.

The moon, therefore, must be a dead world—so our scientists now argue. That means that its interior probably contains enormous grottoes and caves, such as are not found in our world. It is possible, therefore, that remnants of a long-vanished atmosphere of the moon will be found in the interior of that planet, making it highly probable for some sort of organism to carry on an existence there.

What grotesque form such organisms have taken on during the ages it is impossible to definitely affirm. One man's guess is as good as another's. But somehow H. G. Wells, in this story, probably comes as close to the truth as any one can. And the story is written so convincingly, that instead of gaining the impression that you are reading fiction, you sense, rather, that you are reading a true exploration tale.

We know that you will follow the developments in this story with breathless interest.

speculators like myself, all the swarm and tumult that came clanking in and out of the harbour. And now just a few lumps of rubble on a grassy slope, and a sheep or two—and I! And where the port had been were the levels of the marsh, sweeping round in a broad curve to distant Dungeness, and dotted here and there with tree clumps and the church towers of old mediæval towns that are following Lemanus now towards extinction.

That outlook on the marsh was, indeed, one of the finest views I have ever seen. I suppose Dungeness was fifteen miles away; it lay like a raft on the sea, and farther westward were the hills by Hastings under the setting sun. Sometimes they hung close and clear, sometimes they were faded and low, and often the drift of the weather took them clean out of sight. And all the nearer parts of the marsh were laced and lit by ditches and canals.

The window at which I worked looked over the skyline of this crest, and it was from this window that I first set eyes on Cavor. It was just as I was struggling with my scenario, holding down my mind to the sheer hard work of it, and naturally enough he arrested my attention.

The sun had set, the sky was a vivid tranquillity of green and yellow, and against that he came out black—the oddest little figure.

He was a short, round-bodied, thin-legged little man, with a jerky quality in his motions; he had seen fit to clothe his extraordinary mind in a cricket cap, and overcoat, and cycling knickerbockers and stockings. Why he did so I do not know, for he never cycled and he never played cricket. It was a fortuitous concurrence of garments, arising I know not how. He gesticulated with his hands and arms, and jerked his head about and *buzzed*. He buzzed like something electric. You never heard such buzzing. And ever and again he cleared his throat with a most extraordinary noise.

There had been rain, and that spasmodic walk of his was enhanced by the extreme slipperiness of the footpath. Exactly as he came against the sun he stopped, pulled out a watch, hesitated. Then with a sort of convulsive gesture he turned and retreated with every manifestation of haste, no longer gesticulating, but going with ample strides that showed the relatively large size of his feet—they were, I remember, grotesquely exaggerated in size by adhesive clay—to the best possible advantage.

This occurred on the first day of my sojourn, when my play-writing energy was at its height and I regarded the incident simply as an annoying distraction—the waste of five minutes. I returned to my scenario. But when next evening the apparition was repeated with remarkable precision, and again the next evening, and indeed every evening when rain was not falling, concentration upon the scenario became a considerable effort. "Confound the man," said I, "one would think he was learning to be a marionette!" and for several evenings I cursed him pretty heartily.

Then my annoyance gave way to amazement and curiosity. Why on earth should a man do this thing? On the fourteenth evening I could stand it no longer, and so soon as he appeared I opened the French window, crossed the verandah, and directed myself to the point where he invariably stopped.

He had his watch out as I came up to him. He had a chubby, rubicund face with reddish brown eyes—previously I had seen him only against the light. "One moment, sir," said I as he turned.

He stared. "One moment," he said, "certainly. Or if you wish to speak to me for longer, and it is not asking too much—your moment is up—would it trouble you to accompany me?"

"Not in the least," said I, placing myself beside him.

"My habits are regular. My time for intercourse—limited."

"This, I presume, is your time for exercise?"

"It is. I come here to enjoy the sunset."

"You don't. You never have been. It's all——"

"Sir?"

"You never look at it."

"Never look at it?"

"No. I've watched you thirteen nights, and not once have you looked at the sunset—not once."

He knitted his brows like one who encounters a problem.

"Well, I enjoy the sunlight—the amtosphere—I go along this path, through that gate"—he jerked his head over his shoulder—"and round——"

"You don't. You never have been. It's all nonsense. There isn't a way. To-night for instance——"

"Oh! to-night! Let me see. Ah! I just glanced at my watch, saw that I had already been out just three minutes over the precise half-hour, decided there was not time to go round, turned——"

"You always do."

He looked at me—reflected. "Perhaps I do, now I come to think of it. But what was it you wanted to speak to me about?"

"Why, this!"

"This?"

"Yes. Why do you do it? Every night you come making a noise——"

"Making a noise?"

"Like this"—I imitated his buzzing noise.

He looked at me, and it was evident the buzzing awakened distaste. "Do I do *that*?" he asked.

"Every blessed evening."

"I had no idea."

He stopped dead. He regarded me gravely. "Can it be," he said, "that I have formed a Habit?"

"Well, it looks like it. Doesn't it?"

He pulled down his lower lip between finger and thumb. He regarded a puddle at his feet.

"My mind is much occupied," he said, "And you want to know *why*! Well, sir, I can assure you that not only do I not know why I do these things, but I did not even know I did them. Come to think, it is just as you say; I never *have* been beyond that field . . . And these things annoy you?"

For some reason I was beginning to relent towards him. "Not *annoy*," I said. "But—imagine yourself writing a play!"

"I couldn't."

"Well, anything that needs concentration."

"Ah!" he said, "of course," and meditated. His expression became so eloquent of distress, that I relented still more. After all, there *is* a touch of aggression in demanding of a man you don't know why he hums on a public footpath.

"You see," he said weakly, "it's a habit."

"Oh, I recognise that."

"I must stop it."

"But not if it puts you out. After all, I had no business—it's something of a liberty."

"Not at all, sir," he said, "not at all. I am greatly indebted to you. I should guard myself against these things. In future I will. Could I trouble you—once again? That noise?"

"Something like this," I said. "Zuzzoo, zuzzoo. But really, you know——"

"I am greatly obliged to you. In fact, I know I am getting absurdly absent-minded. You are quite justified, sir—perfectly justified. Indeed, I am indebted to you. The thing shall end. And now, sir, I have already brought you farther than I should have done."

"I do hope my impertinence——"

"Not at all, sir, not at all."

We regarded each other for a moment. I raised my hat and wished him a good evening. He responded convulsively, and so we went our ways.

At the stile I looked back at his receding figure. His bearing had changed remarkably, he seemed limp, shrunken. The contrast with his former gesticulating, zuzzooing self took me in some absurd way as pathetic. I watched him out of sight. Then wishing very heartily I had kept to my own business, I returned to my bungalow and my play.

The next evening I saw nothing of him, nor the next. But he was very much in my mind, and it had occurred to me that as a sentimental comic character he might serve a useful purpose in the development of my plot. The third day he called upon me.

For a time I was puzzled to think what had brought him. He made indifferent conversation in the most formal way, then abruptly he came to business. He wanted to buy me out of my bungalow.

"You see," he said, "I don't blame you in the least, but you've destroyed a habit, and it disorganises my day. I've walked past here for years—years. No doubt I've hummed. . . . You've made all that impossible!"

I suggested he might try some other direction.

"No. There is no other direction. This is the only one. I've inquired. And now—every afternoon at four—I come to a dead wall."

"But, my dear sir, if the thing is so important to you——"

"It's vital. You see, I'm—I'm an investigator—I am engaged in a scientific research. I live—" he paused and seemed to think. "Just over there," he said, and pointed suddenly dangerously near my eye. "The house with white chimneys you see just over the trees. And my circumstances are abnormal—abnormal. I am on the point of completing one of the most important demonstrations—I can assure you one of *the most important* demonstrations that have ever been made. It requires constant thought, constant mental ease and activity. And the afternoon was my brightest time!—effervescing with new ideas—new points of view."

"But why not come by still?"

"It would be all different. I should be self-conscious. I should think of you at your play—watching me irritated—instead of thinking of my work. No! I must have the bungalow."

I meditated. Naturally, I wanted to think the matter over thoroughly before anything decisive was said. I was generally ready enough for business in those days, and selling always attracted me; but in the first place it was not my bungalow, and even if I sold it to him at a good price I might get inconvenienced in the delivery of goods if the current owner got wind of the transaction, and in the second I was, well—undischarged. It was clearly a business that required delicate handling. Moreover, the possibility of his being in pursuit of some valuable invention also interested me. It occurred to me that I would like to know more of this research, not with any dishonest intention, but simply with an idea that to know what it was would be a relief from play-writing. I threw out feelers.

He was quite willing to supply information. Indeed, once he was fairly under way the conversation became a monologue. He talked like a man long pent up, who has had it over with himself again and again. He talked for nearly an hour, and I must confess I found it a pretty stiff bit of listening. But through it all there was the undertone of satisfaction one feels when one is neglecting work one has set oneself. During that first interview I gathered very little of the drift of his talk. Half his words were technicalities entirely strange to me, and he illustrated one or two points with what he was pleased to call elementary mathematics, computing on an envelope with a copying-ink pencil, in a manner that made it hard even to seem to understand. "Yes," I said, "yes. Go on!" Nevertheless I made out enough to convince me that he was no mere crank playing at discoveries. In spite of his crank-like appearance there was a force about him that made that impossible. Whatever it was, it was a thing with mechanical possibilities. He told me of a work-shed he had, and of three assistants—originally jobbing carpenters—whom he had trained. Now, from the work-shed to the patent office is clearly only one step. He invited me to see those things. I accepted readily, and took care, by a remark or so, to underline that. The proposed transfer of the bungalow remained very conveniently in suspense.

At last he rose to depart, with an apology for the length of his call. Talking over his work was, he said, a pleasure enjoyed only too rarely. It was not often he found such an intelligent listener as myself, he mingled very little with professional scientific men.

"So much pettiness," he explained; "so much intrigue! And really, when one has an idea—a novel, fertilising idea— I don't want to be uncharitable, but——"

I am a man who believes in impulses. I made

what was perhaps a rash proposition. But you must remember, that I had been alone, play-writing in Lympne, for fourteen days, and my compunction for his ruined walk still hung about me. "Why not," said I, "make this your new habit? In the place of the one I spoilt? At least, until we can settle about the bungalow. What you want is to turn over your work in your mind. That you have always done during your afternoon walk. Unfortunately that's over—you can't get things back as they were. But why not come and talk about your work to me; use me as a sort of wall against which you may throw your thoughts and catch them again? It's certain I don't know enough to steal your ideas myself—and I know no scientific men——"

I stopped. He was considering. Evidently the thing attracted him. "But I'm afraid I should bore you," he said.

"You think I'm too dull?"

"Oh, no; but technicalities——"

"Anyhow, you've interested me immensely this afternoon."

"Of course it *would* be a great help to me. Nothing clears up one's ideas so much as explaining them. Hitherto——"

"My dear sir, say no more."

"But really can you spare the time?"

"There is no rest like change of occupation," I said, with profound conviction.

The affair was over. On my verandah steps he turned. "I am already greatly indebted to you," he said.

I made an interrogative noise.

"You have completely cured me of that ridiculous habit of humming," he explained.

I think I said I was glad to be of any service to him, and he turned away.

Immediately the train of thought that our conversation had suggested must have resumed its sway. His arms began to wave in their former fashion. The faint echo of "zuzzoo" came back to me on the breeze. . . .

Well, after all, that was not my affair. . . .

He came the next day, and again the next day after that, and delivered two lectures on physics to our mutual satisfaction. He talked with an air of being extremely lucid about the "ether," and "tubes of force," and "gravitational potential," and things like that, and I sat in my other folding-chair and said, "Yes," "Go on," "I follow you," to keep him going. It was tremendously difficult stuff, but I do not think he ever suspected how much I did not understand him. There were moments when I doubted whether I was well employed, but at any rate I was resting from that confounded play. Now and then things gleamed on me clearly for a space, only to vanish just when I thought I had hold of them. Sometimes my attention failed altogether, and I would give it up and sit and stare at him, wondering whether, after all, it would not be better to use him as a central figure in a good farce and let all this other stuff slide. And then, perhaps, I would catch on again for a bit.

At the earliest opportunity I went to see his house. It was large and carelessly furnished; there were no servants other than his three assistants, and his dietary and private life were characterised by a philosophical simplicity. He was a water-drinker, a vegetarian, and all those logical disciplinary things. But the sight of his equipment settled many doubts. It looked like business from cellar to attic—an amazing little place to find in an out-of-the-way village. The ground-floor rooms contained benches and apparatus, the bakehouse and scullery boiler had developed into respectable furnaces, dynamos occupied the cellar, and there was a gasometer in the garden. He showed it to me with all the confiding zest of a man who has been living too much alone. His seclusion was overflowing now in an excess of confidence, and I had the good luck to be the recipient.

The three assistants were creditable specimens of the class of "handy-men" from which they came. Conscientious, if unintelligent, strong, civil, and willing. One, Spargus, who did the cooking and all the metal work, had been a sailor; a second, Gibbs, was a joiner; and the third was an ex-jobbing gardener, and now general assistant. They were the merest labourers. All the intelligent work was done by Cavor. Theirs was the darkest ignorance compared even with my muddled impression.

And now, as to the nature of these inquiries. Here, unhappily, comes a grave difficulty. I am no scientific expert, and if I were to attempt to set forth in the highly scientific language of Mr. Cavor the aim to which his experiments tended, I am afraid I should confuse not only the reader but myself, and almost certainly I should make some blunder that would bring upon me the mockery of every up-to-date student of mathematical physics in the country. The best thing I can do therefore is, I think, to give my impressions in my own inexact language, without any attempt to wear a garment of knowledge to which I have no claim.

The object of Mr. Cavor's search was a substance that should be "opaque"—he used some other word I have forgotten, but "opaque" conveys the idea—to "all forms of radiant energy." "Radiant energy," he made me understand, was anything like light or heat, or those Röntgen Rays there was so much talk about a year or so ago, or the electric waves of Marconi, or gravitation. All these things, he said, *radiate* out from centres, and act on bodies at a distance, whence comes the term "radiant energy." Now almost all substances are opaque to some form or other of radiant energy. Glass, for example, is transparent to light, but much less so to heat, so that it is useful as a fire-screen; and alum is transparent to light, but blocks heat almost completely. A solution of iodine in carbon bisulphide, on the other hand, completely blocks light, but is quite transparent to heat. It will hide a fire from you, but permit all its warmth to reach you. Metals are not only opaque to light and heat, but also to radiant electrical energy, which passes through both iodine solution and glass almost as though they were not interposed. And so on.

Now all known substances are "transparent" to gravitation. You can use screens of various sorts to cut off the light or heat, or electrical influence of the sun, or the warmth of the earth from any-

thing; you can screen things by sheets of metal from Marconi's rays, but nothing will cut off the gravitational attraction of the sun or the gravitational attraction of the earth. Yet why there should be nothing it is hard to say. Cavor did not see why such a substance should not exist, and certainly I could not tell him. I had never thought of such a possibility before. He showed me by calculations on paper, which Lord Kelvin, no doubt, or Professor Lodge, or Professor Karl Pearson, or any of those great scientific people might have understood, but which simply reduced me to a hopeless muddle, that not only was such a substance possible, but that it must satisfy certain conditions. It was an amazing piece of reasoning. Much as it amazed and exercised me at the time, it would be impossible to reproduce it here. "Yes," I said to it all, "yes; go on!" Suffice it for this story that he believed he might be able to manufacture this possible substance opaque to gravitation out of a complicated alloy of metals and something new—a new element, I fancy—called, I believe, *helium*, which was sent to him from London in sealed stone jars. Doubt has been thrown upon this detail, but I am almost certain it was *helium* he had sent him in sealed stone jars. It was certainly something very gaseous and thin. If only I had taken notes. . . .

But then, how was I to foresee the necessity of taking notes?

Any one with the merest germ of an imagination will understand the extraordinary possibilities of such a substance, and will sympathise a little with the emotion I felt as this understanding emerged from the haze of abstruse phrases in which Cavor expressed himself. Comic relief in a play indeed! It was some time before I would believe that I had interpreted him aright, and I was very careful not to ask questions that would have enabled him to gauge the profundity of misunderstanding into which he dropped his daily exposition. But no one reading the story of it here will sympathise fully, because from my barren narrative it will be impossible to gather the strength of my conviction that this astonishing substance was positively going to be made.

I do not recall that I gave my play an hour's consecutive work at any time after my visit to his house. My imagination had other things to do. There seemed no limit to the possibilities of the stuff; whichever way I tried I came on miracles and revolutions. For example, if one wanted to lift a weight, however enormous, one had only to get a sheet of this substance beneath it, and one might lift it with a straw. My first natural impulse was to apply this principle to guns and ironclads, and all the material and methods of war, and from that to shipping, locomotion, building, every conceivable form of human industry. The chance that had brought me into the very birth-chamber of this new time—it was an epoch, no less—was one of those chances that come once in a thousand years. The thing unrolled, it expanded and expanded. Among other things I saw in it my redemption as a business man. I saw a parent company, and daughter companies, applications to right of us, applications to left, rings and trusts, privileges, and concessions spreading and spreading, until one vast, stupendous Cavorite company ran and ruled the world.

And I was in it!

I took my line straight away. I knew I was staking everything, but I jumped there and then.

"We're on absolutely the biggest thing that has ever been invented," I said, and put the accent on "we." "If you want to keep me out of this, you'll have to do it with a gun. I'm coming down to be your fourth labourer to-morrow."

He seemed surprised at my enthusiasm, but not a bit suspicious or hostile. Rather, he was self-depreciatory.

He looked at me doubtfully. "But do you really think—?" he said. "And your play! How about that play?"

"It's vanished!" I cried. "My dear sir, don't you see what you've got? Don't you see what you're going to do?"

That was merely a rhetorical turn, but positively, he didn't. At first I could not believe it. He had not had the beginning of the inkling of an idea. This astonishing little man had been working on purely theoretical grounds the whole time! When he said it was "the most important" research the world had ever seen, he simply meant it squared up so many theories, settled so much that was in doubt; he had troubled no more about the application of the stuff he was going to turn out than if he had been a machine that makes guns. This was a possible substance, and he was going to make it! *V'la tout*, as the Frenchman says.

Beyond that, he was childish! If he made it, it would go down to posterity as Cavorite or Cavorine, and he would be made an F.R.S., and his portrait given away as a scientific worthy with *Nature*, and things like that. And that was all he saw! He would have dropped this bombshell into the world as though he had discovered a new species of gnat, if it had not happened that I had come along. And there it would have lain and fizzled, like one or two other little things these scientific people have lit and dropped about us.

When I realised this, it was I did the talking, and Cavor who said, "Go on!" I jumped up. I paced the room, gesticulating like a boy of twenty. I tried to make him understand his duties and responsibilities in the matter—*our* duties and responsibilities in the matter. I assured him we might make wealth enough to work any sort of social revolution we fancied, we might own and order the whole world. I told him of companies and patents, and the case for secret processes. All these things seemed to take him much as his mathematics had taken me. A look of perplexity came into his ruddy little face. He stammered something about indifference to wealth, but I brushed all that aside. He had got to be rich, and it was no good his stammering. I gave him to understand the sort of man I was, and that I had had very considerable business experience. I did not tell him I was an undischarged bankrupt at the time, because that was temporary, but I think I reconciled my evident poverty with my financial claims. And

quite insensibly, in the way such projects grow, the understanding of a Cavorite monopoly grew up between us. He was to make the stuff, and I was to make the boom.

I stuck like a leech to the "we"—"you" and "I", didn't exist for me.

His idea was that the profits I spoke of might go to endow research, but that, of course, was a matter we had to settle later. "That's all right," I shouted, "that's all right." The great point, as I insisted, was to get the thing done.

"Here is a substance," I cried, "no home, no factory, no fortress, no ship can dare to be without —more universally applicable even than a patent medicine. There isn't a solitary aspect of it, not one of its ten thousand possible uses that will not make us rich, Cavor, beyond the dreams of avarice!"

"No!" he said. "I begin to see. It's extraordinary how one gets new points of view by talking over things!"

"And as it happens you have just talked to the right man!"

"I suppose no one," he said, "is absolutely *averse* to enormous wealth. Of course there is one thing——"

He paused. I stood still.

"It is just possible, you know, that we may not be able to make it after all! It may be one of those things that are a theoretical possibility, but a practical absurdity. Or when we make it, there may be some little hitch——!"

"We'll tackle the hitch when it comes," said I.

CHAPTER II

The First Making of Cavorite

BUT Cavor's fears were groundless, so far as the actual making was concerned. On the 14th of October, 1899, this incredible substance was made!

Oddly enough, it was made at last by accident, when Mr. Cavor least expected it. He had fused together a number of metals and certain other things—I wish I knew the particulars now!—and he intended to leave the mixture a week and then allow it to cool slowly. Unless he had miscalculated, the last stage in the combination would occur when the stuff sank to a temperature of 60° Fahr. But it chanced that, unknown to Cavor, dissension had arisen about the furnace tending. Gibbs, who had previously seen to this, had suddenly attempted to shift it to the man who had been a gardener, on the score that coal was soil, being dug, and therefore could not possibly fall within the province of a joiner; the man who had been a jobbing gardener alleged, however, that coal was a metallic or ore-like substance, let alone that he was cook. But Spargus insisted on Gibbs doing the coaling, seeing that he was a joiner and that coal is notoriously fossil wood. Consequently Gibbs ceased to replenish the furnace, and no one else did so, and Cavor was too much immersed in certain interesting problems concerning a Cavorite flying machine (neglecting the resistance of the air and one or two other points) to perceive that anything was wrong. And the premature birth of his invention took place just as he was coming across the field to my bungalow for our afternoon talk and tea.

I remember the occasion with extreme vividness. The water was boiling, and everything was prepared, and the sound of his "zuzzoo" had brought me out upon the verandah. His active little figure was black against the autumnal sunset, and to the right the chimneys of his house just rose above a gloriously tinted group of trees. Remoter rose the Wealden Hills, faint and blue, while to the left the hazy marsh spread out spacious and serene. And then——

The chimneys jerked heavenward, smashing into a string of bricks as they rose, and the roof and a miscellany of furniture followed. Then overtaking them came a huge white flame. The trees about the building swayed and whirled and tore themselves to pieces, that sprang towards the flare. My ears were smitten with a clap of thunder that left me deaf on one side for life, and all about me windows smashed, unheeded.

I took three steps from the verandah towards Cavor's house and even as I did so came the wind.

Instantly my coat tails were over my head, and I was progressing in great leaps and bounds, and quite against my will, towards him. In the same moment the discoverer was seized, whirled about, and flew through the screaming air. I saw one of my chimney pots hit the ground within six yards of me, leap a score of feet, and so hurry in great strides towards the focus of the disturbance. Cavor, kicking and flapping, came down again, rolled over and over on the ground for a space, struggled up and was lifted and borne forward at an enormous velocity, vanishing at last among the labouring, lashing trees that writhed about his house.

A mass of smoke and ashes, and a square of bluish shining substance rushed up towards the zenith. A large fragment of fencing came sailing past me, dropped edgeways, hit the ground and fell flat, and then the worst was over. The aerial commotion fell swiftly until it was a mere strong gale, and I became once more aware that I had breath and feet. By leaning back against the wind I managed to stop, and could collect such wits as still remained to me.

In that instant the whole face of the world had changed. The tranquil sunset had vanished, the sky was dark with scurrying clouds, everything was flattened and swaying with the gale. I glanced back to see if my bungalow was still in a general way standing, then staggered forward towards the trees amongst which Cavor had vanished, and through whose tall and leaf-denuded branches shone the flames of his burning house.

I entered the copse, dashing from one tree to another and clinging to them, and for a space I sought him in vain. Then amidst a heap of smashed branches and fencing that had banked itself against a portion of his garden wall I perceived something stir. I made a run for this, but before I reached it a brown object separated itself, rose on two muddy legs, and protruded two drooping, bleeding hands. Some tattered ends of garment fluttered out from its middle portion and streamed before the wind.

For a moment I did not recognise this earthy lump, and then I saw that it was Cavor, caked in the mud in which he had rolled. He leant forward against the wind, rubbing the dirt from his eyes and mouth.

He extended a muddy lump of hand, and staggered a pace towards me. His face worked with emotion, little lumps of mud kept falling from it. He looked as damaged and pitiful as any living creature I have ever seen, and his remark therefore amazed me exceedingly. "Gratulate me," he gasped "gratulate me!"

"Congratulate you!" said I. "Good heavens! What for?"

"I've done it."

"You *have*. What on earth caused that explosion?"

A gust of wind blew his words away. I understood him to say that it wasn't an explosion at all. The wind hurled me into collision with him, and we stood clinging to one another.

"Try and get back to my bungalow," I bawled in his ear. He did not hear me, and shouted something about "three martyrs—science," and also something about "not much good." At the time he laboured under the impression that his three attendants had perished in the whirlwind. Happily this was incorrect. Directly he had left for my bungalow they had gone off to the public-house in Lympne to discuss the question of the furnaces over some trivial refreshment.

I repeated my suggestion of getting back to my bungalow, and this time he understood. We clung arm-in-arm and started, and managed at last to reach the shelter of as much roof as was left to me. For a space we sat in arm-chairs and panted. All the windows were broken, and the lighter articles of furniture were in great disorder, but no irrevocable damage was done. Happily the kitchen door had stood the pressure upon it, so that all my crockery and cooking materials had survived. The oil stove was still burning, and I put on the water to boil again for tea. And that prepared, I could turn on Cavor for his explanation.

"Quite correct," he insisted; "quite correct. I've done it, and it's all right."

"But," I protested. "All right! Why, there can't be a rick standing, or a fence or a thatched roof undamaged for twenty miles round. . . ."

"It's all right—*really*. I didn't, of course, foresee this little upset. My mind was preoccupied with another problem, and I'm apt to disregard these practical side issues. But it's all right——"

"My dear sir," I cried, "don't you see you've done thousands of pounds' worth of damage?"

"There, I throw myself on your discretion. I'm not a practical man, of course, but don't you think they will regard it as a cyclone?"

"But the explosion——"

"It was *not* an explosion. It's perfectly simple. Only, as I say, I'm apt to overlook these little things. It's that zuzzoo business on a larger scale. Inadvertently I made this substance of mine, this Cavorite, in a thin, wide sheet. . . ."

He paused. "You are quite clear that the stuff is opaque to gravitation, that it cuts off things from gravitating towards each other?"

"Yes," said I. "Yes."

"Well, so soon as it reached a temperature of 60° Fahr. and the process of its manufacture was complete, the air above it, the portions of roof and ceiling and floor above it ceased to have weight. I suppose you know—everybody knows nowadays—that, as a usual thing, the air *has* weight, that it presses on everything at the surface of the earth, presses in all directions, with a pressure of fourteen and a half pounds to the square inch?"

"I know that," said I. "Go on."

"I know that too," he remarked. "Only this shows you how useless knowledge is unless you apply it. You see, over our Cavorite this ceased to be the case, the air there ceased to exert any pressure, and the air around it and not over the Cavorite, was exerting a pressure of fourteen pounds and a half to the square inch upon this suddenly weightless air. Ah! you begin to see! The air all about the Cavorite crushed in upon the air above it with irresistible force. The air above the Cavorite was forced upward violently, the air that rushed in to replace it immediately lost weight, ceased to exert any pressure, followed suit, blew the ceiling through and the roof off. . . .

"You perceive," he said, "it formed a sort of atmospheric fountain, a kind of chimney in the atmosphere. And if the Cavorite itself hadn't been loose and so got sucked up the chimney, does it occur to you what would have happened?"

I thought. "I suppose," I said, "the air would be rushing up and up over that infernal piece of stuff now."

"Precisely," he said. "A huge fountain——"

"Spouting into space! Good heavens! Why, it would have squirted all the atmosphere of the earth away! It would have robbed the world of air! It would have been the death of all mankind! That little lump of stuff!"

"Not exactly into space," said Cavor, "but as bad—practically. It would have whipped the air off the world as one peels a banana, and flung it thousands of miles. It would have dropped back again, of course—but on an asphyxiated world! From our point of view very little better than if it never came back!"

I stared. As yet I was too amazed to realize how all my expectations had been upset. "What do you mean to do now?" I asked.

"In the first place, if I may borrow a garden trowel I will remove some of this earth with which I am encased, and then if I may avail myself of your domestic conveniences I will have a bath. This done, we will converse more at leisure. It will be wise, I think"—he laid a muddy hand on my arm—"if nothing were said of this affair beyond ourselves. I know I have caused great damage—probably even dwelling-houses may be ruined here and there upon the country-side. But on the other hand, I cannot possibly pay for the damage I have done, and if the real cause of this is published, it will lead only to heartburning and the obstruction of my work. One cannot foresee *everything*, you know, and I cannot consent for one moment to add the burthen of practical considera-

tions to my theorising. Later on, when you have come in with your practical mind, and Cavorite is floated—floated *is* the word, isn't it?—and it has realised all you anticipate for it, we may set matters right with these persons. But not now—not now. If no other explanation is offered, people, in the present unsatisfactory state of meteorological science, will ascribe all this to a cyclone; there might be a public subscription, and as my house has collapsed and been burnt, I should in that case receive a considerable share in the compensation, which would be extremely helpful to the prosecution of our researches. But if it is known that *I* caused this, there will be no public subscription, and everybody will be put out. Practically I should never get a chance of working in peace again. My three assistants may or may not have perished. That is a detail. If they have, it is no great loss; they were more zealous than able, and this premature event must be largely due to their joint neglect of the furnace. If they have not perished, I doubt if they have the intelligence to explain the affair. They will accept the cyclone story. And if, during the temporary unfitness of my house for occupation, I may lodge in one of the untenanted rooms of this bungalow of yours——"

He paused and regarded me.

A man of such possibilities, I reflected, is no ordinary guest to entertain.

"Perhaps," said I, rising to my feet, "we had better begin by looking for a trowel," and I led the way to the scattered vestiges of the greenhouse.

And while he was having his bath I considered the entire question alone. It was clear there were drawbacks to Mr. Cavor's society I had not foreseen. The absent-mindedness that had just escaped depopulating the terrestrial globe, might at any moment result in some other grave inconvenience. On the other hand I was young, my affairs were in a mess, and I was in just the mood for reckless adventure—with a chance of something good at the end of it. I had quite settled in my mind that I was to have half at least in that aspect of the affair. Fortunately I held my bungalow, as I have already explained, on a three-year agreement, without being responsible for repairs; and my furniture, such as there was of it, had been hastily purchased, was unpaid for, insured, and altogether devoid of associations. In the end I decided to keep on with him, and see the business through.

Certainly the aspect of things had changed very greatly. I no longer doubted at all the enormous possibilities of the substance, but I began to have doubts about the gun-carriage and the patent boots.

We set to work at once to reconstruct his laboratory and proceed with our experiments. Cavor talked more on my level than he had ever done before, when it came to the question of how we should make the stuff next.

"Of course we must make it again," he said, with a sort of glee I had not expected in him, "of course we must make it again. We have caught a Tartar, perhaps, but we have left the theoretical behind us for good and all. If we can possibly avoid wrecking this little planet of ours, we will. But—there *must* be risks! There must be. In experimental work there always are. And here, as a practical man, *you* must come in. For my own part it seems to me we might make it edgeways, perhaps, and very thin. Yet I don't know. I have a certain dim perception of another method. I can hardly explain it yet. But curiously enough it came into my mind, while I was rolling over and over in the mud before the wind, and very doubtful how the whole adventure was to end, as being absolutely the thing I ought to have done."

Even with my aid we found some little difficulty, and meanwhile we kept at work restoring the laboratory. There was plenty to do before it was absolutely necessary to decide upon the precise form and method of our second attempt. Our only hitch was the strike of the three labourers, who objected to my activity as a foreman. But that matter we compromised after two days' delay.

CHAPTER III

The Building of the Sphere

I REMEMBER the occasion very distinctly when Cavor told me of his idea of the sphere. He had had intimations of it before, but at the time it seemed to come to him in a rush. We were returning to the bungalow for tea, and on the way he fell humming. Suddenly he shouted, "That's it! That finishes it! A sort of roller blind!"

"Finishes what?" I asked.

"Space—anywhere! The moon!"

"What do you mean?"

"Mean? Why—it must be a sphere! That's what I mean!"

I saw I was out of it, and for a time I let him talk in his own fashion. I hadn't the ghost of an idea then of his drift. But after he had taken tea he made it clear to me.

"It's like this," he said. "Last time I ran this stuff that cuts things off from gravitation into a flat tank with an overlap that held it down. And directly it had cooled and the manufacture was completed all that uproar happened, nothing above it weighed anything, the air went squirting up, the house squirted up, and if the stuff itself hadn't squirted up too, I don't know what would have happened! But suppose the substance is loose, and quite free to go up?"

"It will go up at once!"

"Exactly. With no more disturbance than firing a big gun."

"But what good will that do?"

"I'm going up with it!"

I put down my teacup and stared at him.

"Imagine a sphere," he explained, "large enough to hold two people and their luggage. It will be made of steel lined with thick glass; it will contain a proper store of solidified air, concentrated food, water-distilling apparatus, and so forth. And enamelled, as it were, on the outer steel——"

"Cavorite?"

"Yes."

"But how will you get inside?"

"There was a similar problem about a dumpling."

"Yes, I know. But how?"

"That's perfectly easy. An air-tight manhole is all that is needed. That, of course, will have to be a little complicated; there will have to be a valve, so that things may be thrown out, if necessary, without much loss of air."

"Like Jules Verne's thing in *A Trip to the Moon?*"

But Cavor was not a reader of fiction.

"I begin to see," I said slowly. "And you could get in and screw yourself up while the Cavorite was warm, and as soon as it cooled it would become impervious to gravitation, and off you would fly——"

"At a tangent."

"You would go off in a straight line——" I stopped abruptly. "What is to prevent the thing travelling in a straight line into space for ever?" I asked. "You're not safe to get anywhere, and if you do—how will you get back?"

"I've just thought of that," said Cavor. "That's what I meant when I said the thing is finished. The inner glass sphere can be air-tight, and, except for the manhole, continuous, and the steel sphere can be made in sections, each section capable of rolling up after the fashion of a roller blind. These can easily be worked by springs, and released and checked by electricity conveyed by platinum wires fused through the glass. All that is merely a question of detail. So you see, that except for the thickness of the blind rollers, the Cavorite exterior of the sphere will consist of windows or blinds, whichever you like to call them. Well, when all these windows or blinds are shut, no light, no heat, no gravitation, no radiant energy of any sort will get at the inside of the sphere, it will fly on through space in a straight line, as you say. But open a window, imagine one of the windows open. Then at once any heavy body that chances to be in that direction will attract us——"

I sat taking it in.

"You see?" he said.

"Oh, I *see*."

"Practically we shall be able to tack about in space just as we wish. Get attracted by this and that."

"Oh, yes. *That's* clear enough. Only——"

"Well?"

"I don't quite see what we shall do it for! It's really only jumping off the world and back again."

"Surely! For example, one might go to the moon."

"And when one got there? What would you find?"

"We should see—— Oh! consider the new knowledge."

"Is there air there?"

"There may be."

"It's a fine idea," I said, "but it strikes me as a large order all the same. The moon! I'd much rather try some smaller things first."

"They're out of the question, because of the air difficulty."

"Why not apply that idea of spring blinds—Cavorite blinds in strong steel cases—to lifting weights?"

"It wouldn't work," he insisted. "After all, to go into outer space is not so much worse, if at all, than a polar expedition. Men go on polar expeditions."

"Not business men. And besides, they get paid for polar expeditions. And if anything goes wrong there are relief parties. But this—it's just firing ourselves off the world for nothing."

"Call it prospecting."

"You'll have to call it that. . . . One might make a book of it perhaps," I said.

"I have no doubt there will be minerals," said Cavor.

"For example?"

"Oh! sulphur, ores, gold perhaps, possibly new elements."

"Cost of carriage," I said. "You know you're *not* a practical man. The moon's a quarter of a million miles away."

"It seems to me it wouldn't cost much to cart any weight anywhere if you packed it in a Cavorite case."

I had not thought of that. "Delivered free on head of purchaser, eh?"

"It isn't as though we were confined to the moon."

"You mean——?"

"There's Mars—clear atmosphere, novel surroundings, exhilarating sense of lightness. It might be pleasant to go there."

"Is there air on Mars?"

"Oh yes!"

"Seems as though you might run it as a sanatorium. By the way, how far is Mars?"

"Two hundred million miles at present," said Cavor airily; "and you go close by the sun."

My imagination was picking itself up again. "After all," I said, "there's something in these things. There's travel——"

An extraordinary possibility came rushing into my mind. Suddenly I saw, as in a vision, the whole solar system threaded with Cavorite liners and spheres *de luxe*. "Rights of preemption," came floating into my head—planetary rights of preemption. I recalled the old Spanish monopoly in American gold. It wasn't as though it was just this planet or that—it was all of them. I stared at Cavor's rubicund face, and suddenly my imagination was leaping and dancing. I stood up, I walked up and down; my tongue was unloosened.

"I'm beginning to take it in," I said; "I'm beginning to take it in." The transition from doubt to enthusiasm seemed to take scarcely any time at all. "But this is tremendous!" I cried. "This is Imperial! I haven't been dreaming of this sort of thing."

Once the chill of my opposition was removed, his own pent-up excitement had play. He too got up and paced. He too gesticulated and shouted. We behaved like men inspired. We *were* men inspired.

"We'll settle all that!" he said in answer to some incidental difficulty that had pulled me up. "We'll soon settle all that! We'll start the drawings for mouldings this very night."

"We'll start them now," I responded, and we hurried off to the laboratory to begin upon this work forthwith.

I was like a child in Wonderland all that night.

The dawn found us both still at work—we kept our electric light going heedless of the day. I remember now exactly how those drawings looked. I shaded and tinted while Cavor drew—smudged and haste-marked they were in every line, but wonderfully correct. We got out the orders for the steel blinds and frames we needed from that night's work, and the glass sphere was designed within a week. We gave up our afternoon conversations and our old routine altogether. We worked, and we slept and ate when we could work no longer for hunger and fatigue. Our enthusiasm infected even our three men, though they had no idea what the sphere was for. Through those days the man Gibbs gave up walking, and went everywhere, even across the room, at a sort of fussy run.

And it grew—the sphere. December passed, January—I spent a day with a broom sweeping a path through the snow from bungalow to laboratory—February, March. By the end of March the completion was in sight. In January had come a team of horses, a huge packing-case; we had our thick glass sphere now ready, and in position under the crane we had rigged to sling it into the steel shell. All the bars and blinds of the steel shell—it was not really a spherical shell, but polyhedral, with a roller blind to each facet—had arrived by February, and the lower half was bolted together. The Cavorite was half made by March, the metallic paste had gone through two of the stages in its manufacture, and we had plastered quite half of it on to the steel bars and blinds. It was astonishing how closely we kept to the line of Cavor's first inspiration in working out the scheme. When the bolting together of the sphere was finished, he proposed to remove the rough roof of the temporary laboratory in which the work was done, and build a furnace about it. So the last stage of Cavorite making, in which the paste is heated to a dull red glow in a stream of helium, would be accomplished when it was already on the sphere.

And then we had to discuss and decide what provisions we were to take—compressed foods, concentrated essences, steel cylinders containing reserve oxygen, an arrangement for removing carbonic acid and waste from the air and restoring oxygen by means of sodium peroxide, water condensers, and so forth. I remember the little heap they made in the corner—tins, and rolls, and boxes—convincingly matter-of-fact.

It was a strenuous time, with little chance of thinking. But one day, when we were drawing near the end, an odd mood came over me. I had been bricking up the furnace all the morning, and I sat down by these possessions dead beat. Everything seemed dull and incredible.

"But look here, Cavor," I said. "After all! What's it all for?"

He smiled. "The thing now is to go."

"The moon," I reflected. "But what do you expect? I thought the moon was a dead world."

He shrugged his shoulders.

"What do you expect?"

"We're going to see."

"*Are* we?" I said, and stared before me.

"You are tired," he remarked. "You'd better take a walk this afternoon."

"No," I said obstinately; "I'm going to finish this brickwork."

And I did, and insured myself a night of insomnia.

I don't think I have ever had such a night. I had some bad times before my business collapse, but the very worst of these was sweet slumber compared to this infinity of aching wakefulness. I was suddenly in the most enormous funk at the thing we were going to do.

I do not remember before that night thinking at all of the risks we were running. Now they came like that array of spectres that once beleaguered Prague, and camped around me. The strangeness of what we were about to do, the unearthliness of it, overwhelmed me. I was like a man awakened out of pleasant dreams to the most horrible surroundings. I lay, eyes wide open, and the sphere seemed to get more flimsy and feeble, and Cavor more unreal and fantastic, and the whole enterprise madder and madder every moment.

I got out of bed and wandered about. I sat at the window and stared at the immensity of space. Between the stars was the void, the unfathomable darkness! I tried to recall the fragmentary knowledge of astronomy I had gained in my irregular reading, but it was all too vague to furnish any idea of the things we might expect. At last I got back to bed and snatched some moments of sleep—moments of nightmare rather—in which I fell and fell and fell for evermore into the abyss of the sky.

I astonished Cavor at breakfast. I told him shortly, "I'm not coming with you in the sphere."

I met all his protests with a sullen persistence. "The thing's too mad," I said, "and I won't come. The thing's too mad."

I would not go with him to the laboratory. I fretted about my bungalow for a time, and then took hat and stick and set off alone, I knew not whither. It chanced to be a glorious morning: a warm wind and deep blue sky, the first green of spring abroad, and multitudes of birds singing. I lunched on beef and beer in a little public-house near Elham, and startled the landlord by remarking apropos of the weather, "A man who leaves the world when days of this sort are about is a fool!"

"That's what I says when I heerd on it!" said the landlord, and I found that for one poor soul at least this world had proved excessive, and there had been a throat-cutting. I went on with a new twist to my thoughts.

In the afternoon I had a pleasant sleep in a sunny place, and went my way refreshed.

I came to a comfortable-looking inn near Canterbury. It was bright with creepers, and the landlady was a clean old woman and took my eye. I found I had just enough money to pay for my lodging with her. I decided to stop the night there. She was a talkative body, and among many other particulars I learnt she had never been to London. "Canterbury's as far as ever I been," she said. "I'm not one of your gad-about sort."

"How would you like a trip to the moon?" I cried.

"I never did hold with them ballooneys," she said,

evidently under the impression that this was a common excursion enough. "I wouldn't go up in one—not for ever so."

This struck me as being funny. After I had supped, I sat on a bench by the door of the inn and gossiped with two labourers about brick-making, and motor cars, and the cricket of last year. And in the sky a faint new crescent, blue and vague as a distant Alp, sank westward over the sun.

The next day I returned to Cavor. "I am coming," I said. I've been a little out of order that's all."

That was the only time I felt any serious doubt of our enterprise. Nerves purely! After that I worked a little more carefully, and took a trudge for an hour every day. And at last, save for the heating in the furnace, our labours were at an end.

CHAPTER IV

Inside the Sphere

"GO on," said Cavor, as I sat across the edge of the manhole and looked down into the black interior of the sphere. We two were alone. It was evening, the sun had set, and the stillness of the twilight was upon everything.

I drew my other leg inside and slid down the smooth glass to the bottom of the sphere, then turned to take the cans of food and other impedimenta from Cavor. The interior was warm, the thermometer stood at eighty, and as we should lose little or none of this by radiation, we were dressed in shoes and thin flannels. We had, however, a bundle of thick woolen clothing and several thick blankets to guard against mischance. By Cavor's direction I placed the packages, the cylinders of oxygen, and so forth, loosely about my feet, and soon we had everything in. He walked about the roofless shed for a time seeking anything we had overlooked, and then crawled in after me. I noted something in his hand.

"What have you got there?" I asked.

"Haven't you brought anything to read?"

"Good Lord! No."

"I forgot to tell you. There are uncertainties—— The voyage may last—— We may be weeks!"

"But——"

"We shall be floating in this sphere with absolutely no occupation."

"I wish I'd known——"

He peered out of the manhole. "Look!" he said. "There's something there!"

"Is there time?"

"We shall be an hour."

I looked out. It was an old number of *Tit-Bits* that one of the men must have brought. Farther away in the corner I saw a torn *Lloyd's News*. I scrambled back into the sphere with these things. "What have you got?" I said.

I took the book from his hand and read, *The Works of William Shakespeare.*"

He coloured slightly. "My education has been so purely scientific——" he said apologetically.

"Never read him?"

"Never."

"He knew a little, you know—in an irregular sort of way."

"Precisely what I am told," said Cavor.

I assisted him to screw in the glass cover of the manhole, and then he pressed a stud to close the corresponding blind in the outer case. The little oblong of twilight vanished. We were in darkness.

For a time neither of us spoke. Although our case would not be impervious to sound, everything was very still. I perceived there was nothing to grip when the shock of our start should come, and I realised that I should be uncomfortable for want of a chair.

"Why have we no chairs?" I asked.

"I've settled all that," said Cavor. "We shan't need them."

"Why not?"

"You will see," he said, in the tone of a man who refuses to talk.

I became silent. Suddenly it had come to me clear and vivid that I was a fool to be inside that sphere. Even now, I asked myself, is it too late to withdraw? The world outside the sphere, I knew, would be cold and inhospitable enough to me—for weeks I had been living on subsidies from Cavor—but after all, would it be as cold as the infinite zero, as inhospitable as empty space? If it had not been for the appearance of cowardice, I believe that even then I should have made him let me out. But I hesitated on that score, and hesitated, and grew fretful and angry, and the time passed.

There came a little jerk, a noise like champagne being uncorked in another room, and a faint whistling sound. For just one instant I had a sense of enormous tension, a transient conviction that my feet were pressing downward with a force of countless tons. It lasted for an infinitesimal time.

But it stirred me to action. "Cavor!" I said into the darkness, "my nerve's in rags. . . . I don't think——"

I stopped. He made no answer.

"Confound it!" I cried; "I'm a fool! What business have I here? I'm not coming, Cavor. The thing's too risky. I'm getting out."

"You can't," he said.

He made no answer for ten seconds. "It's too late for us to quarrel now, Bedford," he said. "That little jerk was the start. Already we are flying as swiftly as a bullet up into the gulf of space."

"I——" I said, and then it didn't seem to matter what happened. For a time I was, as it were, stunned; I had nothing to say. It was just as if I had never heard of this idea of leaving the world before. Then I perceived an unaccountable change in my bodily sensations. It was a feeling of lightness, of unreality. Coupled with that was a queer sensation in the head, an apoplectic effect almost, and a thumping of blood-vessels at the ears. Neither of these feelings diminished as time went on, but at last I got so used to them that I experienced no inconvenience.

I heard a click, and a little glow lamp came into being.

I saw Cavor's face, as white as I felt my own to be. We regarded one another in silence. The transparent blackness of the glass behind him made him seem as though he floated in a void.

"Well, we're committed," I said at last.

"Yes," he said, "we're committed."

"Don't move," he exclaimed, at some suggestion of a gesture. "Let your muscles keep quite lax—as if you were in bed. We are in a little universe of our own. Look at those things!"

He pointed to the loose cases and bundles that had been lying on the blankets in the bottom of the sphere. I was astonished to see that they were floating now nearly a foot from the spherical wall. Then I saw from his shadow that Cavor was no longer leaning against the glass. I thrust out my hand behind me, and found that I too was suspended in space, clear of the glass.

I did not cry nor gesticulate, but fear came upon me. It was like being held and lifted by something—you know not what. The mere touch of my hand against the glass moved me rapidly. I understood what had happened, but that did not prevent my being afraid. We were cut off from all exterior gravitation, only the attraction of objects within our sphere had effect. Consequently everything that was not fixed to the glass was falling—slowly because of the slightness of our masses—towards the centre of gravity of our little world, which seemed to be somewhere about the middle of the sphere, but rather nearer to myself than Cavor, on account of my greater weight.

"We must turn round," said Cavor, "and float back to back, with the things between us."

It was the strangest sensation conceivable, floating thus loosely in space, at first indeed horribly strange, and when the horror passed, not disagreeable at all, exceedingly restful; indeed, the nearest thing to it in earthly experience that I know is lying on a very thick, soft feather bed. But the quality of utter detachment and independence! I had not reckoned on things like this. I had expected a violent jerk at starting, a giddy sense of speed. Instead I felt—as if I were disembodied. It was not like the beginning of a journey; it was like the beginning of a dream.

CHAPTER V

The Journey to the Moon

PRESENTLY Cavor extinguished the light. He said we had not overmuch energy stored, and that what we had we must economise for reading. For a time, whether it was long or short I do not know, there was nothing but blank darkness.

A question floated up out of the void. "How are we pointing?" I said. "What is our direction?"

"We are flying away from the earth at a tangent, and as the moon is near her third quarter we are going somewhere towards her. I will open a blind——"

Came a click, and then a window in the outer case yawned open. The sky outside was as black as the darkness within the sphere, but the shape of the open window was marked by an infinite number of stars.

Those who have only seen the starry sky from the earth cannot imagine its appearance when the vague, half-luminous veil of our air has been withdrawn. The stars we see on earth are the mere scattered survivors that penetrate our misty atmosphere. But now at last I could realise the meaning of the hosts of heaven!

Stranger things we were presently to see, but that airless, star-dusted sky! Of all things, I think that will be one of the last I shall forget.

The little window vanished with a click, another beside it snapped open and instantly closed, and then a third, and for a moment I had to close my eyes because of the blinding splendour of the waning moon.

For a space I had to stare at Cavor and the white-lit things about me to season my eyes to light again, before I could turn them towards that pallid glare.

Four windows were open in order that the gravitation of the moon might act upon all the substances in our sphere. I found I was no longer floating freely in space, but that my feet were resting on the glass in the direction of the moon. The blankets and cases of provisions were also creeping slowly down the glass, and presently came to rest so as to block out a portion of the view. It seemed to me, of course, that I looked "down" when I looked at the moon. On earth "down" means earthward, the way things fall, and "up" the reverse direction. Now the pull of gravitation was towards the moon, and for all I knew to the contrary our earth was overhead. And, of course, when all the Cavorite blinds were closed, "down" was towards the centre of our sphere, and "up" towards its outer wall.

It was curiously unlike earthly experience, too, to have the light coming *up* to one. On earth light falls from above, or comes slanting down sideways, but here it came from beneath our feet, and to see our shadows we had to look up.

At first it gave me a sort of vertigo to stand only on thick glass and look down upon the moon through hundreds of thousands of miles of vacant space; but this sickness passed very speedily. And then—the splendour of the sight!

The reader may imagine it best if he will lie on the ground some warm summer's night and look between his upraised feet at the moon, but for some reason, probably because the absence of air made it so much more luminous, the moon seemed already considerably larger than it does from earth. The minutest details of its surface were acutely clear. And since we did not see it through air, its outline was bright and sharp, there was no glow or halo about it, and the star-dust that covered the sky came right to its very margin, and marked the outline of its unilluminated part. And as I stood and stared at the moon between my feet, that perception of the impossible that had been with me off and on ever since our start, returned again with tenfold conviction.

"Cavor," I said, "this takes me queerly. Those companies we were going to run, and all that about minerals?"

"I don't see 'em here."

"No," said Cavor; "but you'll get over all that."

"I suppose I'm made to turn right side up again. Still, *this*—— For a moment I could half believe there never was a world."

"That copy of *Lloyd's News* might help you."

I stared at the paper for a moment, then held

it above the level of my face, and found I could read it quite easily. I struck a column of mean little advertisements. "A gentleman of private means is willing to lend money," I read. I knew that gentleman. Then somebody eccentric wanted to sell a Cutaway bicycle, "quite new and cost £15," for five pounds; and a lady in distress wished to dispose of some fish knives and forks, "a wedding present," at a great sacrifice. No doubt some simple soul was sagely examining these knives and forks, and another triumphantly riding off on that bicycle, and a third trustfully consulting that benevolent gentleman of means even as I read. I laughed, and let the paper drift from my hand.

"Are we visible from the earth?" I asked.

"Why?"

"I knew some one who was rather interested in astronomy. It occurred to me that it would be rather odd if—my friend—chanced to be looking through some telescope."

"It would need the most powerful telescope on earth even now to see us as the minutest speck."

For a time I stared in silence at the moon.

"It's a world," I said; "one feels that infinitely more than one ever did on earth. People perhaps——"

"People!" he exclaimed. "*No!* Banish all that! Think yourself a sort of ultra-arctic voyager exploring the desolate places of space. Look at it!"

He waved his hand at the shining whiteness below. "It's dead—dead! Vast extinct volcanoes, lava wildernesses, tumbled wastes of snow, or frozen carbonic acid, or frozen air, and everywhere landslip seams and cracks and gulfs. Nothing happens. Men have watched this planet systematically with telescopes for over two hundred years. How much change do you think they have seen?"

"None."

"They have traced two indisputable landslips, a doubtful crack, and one slight periodic change of colour, and that's all."

"I didn't know they'd traced even that."

"Oh, yes. But as for people!"

"By the way," I asked, "how small a thing will the biggest telescopes show upon the moon?"

"One could see a fair-sized church. One could certainly see any towns or buildings, or anything like the handiwork of men. There might perhaps be insects, something in the way of ants, for example, so that they could hide in deep burrows from the lunar night, or some new sort of creatures having no earthly parallel. That is the most probable thing, if we are to find life there at all. Think of the difference in conditions! Life must fit itself to a day as long as fourteen earthly days, a cloudless sun-blaze of fourteen days, and then a night of equal length, growing ever colder and colder under these cold, sharp stars. In that night there must be cold, the ultimate cold, absolute zero, 273°C. below the earthly freezing point. Whatever life there is must hibernate through *that*, and rise again each day."

He mused. "One can imagine something worm-like," he said, "taking its air solid as an earth-worm swallows earth, or thick-skinned monsters——"

"By the bye," I said, "why didn't we bring a gun?"

He did not answer that question. "No," he concluded, "we just have to go. We shall see when we get there."

I remembered something. "Of course, there's my minerals, anyhow," I said; "whatever the conditions may be."

Presently he told me he wished to alter our course a little by letting the earth tug at us for a moment. He was going to open one earthward blind for thirty seconds. He warned me that it would make my head swim, and advised me to extend my hands against the glass to break my fall. I did as he directed, and thrust my feet against the bales of food cases and air cylinders to prevent their falling upon me. Then with a click the window flew open. I fell clumsily upon hands and face, and saw for a moment between my black extended fingers our mother earth—a planet in a downward sky.

We were still very near—Cavor told me the distance was perhaps eight hundred miles and the huge terrestrial disc filled all heaven. But already it was plain to see that the world was a globe. The land below us was in twilight and vague, but westward the vast gray stretches of the Atlantic shone like molten silver under the receding day. I think I recognised the cloud-dimmed coast-lines of France and Spain and the south of England, and then, with a click, the shutter closed again, and I found myself in a state of extraordinary confusion, sliding slowly over the smooth glass.

When at last things settled themselves in my mind again, it seemed quite beyond question that the moon was "down" and under my feet, and that the earth was somewhere away on the level of the horizon—the earth that had been "down" to me and my kindred since the beginning of things.

So slight were the exertions required of us, so easy did the practical annihilation of our weight make all we had to do, that the necessity for taking refreshment did not occur to us for nearly six hours (by Cavor's chronometer) after our start. I was amazed at that lapse of time. Even then I was satisfied with very little. Cavor examined the apparatus for absorbing carbonic acid and water, and pronounced it to be in satisfactory order, our consumption of oxygen having been extraordinarily slight. And our talk being exhausted for the time, and there being nothing further for us to do, we gave way to a curious drowsiness that had come upon us, and spreading our blankets on the bottom of the sphere in such a manner as to shut out most of the moonlight, wished each other good-night, and almost immediately fell asleep.

And so, sleeping, and sometimes talking and reading a little, and at times eating, although without any keenness of appetite,[1] but for the most part in a sort of quiescence that was neither waking nor slumber, we fell through a space of time that had

[1] It is a curious thing, that while we were in the sphere we felt not the slightest desire for food, nor did we feel the want of it when we abstained. At first we forced our appetites, but afterwards we fasted completely. Altogether we did not consume one-hundredth part of the compressed provisions we had brought with us. The amount of carbonic acid we breathed out was unnaturally low, but why this was so I am quite unable to explain.

neither night nor day in it, silently, softly, and swiftly down towards the moon.

CHAPTER VI

The Landing on the Moon

I REMEMBER how one day Cavor suddenly opened six of our shutters and blinded me so that I cried aloud at him. The whole area was moon, a stupendous scimitar of white dawn with its edge hacked out by notches of darkness, the crescent shore of an ebbing tide of darkness, out of which peaks and pinnacles came climbing into the blaze of the sun. I take it the reader has seen pictures or photographs of the moon, so that I need not describe the broader features of that landscape, those spacious ring-like ranges vaster than any terrestrial mountains, their summits shining in the day, their shadows harsh and deep, the gray disordered plains, the ridges, hills, and craterlets, all passing at last from a blazing illumination into a common mystery of black. Athwart this world we were flying scarcely a hundred miles above its crest and pinnacles. And now we could see, what no eye on earth will ever see, that under the blaze of the day the harsh outlines of the rocks and ravines of the plains and crater floor grew gray and indistinct under a thickening haze, that the white of their lit surfaces broke into lumps and patches, and broke again and shrank and vanished, and that here and there strange tints of brown and olive grew and spread.

But little time we had for watching then. For now we had come to the real danger of our journey. We had to drop ever closer to the moon as we spun about it, to slacken our pace and watch our chance, until at last we could dare to drop upon its surface.

For Cavor that was a time of intense exertion; for me it was an anxious inactivity. I seemed perpetually to be getting out of his way. He leapt about the sphere from point to point with an agility that would have been impossible on earth. He was perpetually opening and closing the Cavorite windows, making calculations, consulting his chronometer by means of the glow lamp during those last eventful hours. For a long time we had all our windows closed and hung silently in darkness hurling through space.

Then he was feeling for the shutter studs, and suddenly four windows were open. I staggered and covered my eyes, drenched and scorched and blinded by the unaccustomed splendour of the sun beneath my feet. Then again the shutters snapped, leaving my brain spinning in a darkness that pressed against the eyes. And after that I floated in another vast, black silence.

Then Cavor switched on the electric light, and told me he proposed to bind all our luggage together with the blankets about it, against the concussion of our descent. We did this with our windows closed, because in that way our goods arranged themselves naturally at the centre of the sphere. That too was a strange business; we two men floating loose in that spherical space, and packing and pulling ropes. Imagine it if you can! No up nor down, and every effort resulting in unexpected movements. Now I would be pressed against the glass with the full force of Cavor's thrust, now I would be kicking helplessly in a void. Now the star of the electric light would be overhead, now under foot. Now Cavor's feet would float up before my eyes, and now we would be crossways to each other. But at last our goods were safely bound together in a big soft bale, all except two blankets with head holes that we were to wrap about ourselves.

Then for a flash Cavor opened a window moonward, and we saw that we were dropping towards a huge central crater with a number of minor craters grouped in a sort of cross about it. And then again Cavor flung our little sphere open to the scorching, blinding sun. I think he was using the sun's attraction as a brake. "Cover yourself with a blanket," he cried, thrusting himself from me, and for a moment I did not understand.

Then I hauled the blanket from beneath my feet and got it about me and over my head and eyes. Abruptly he closed the shutters again, snapped one open again and closed it, then suddenly began snapping them all open, each safely into its steel roller. There came a jar, and then we were rolling over and over, bumping against the glass and against the big bale of our luggage, and clutching at each other, and outside some white substance splashed as if we were rolling down a slope of snow. . . .

Over, clutch, bump, clutch, bump, over. . . .

Came a thud, and I was half buried under the bale of our possessions, and for a space everything was still. Then I could hear Cavor puffing and grunting, and the snapping of a shutter in its sash. I made an effort, thrust back our blanket-wrapped luggage, and emerged from beneath it. Our open windows were just visible as a deeper black set with stars.

We were still alive, and we were lying in the darkness of the shadow of the wall of the great crater into which we had fallen.

We sat getting our breath again, and feeling the bruises on our limbs. I don't think either of us had had a very clear expectation of such rough handling as we had received. I struggled painfully to my feet. "And now," said I, "to look at the landscape of the moon! But——! It's tremendously dark, Cavor!"

The glass was dewy, and as I spoke I wiped at it with my blanket. "We're half an hour or so beyond the day," he said. "We must wait."

It was impossible to distinguish anything. We might have been in a sphere of steel for all that we could see. My rubbing with the blanket simply smeared the glass, and as fast as I wiped it, it became opaque again with freshly condensed moisture mixed with an increasing quantity of blanket hairs. Of course I ought not to have used the blanket. In my efforts to clear the glass I slipped upon the damp surface, and hurt my shin against one of the oxygen cylinders that protruded from our bale.

The thing was exasperating—it was absurd. Here we were just arrived upon the moon, amidst we knew not what wonders, and all we could see was

the gray and streaming wall of the bubble in which we had come.

"Confound it!" I said, "but at this rate we might have stopped at home;" and I squatted on the bale and shivered, and drew my blanket closer about me.

Abruptly the moisture turned to spangles and fronds of frost. "Can you reach the electric heater," said Cavor. "Yes—that black knob. Or we shall freeze."

I did not wait to be told twice. "And now," said I, "what are we to do?"

"Wait," he said. "Of course. We shall have to wait until our air gets warm again, and then this glass will clear. We can't do anything till then. It's night here yet; we must wait for the day to overtake us. Meanwhile, don't you feel hungry?"

For a space I did not answer him, but sat fretting. I turned reluctantly from the smeared puzzle of the glass and stared at his face. "Yes," I said, "I am hungry. I feel somehow enormously disappointed. I had expected—I don't know what I had expected, but not this."

I summoned my philosophy, and rearranging my blanket about me sat down on the bale again and began my first meal on the moon. I don't think I finished it—I forget. Presently, first in patches, then running rapidly together into wider spaces, came the clearing of the glass, came the drawing of the misty veil that hid the moon world from our eyes.

We peered out upon the landscape of the moon.

CHAPTER VII

Sunrise on the Moon

AS we saw it first it was the wildest and most desolate of scenes. We were in an enormous amphitheatre, a vast circular plain, the floor of the giant crater. Its cliff-like walls closed us in on every side. From the westward the light of the unseen sun fell upon them, reaching to the very foot of the cliff, and showed a disordered escarpment of drab and grayish rock, lined here and there with banks and crevices of snow. This was perhaps a dozen miles away but at first no intervening atmosphere diminished in the slightest the minutely detailed brilliancy with which these things glared at us. They stood out clear and dazzling against a background of starry blackness that seemed to our earthly eyes rather a gloriously spangled velvet curtain than the spaciousness of the sky.

The eastward cliff was at first merely a starless selvedge to the starry dome. No rosy flush, no creeping pallor, announced the commencing day. Only the Corona, the Zodiacal light, a huge cone-shaped, luminous haze, pointing up towards the splendour of the morning star, warned us of the imminent nearness of the sun.

Whatever light was about us was reflected by the westward cliffs. It showed a huge undulating plain, cold and gray, a gray that deepened eastward into the absolute raven darkness of the cliff shadow. Innumerable rounded gray summits, ghostly hummocks, billows of snowy substance, stretching crest beyond crest into the remote obscurity, gave us our first inkling of the distance of the crater wall. These hummocks looked like snow. At the time I thought they were snow. But they were not—they were mounds and masses of frozen air!

So it was at first, and then, sudden, swift, and amazing, came the lunar day.

The sunlight had crept down the cliff, it touched the drifted masses at its base and incontinently came striding with seven-leagued boots towards us. The distant cliff seemed to shift and quiver, and at the touch of the dawn a reek of gray vapour poured upward from the crater floor, whirls and puffs and drifting wraiths of gray, thicker and broader and denser, until at last the whole westward plain was steaming like a wet handkerchief held before the fire, and the westward cliffs were no more than a refracted glare beyond.

"It is air," said Cavor. "It must be air—or it would not rise like this—at the mere touch of a sunbeam. And at this pace. . . ."

He peered upwards. "Look!" he said.

"What?" I asked.

"In the sky. Already. On the blackness—a little touch of blue. See! The stars seem larger. And the little ones and all those dim nebulosities we saw in empty space—they are hidden!"

Swiftly, steadily, the day approached us. Gray summit after gray summit was overtaken by the blaze, and turned to a smoking white intensity. At last there was nothing to the west of us but a bank of surging fog, the tumultuous advance and ascent of cloudy haze. The distant cliff had receded farther and farther, had loomed and changed through the whirl, and foundered and vanished at last in its confusion.

Nearer came that steaming advance, nearer and nearer, coming as fast as the shadow of a cloud before the south-west wind. About us rose a thin anticipatory haze.

Cavor gripped my arm.

"What?" I said.

"Look! The sunrise! The sun!"

He turned me about and pointed to the brow of the eastward cliff, looming above the haze about us, scarce lighter than the darkness of the sky. But now its line was marked by strange reddish shapes, tongues of vermilion flame that writhed and danced. I fancied it must be spirals of vapour that had caught the light and made this crest of fiery tongues against the sky, but indeed it was the solar prominences I saw, a crown of fire about the sun that is forever hidden from earthly eyes by our atmospheric veil.

And then—the sun!

Steadily, inevitably came a brilliant line, came a thin edge of intolerable effulgence that took a circular shape, became a bow, became a blazing sceptre, and hurled a shaft of heat at us as though it was a spear.

It seemed verily to stab my eyes! I cried aloud and turned about blinded, groping for my blanket beneath the bale.

And with that incandescence came a sound, the first sound that had reached us from without since we left the earth, a hissing and rustling, the stormy

trailing of the aerial garment of the advancing day. And with the coming of the sound and the light the sphere lurched, and blinded and dazzled we staggered helplessly against each other. It lurched again, and the hissing grew louder. I had shut my eyes perforce, I was making clumsy efforts to cover my head with my blanket, and this second lurch sent me helplessly off my feet. I fell against the bale, and opening my eyes had a momentary glimpse of the air just outside our glass. It was running—it was boiling—like snow into which a white-hot rod is thrust. What had been solid air had suddenly at the touch of the sun become a paste, a mud, a slushy liquefaction, that hissed and bubbled into gas.

There came a still more violent whirl of the sphere and we had clutched one another. In another moment we were spun about again. Round we went and over, and then I was on all fours. The lunar dawn had hold of us. It meant to show us little men what the moon could do with us.

I caught a second glimpse of things without, puffs of vapour, half-liquid slush, excavated, sliding, falling, sliding. We dropped into darkness. I went down with Cavor's knees in my chest. Then he seemed to fly away from me, and for a moment I lay with all the breath out of my body staring upward. A toppling crag of the melting stuff had splashed over us, buried us, and now it thinned and boiled off us. I saw the bubbles dancing on the glass above. I heard Cavor exclaiming feebly.

Then some huge landship in the thawing air had caught us, and spluttering expostulation, we began to roll down a slope, rolling faster and faster, leaping crevasses and rebounding from banks, faster and faster, westward into the white-hot boiling tumult of the lunar day.

Clutching at one another we spun about, pitched this way and that, our bale of packages leaping at us, pounding at us. We collided, we gripped, we were torn asunder—our heads met, and the whole universe burst into fiery darts and stars! On the earth we should have smashed one another a dozen times, but on the moon, luckily for us, our weight was only one-sixth of what it is terrestrially, and we fell very mercifully. I recall a sensation of utter sickness, a feeling as if my brain were upside down within my skull, and then——

Something was at work upon my face, some thin feelers worried my ears. Then I discovered the brilliance of the landscape around was mitigated by blue spectacles. Cavor bent over me, and I saw his face upside down, his eyes also protected by tinted goggles. His breath came irregularly, and his lip was bleeding from a bruise. "Better?" he said, wiping the blood with the back of his hand.

Everything seemed swaying for a space, but that was simply my giddiness. I perceived that he had closed some of the shutters in the outer sphere to save me from the direct blaze of the sun. I was aware that everything about us was very brilliant.

"Lord!" I gasped. "But this——!"

I craned my neck to see. I perceived there was a blinding glare outside, an utter change from the gloomy darkness of our first impressions. "Have I been insensible long?" I asked.

"I don't know—the chronometer is broken. Some little time. . . . My dear chap! I have been afraid. . . ."

I lay for a space taking this in. I saw his face still bore evidences of emotion. For a while I said nothing. I passed an inquisitive hand over my contusions, and surveyed his face for similar damages. The back of my right hand had suffered most, and was skinless and raw. My forehead was bruised and had bled. He handed me a little measure with some of the restorative—I forget the name of it—he had brought with us. After a time I felt a little better. I began to stretch my limbs carefully. Soon I could talk.

"It wouldn't have done," I said, as though there had been no interval.

"No! it *wouldn't.*"

He thought, his hands hanging over his knees. He peered through the glass and then stared at me. "Good Lord!" he said. *"No!"*

"What has happened?" I asked after a pause. "Have we jumped to the tropics?"

"It was as I expected. This air has evaporated—if it is air. At any rate, it has evaporated, and the surface of the moon is showing. We are lying on a bank of earthy rock. Here and there bare soil is exposed. A queer sort of soil!"

It occurred to him that it was unnecessary to explain. He assisted me into a sitting position, and I could see with my own eyes.

CHAPTER VIII

A Lunar Morning

THE harsh emphasis, the pitiless black and white of the scenery had altogether disappeared. The glare of the sun had taken upon itself a faint tinge of amber; the shadows upon the cliff of the crater wall were deeply purple. To the eastward a dark bank of fog still crouched and sheltered from the sunrise, but to the westward the sky was blue and clear. I began to realise the length of my insensibility.

We were no longer in a void. An atmosphere had arisen about us. The outline of things had gained in character, had grown acute and varied; save for a shadowed space of white substances here and there, white substance that was no longer air but snow, the arctic appearance had gone altogether. Everywhere broad rusty brown spaces of bare and tumbled earth spread to the blaze of the sun. Here and there at the edge of the snowdrifts were transient little pools and eddies of water, the only things stirring in that expanse of barrenness. The sunlight inundated the upper two blinds of our sphere and turned our climate to high summer, but our feet were still in shadow, and the sphere was lying upon a drift of snow.

And scattered here and there upon the slope, and emphasised by little white threads of unthawed snow upon their shady sides, were shapes like sticks, dry twisted sticks of the same rusty hue as the rock upon which they lay. That caught one's thoughts sharply. Sticks! On a lifeless world? Then as my eye grew more accustomed to the texture of their substance, I perceived that al-

most all this surface had a fibrous texture, like the carpet of brown needles one finds beneath the shade of pine trees.

"Cavor!" I said.

"Yes."

"It may be a dead world now—but once——"

Something arrested my attention. I had discovered among these needles a number of little round objects. And it seemed to me that one of these had moved.

"Cavor," I whispered.

"What?"

But I did not answer at once. I stared incredulous. For an instant I could not believe my eyes. I gave an inarticulate cry. I gripped his arm. I pointed. "Look!" I cried, finding my tongue. "There! Yes! And there!"

His eyes followed my pointing finger. "Eh?" he said.

How can I describe the thing I saw? It is so petty a thing to state, and yet it seemed so wonderful, so pregnant with emotion. I have said that amidst the stick-like litter were these rounded bodies, these little oval bodies that might have passed as very small pebbles. And now first one and then another had stirred, had rolled over and cracked, and down the crack of each of them showed a minute line of yellowish green, thrusting outward to meet the hot encouragement of the newly-risen sun. For a moment that was all, and then there stirred and burst a third!

"It is a seed," said Cavor. And then I heard him whisper very softly, *"Life!"*

"Life!" And immediately it poured upon us that our vast journey had not been made in vain, that we had come to no arid waste of minerals, but to a world that lived and moved! We watched intensely. I remember I kept rubbing the glass before me with my sleeve, jealous of the faintest suspicion of mist.

The picture was clear and vivid only in the middle of the field. All about that centre the dead fibres and seeds were magnified and distorted by the curvature of the glass. But we could see enough! One after another all down the sunlit slope these miraculous little brown bodies burst and gaped apart, like seed-pods, like the husks of fruits; opened eager mouths that drank in the heat and light pouring in a cascade from the newly-risen sun.

Every moment more of these seed-coats ruptured, and even as they did so the swelling pioneers overflowed their rent-distended seed-cases, and passed into the second stage of growth. With a steady assurance, a swift deliberation, these amazing seeds thrust a rootlet downward to the ground and a queer little bundle-like bud into the air. In a little while the whole slope was dotted with minute plantlets standing at attention in the blaze of the sun.

They did not stand for long. The bundle-like buds swelled and strained and opened with a jerk, thrusting out a coronet of little sharp tips, spreading a whorl of tiny, spiky, brownish leaves, that lengthened rapidly, lengthened visibly even as we watched. The movement was slower than any animal's, swifter than any plant's I have ever seen before. How can I suggest it to you—the way that growth went on? The leaf tips grew so that they moved onward even while we looked at them. The brown seed-case shrivelled and was absorbed with an equal rapidity. Have you ever on a cold day taken a thermometer into your warm hand and watched the little thread of mercury creep up the tube? These moon plants grew like that.

In a few minutes, as it seemed, the buds of the more forward of these plants had lengthened into a stem and were even putting forth a second whorl of leaves, and all the slope that had seemed so recently a lifeless stretch of litter was now dark with the stunted olive-green herbage of bristling spikes that swayed with the vigour of their growing.

I turned about, and behold! along the upper edge of a rock to the eastward a similar fringe in a scarcely less forward condition swayed and bent, dark against the blinding glare of the sun. And beyond this fringe was the silhouette of a plant mass, branching clumsily like a cactus, and swelling visibly, swelling like a bladder that fills with air.

Then to the westward also I discovered that another such distended form was rising over the scrub. But here the light fell upon its sleek sides, and I could see that its colour was a vivid orange hue. It rose as one watched it; if one looked away from it for a minute and then back, its outline had changed; it thrust out blunt congested branches until in a little time it rose a coralline shape of many feet in height. Compared with such a growth the terrestrial puff-ball, which will sometimes swell a foot in diameter in a single night, would be a hopeless laggard. But then the puff-ball grows against a gravitational pull six times that of the moon. Beyond, out of gullies and flats that had been hidden from us, but not from the quickening sun, over reefs and banks of shining rock, a bristling beard of spiky and fleshy vegetation was straining into view, hurrying tumultuously to take advantage of the brief day in which it must flower and fruit and seed again and die. It was like a miracle, that growth. So, one must imagine, the trees and plants arose at the Creation and covered the desolation of the new-made earth.

Imagine it! Imagine that dawn! The resurrection of the frozen air, the stirring and quickening of the soil, and then this silent uprising of vegetation, this unearthly ascent of fleshiness and spikes. Conceive it all lit by a blaze that would make the intensest sunlight of earth seem watery and weak. And still around this stirring jungle, wherever there was shadow, lingered banks of bluish snow. And to have the picture of our impression complete, you must bear in mind that we saw it all through a thick bent glass, distorting it as things are distorted by a lens, acute only in the centre of the picture, and very bright there, and towards the edges magnified and unreal.

(To be continued next month)

The MAN HIGHER UP

By Edwin Balmer and William B. MacHarg

Author's of "The Eleventh Hour" and "The Hammering Man"

Trant substituted for the photograph the bent wire given him by Miss Rowan. Then for the last time he swung to the instrument, and as his eyes caught the wildly vibrating pencils, they flared with triumph.

THE first real blizzard of the winter had burst upon New York from the Atlantic. For seventy-two hours—as Rentland, chief clerk in the Broadway offices of the American Commodities Company, saw from the record he was making for President Welter—no ship of any of the dozen expected from foreign ports had been able to make the company's docks in Brooklyn, or indeed, had been reported at Sandy Hook. And for the last five days, during which the Weather Bureau's storm signals had stayed steadily set, no steamer of the six which had finished unloading at the docks the week before had dared to try for the open sea except one, the *Elizabethan* Age, which had cleared the Narrows on Monday night.

On land the storm was scarcely less disastrous to the business of the great importing company. Since Tuesday morning Rentland's reports of the car- and train-load consignments which had left the warehouses daily had been a monotonous page of trains stalled. But until that Friday morning, Welter—the big, bull-necked, thick-lipped master of men and money—had borne all the accumulated trouble of the week with serenity, almost with contempt. Only when the chief clerk added to his report the minor item that the 3,000-ton steamer, *Elizabethan Age*, which had cleared on Monday night, had been driven into Boston, something suddenly seemed to "break" in the inner office. Rentland heard the president's secretary telephone to Brooklyn for Rowan, the dock superintendent; he heard Welter's heavy steps going to and fro in the private office, his hoarse voice raised angrily; and soon afterwards Rowan blustered in. Rentland could no longer overhear the voices. He went back to his own private office and called the station master at the Grand Central Station on the telephone.

"The seven o'clock train from Chicago?" the clerk asked in a guarded voice. "It came in at 10:30, as expected? Oh, at 10:10! Thank you." He hung up the receiver and opened the door to pass a word with Rowan as he came out of the president's office.

"They've wired that the *Elizabethan Age* couldn't get beyond Boston, Rowan," he cried curiously.

"The —— —— —— hooker!" The dock superintendent had gone strangely white; for the imperceptible fraction of an instant his eyes dimmed with fear, as he stared into the wondering face of the clerk, but he recovered himself quickly, spat offensively, and slammed the door as he went out. Rentland stood with clenching hands for a moment; then he glanced at the clock and hurried to the entrance of the outer office. The elevator was just bringing up from the street a red-haired, blue-gray-eyed young man of medium height, who, noting with a quick, intelligent glance the arrangement of the offices, advanced directly toward President Welter's door. The chief clerk stepped forward quickly.

"You are Mr. Trant?"

"Yes."

"I am Rentland. This way, please." He led the psychologist to the little room behind the files, where he had telephoned the moment before.

"Your wire to me in Chicago, which brought me here," said Trant, turning from the inscription "Chief Clerk" on the door to the dogged, decisive features and wiry form of his client, "gave me to understand that you wished to have me investigate the disappearance, or death, of two of your dock scale-checkers. I suppose you were acting for President Welter—of whom I have heard—in sending for me?"

"No," said Rentland, as he waved Trant to a seat. "President Welter is certainly not troubling himself to that extent over an investigation."

"Then the company, or some other officer?" Trant questioned, with increasing curiosity.

"No; nor the company, nor any other officer in it, Mr. Trant." Rentland smiled. "Nor even am I, as chief clerk of the American Commodities Company, overtroubling myself about those checkers," he leaned nearer to Trant, confidentially, "but as a special agent for the United States Treasury Department I am extremely interested in the death of one of these men, and in the disappearance of the other. And for that I called you to help me."

"As a secret agent for the Government?" Trant repeated, with rapidly rising interest.

"Yes; a spy, if you wish so to call me, but as truly in the ranks of the enemies to my country as any Nathan Hale, who has a statue in this city. To-day the enemies are the big, corrupting, thieving corporations like this company; and appreciating that, I am not ashamed to be a spy in their ranks, commissioned by the Government to catch and condemn President Welter, and any other officers involved with him, for systematically stealing from the Government for the past ten years, and for probable connivance in the murder of at least one of those two checkers so that the company might continue to steal."

"To steal? How?"

"Customs frauds, thefts, smuggling—anything you wish to call it. Exactly what or how, I can't tell; for that is part of what I sent for you to find out. For a number of years the Customs Department has suspected, upon circumstantial evidence, that the enormous profits of this company upon the thousand and one things which it is importing and distributing must come in part from goods they have got through without paying the proper duty. So at my own suggestion I entered the employ of the company a year ago to get track of the method. But after a year here I was almost ready to give up the investigation in despair, when Ed. Landers, the company's checker on the docks in scale house No. 3, was killed—accidentally, the coroner's jury

THIS excellent detective scientifiction story is the first of a series to appear in AMAZING STORIES. These romances depict the achievement of Luther Trant, psychological detective.

While the results of psychic evidence have not as yet been accepted in our courts, there is no doubt that at a not-distant date such evidence will be given due importance in the conviction of our criminals. The authors of this tale are experts in their science and the series cannot fail to arouse your interest to the highest degree. A second story will appear in an early issue of AMAZING STORIES.

said. To me it looked suspiciously like murder. Within two weeks Morse, who was appointed as checker in his place, suddenly disappeared. The company's officials showed no concern as to the fate of these two men; and my suspicions that something crooked might be going on at scale house No. 3 were strengthened; and I sent for you to help me to get at the bottom of things."

"Is it not best then to begin by giving me as fully as possible the details of the employment of Morse and Landers, and also of their disappearance?" the young psychologist suggested.

"I have told you these things here, Trant, rather than take you to some safer place," the secret agent replied, "because I have been waiting for some one who can tell you what you need to know better than I can. Edith Rowan, the stepdaughter of the dock superintendent, knew Landers well, for he boarded at Rowan's house. She was—or is, if he still lives—engaged to Morse. It is an unusual thing for Rowan himself to come here to see President Welter, as he did just before you came; but every morning since Morse disappeared his daughter has come to see Welter personally. She is already waiting in the outer office." Opening the door, he indicated to Trant a light-haired, overdressed, nervous girl twisting about uneasily on the seat outside the president's private office.

"Welter thinks it policy, for some reason, to see her a moment every morning. But she always comes out almost at once—crying."

"This is interesting," Trant commented, as he watched the girl go into the president's office. After only a moment she came out, crying. Rentland had already left his room, so it seemed by chance that he and Trant met and supported her to the elevator, and over the slippery pavement to a neat electric coupé which was standing at the curb.

"It's hers," said Rentland, as Trant hesitated before helping the girl into it. "It's one of the things I wanted you to see. Broadway is very slippery, Miss Rowan. You will let me see you home again this morning? This gentleman is Mr. Trant, a private detective. I want him to come along with us."

The girl acquiesced, and Trant crowded into the little automobile. Rentland turned the coupé skillfully out into the swept path of the street, ran swiftly down Fifth Avenue to Fourteenth Street, and stopped three streets to the east before a house in the middle of the block. The house was as narrow and cramped and as cheaply constructed as its neighbors on both sides. It had lace curtains conspicuous in every window, and with impressive statuettes, vases, and gaudy bits of bric-a-brac in the front rooms.

"He told me again that Will must still be off drunk; and Will never takes a drink," she spoke to them for the first time, as they entered the little sitting room.

"'He' is Welter," Rentland explained to Trant. "'Will' is Morse, the missing man. Now, Miss Rowan, I have brought Mr. Trant with me because I have asked him to help me find Morse for you, as I promised; and I want you to tell him everything you can about how Landers was killed and how Morse disappeared."

"And remember," Trant interposed, "that I know very little about the American Commodities Company."

"Why, Mr. Trant," the girl gathered herself together, "you cannot help knowing something about the company! It imports almost everything—tobacco, sugar, coffee, olives, and preserved fruits, oils, and all sorts of table delicacies, from all over the world, even from Borneo, Mr. Trant, and from Madagascar and New Zealand. It has big warehouses at the docks with millions of dollars' worth of goods stored in them. My stepfather has been with the company for years, and has charge of all that goes on at the docks."

"Including the weighing?"

"Yes; everything on which there is a duty when it is taken off the boats has to be weighed, and to do this there are big scales, and for each one a scale house. When a scale is being used there are two men in the scale house. One of these is the Government weigher, who sets the scale to a balance and notes down the weight in a book. The other man, who is an employee of the company, writes the weight also in a book of his own; and he is called the company's checker. But though there are half a dozen scales, almost everything, when it is possible, is unloaded in front of Scale No. 3, for that is the best berth for ships."

"And Landers?"

"Landers was the company's checker on scale No. 3. Well, about five weeks ago I began to see that Mr. Landers was troubled about something. Twice a queer, quiet little man with a scar on his cheek came to see him, and each time they went up to Mr. Landers' room and talked a long while. Ed's room was over the sitting room, and after the man had gone I could hear him walking back and forth—walking and walking until it seemed as though he would never stop. I told father about this man who troubled Mr. Landers, and he asked him about it, but Mr. Landers flew into a rage and said it was nothing of importance. Then one night—it was a Wednesday—everybody stayed late at the docks to finish unloading the steamer *Covallo*. About two o'clock father got home, but Mr. Landers had not been ready to come with him. He did not come all that night, and the next day he did not come home.

"Now, Mr. Trant, they are very careful at the warehouses about who goes in and out, because so many valuable things are stored there. On one side the warehouses open on the docks, and at each end they are fenced off so that you cannot go along the docks and get away from them that way; and on the other side they open on the street through great driveway doors, and at every door, as long as it is open, there stands a watchman, who sees everybody that goes in and out. Only one door was open that Wednesday night, and the watchman there had not seen Mr. Landers go out. And the second night passed, and he did not come home. But the next morning, Friday morning," the girl caught her breath hysterically, "Mr. Landers' body was found in the engine room back of scale house No. 3, with the face crushed in horribly!"

"Was the engine room occupied?" said Trant, quickly. "It must have been occupied in the daytime, and probably on the night when Landers disappeared, as they were unloading the *Cavallo*. But

on the night after which the body was found—was it occupied that night?"

"I don't know, Mr. Trant. I think it could not have been, for after the verdict of the coroner's jury, which was that Mr. Landers had been killed by some part of the machinery, it was said that the accident must have happened either the evening before, just bfore the engineer shut off his engines, or the first thing that morning, just after he had started them; for otherwise somebody in the engine room would have seen it."

"But where had Landers been all day Thursday, Miss Rowan, from two o'clock on the second night before, when your father last saw him, until the accident in the engine room?"

"It was supposed he had been drunk. When his body was found, his clothes were covered with fibers from the coffee-sacking, and the jury supposed he had been sleeping off his liquor in the coffee warehouse during Thursday. But I had known Ed Landers for almost three years, and in all that time I never knew him to take even one drink."

"Then it was a very unlikely supposition. You do not believe in that accident, Miss Rowan?" Trant said, brusquely.

The girl grew white as paper. "Oh, Mr. Trant, I don't know! I did believe in it. But since Will —Mr. Morse—has disappeared in exactly the same way, under exactly the same circumstances, and everyone acts about it exactly the same way——"

"You say the circumstances of Morse's disappearance were the same?" Trant pressed quietly when she was able to proceed.

"After Mr. Landers had been found dead," said the girl, pulling herself together again, "Mr. Morse, who had been checker in one of the other scale houses, was made checker on scale No. 3. We were surprised at that, for it was a sort of promotion, and father did not like Will; he had been greatly displeased at our engagement. Will's promotion made us very happy, for it seemed as though father must be changing his opinion. But after Will had been checker on scale No. 3 only a few days, the same queer, quiet little man with the scar on his cheek who had begun coming to see Mr. Landers before he was killed began coming to see Will, too! And after he began coming, Will was troubled, terribly troubled, I could see; but he would not tell me the reason. And he expected, after that man began coming, that something would happen to him. And I know, from the way he acted and spoke about Mr. Landers, that he thought he had not been accidentally killed. One evening, when I could see he had been more troubled than ever before, he said that if anything happened to him I was to go at once to his boarding house and take charge of everything in his room, and not to let anyone into the room to search it until I had removed everything in the bureau drawers; everything no matter how useless anything seemed. Then, the very next night, five days ago, just as while Mr. Landers was checker, everybody stayed overtime at the docks to finish unloading a vessel, the *Elizabethan Age*. And in the morning Will's landlady called me on the phone to tell me that he had not come home. Five days ago, Mr. Trant! And since then no one has seen or heard from him; and the watchman did not see him come out of the warehouse that night just as he did not see Ed Landers."

"What did you find in Morse's bureau?" asked Trant.

"I found nothing."

"Nothing?" Trant repeated. "That is impossible, Miss Rowan! Think again! Remember he warned you that what you found might seem trivial and useless."

The girl, a little defiantly, studied for an instant Trant's clear-cut features. Suddenly she arose and ran from the room, but returned quickly with a strange little implement in her hand.

It was merely a bit of wire, straight for perhaps three inches, and then bent in a half circle of five or six inches, the bent portion of the wire being wound carefully with stout twine, thus:

The mysterious string-wrapped piece of bent wire.

"Except for his clothes and some blank writing paper and envelopes that was absolutely the only thing in the bureau. It was the only thing at all in the only locked drawer."

Trant and Rentland stared disappointedly at this strange implement, which the girl handed to the psychologist.

"You have shown this to your stepfather, Miss Rowan, for a possible explanation of why a company checker should be so solicitous about such a thing as this?" asked Trant.

"No," the girl hesitated. "Will had told me not to say anything; and I told you father did not like Will. He had made up his mind that I was to marry Ed Landers. In most ways father is kind and generous. He's kept the coupé we came here in for mother and me for two years; and you see," she gestured a little proudly about the bedecked and badly furnished rooms, "you see how he gets everything for us. Mr. Landers was most generous, too. He took me to the theaters two or three times every week—always the best seats, too. I didn't want to go, but father made me. I preferred Will, though he wasn't so generous."

Trant's eyes returned, with more intelligent scrutiny, to the mysterious implement in his hand.

"What salary do checkers receive, Rentland?" he asked, in a low tone.

"One hundred and twenty-five dollars a month."

"And her father, the dock superintendent—how much?" Trant's expressive glance now jumping about from one gaudy, extravagant trifle in the room to another, caught a glimpse again of the electric coupé standing in the street, then returned to the tiny bit of wire in his hand.

"Three thousand a year," Rentland replied.

"Tell me, Miss Rowan," said Trant, "this implement—have you by any chance mentioned it to President Welter?"

"Why, no, Mr. Trant."

"You are sure of that? Excellent! Excellent! Now the queer, quiet little man with the scar on his cheek who came to see Morse; no one could tell you anything about him?"

"No one, Mr. Trant; but yesterday Will's landlady told me that a man has come to ask for Will every forenoon since he disappeared, and she thinks this may be the man with the scar, though she can't be sure, for he kept the collar of his overcoat up about his face. She was to telephone me if he came again."

"If he comes this morning," Trant glanced quickly at his watch, "you and I, Rentland, might much better be waiting for him over there."

The psychologist rose, putting the bent, twine-wound bit of wire carefully into his pocket; and a minute later the two men crossed the street to the house, already known to Rentland, where Morse had boarded. The landlady not only allowed them to wait in her little parlor, but waited with them until at the end of an hour she pointed with an eager gesture to a short man in a big ulster who turned sharply up the front steps.

"That's him—see!" she exclaimed.

"That the man with the scar!" cried Rentland. "Well! I know him."

He made for the door, caught at the ulster and pulled the little man into the house by main force.

"Well, Dickey!" the secret agent challenged, as the man faced him in startled recognition. "What are you doing in this case? Trant, this is Inspector Dickey, of the Customs Office," he introduced the officer.

"I'm in the case on my own hook, if I know what case you're talking about," piped Dickey. "Morse, eh? and the American Commodities Company, eh?"

"Exactly," said Rentland, brusquely. "What were you calling to see Landers for?"

"You know about that?" The little man looked up sharply. "Well, six weeks ago Landers came to me and told me he had something to sell; a secret system for beating the customs. But before we got to terms, he began losing his nerve a little; he got it back, however, and was going to tell me when, all at once, he disappeared, and two days later he was dead! That made it hotter for me; so I went after Morse. But Morse denied he knew anything. Then Morse disappeared, too."

"So you got nothing at all out of them?" Rentland interposed.

"Nothing I could use. Landers, one time when he was getting up his nerve, showed me a piece of bent wire—with string around it—in his room, and began telling me something when Rowan called him, and then he shut up."

"A bent wire!" Trant cried, eagerly. "Like this?" He took from his pocket the implement given him by Edith Rowan. "Morse had this in his room, the only thing in a locked drawer."

"The same thing!" Dickey cried, seizing it. "So Morse had it, too, after he became checker at scale No. 3, where the cheating is, if anywhere. The very thing Landers started to explain to me, and how they cheated the customs with it. I say, we must have it now, Rentland! We need only go to the docks and watch them while they weigh, and see how they use it, and arrest them and then we have them at last, eh, old man?" he cried in triumph. "We have them at last!"

"You mean," Trant cut in upon the customs man, "that you can convict and jail perhaps the checker, or a foreman, or maybe even a dock superintendent —as usual. But the men higher up—the big men who are really at the bottom of this business and the only ones worth getting—will you catch them?"

"We must take those we can get," said Dickey sharply.

Trant laid his hand on the little officer's arm.

"I am a stranger to you," he said, "but if you have followed some of the latest criminal cases in Illinois perhaps you know that, using the methods of modern practical psychology, I have been able to get results where old ways have failed. We are front to front now with perhaps the greatest problem of modern criminal catching, to catch, in cases involving a great corporation, not only the little men low down who perform the criminal acts, but the men higher up, who conceive, or connive at the criminal scheme. Rentland, I did not come here to convict merely a dock foreman; but if we are going to reach anyone higher than that, you must not let Inspector Dickey excite suspicion by prying into matters at the docks this afternoon!"

"But what else can we do?" said Rentland, doubtfully.

"Modern practical psychology gives a dozen possible ways for proving the knowledge of the man higher up in this corporation crime," Trant answered, "and I am considering which is the most practicable. Only tell me," he demanded suddenly; "Mr. Welter I have heard is one of the rich men of New York who make it a fad to give largely to universities and other institutions; can you tell me with what ones he may be most closely interested?"

"I have heard," Rentland replied, "that he is one of the patrons of the Stuyvesant School of Science. It is probably the most fashionably patroned institution in New York; and Welter's name, I know, figures with it in the newspapers."

"Nothing could be better!" Trant exclaimed. "Kuno Schmalz has his psychological laboratory there. I see my way now, Rentland; and you will hear from me early in the afternoon. But keep away from the docks!" He turned and left the astonished customs officers abruptly. Half an hour later the young psychologist sent in his card to Professor Schmalz in the laboratory of the Stuyvesant School of Science. The German, broad-faced, spectacled, beaming, himself came to the laboratory door.

"Is it Mr. Trant—the young, apt pupil of my old friend, Dr. Reiland?" he boomed, admiringly. "Ach! luck is good to Reiland! For twenty years I, too, have shown them in the laboratory how fear, guilt, every emotion causes in the body reactions which can be measured. But do they apply it? Pouf! No! it remains to them all impractical, academic, because I have only nincompoops in my classes!"

"Professor Schmalz," said Trant, following him into the laboratory, and glancing from one to another of the delicate instruments with keen interest, "tell me along what line you are now working."

"Ach! I have been for a year now experimenting with the plethysmograph and the pneumograph. I make a taste, I make a smell, or I make a noise to excite feeling in the subject; and I read by the plethysmograph that the volume of blood in the hand decreases under the emotions and that the

pulse quickens; and by the pneumograph I read that the breathing is easier or quicker, depending on whether the emotions are pleasant or unpleasant. I have performed this year more than two thousand of those experiments."

"Good! I have a problem in which you can be of the very greatest use to me; and the plethysmograph and the pneumograph will serve my purpose as well as any other instruments in the laboratory. For no matter how hardened a man may be, no matter how impossible it may have become to detect his feelings in his face or bearing, he cannot prevent the volume of blood in his hand from decreasing, and his breathing from becoming different, under the influence of emotions of fear or guilt. By the way, professor, is Mr. Welter familiar with these experiments of yours?"

"What, he!" cried the stout German. "For why should I tell him about them? He knows nothing. He has bought my time to instruct classes; he has not bought, py chiminey! everything—even the soul Gott gave me!"

"But he would be interested in them?"

"To be sure, he would be interested in them! He would bring in his automobile three or four other fat money-makers, and he would show off before them. He would make his trained bear—that is me—dance!"

"Good!" cried Trant again, excitedly. "Professor Schmalz, would you be willing to give a little exhibition of the plethysmograph and pneumograph, this evening, if possible, and arrange for President Welter to attend it?"

The astute German cast on him a quick glance of interrogation. "Why not?" he said. "It makes nothing to me what purpose you will be carrying out; no, py chiminey! not if it costs me my position of trained bear; because I have confidence in my psychology that it will not make any innocent man suffer!"

"And you will have two or three scientists present to watch the experiments? And you will allow me to be there also and assist?"

"With great pleasure."

"But, Professor Schmalz, you need not introduce me to Mr. Welter, who will think I am one of your assistants."

"As you wish about that, pupil of my dear old friend."

"Excellent!" Trant leaped to his feet. "Provided it is possible to arrange this with Mr. Welter, how soon can you let me know?"

"Ach! it is as good as arranged, I tell you. His vanity will arrange it if I assure the greatest publicity——"

"The more publicity the better."

"Wait! It shall be fixed before you leave here."

The professor led the way into his private study, telephoned to the president of the American Commodities Company, and made the appointment without trouble.

A few minutes before eight o'clock that evening Trant again mounted rapidly the stone steps to the professor's laboratory. The professor and two others, who were bending over a table in the center of the room, turned at his entrance. President Welter had not yet arrived. The young psychologist acknowledged with pleasure the introduction to the two scientists with Schmalz. Both of them were known to him by name, and he had been following with interest a series of experiments, which the elder, Dr. Annerly, had been reporting in a psychological journal. Then he turned at once to the apparatus on the table.

He was still examining the instruments when the noise of a motor car stopping at the door warned him of the arrival of President Welter's party. Then the laboratory door opened and the party appeared. They also were three in number; stout men, rather obtrusively dressed, in jovial spirits, with strong faces flushed now with the wine they had taken at dinner.

"Well, professor, what fireworks are you going to show us to-night?" asked Welter, patronizingly. "Schmalz," he explained to his companions, "is the chief ringmaster of this circus."

The bearded face of the German grew purple under Welter's jokingly overbearing manner; but he turned to the instruments and began to explain them. The pneumograph, which the professor first took up, consists of a very thin flexible brass plate suspended by a cord around the neck of the person under examination, and fastened tightly against the chest by a cord circling the body. On the outer surface of this plate are two small, bent levers, connected at one end to the cord around the body of the subject, and at the other end to the surface of a small hollow drum fastened to the plate between the two. As the chest rises and falls in breathing, the levers press more and less upon the surface of the drum; and this varying pressure on the air inside the drum is transmitted from the drum through an air-tight tube to a little pencil which it lowers and raises. The pencil, as it rises and falls, touching always a sheet of smoked paper traveling over a cylinder on the recording device, traces a line whose rising strokes represent accurately the drawing of air into the chest and whose falling represents its expulsion.

It was clear to Trant that the professor's rapid explanation, though plain enough to the psychologists already familiar with the device, was only partly understood by the big men. It had not been explained to them that changes in the breathing so slight as to be imperceptible to the eye would be recorded unmistakably by the moving pencil.

Professor Schmalz turned to the second instrument. This was a plethysmograph, designed to measure the increase or decrease of the size of one finger of a person under examination as the blood supply to that finger becomes greater or less. It consists primarily of a small cylinder so constructed that it can be fitted over the finger and made air-tight. Increase or decrease of the size of the finger then increases or decreases the air pressure inside the cylinder. These changes in the air pressure are transmitted through an airtight tube to a delicate piston which moves a pencil and makes a line upon the record sheet just under that made by the pneumograph. The upward or downward trend of this line shows the increase or decrease of the blood supply, while the smaller vibrations up and down record the pulse beat in the finger.

There is still a third pencil touching the record

sheet above the other two and wired electrically to a key like that of a telegraph instrument fastened to the table. When this key is in its normal position this pencil makes simply a straight line upon the sheet; but instantly when the key is pressed down, the line breaks downward also.

This third instrument is used merely to record on the sheet, by the change in the line, the point at which the object that arouses sensation or emotion is displayed to the person undergoing examination.

The instant's silence which followed Schmalz's rapid explanation was broken by one of Welter's companions with the query:

"Well, what's the use of all this stuff, any way?"

"Ach!" said Schmalz, bluntly, "it is interesting, curious! I will show you."

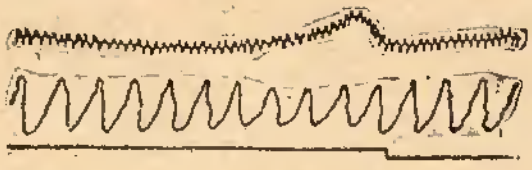
"Will one of you gentlemen," said Trant, quickly, "permit us to make use of him in the demonstration?"

"Try it, Jim," Welter laughed, noisily.

"Not I," said the other. "This is your circus."

"Yes, indeed it's mine. And I'm not afraid of it. Schmalz, do your worst!" He dropped, laughing, into the chair the professor set for him, and at Schmalz's direction unbuttoned his vest. The professor hung the pneumograph around his neck and fastened it tightly about the big chest. He laid Welter's forearm in a rest suspended from the ceiling, and attached the cylinder to the second finger of the plump hand. In the meantime Trant had quickly set the pencils to bear upon the record sheet and had started the cylinder on which the sheet traveled under them.

"You see, I have prepared for you." Schmalz lifted a napkin from a tray holding several little dishes. He took from one of these a bit of caviar and laid it upon Welter's tongue. At the same instant Trant pushed down the key. The pencils showed a slight commotion, and the spectators stared at this record sheet!



"Ach!" exclaimed Schmalz, "you do not like caviar."

"How do you know that?" demanded Welter.

"The instruments show that at the unpleasant taste you breathe less freely—not so deep. Your finger, as under strong sensation or emotions, grows smaller, and your pulse beats more rapidly."

"By the Lord! Welter, what do you think of that?" cried one of his companions; "Your finger gets smaller when you taste caviar!"

It was a joke to them. Boisterously laughing, they tried Welter with other food upon the tray; they lighted for him one of the black cigars of which he was most fond, and watched the trembling pencils write the record of his pleasure at the taste and smell. Through it all Trant waited, alert, watchful, biding the time to carry out his plan. It came when, having exhausted the articles at hand, they paused to find some other means to carry on the amusement. The young psychologist leaned forward suddenly.

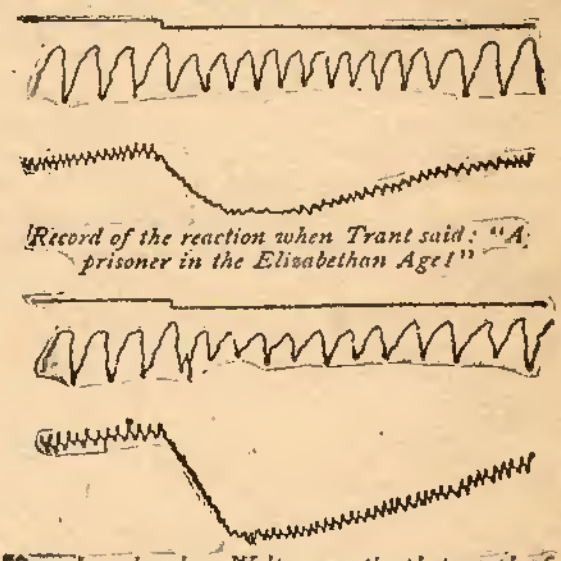
"It is no great ordeal after all, is it, Mr. Welter?" he said. "Modern psychology does not put its subjects to torture like"—he halted, meaningly — *"a prisoner in the Elizabethan Age!"*

Dr. Annerly, bending over the record sheet, uttered a startled exclamation. Trant, glancing keenly at him, straightened triumphantly. But the young psychologist did not pause. He took quickly from his pocket a photograph, showing merely a heap of empty coffee sacks piled carelessly to a height of some two feet along the inner wall of a shed, and laid it in front of the subject. Welter's face did not alter; but again the pencils shuddered over the moving paper, and the watchers stared with astonishment. Rapidly removing the photograph, Trant substituted for it the bent wire given him by Miss Rowan. Then for the last time he swung to the instrument, and as his eyes caught the wildly vibrating pencils, they flared with triumph.

President Welter rose abruptly, but not too hurriedly. "That's about enough of this tomfoolery," he said, with perfect self-possession.

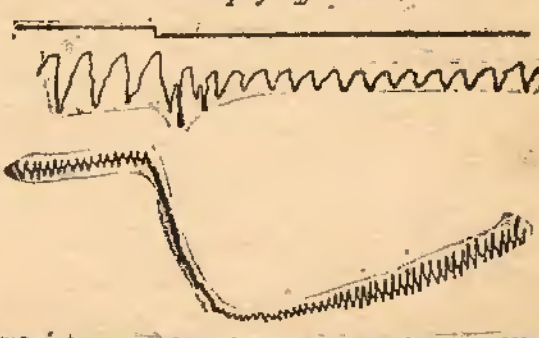
His jaw had imperceptibly squared to the watchful determination of the prize fighter driven into his corner. His cheek still held the ruddy glow of health; but the wine flush had disappeared from it, and he was perfectly sober.

Trant tore the strip of paper from the instrument, and numbered the last three reactions 1, 2, 3. This is the way the records looked:



Record of the reaction when Trant said: "A prisoner in the Elizabethan Age!"

Record made when Welter saw the photograph of a heap of coffee sacks.



Record made when the spring was shown to Welter.

"Amazing!" said Dr. Annerly. "Mr. Welter, I am curious to know what associations you have with that photograph and bent wire, the sight of which aroused in you such strong emotion."

By immense self-control, the president of the

American Commodities Company met his eyes fairly. "None," he answered.

"Impossible! No psychologist, knowing how this record was taken, could look at it without feeling absolutely certain that the photograph and spring caused in you such excessive emotion that I am tempted to give it, without further words, the name of 'intense fright!' But if we have inadvertently surprised a secret, we have no desire to pry into it further. Is it not so, Mr. Trant?"

At the name President Welter whirled suddenly. "Trant! Is your name Trant?" he demanded. "Well, I've heard of you." His eyes hardened. "A man like you goes just so far, and then—somebody stops him!"

"As they stopped Landers?" Trant inquired.

"Come, we've seen enough, I guess," said President Welter, and, including for one instant in his now frankly menacing gaze both Trant and Professor Schmalz, turned to the door, closely followed by his companions. And a moment later the quick explosions of his automobile were heard. At the sound, Trant seized suddenly a large envelope, dropped into it the photograph and wire he had just used, sealed, signed, and dated it, signed and dated also the record from the instruments, and hurriedly handed all to Dr. Annerly.

"Doctor, I trust this to you," he cried, excitedly. "It will be best to have them attested by all three of you. If possible get the record photographed to-night, and distribute the photographs in safe places. Above all, do not let the record itself out of your hands until I come for it. It is important —extremely important! As for me, I have not a moment to lose!"

He seized his hat and dashed from the room, leaving them in an astonished group.

The young psychologist sped down the stone steps of the laboratory three at a time, ran at top speed to the nearest street corner, turned it and leaped into a waiting taxicab. "The American Commodities Company's dock in Brooklyn," he shouted, "and never mind the speed limits!"

Rentland and the chauffeur, awaiting him in the machine, galvanized at his coming.

"Hot work?" the custom's agent asked.

"It may be very hot; but we have the start of him," Trant replied as the car shot ahead. "Welter himself is coming to the docks to-night, I think, by the look of him! He left just before me, but must drop his friends first. He suspects, now, that we know; but he cannot be aware that we know that they are unloading to-night. He probably counts on our waiting to catch them at the cheating to-morrow morning. So he's going over to-night himself if I size him up right, to order it stopped and remove all traces before we can prove anything. Is Dickey waiting?"

"When you give the word he is to take us in and catch them at it. If Welter himself comes, as you think, it will not change the plan?" Rentland asked.

"Not at all," said Trant, "for I have him already. He will deny everything, of course, but it's too late now!"

The big car, with unchecked speed, swung down Broadway, slowed after a twenty-minutes'-run to cross the Brooklyn Bridge, and, turning to the left, plunged once more at high speed into the narrower and less well-kept thoroughfares of the Brooklyn water front. Two minutes later it overtook a little electric coupé, bobbing excitedly down the sloping street. As they passed it, Trant caught sight of the illuminated number hanging at its rear, and shouted suddenly to the chauffeur, who brought his car to a stop a hundred feet beyond. The psychologist, leaping down, ran into the road before the little car.

"Miss Rowan," he cried to its single occupant, as it came to a stop. "Why are you coming over here at this time to-night?"

"Oh, it's you, Mr. Trant!" She opened the door, showing relief in the recognition. "Oh, I'm so worried. I'm on my way to see father; for a telegram just came to him from Boston; mother opened it, and told me to take it to him at once, as it was most important. She wouldn't tell me what it was about, but it excited her a great deal. Oh, I'm so afraid it must be about Will and that was why she wouldn't tell me."

"From Boston?" Trant pressed quickly. Having her confidence, the girl nervously read the telegram aloud by the light of the coupé's side lamps. it read:

Police have taken your friend out of our hands; look out for trouble. Wilson.

"Who is Wilson?" Trant demanded.

"I am not sure it is the man, but the captain of the *Elizabethan Age* is a friend of father's named Wilson!"

"I can't help you then, after all," said Trant, springing back to his powerful car. He whispered a word to the chauffeur which sent it driving ahead through the drifts at double its former speed, leaving the little electric coupé far behind. Ten minutes later Rentland stopped the motor a block short of a great lighted doorway which suddenly showed in a length of dark, lowering buildings which lay beside the American Commodities Company's Brooklyn docks.

"Now," the secret agent volunteered, "it is up to me to find Dickey's ladder!"

He guided Trant down a narrow, dark court which brought them face to face with a blank wall; against this wall a light ladder had been recently placed. Ascending it, they came into the dock inclosure. Descending again by a dozen rickety, disused steps, they reached a darker, covered teamway and hurried along it to the docks. Just short of the end of the open dock houses, where a string of arc lamps threw their white and flickering light upon the huge, black side of a moored steamer, Rentland turned into a little shed, and the two came suddenly upon Customs Officer Dickey.

"This one next to us," the little man whispered, eagerly, to Trant, as he grasped his hand, "is the scale house where whatever is being done is done—No. 3."

In and out of the yawning gangways of the steamer before them struggling lines of sweating men were wheeling trucks loaded with bales of tobacco. Trant looked first to the left, where the bales disappeared into the tobacco warehouse; then to the right, where, close at hand, each truck-load

stopped momentarily on a scale platform in front of the low shed which bore the number Dickey indicated in a large white figure.

"Who's that?" asked Trant as a small figure, hardly five feet tall, cadaverous, beetle-browed, with cold, malignant, red-lidded eyes passed directly under the arc light nearest them.

"Rowan, the dock superintendent!" Dickey whispered.

"I knew he was small," Trent returned with surprise, "but I thought surely he must have some fist to be the terror of these dock laborers."

"Wait!" Rentland, behind them, motioned.

A bloated, menacing figure had suddenly swung clear of the group of dock laborers—a roustabout, goaded to desperation, with a fist raised against his puny superior. But before the blow had fallen another fist, huge and black, struck the man over Rowan's shoulder with a hammer. He fell, and the dock superintendent passed on without a backward glance, the giant negro who had struck the blow following in his footsteps like a dog.

"The black," Rentland explained, "is Rowan's bodyguard. He needs him."

"I see," Trant replied. "And for Miss Rowan's sake I am glad it was that way," he added, enigmatically.

Dickey had quietly opened a door on the opposite side of the shed; the three slipped quickly through it and stepped unobserved around the corner of the coffee warehouse to a long, dark, and narrow space. On one side of them was the rear wall of scale house No. 3, and on the other the engine room where Landers' body had been found. The single window in the rear of No. 3 scale house had been whitewashed to prevent anyone from looking in from that side; but in spots the whitewash had fallen off in flakes. Trant put his eye to one of these clear spots in the glass and looked in.

The scale table, supported on heavy posts, extended across almost the whole front of the house, behind a low, wide window, which permitted those seated at the table to see all that occurred on the docks. Toward the right end of the table sat the Government weigher; toward the left end, and separated from him by almost the whole length of the table, sat the company checker. They were the only persons in the scale house. Trant, after his first rapid survey of the scene, fixed his eye upon the man who had taken the place which Landers had held for three years, and Morse for a few days afterwards—the company checker. A truck-load of tobacco bales was wheeled on to the scales in front of the house.

"Watch his left knee," Trant whispered quickly into Dickey's ear at the pane beside him, as the balance was being made upon the beam before them. As he spoke, the Government weigher adjusted the balance and they saw the left leg of the company checker pressed hard against the post which protected the scale rod at his end. Both men in the scale house then read aloud the weight and each entered it in the book on the table in front of him. A second truckful was wheeled on to the scale; and again, just as the Government weigher fixed his balances, the company checker, so inconspicuously as to make the act undiscoverable by anyone not looking for that precise move, repeated the operation. With the next truck they saw it again. The psychologist turned to the others. Rentland, too, had been watching through the pane and nodded his satisfaction.

Immediately Trant dashed open the door of the scale house, and threw himself bodily upon the checker. The man resisted; they struggled. While the customs men protected him, Trant, wrenching something from the post beside the checker's left knee, rose with a cry of triumph. Then the psychologist, warned by a cry from Rentland, leaped quickly to one side to avoid a blow from the giant negro. His quickness saved him; still the blow, glancing along his cheek, hurled him from his feet. He rose immediately, blood flowing from a superficial cut upon his forehead where it had struck the scale-house wall. He saw Rentland covering the negro with a revolver, and the two other customs men arresting, at pistol point, the malignant little dock superintendent, the checker, and the others who had crowded into the scale house.

"You see!" Trant exhibited to the customs officers a bit of bent wire, wound with string, precisely like that the girl had given him that morning and he had used in his test of Welter the hour before. "It was almost exactly as we knew it must be! This spring was stuck through a hole in the protecting post so that it prevented the balance beam from rising properly when bales were put on the platform. A little pressure just at that point takes many pounds from each bale weighed. The checker had only to move his knee, in a way we would never have noticed if we were not watching for it, to work the scheme by which they have been cheating for ten years! But the rest of this affair," he glanced at the quickly collecting crowd, "can best be settled in the office."

He led the way, the customs men taking their prisoners at pistol point. As they entered the office, Rowan first, a girl's cry and the answering oath of her step-father told that the dock superintendent's daughter had arrived. But she had been almost overtaken by another powerful car; for before Trant could speak with her the outer door of the office opened violently and President Welter, in an automobile coat and cap, entered.

"Ah! Mr. Welter, you got here quickly," said Trant, meeting calmly his outraged astonishment at the scene. "But a little too late."

"What is the matter here?" Welter governed his voice commandingly. "And what has brought *you* here, from your phrenology?" he demanded, contemptuously, of Trant.

"The hope of catching red-handed, as we have just caught them, your company checker and your dock superintendent defrauding the Government," Trant returned, "before you could get here to stop them and remove evidences."

"What raving idiocy is this?" Welter replied, still with excellent moderation. "I came here to sign some necessary papers for ships clearing, and you——"

"I say we have caught your men redhanded," Trant repeated, "at the methods used, with your certain knowledge and under your direction, Mr. Welter, to steal systematically from the United States Government for—probably the last ten years.

We have uncovered the means by which your company checker at scale No. 3, which, because of its position, probably weighs more cargoes than all the other scales together, has been lessening the apparent weights upon which you pay duties."

"Cheating here under my direction?" Welter now bellowed indignantly. "What are you talking about? Rowan, what is he talking about?" he demanded, boldly, of the dock superintendent; but the cadaverous little man was unable to brazen it out with him.

"You need not have looked at your dock superintendent just then, Mr. Welter, to see if he would stand the racket when the trouble comes, for which you have been paying him enough on the side to keep him in electric motors and marble statuettes. And you cannot try now to disown this crime with the regular president-of-corporation excuse, Mr. Welter, that you never knew of it, that it was all done without your knowledge by a subordinate to make a showing in his department; and do not expect, either, to escape so easily your certain complicity in the murder of Landers, to prevent him from exposing your scheme and since—even the American Commodities Company scarcely dared to have two 'accidental deaths' of checkers in the same month—the shanghaiing of Morse later."

"My complicity in the death of Landers and the disappearance of Morse?" Welter roared.

"I said the murder of Landers," Trant corrected. "For when Rentland and Dickey tell to-morrow before the grand jury how Landers was about to disclose to the Customs Department the secret of the cheating in weights; how he was made afraid by Rowan, and later was about to tell anyway and was prevented only by a most sudden death, I think murder will be the word brought in the indictment. And I said shanghaiing of Morse, Mr. Welter. When we remembered this morning that Morse had disappeared the night the *Elizabethan Age* left your docks and you and Rowan were so intensely disgusted at its having had to put into Boston this morning instead of going on straight to Sumatra, we did not have to wait for the chance information this evening that Captain Wilson is a friend of Rowan's to deduce that the missing checker was put aboard, as confirmed by the Boston harbor police this afternoon, who searched the ship under our instructions." Trant paused a moment; again fixed the now trembling Welter with his eye, and continued: "I charge your certain complicity in these crimes, along with your certain part in the customs frauds," the psychologist repeated. "Undoubtedly, it was Rowan who put Morse out of the way upon the *Elizabethan Age*. Nevertheless, you knew that he was a prisoner upon that ship, a fact which was written down in indelible black and white by my tests of you at the Stuyvesant Institute two hours ago, when I merely mentioned to you 'a prisoner in the Elizabethan Age.'

"I do not charge that you, personally, were the one who murdered Landers; or even that Rowan himself did; whether his negro did, as I suspect, is a matter now for the courts to decide upon. But that you undoubtedly were aware that he was not killed accidentally in the engine room, but was killed the Wednesday night before and his body hidden under the coffee bags, as I guessed from the fibres of coffee sacking on his clothes, was also registered as mercilessly by the psychological machines when I showed you merely the picture of a pile of coffee sacks.

"And last, Mr. Welter, you deny knowledge of the cheating which has been going on, and was at the bottom of the other crimes. Well, Welter," the psychologist took from his pocket the bent, twine-wound wire, "here is the 'innocent' little thing which was the third means of causing you to register upon the machines such extreme and inexplicable emotion; or rather, Mr. Welter, it is the companion piece to that, for this is not the one I showed you, the one given to Morse to use, which, however, he refused to make use of; but it is the very wire I took to-night from the hole in the post where it bore against the balance beam-rod to cheat the Government. When this is made public to-morrow, and with it is made public, too, and attested by the scientific men who witnessed them, the diagram and explanation of the tests of you two hours ago, do you think that you can deny longer that this was all with your knowledge and direction?'

The big, bull neck of the president swelled, and his hands clenched and reclenched as he stared with gleaming eyes into the face of the young man who thus challenged him.

"You are thinking now, I suppose, Mr. Welter," Trant replied to his glare, "that such evidence as that directly against you cannot be got before a court. I am not so sure of that. But at least it can go before the public to-morrow morning in the papers, attested by the signatures of the scientific men who witnessed the test. It has been photographed by this time, and the photographic copies are distributed in safe places, to be produced with the original on the day when the Government brings criminal proceedings against you. If I had it here I would show you how complete, how merciless, is the evidence that you knew what was being done. I would show you how at the point marked 1 on the record your pulse and breathing quickened with alarm under my suggestion; how at the point marked 2 your anxiety and fear increased; and how at 3, when the spring by which this cheating had been carried out was before your eyes, you betrayed yourself uncontrollably, unmistakably. How the volume of blood in your second finger suddenly diminished, as the current was thrown back upon your heart; how your pulse throbbed with terror; how, though unmoved to outward appearance, you caught your breath, and your laboring lungs struggled under the dread that your wrong doing was discovered and you would be branded—as I trust you will now be branded, Mr. Welter, when the evidence in this case and the testimony of those who witnessed my test are produced before a jury—a deliberate and scheming thief!"

"————you!" The three words escaped from Welter's puffed lips. He put out his arm to push aside the customs officer standing between him and the door. Dickey resisted.

"Let him go, if he wants to!" Trant called to the officer. "He can neither escape nor hide. His money holds him under bond!"

The officer stepped aside, and Welter, without an-

(*Continued on page* 867)

The TIME ELIMINATOR

By Kaw

They beheld a little two-seated Ford, 1904 model, bumping and swaying along the Boston Post Road just west of the state line. Behind them came a horse and buggy, the irate driver lashing his steed in a vain attempt to overtake the fleeing couple in the car.

HAMILTON Fish Errell, or "Fish" Errell, as he was known at Yale, contemplated the product of his genius with elation, not unmixed with awe.

The machine stood on a solid block of transparent glass and resembled somewhat a modern radio cabinet combined with a motion picture machine. Across the face of the cabinet were three dials, but here the resemblance to radio reception ceased, for these dials bore the legends "Longitude," "Latitude" and "Altitude" respectively. A fourth dial, perhaps eight inches in diameter, was located above the others and this one bore the inscription "Time-Space."

Within was a bewildering array of tubes, wires and lamps and in front of all these, a curious arrangement of revolving mirrors, the speed of which was controlled by a knob at the right of the cabinet. One pair of wires connected the cabinet with a small dynamo, while a second set led to a 100-foot aerial pole outside the house itself.

It was while in his senior year at Yale that Errell's researches into the strange relationship existing between light and electricity attracted so much attention. Indeed he was in a fair way of becoming a celebrity when he suddenly dropped from public view and betook himself to a secluded village called Arshamomoque, at the eastern end of Long Island, where the Errell family maintained a Summer residence.

The house itself, known locally as "The Mansion," stood on a hill overlooking the Sound, but sufficiently back from the highway to insure a desirable degree of privacy. A spacious tower, originally designed for an observatory, had been converted into a research laboratory and here, surrounded by the most modern apparatus, young Errell worked feverishly on his new invention,—an invention which, even in its unfinished condition, had already produced results so far-reaching in their consequences and so revolutionary from a scientific point of view, that at times the young man almost questioned his own sanity.

A Wonderful Projecting Machine

AND now the machine was completed. The young inventor straightened up, took a deep breath and reached for a cigar. As he did so, the word "Havana" popped into his mind.

"Well, why not?" he queried. "I'll try Havana for my first real test and see how the ponies are running today."

Whereupon he consulted a map, noted the longitude and latitude of that city and twirled the dials of the cabinet to correspond. Then, looking at his watch, which showed 3 p.m., he adjusted the upper dial to 2:30 o'clock, the corresponding time for Havana.

A moment's hesitation, and then he reached over and threw a little switch, at the same time placing his other hand on the knob that controlled the revolving mirrors. A faint buzz and then a stream of light from the cabinet illumined a white screen on the opposite wall.

At first there was but a confused blur, but as he slowly turned the knob backward and forward this presently crystallized into a panoramic view of the Havana race-track, revealing the grandstand thronged with wildly excited spectators and three foam-specked horses tearing down the home stretch almost neck and neck.

Even as Errell watched, they flashed over the line and a moment later the name of the winner, "Muchacho," appeared on the bulletin board.

"Hot stuff!" he commented. "Now for the next test."

Slowly, almost solemnly, he turned the upper dial to the left,—five, ten, fifteen, twenty notches.

"That should be the year 1906," he said, "the year of the great earthquake at San Francisco."

Consulting his map again, he adjusted the lower dials, allowing 100 feet for altitude, and again threw the switch.

As before, the picture first appeared as an indistinguishable blur, and then it changed gradually to a clearly-defined birdseye view of the stricken city. And now he could behold great buildings come crashing down, throngs of panic-stricken citizens scurrying through the streets in wild disorder, with here and there the smoke of incipient fires.

For some time he watched the awe-inspiring spectacle, then threw the cut-out switch and reset the dials.

"Now I'll try for 'distance,' as the radio fans would put it," he chuckled, jubilant over his success thus far.

Seeing St. Joan of Arc

Reaching up, he twirled the top dial rapidly to the left, with reckless disregard of this annihilation of time and space, until the indicator registered the year 1428!

"This should convince the most skeptical," he said. "I'll take a peek at France in those bygone days."

He thereupon computed carefully the location of the city of Orleans and made the proper adjustments on the lower dials. Then, confident but deeply impressed at the thought of what was to come, he once more threw the switch and regulated the speed of the revolving mirrors until the pictures on the screen synchronized with the actual event.

"My God! It's Joan of Arc!" he cried, as across the silver screen in serried ranks, swept the attacking army at the siege of Orleans. At their head, clad in brightly shining armor, flashing sword uplifted and a look of exaltation on her face, rode the Warrior Maid!

Minute after minute he sat there with bated breath,—tremulous with excitement, awed and yet elated. And then, as he was resetting the dials,

IF we may believe Einstein, there can be nothing faster in our universe than light, moving at the rate of 186,000 miles per second. If Einstein is right, then the excellent story printed here is impossible. But no one knows. Perhaps it IS possible to catch up with the light rays that have gone into the beyond. If it is possible to do so, we should be able to photograph or throw on a screen at some future date how Columbus actually discovered America, and other famous historical events.

At any rate, THE TIME ELIMINATOR demands your attention. A very clever explanation is given of a wonderful apparatus that does it all and is of great interest.

a thought came into his mind that sobered him with a jolt. Ten minutes later he was speeding towards New York in his big Mercer.

At precisely 5 p.m. he was shown into the private office of Brig.-General Humiston, commanding the new secret intelligence department of the Washington government.

Brig.-General Humiston and His Daughter

NOT only the General but, unknown to him, his daughter also, had long taken a deep interest in young Errell, the latter's father and the General having been classmates at West Point. This interest was fully reciprocated, especially in the case of the daughter,—a vivacious exponent of the younger set.

But it was in his capacity as a government official that Errell had called on General Humiston, having determined to proffer his services and the services of his invention as well to the country of his birth.

"Well, my boy," boomed the gruff old soldier, "What's on your mind? And why haven't you been to see us for so long? Jerry thinks you have forgotten her entirely."

"General," broke in the young man, ignoring his inquiry, "can you jump into my car and come down to my place on Long Island at once? I have something to show you, something so breath-taking in its possibilities and of such tremendous importance to your department that every moment counts."

"Are you in earnest?" demanded the General, sitting up with a jerk. "You want me to break a theatre engagement with Jerry and go with you now?"

"Precisely that," replied Errell gravely; then, hopefully: "Why not bring Jerry with you?"

"Call at the Biltmore in one hour," was the reply in curt, military tones. "One or both of us will be ready to go with you."

Errell's hand went up in salute, he turned smartly on his heel and left the room.

Promptly on the hour, the General appeared at the motor entrance of the hotel, followed closely by Jerry,—bewitching in rich furs and silken coat. Errell's heart thumped riotously as he leaped from the car and met her with outstretched hands.

"Oh Jerry," he cried, "It's good to see you," and his eyes fully confirmed the words.

"I'm from Missouri," was that young person's flippant reply, but the words could not disguise the wonderful glow of happiness that irradiated the lovely little face.

Once out of the city, the big car sped down the island, roaring past sleepy farms and villages as it tore through the night, and as the clock struck 9 they drew up at the Errell doorstep.

Little was said on the outward trip, but once inside the house the General asked:

"Now, Errell, what's it all about? I hope you haven't dragged me down here on a wild goose chase."

"Come up to my laboratory," was Errell's reply. He waited a second, then added: "You too, Jerry." She gave him a quick glance of appreciation.

Explanation of the Invention

A MOMENT more and they were in the laboratory, Jerry and her father looking with frank curiosity at the mysterious cabinet.

"General, and you too, Jerry," began Errell very soberly. "What I am about to show you is something so fantastic, so weird, so utterly removed from all human experience, that before proceeding further I feel I should prepare your minds for what you are to behold. Please be seated and follow closely." He paused, then went on:

"When the dynamo at a power-house breaks down, every trolley car on that system stops and the electricity in the overhead wire and in the dynamo itself disappears,—swallowed up in the earth's general store of electric force. Unless this electricity can be made to reappear, by starting up the dynamo again, street-car service on that system is a thing of the past. This is obvious. Now for the next step:

"You know how moving pictures are made, with a blasé photographer turning a crank while the villain chokes the heroine. Once the lights are switched off, however, the scene has passed into oblivion,—unless or until it is resurrected by projecting the film on to a screen. What few people realize, is that every event on this earth leaves a record in light rays, whether or not a human photographer is present to snap the picture.

"In other words, light rays persist, or endure, since nothing is lost in Nature. To illustrate: Through the medium of a powerful telescope we are now able to get a view of celestial bodies which, without the aid of this instrument, would necessitate a journey of years in their direction in order to obtain a corresponding view. If a cataclysm should destroy the Martian canals today and we should travel towards that planet in a projectile at the rate of a mile a minute, it would take years ere we reached a point in space where the event would become visible to our eyes; or, if we elected to remain here, it would take just that much longer before the event would appear to the inhabitants of this sphere.

"Again, consider the curious paradox presented last New Year's eve, when couples in London danced by radio during the last moments of 1925 to music played in Berlin in 1926, and then, a few moments later, danced in 1926 to music being played in New York in 1925. An evening paper in San Francisco might truthfully have stated on December 31st: 'The West End club of London danced the old year out at 4 o'clock this afternoon,' while a London paper on the morning of January 1st might with equal truth have announced: 'The Waikiki club of Honolulu will dance the New Year in at 10:30 o'clock this forenoon.'

Time is a Measure of Space

"FROM this you can readily comprehend that Time is but a measure of space. Now for the final step:

"In order to reproduce a past scene in Nature, two problems arise: First, that of reproducing the light rays in their proper sequence. As I stated before, nothing is lost in Nature, although it may change its form. So, just as electricity can be made to manifest itself again after disappearing, so also can light rays, which persist, be made to reappear, although no longer visible to the eye. It is not essential that the identical light rays of the former scene be brought back; only that the rays

shall appear in their former sequence and intensities. If you strike a church bell and repeat the blow ten years later, you reproduce the tone of that bell perfectly, although you do not get the original sound wave.

Projecting the General's Last Sunday's Ride

"THE second problem,—that of correlating the present position of this earth with the exact position in space which it occupied at the instant the event actually happened,—is more complex, involving as it does intricate problems in geometry, gravitational force, relativity, the earth's movement through space and other factors too complicated for the lay mind."

Errell waited a moment, to give his hearers time to grasp the significance of this last statement, then resumed:

"These problems, General, have been solved in the machine before you, as I shall now proceed to demonstrate. Where were you on Sunday morning at 9 o'clock?"

"I was out for a morning canter in Rock Creek Park, Washington," replied General Humiston, impressed in spite of himself.

"Watch the screen in front of you," commanded Errell, meanwhile adjusting the dials of the cabinet.

A subdued buzzing noise, and then before the astonished gaze of the General and his daughter there unrolled a panorama of the City of Magnificent Distances, converging presently on the bridle path in Rock Creek park. A moment later the figure of General Humiston, mounted on his big grey charger, came galloping into view.

The Most Secret Plans An Open Book

"MY God!" exclaimed that doughty soldier, springing to his feet. "Do you realize, boy, what this invention would mean to your government? Why, the most secret plans of an enemy would be an open book to us."

"It was for just that reason that I have brought you here," replied the young man, gravely. "Before we go further into that, however, is there anything of special interest to your department right now that you would like to know?"

"You couldn't tell me, could you," asked the General, stepping nearer in his excitement, "just who were present at a secret conference at Fontainebleau last Tuesday at 10 a.m.?"

"Just a moment," cautioned Errell, as he readjusted the dials and made the proper allowance for time and distance. "Now watch the screen."

Again a faint buzzing noise, then the light flashed on and first came the Eiffel tower into view, with its flaring automobile advertisement, and then Fontainebleau. Even as they watched, a closed car drove up and the French Minister of Commerce alighted and disappeared within the building. Then came the English Secretary of Commerce and Italy's representative, followed a moment later by the Russian Commissioner. Promptly on the hour the German Minister of Trade and Industries drove up and joined the others.

Errell glanced at the General, who was trembling with eagerness, exultation and almost with fear.

"Yes," he muttered audibly, "they are all there; I know every one of them." He was silent a moment.

"I presume you have an inkling of what this conference means, Errell. The idea is for each government here represented to control some commodity that is absolutely essential to American industry and then to boost the price to a figure so prohibitive as to provoke reprisals. These will then be seized upon as a pretext for the breaking of treaties; the next step is a world war against the United States —our tremendous store of gold the main objective."

"But it takes money to finance a war these days," objected Errell.

"Precisely, and therein is our strongest defense," was the answer. "With fore-knowledge of what is contemplated, our bankers can shut down on further loans abroad and curtail European credits. This machine will enable us to prepare for any contingency; by revealing every plan of the enemy, we can make this country practically impregnable."

"That is just it," replied Errell.

"The first thing," broke in the General, "is to safeguard your discovery. Should but a whisper of what you have accomplished get abroad, your life would not be worth a candle."

"I have thought of that," said the younger man, "and for greater secrecy I think the machine should be kept here, rather than in Washington where inevitably there would be a leak sooner or later. You could run down here for frequent visits."

"Yes, but I would have to have a very plausible reason for those visits," interposed the General.

The Apparatus Wins the Bride

"WELL,"—and here Errell paused and glanced at Jerry, who nodded brightly,—"why not spend your week-ends here with Jerry and your new son-in-law? We expect to be married in June."

"What? What's that?" shouted the old General, "Jerry your wife! How do you get that way, young man?" and he tried to look very stern. "In my day," he added virtuously, "it was customary for the young lady's parents to be consulted."

"Um-m," mused Errell. "Would you mind telling me in what year you were married?"

"I know!" cried Jerry, delightedly. "They were married in Greenwich, Connecticut, just 22 years ago today, at 5 o'clock in the afternoon."

"Hey! Wait a minute," exclaimed her father, in evident confusion, as Errell stepped to the little cabinet, but he was too late. Already the machine had given its preliminary buzz and the next moment they beheld a little two-seated Ford, 1904 model, bumping and swaying along the Boston Post road just west of the state line. Perhaps half a mile behind them came a horse and buggy, the irate driver lashing his foam-flecked steed in a vain attempt to overtake the fleeing couple in the car.

Errell glanced at Jerry, then at her father, and back to the picture. There could be no mistake! The girl in the little Ford might have been Jerry herself, save for the difference in dress, while the handsome young chap at her side, his eyes glued to the road, bore a resemblance to her father so striking as to dispel any doubt of his identity.

"You win!" laughed the General, wiping his eyes. "Take her, my boy, and may you be as happy as we were."

THE END

THROUGH *the* CRATER'S RIM

By A. Hyatt Verrill

Author of "Beyond the Pole."

But even as I gazed, transfixed with horror, paralyzed by the sight, the vine threw its last coil about the dying man and before my eyes drew the quivering body into the tree above. Then something approached my leg. With a wild yell of terror I leaped aside. A second vine was writhing and twisting over the ground towards me.

CHAPTER I

Into the Unknown

"I TELL you it's there," declared Lieutenant Hazen decisively. "It may not be a civilized city, but it's no Indian village or native town. It's big—at least a thousand houses—and they're built of stone or something like it and not of thatch."

"You've been dreaming, Hazen," laughed Fenton. "Or else you're just trying to jolly us."

"Do you think I'd hand in an official report of a dream?" retorted the Lieutenant testily. "And it's gospel truth I've been telling you."

"Never mind Fenton," I put in. "He's a born pessimist and skeptic anyhow. How much did you actually see?"

We were seated on the veranda of the Hotel Washington in Colon and the aviator had been relating how, while making a reconnoissance flight over the unexplored and unknown jungles of Darien, he had sighted an isolated, flat topped mountain upon whose summit was a large city—of a thousand houses or more—and without visible pass, road or stream leading to it.

"It was rotten air," Hazen explained in reply to my question. "And I couldn't get lower than 5,000 feet. So I can't say what the people were like. But I could see 'em running about first time I went over and they were looking mightily excited. Then I flew back for a second look and not a soul was in sight—took to cover I expect. But I'll swear the buildings were stone or 'dobe and not palm or thatch."

"Why didn't you land and get acquainted?" enquired Fenton sarcastically.

"There was one spot that looked like a pretty fair landing," replied the aviator. "But the air was bad and the risk too big. How did I know the people weren't hostile? It was right in the Kuna Indian country and even if they were peaceable they might have smashed the plane or I mightn't have been able to take off. I was alone too."

"You say you made an official report of your discovery," I said. "What did the Colonel think about it?"

"Snorted and said he didn't see why in blazes I bothered reporting an Indian village."

"It's mighty interesting," I declared. "I believe you've actually seen the Lost City, Hazen. Balboa heard of it. The Dons spent years hunting for it and every Indian in Darien swears it exists."

"Well, I never heard of it before," said Hazen, "What's the yarn, anyway?"

"According to the Indian story there's a big city on a mountain top somewhere in Darien. They say no one has ever visited it, that it's guarded by evil spirits and that it was there ages before the first Indians."

"If they've never seen it how do they know it's there?" Fenton demanded. "In my opinion it's all bosh. How can there be a 'lost city' in this bally little country and why hasn't someone found it? Why, there are stories of lost cities and hidden cities and such rot in every South and Central American country. Just fairy tales—pure bunk!"

"I know there are lots of such yarns," I admitted. "And most of them I believe are founded on fact. Your South American Indian hasn't enough imagination to make a story out of whole cloth. It's easy to understand why and how such a place might exist for centuries and no one find it. This 'little country' as you call it could hide a hundred cities in its jungles and no one be the wiser. No civilized man has ever yet been through the Kuna country. But I'm going. I'll have a try for that city of Hazen's."

"Well, I wish you luck," said Fenton. "If the Kunas don't slice off the soles of your feet and turn you loose in the bush and if you *do* find Hazen's pipe dream, just bring me back a souvenir, will you?"

With this parting shot he rose and sauntered off towards the swimming pool.

"Do you really mean to have a go at that place?" asked Hazen as Fenton disappeared.

"I surely do," I declared. "Can you show me the exact spot on the map where you saw the city?"

For the next half hour we pored over the map of Panama and while—owing to the incorrectness of the only available maps—Hazen could not be sure of the exact location of his discovery, still he pointed out a small area within which the strange city was located.

"You're starting on a mighty dangerous trip," he declared as I talked over my plans. "Even if you get by the Kunas and find the place how are you going to get out? The people may kill you or make you a prisoner. If they've been isolated for so long I reckon they won't let any news of 'em leak out."

"Of course there's a risk," I laughed. "That's what makes it so attractive. I'm not worried over the Kunas though. They're not half as bad as painted. I spent three weeks among them two years ago and had no trouble. They may drive me back, but they don't kill people offhand. Getting out will be the trouble as you say. But I've first got to get in and I'm not making plans to get out until then."

"Lord, but I wish I were going too!" cried Hazen. "Say, I tell you what I'm going to do. I'll borrow that old Curtiss practice boat and fly over there once in a while. If you're there, just wave a white rag for a signal. Maybe the people'll be so darned scared if they see the plane that they'll not trouble you. Might make a good play of it—let 'em think you're responsible for it you know."

"I don't know but that's a mighty good scheme, Hazen," I replied, after a moment's thought. "Let's

IN this story the author of "Beyond the Pole" gives us another one of his amazing contributions to Scientifiction. Here we find a strange race living within an extinct volcanic crater somewhere in Central America.

When it is remembered that only a few years ago an entirely new race was discovered by scientists in Panama, which are now known better under the name of White Indians, it should be understood that Mr. Verrill is not taxing your credulity by the strange race which he pictures in this story.

We promise you a good half hour's reading in this well-told tale.

see. If I get off day after tomorrow I should be in the Kuna country in a week. You might take your first flight ten days from now. But if things go wrong I don't see as you can help me much if you can't land."

"We'll worry over that when the time comes," he said cheerfully. A few days later I was being paddled and poled up the Cañazas River with the last outposts of civilization many miles behind and the unknown jungles and the forbidden country of the wild Kunas ahead.

It was with the greatest difficulty that I had been able to secure men to accompany me, for the natives looked with the utmost dread upon the Kuna country and only two, out of the scores I had asked, were willing to tempt fate and risk their lives in the expedition into the unknown.

For two days now we had been within the forbidden district—the area guarded and held by the Kunas and into which no outsider is permitted to enter—and yet we had seen or heard no signs of Indians. But I was too old a hand and too familiar with the ways of South American Indians to delude myself with the idea that we had not been seen or our presence known. I well knew that, in every likelihood, we had been watched and our every movement known since the moment we entered the territory. No doubt, sharp black eyes were constantly peering at us from the jungle, while bows and blowguns were ever ready to discharge their missiles of death at any instant. As long as we were not molested or interfered with, however, I gave little heed to this. Moreover, I believed, from my brief acquaintance with the Kunas of two years previously, that they seldom killed a white man until after he had been warned out of their country and tried to return to it.

At night we camped beside the river, making our beds upon the warm dry sand and each day we poled the cayuca up the rapids and deeper into the forest. At last we reached the spot where, according to my calculations, we must strike through the jungle overland to reach the mountain seen by Hazen. Hiding our dugout in the thick brush beside the river we packed the few necessities to be carried with us and started off through the forest.

If Hazen were not mistaken in his calculations, we should reach the vicinity of the mountain in two days' march, even though the going was hard and we were compelled to hew a way with our machetes for miles at a stretch.

But it's one thing to find a mountain top when flying over the sea of jungle and quite another to find that mountain when hidden deep in the forest and surrounded on every side by enormous trees. I realized that we might easily pass within a few hundred yards of the spot and never suspect it and that we might wander for days, searching for the mountain without finding it. It was largely a matter of luck after all. But Hazen had described the surrounding country so minutely, that I had high hopes of success.

By the end of the first day in the bush we had reached rough and hilly country, which promised well, and it was with the expectation of reaching the base of the mountain the following day that we made camp that night. Still we had seen no Indians, no signs of their trails or camps, which did much to calm the fears of my men and which I accounted for on the theory that the Kunas avoided this part of the country through superstitious fears of the lost city and its people.

At daybreak we broke camp and had tramped for perhaps three hours when, without warning, José, who was last in line, uttered a terrified cry. Turning quickly I was just in time to see him throw up his hands and fall in a heap with a long arrow quivering in his back. The Kunas were upon us.

Scarcely had the realization come to me when an arrow thudded sharply into a tree by my side and Carlos, with a wild yell of deadly fear, threw down his load and dashed madly away. Not an Indian could be seen. To stand there, a target for their missiles, was suicidal, and turning, I fled at my utmost speed after Carlos. How we managed to run through that tangled jungle is still a mystery to me, but we made good time, nevertheless. Fear drove us and dodging between the giant trees, leaping fallen trunks, tripping over roots and scrambling over rocks, we sped on.

And now, from behind, we could hear the sounds of the pursuing Indians; their low gutteral cries, the sounds of breaking twigs and branches; constantly they were drawing nearer. I knew that in a few minutes they would be upon us—that at any instant a poisoned blowgun dart or a barbed arrow might bury itself in my body; but still we strove to escape.

Then, just as I felt that the end must be at hand —just as I had decided to turn and sell my life dearly—the forest thinned. Before us sunlight appeared and the next moment we dashed from the jungle into a space free from underbrush but covered with enormous trees draped with gnarled and twisted lianas. The land here rose sharply and, glancing ahead between the trees, I saw the indistinct outlines of a lofty mountain against the sky.

Toiling up the slope, breathing heavily, utterly exhausted, I kept on. Then, as a loud shout sounded from the rear, I turned to see five hideously painted Kunas break from the jungle. But they did not follow. To my utter amazement they halted, gave a quick glance about, and, with a chorus of frightened yells, turned and dashed back into the shelter of the jungle.

But I had scant time to give heed to this. The Kunas' cries were still ringing in my ears when a scream from Carlos drew my attention. Thinking him attacked by savages I rushed towards him, drawing my revolver as I ran.

With bulging, rolling eyes, blanched face and ghastly, terror stricken features he was struggling, fighting madly, with a writhing, coiling gray object which I took for a gigantic snake. Already his body and legs were bound and helpless in the coils. With his machete he was raining blows upon the quivering awful thing which slowly, menacingly wavered back and forth before him, striving to throw another coil about his body.

And then, as I drew near, my senses reeled, I felt that I was in some awful nightmare. The object, so surely, relentlessly, silently encircling and crushing him was no serpent but a huge liana drooping from the lofty branches of a great tree!

It seemed absolutely incredible, impossible, unbelieveable. But even as I gazed, transfixed with horror, paralyzed by the sight, the vine threw its last coil about the dying man and before my eyes drew the quivering body into the trees above.

Then something touched my leg. With a wild yell of terror I leaped aside. A second vine was writhing and twisting over the ground towards me!

Crazed with unspeakable fear I struck at the thing with my machete. At the blow the vine drew sharply back while from the gash a thick, yellowish, stinking juice oozed forth. Turning, I started to rush from the accursed spot but as I passed the first tree another liana writhed forward in my path.

Utterly bereft of my senses, slashing madly as I ran, yelling like a madman, I dodged from tree to tree, seeking the open spaces, evading by a hair's breadth the fearful, menacing, serpent-like vines, until half-crazy, torn, panting and utterly spent I dashed forth into a clear grassy space.

Before me, rising like a sheer wall against the sky was a huge precipitous cliff of red rock.

Now I knew why the Kunas had not followed us beyond the jungle. They were aware of the man-killing lianas and had left us to a worse death than any they could inflict. I was safe from them I felt sure. But was I any better off? Before me was an impassable mountain side. On either hand and in the rear those awful, blood-thirsty, sinister vines and, lurking in the jungles, were the savage Kunas with their fatal poisoned darts and powerful bows. I was beset on every side by deadly peril, for I was without food, I had cast aside my gun and even my revolver in my blind, terror-crazed escape from those ghastly living vines, and to remain where I was meant death by starvation or thirst.

But anything was better than this nightmare-like forest. At the thought I glanced with a shudder at the trees and my blood seemed to freeze in my veins.

The forest was approaching me! I could not believe my eyes. Now I felt I must be mad, and fascinated; hypnotized, I gazed, striving my utmost to clear my brain, to make common sense contradict the evidence of my eyes. But it was no delusion. Ponderously, slowly, but steadily the trees were gliding noiselessly up the slope! Their great gnarled roots were creeping and undulating over the ground while the pendant vines writhed and swayed and darted forth in all directions as if feeling their way. And then I saw what had before escaped me. The things were not lianas as I had thought. They were parts of the trees themselves—huge, lithe, flexible tentacles springing from a thick, fleshy livid-hued crown of branches armed with stupendous thorns and which slowly opened and closed like hungry jaws above the huge trunks.

It was monstrous, uncanny, supernatural. A hundred yards and more of open ground had stretched between me and the forest when I had flung myself down, but now a scant fifty paces remained. In a few brief moments the fearsome things would be upon me. But I was petrified, incapable of moving hand or foot, too terrified and overwhelmed even to cry out.

Nearer and nearer the ghastly things came. I could hear the pounding of my heart. A cold sweat broke out on my body. I shivered as with ague. Then a long, warty, tentacle darted towards me and as the loathsome stinking thing touched my hand the spell was broken. With a wild scream I turned and dashed blindly towards the precipice, seeking only to delay, only to avoid for a time the certain awful death to which I was doomed, for the cliff barred all escape and I could go no farther.

CHAPTER II

Amazing Discoveries

A DOZEN leaps and I reached the wall of rock beyond which all retreat was cut off. Close at hand was an outjutting buttress, and thinking that back of this I might hide and thus prolong my life, I raced for it.

Panting, unseeing, I reached the projection, ducked behind it, and to my amazement and unspeakable delight, found myself in a narrow canyon or defile, like a huge cleft in the face of the precipice.

Here was safety for a time. The terrible man-eating trees could not enter, and striving only to put a greater distance between myself and the vegetable demons I never slackened my pace as I turned and sped up the canyon.

Narrower and narrower it became. Far above my head the rocky walls leaned inward, shutting out the light until soon it was so dim and shadowy that, through sheer necessity, I was forced to stop running and to pick my way carefully over the masses of rock that strewed the canyon's floor. Presently only a narrow ribbon of sky was visible between the towering walls of the pass. Then this was blotted out and I found myself in the inky blackness of a tunnel—an ancient watercourse—leading into the very bowels of the mountain.

But there was no use in hesitating. Anything was preferable to the cannibal trees, and groping my way I pressed on. Winding and twisting, turning sharply, the passageway led, ever ascending steeply and taxing my exhausted muscles and overwrought system to the utmost. Then, far ahead, I heard the faint sound of dripping, falling water and with joy at thought of burying my aching head in the cold liquid, and of easing my parched, dry throat, I hurried, stumbling, through the tunnel.

At last, I saw a glimmer of light in the distance and in it the sparkle of the water. Before me was the end of the tunnel and sunlight and with a final spurt of speed I rushed towards it. Then, just as I gained the opening, and so suddenly and unexpectedly that he seemed to materialize from thin air, a man rose before me.

Unable to check my speed, too thunderstruck at the apparition to halt, I dashed full into him and together we rolled head over heels upon the ground.

I have said he was a man. But even in that brief second that I glimpsed him, before I bowled him over, I realized that he was unlike any man I or anyone else had ever seen. Barely three feet in height, squat, with enormous head and shoulders, he stood shakily upon the tiniest of bandy legs and half supported his weight by his enormously long muscular arms. Had it not been that he was partly

clothed and that his face was hairless, I should have thought him an ape. And now, as I picked myself up and stared at him, my jaws gaped in utter amazement. The fellow was running from me at top speed upon his hands, his feet waving and swaying in the air!

So utterly dumbfounded was I at the sight that I stood there silently gazing after the strange being until he vanished behind a clump of bushes. Then as it dawned upon me that no doubt there were others near, and, that as he had shown no sign of hostility, they were likely peaceable, I hurried after him.

A narrow trail led through the brush and running along this I burst from the shrubbery and came to an abrupt halt, utterly astounded at the sight which met my eyes. I was standing at the verge of a little rise beyond which stretched an almost circular, level plain several miles in diameter. Massed upon this in long rows, compact groups and huge squares, were hundreds of low, flat-roofed, stone buildings, while upon a smooth green plot at a little distance, stood a massive truncated pyramid.

Unwittingly I had reached my goal. Before me was the lost city of Darien. Hazen had been right!

But it was not this thought nor the strange city and its buildings that held my fascinated gaze, but the people. Everywhere they swarmed. Upon the streets, the housetops, even on the open land of the plain, they crowded and each and every one an exact counterpart of the one with whom I had collided at the mouth of the tunnel. And, like him too, all were walking or running upon their hands with their feet in air!

All this I saw in the space of a few seconds. Then, to add to my astonishment, I saw that many of the impossible beings actually were carrying burdens in their upraised feet! Some bore baskets, others jars or pots, others bundles, while one group that was approaching in my direction, held bows and arrows in their toes, and held them most menacingly at that!

It was evident that I had been seen. The excitement of the beings, their gestures and the manner in which they peered towards me from between their arms, left no doubt of it, while the threatening defensive attitude of the bowmen proved that they were ready to attack or defend at a moment's notice.

No doubt, to them, my appearance was as remarkable, as inexplicable and as amazing as they were to me. The greater portion were evidently filled with terror and scurried into their houses, yet many still stood their ground, while a few were so overcome with curiosity and surprise that they dropped feet to earth and rested right side up in order to stare at me more intently.

I realized that it behooved me to do something. To stand there motionless and speechless, gazing at the strange folk while they stared back, would accomplish nothing. But what to do, what move to make? That was a serious question. If I attempted to approach them a shower of arrows might well end my career and my investigations of the place then and there. It was equally useless to retrace my steps, even had I been so minded, for only certain death lay back of me. By some means I must win the confidence or friendship of these outlandish beings if only temporarily. A thousand ideas flashed through my mind.

If only Hazen would appear the creatures of the city might think I had dropped from the sky and so look upon me as a supernatural being. But it was hopeless to expect such a coincidence or to look for him. I had told him to fly over on the tenth day and this was only the seventh. If only I had retained my revolver the discharge of the weapon might frighten them into thinking me a god. But my firearms lay somewhere in the demon forest. I had heard no sounds of voices, no shouting, and I wondered if the beings were dumb. Maybe, I thought, if I should speak—should yell—I might impress them. But, on the other hand, the sound of my voice might break the spell and cause them to attack me. A single mistake, the slightest false move, might seal my doom. I was in a terrible quandary. All my former experiences with savage unknown tribes passed through my mind, and I strove to think of some incident, some little event, which had saved the day in the past and might be put to good use now.

And as I thus pondered I unconsciously reached in my pocket for my pipe, filled it with tobacco and placing it between my lips, struck a match and puffed forth a cloud of smoke. Instantly, from the weird creatures, a low, wailing, sibilant sound arose. The archers dropped their bows and arrows and, with one accord, the people threw themselves grovelling on the ground. Unintentionally I had solved the problem. To these beings I was a fire-breathing, awful god!

Realizing this, knowing that when dealing with primitive races full of superstitions one must instantly follow up an advantage, I hesitated no longer. Puffing lustily at my pipe I strode forward and approached the nearest prostrate group. Motionless they buried their faces in the dust, bodies pressed to earth, not daring to look up or even steal a surreptitious glance at the terrible, smoke-belching being who towered over them. Never had I seen such a demonstration of abject fear, such utter debasement. It really was pitiful to see them, to view their trembling, panting bodies quivering with nameless terror; terror so great they dared not flee, even though they knew by my footsteps that I was among them, and feared that at any moment an awful doom might descend upon them.

But their very fright defeated my purpose. I had won safety and even adoration perhaps, but there could be no amity, no intercourse, no means of mingling with them, of securing food, of learning anything if they were to remain cowering on the ground. By some means I must win a measure of their confidence, I must prove that I was a friendly beneficent deity and yet I must still be able to impress them with my powers and control them through fear.

It was a delicate matter to accomplish, but it had to be done. Almost at my feet lay one of the archers—a leader or chieftain I thought from the feather ornaments he wore—and stooping, I lifted him gently. At my touch he fairly palpitated with ter-

ror, but no frightened scream, no sound save an indrawn snake-like hiss, escaped his lips, and he offered no resistance as I lifted him to a kneeling position.

Hitherto I had had no opportunity to obtain a good view of these people, but now I saw this fellow close at hand I was amazed at his repulsive ugliness. I have seen some rather ugly races, but all of them combined and multiplied a hundredfold would be beauties compared to these dwarfed, topsy-turvy, denizens of the lost city. Almost black, low browed, with tiny, shifty eyes like those of a reptile, with enormous, thick lipped mouths, sharp, fang-like teeth and matted hair, the bowman seemed far more like an ape than like a human being. And then I noticed a most curious thing. He had no ears! Where they should have been were merely round, bare spots covered with light colored thin membrane like the ears of a frog. For an instant I thought it a malformation or an injury. But as I glanced at the others I saw that all were the same. Not one possessed a human ear! All this I took in as I lifted the fellow up. Then as he tremblingly raised his head and eyed me I spoke to him, trying to make my tones gentle and reassuring. But there was no response, no sign of intelligence or understanding in his dull, frightened eyes. There was nothing to do but to fall back on sign language and rapidly I gestured, striving to convey to him that I would do no injury or harm, that I was friendly and that I wished the people to rise.

Slowly a look of comprehension dawned upon his ugly face and then, to prove my friendship, I fished in my pocket, found a tiny mirror and placed it in his hand. At the expression of utter astonishment that overspread his ugly features as he looked in the glass I roared with laughter. But the mirror won the day. Uttering sharp, strange, hissing sounds, the fellow conveyed the news to his companions and slowly, hesitatingly and with lingering fear still on their faces, the people rose and gazed upon me with strangely mingled awe and curiosity.

Mainly they were men, but scattered among them were many who evidently were women, although all were so uniformly repulsive in features that it was difficult to distinguish the sexes. All too, were clad much alike in single garments of bark-cloth resembling gunnysacks with holes cut at the four corners for legs and arms and an opening for the head.

But while there was no variation in the form or material of the clothing yet some wore ornaments and others did not. Leg and arm bands of woven fibre were common. Many of the men had decorations of bright hued feathers attached to arms or legs or fastened about their waists and many were elaborately tattooed. That such primitive dwarfed, ugly, degenerate creatures could have built the city of stone houses, could have laid out the broad paved streets and could have developed so much of civilization, seemed incredible.

But I had little time to devote to such thoughts. The fellow I had presented with the mirror was hissing at me like a serpent and by signs was trying to indicate that I was to follow him. So, with the crowd trailing behind us, we started up the road towards the centre of the city.

CHAPTER III

Before the King

TRULY no stranger procession had ever been seen by human eyes.

Before me, the chief archer led the way, walking upon his great calloused hands and with his bow grasped firmly in one prehensile foot and his precious mirror in the other. On either side and in the rear were scores of the weird beings hurrying along on their hands, keeping up an incessant hissing sound like escaping steam; black legs and feet waving and gesticulating in air and, at first glance, appearing like a crowd of headless dwarfs. How I wished that Fenton might have been there to see!

Apparently my actions had been closely watched from the safe retreats of the houses and word passed that I was not to be feared, for as we reached the first buildings, the edges of the roofs and the tiny window slits were lined with curious, ugly faces peering at us. It was then that I noticed that none of the buildings had doors, the walls rising blank to the roofs save for the narrow windows, while ladders, here and there in place, proved that the inhabitants, like the Pueblo Indians, entered and left their dwellings through the roofs.

Now and then as we passed along, some of the more venturesome beings would join the procession, scrambling nimbly down the ladders, sometimes upside down on their hands, often using both hands and feet, but always using hands only as soon as they reached the ground.

How or why they had developed this extraordinary mode of progression puzzled me greatly, for there seemed no scientifically good reason for it. Among tribes who habitually use boats, weak legs and enormously developed shoulders, chests and arms are common, and I could well understand how a race, depending entirely upon water for transportation, might, through generations of inbreeding and isolation, lose the use of legs.

But here was a people who apparently had no conveyances of any kind, who must of necessity travel about to cultivate their crops, who must carry heavy burdens in order to construct their buildings and to whom legs would seem a most important matter, and yet with legs and feet so atrophied and arms so tremendously developed that they walked on their hands and used their feet as auxiliaries. It was a puzzle I longed to solve and that I would have investigated thoroughly had fate permitted me to dwell longer in the strange city. But I am getting ahead of my story.

Presently we reached a large central square surrounded by closely set buildings. Approaching one of these, my guide signalled that I was to follow him as he swiftly ascended the ladder to the roof. Rather hesitatingly, for I doubted if the frail affair would support my weight, I climbed gingerly up and found myself upon the broad, flat roof. Before me were several dark openings with the ends of ladders projecting from them and down one of these

my guide led the way. At the bottom of the ladder I was in a large, obscure room, lit only by the slits of windows high in the walls, and for a moment I could see nothing of my surroundings, although from all sides issued the low hissing sounds that I now knew were the language of these remarkable people. Then, as my eyes became accustomed to the dim light, I saw that a score of beings were squatted about the sides of the room, while, directly before me, on a raised dais or platform, was seated the largest and ugliest individual I had seen.

That he was a ruler, a king or high priest, was evident. In place of the sack-like garment of his people he was clad in a long robe of golden green feathers. Upon his head was a feather crown of the same hue. About his wrists and ankles were golden bands studded with huge uncut emeralds, and a string of the same stones hung upon his chest.

The throne, if such it could be called, was draped with a green and gold rug and everywhere, upon the walls of the chamber, were paintings of strange misshapen, uncouth creatures and human beings all in the same green and yellow tints. Something in the surroundings, in the drawings and the costume of the king, reminded me of the Aztecs or Mayas and while quite distinct from either I felt sure that, in some long past time, these dwellers of the lost city had been influenced by or had been in contact with, these ancient civilizations.

As I stood before the dais my guide prostrated himself before the green robed monarch and then, rising, carried on what appeared to be an animated account of my arrival and the subsequent happenings.

As he spoke, silence fell upon those present and the king listened attentively, glancing now and then at me and regarding me with an expression of combined fear, respect and enmity. I could readily understand what his feelings were. No doubt he was a person of far greater intelligence than his subjects, and while more or less afraid of such a strange being as myself, and superstitious enough to think me supernatural, yet in me he saw a possible usurper of his own power and prominence and, if he had dared, he would have been only too glad to have put me out of the way.

At the end of the archer's narrative the fellow handed his mirror to the king who uttered a sharp exclamatory hiss as he saw his own ugly countenance reflected in it. Forgetting court etiquette and conventions in their curiosity, the others gathered about and as the mirror passed from hand to hand their amazement knew no bounds.

All of these men I now saw were clad in green or green and white and were evidently of high rank, priests or courtiers I took it, but otherwise were as undersized and repulsive as the common people on the streets.

Suddenly I was aroused from my contemplation of the room and its occupants by my guide who came close and by signs ordered me to perform the miracle of smoking. Very ceremoniously and deliberately I drew out my pipe, filled it and struck a match. At the bright flare of the flame king and courtiers uttered a wailing hiss of fear and threw themselves upon the floor. But they were of different stuff from their people, or else the guide had prepared them for the event, for the king soon raised his head, and glancing dubiously at me and finding I had not vanished in fire and smoke, as he no doubt expected, he resumed his sitting posture and in sharp tones ordered his fellows to do likewise.

But despite this it was very evident that he and his friends were in dread of the smoke from my mouth and nose while the tobacco fumes caused them to sputter and cough and choke. This at last was more than even the king could stand, and by signs he made it clear that he wished me to end the demonstration of my fire eating ability. Then he rose, and, to my unbounded surprise, stood erect and stepped forward like an ordinary mortal upon his feet. Here was an extraordinary thing. Was the king of a distinct race or stock or was the use of nether limbs for walking confined to the royal family or to individuals?

It was a fascinating scientific problem to solve. I had no time to give it any consideration, however, for the king was now addressing me in his snake-like dialect and was trying hard to make his meaning clear by signs. For a moment I was at a loss, but presently I grasped his meaning. He was asking whence I had come, and from the frequency with which he pointed upward I judged he thought I had dropped from the sky.

Then a brilliant idea occurred to me as I remembered Hazen's story and his suggestion regarding his return by plane. Pointing upward I made the best imitation of a motor's exhaust that I could manage. There was no doubt that the monarch grasped my meaning. He grinned, nodded and swept his arm in a wide semicircle around his head, evidently to represent the course of the plane when Hazen had flown over the city.

Seemingly satisfied and, I judged, deeply impressed as well, he resumed his seat, gave a few orders to his fellows and summoning my guide spoke a few words to him. Thereupon the archer signalled me to follow and led the way across the room. But I noticed that the king had not returned the mirror.

Ascending the ladder to the roof the fellow hurried across to a second building, scrambled down another ladder and we entered a large room. In one corner swung a large fiber hammock; in the centre was spread a cloth decorated in green and gold, and as we entered two women appeared, each carrying handsome earthenware dishes of food whose savory odors whetted my already ravenous appetite.

Marvelous as it was to see these impossible beings carrying food in their uplifted feet and walking on their hands, yet I had now become somewhat accustomed to the people and I was so famished that I hardly gave the upside down serving maids a second glance.

The food was excellent—consisting of vegetables, some sort of fricasseed game and luscious fruits—and as I ate my guide squatted near and regarded me with the fixed, half adoring, half frightened look that one sees on the face of a strange puppy.

I judged that he had been appointed my own per-

sonal guard or valet—it mattered little which—and I was not sorry, for he seemed a fairly decent specimen of his race and we already had become pretty well accustomed to each other's signs and gestures. Wishing to still further establish myself in his confidence, and feeling rather sorry for him because of the loss of his treasured mirror, I searched my pockets for some other trinket. My possessions however were limited. They consisted of a stub of a leadpencil, a note book, a few coins, my handkerchief, my watch, my pocketknife, a few loose pistol cartridges, my pipe and tobacco and a box of matches. As I drew all these out a sudden fear gripped me. I had barely a dozen matches remaining and my supply of tobacco was perilously low. What would happen when I could no longer produce fire and smoke when called upon to do so?

But I controlled my fears and comforted myself with the thought that possibly, after having felt the effects of tobacco smoke, the king would not soon demand another miracle at my hands and that, before either matches or tobacco was exhausted, something might well happen to solve any problems that might arise. Nevertheless I heartily wished that I had arranged with Hazen to bring supplies in case they were needed and which he could have easily dropped as he flew over.

It would, I now realized, have proved an extremely impressive thing for the people to have seen me secure my magic from the giant roaring bird in the sky. But I had never of course dreamed of such adventures as I had met and could not possibly have foreseen the need of such things. Just the same I cursed myself for a stupid fool for not having provided for any contingency and especially for not having arranged a series of signals with Hazen. However, I was familiar with wigwagging and decided that, if necessity arose, It would be quite feasible for me to signal to him by means of my handkerchief tied on a stick. Also, I felt a bit easier in my mind from knowing that near the city was a splendid landing place for the plane and that Hazen, if signalled, would unquestionably attempt a descent.

Truly it was not every explorer in a predicament like mine who could count on being able to summon aid from the clouds if worst came to worst or who knew that a friend in an airplane would keep track of his whereabouts. Indeed, I almost chuckled at the thought of being in this long lost city among these incredible folk and yet within two hundred miles of the Canal and civilization and with another American due to hover above—and even communicate with me—within the next three days. It was all so dreamlike, so utterly preposterous that I scarcely could force myself to believe it and, having dined well and feeling desperately tired, I flung myself into the hammock and almost instantly dropped off to sleep.

It was still daylight when I awoke and the room was empty. Ascending the ladder to the roof without meeting anyone, I climbed down the other ladder to the street. Many people were about and while a few, especially the women and children, threw themselves on their faces or scampered into their houses at my approach, yet the majority merely prostrated themselves for a moment and then stood, supporting themselves in their ape-like way, and stared curiously at me. I had gone but a short distance when my valet came hurrying to my side. But he made no objections to my going where I wished and I was glad to see that my movements were not to be hampered as I was anxious thoroughly to explore the city and its neighborhood. Curious to learn the purpose of the pyramidal structure I had noticed I proceeded in that direction and was soon in a part of the town given over to stalls, shops and markets. There were also several workshops, such as pottery makers', a woodworking shop and a weaver's shop and I spent some time watching the artizans at their work. Somehow, from seeing the people walk upon their hands, I had expected to see them perform their tasks with their feet and it came as something of a surprise to see these fellows using their hands like ordinary mortals.

Beyond this portion of the city the houses were scattered, the outlying buildings were more or less patched and out of repair and were very evidently the abode of the poorer classes, although the inhabitants I saw, and who retreated the instant they saw me, were exactly like all the others as far as I could see, both in dress and feature. Passing these huts, I crossed the smooth green field, which I now saw was a perfect landing place for the plane. Tethered to stakes and grazing on the grass were a number of animals which, as I first noticed them, I had taken for goats and cattle. But now I discovered that they were all deer and tapirs. It was a great surprise to see these animals domesticated but, after all, it was not remarkable, for I should have known, had I stopped to give the matter thought, that goats, sheep and cattle were unknown to the aboriginal Americans and that this city and its people, who had never been visited and had never communicated with other races, would of necessity be without these well known animals.

Moreover, I knew that the Mayas were supposed to have used tapirs as beasts of burden, and while I was standing there watching the creatures a man approached riding astride a big tapir and driving a second one loaded with bags of charcoal and garden produce. Here then was a partial solution of the manner by which these weak, dwarfed people built their stone houses. For with the powerful elephant-like tapirs—and I noticed all were the giant Baird's tapir which reaches a weight of seven or eight hundred pounds—they could easily haul the blocks of stone from a quarry and by means of tackle and inclined planes, could readily hoist the stones to the tops of the walls.

I had now reached the base of the pyramid and found it a massive structure of the same flinty stone as the other buildings. Running from base to summit was a spiral path or stairway and instantly I knew that it was a sacrificial pyramid exactly like those used by the Aztecs and on which unfortunate beings were killed and sacrificed. This discovery still further confirmed my suspicions that these people were either of Aztec or Maya blood or had been influenced by those races. Filled with curiosity to see the altar on the summit I started up the sloping stairs. I was at first doubtful if my companion

would permit this, for the structure was sacred and doubtless only priests of the highest order were permitted upon it. Evidently, however, my guide thought that such a supernatural being or god as myself had every right to invade the most sacred places, and he offered no objection, but prostrated himself at the base of the pyramid as I ascended.

At the summit I found, as I had expected, the sacrificial stone, a huge block elaborately carved in hieroglyphs and with channels to permit the blood to drain off, while, close at hand, was a massive carved stone collar or yoke exactly like those which have been found in Porto Rico and have so long puzzled scientists. From the blood stains upon this I felt sure it was used to hold down the victim's head and neck, while strong metal staples, set into the stone, indicated that the man destined for sacrifice was spread-eagled and his ankles and wrists bound fast to the rings.

It was a most interesting spot from a scientific standpoint, but decidedly gruesome, while the stench of putrefied blood and fragments of human flesh clinging to the stones was nauseating and I was glad to retrace my steps and descend to the ground.

From the top of the pyramid I had obtained a fine view of the plain and city and I had noted that the former was surrounded on all sides with steep cliffs, and I realized that the plain was not a flat topped mountain as I had thought but the crater of an extinct volcano.

I saw no path, pass or opening by which the crater-valley could be entered, but I knew there was the one by which I had arrived. As the sun, here on the mountain top, was still well above the horizon I decided to visit the entrance to the tunnel, for I was anxious to know why the people should leave this avenue open when, on every other side, they were completely cut off from the outer world. Possibly, I thought, they knew of those horrible man-eating trees and trusted to them to guard the city from intruders. Or again, they might keep the entrance guarded, for the fellow I had knocked over as I dashed in had been at the tunnel mouth and for all I knew he might have been an armed guard and was merely so thunderstruck at my precipitate appearance that he forgot his duties and his weapons.

With such thoughts running through my mind I strolled across the plain, past well-tilled gardens and fields, in several of which I saw men ploughing with well made plows drawn by tapirs. Even the farmers stopped their work and prostrated themselves as I passed, and it was evident that word of my celestial origin and supernatural character had gone forth to every inhabitant of the valley.

Following the path, I reached the little rise from which I had first viewed the city and soon came to the spot where I had entered. Imagine my utter surprise when I saw no sign whatever of the opening. I was positive that I had not missed my way: I recognized the clumps of bushes and the forms of the rocks, but there was no dark hole, no aperture in the cliff. Then, as I drew near to the precipice, I made an astounding discovery. Closely fitted into the rock and so like it that it had escaped my attention, was an enormous stone door. How it was operated, whether it was hinged or slid or whether it was pivoted, I could not determine. But that it covered and concealed the entrance to the tunnel I was convinced. Why the people had left the tunnel open as though to clear the way for me, why they should have fitted a door to it, why they should ever use the tunnel which could bring them only to the death-dealing forest, were problems which I could not solve.

At any rate there was nothing to be gained by staying there and I started back towards the city. Thinking to return by another route, I took a path that led towards the opposite mountain side and presently from ahead, I distinctly heard the sound of metal striking stone.

Oddly enough my mind had been so filled with other matters that I had hardly wondered how these people cut or worked the hard stone. But now that my attention was attracted by the sound my curiosity was aroused and I hurried forward. What metal I wondered, did these people use? For metal I knew it must be from the ringing, clinking noise. Was I about to see hardened bronze tools in actual use or had these marvelous folk discovered the use of iron or steel? So astounding had been all my experiences, so paradoxical and incredible everything I had seen, that I was prepared for almost anything. I, or rather we, soon came to the verge of a deep pit wherein, laboring at great masses of white stone, were scores of workmen. Standing like skeletons among the blocks were derricks; hitched to sledge-like drags loaded with stone were teams of tapirs and on the farther side was a big outjutting ledge from which the stone was being quarried. Hurrying down the steep trail I reached the bottom of the pit to find every man flat on the ground.

Signalling to my companion that I wished to have the fellows go on with their work, I approached the nearest slab of rock. It was the same fine grained whitish rock of which the city was built, and, lying upon it where they had been dropped by the stone cutters, were several small hammers, chisels and an adze-like tool. That they were not bronze or any alloy of copper I knew at the first glance. Their color was that of tempered steel and they seemed ridiculously small for the purpose of working this hard stone. If these people used steel then I had indeed made a discovery, and intent on this matter I picked up one of the tools to examine it. No sooner had I lifted it that I uttered an involuntary exclamation of surprise. The hammer, although hardly larger than an ordinary tack hammer, weighed fully ten pounds! It was heavier than if made of solid gold. There was only one known metal that could be so heavy and that was platinum. But platinum it could not be, for that metal is softer than gold and would be of no more use for cutting rock than so much lead. The tools, however, were undoubtedly hard—the polished surface of the hammer-head and the chisels, and the unscarred keen edges of the latter, showed this, and, anxious to test their hardness, I held a chisel against the rock and struck it sharply with a hammer.

Once more I cried out in wonder, for the chisel had bitten fully half an inch into the stone! It had cut it as easily as if the rock were cheese!

What marvel was this? What magic lay in these tools? And then the secret dawned upon me and a moment's examination of the stone confirmed my suspicions. It was not that the tools were so very hard or keen but that the rock was soft—so soft that I could readily cut it with my pocket knife, a wax-like earthy rock which no doubt became hard upon exposure to the air exactly like the coral rock of Bermuda, which may be quarried with saws and even planed, but becomes as hard as limestone after exposure to the elements. Still, the tools were far harder than any metal except tempered steel, and for some time I puzzled over the matter as I watched the workmen, now over their fright and adoration, skilfully cutting and squaring the blocks of stone. It was one more conundrum I could not solve, and it was not until long afterwards, when a careful analysis of the metal was made, that I knew the truth. The metal was an alloy of platinum and iridium—the later one of the hardest of all known metals.

As we left the quarry and made our way toward the city I noticed an immense aqueduct stretching across the land from the apparently solid mountain side just above the quarry. I had given little thought to how the people secured water here in the crater. But it was now apparent that it was brought from some source by the stone conduit. Keenly curious to know whence it came, for I could not imagine how a river, lake or spring could exist on the crater rim, I wished to investigate, but darkness was coming on, I was tired and I deferred further exploration until another day.

Although I suppose I should have been grateful for being able to communicate with the people at all, yet I keenly felt the lack of a common medium of conversation, for the sign language was limited and I could not secure the information I so much desired about many matters that puzzled me.

Nothing further of interest transpired that night. I was supplied with food, I slept soundly and did not awaken until roused by the women with my breakfast. Very soon afterwards I was summoned to the throne room by Zip, as I called my companion, and once more I had to strike a match and smoke my pipe for the king's benefit. This time a second personage of high rank was beside him, a villainous looking hunchbacked dwarf with red, vicious eyes and cruel mouth but who, like the king, walked on his feet. From his elaborately decorated white robes and the mitre-like crown of quetzal feathers on his gray head, I concluded he was a high priest, for in the designs upon his costume and the form of his crown, I saw a decided resemblance to the Aztec priests as shown in the picturegraph of that race. Moreover, the quetzal or resplendant trogon was, I knew, the sacred bird of the Aztecs and Mayas, and while I was aware that it was common in the northern portions of Panama, I had never heard of its occurrence in Darien, a fact which still further confirmed my belief that these people were of Aztec stock. But if this were the case it was a puzzle as to why they should be so undersized, malformed and physically degenerate, for both the Aztecs and Mayas were powerful, well-formed races. The only solution I could think of was the supposition that isolation and intermarriage through centuries had brought about such results.

But to return to my audience with the king. I was not all pleased at thus having to use my precious matches and tobacco and I foresaw some very unpleasant developments in store for me if the performance was to be of daily occurrence. It was manifest that I must devise some new and startling exhibition of my powers if I were to retain my prestige and my freedom, for I well knew, from past experiences with savage races, and from the character of these potentates, that if I failed to perform miracles, and became, in their eyes, an ordinary mortal, my career would come to an abrupt end.

To be sure, there was the reassuring fact that Hazen would or should appear within the next forty-eight hours, but it was decidedly problematical as to whether I could communicate with him or could receive any aid from the air. However, there was nothing to be done but obey and puff away at my pipe. With the idea of cutting the exhibition short I stepped closer to the throne and blew the smoke towards the faces of the king and the priest. The monarch was soon coughing and spluttering, but he was game, while the priest, to my amazement, sniffed the smoke and seemed to enjoy it. Here was trouble. Evidently he had a natural taste for tobacco and this fact caused me a deal of worry, for if the old rascal took it into his head to acquire the habit and demanded I should let him try a puff at the pipe I would be in a pretty fix indeed.

However, my fears on this score were groundless, and presently the king, who could stand it no longer, signalled for me to depart, which I did most gladly.

I still had it in mind to investigate the water supply, and with Zip—reminding me of an acrobatic clown—beside me, headed for the aqueduct. This I found was of stones, dovetailed together in water tight joints, and built like an open trough and the speed of the water flowing through it proved the supply well above the city's level. It was an easy matter to follow the conduit, for a well-trodden path was beside it, but it was a steep up-grade climb for nearly a mile before I gained the spot where the aqueduct tapped the mountain rim. Here the water gushed from a hole in the solid rock and from its volume I knew it must come from some large reservoir. From where I stood I could look directly down into the quarry and the thought flashed through my mind that if the people continued to quarry in the place for many more years they would undermine and weaken the foundations of the aqueduct.

It was their lookout not mine, however, and still intent on tracing the water to its source I turned up a trail that appeared to lead to the mountain top. In places this was excessively steep and here Zip exhibited a new habit of his people. Dropping his feet he proceeded to climb the path on all fours, his feet first and his prehensile toes grasping every projection and bit of rock to draw him along while his immense, powerful hands supported his weight and pushed him onward, He looked more like a gigantic spider than anything, and not in the least human. Panting and blown I at last gained the sum-

mit and looked down upon a lake of dismal black water filling a circular crater about half a mile in diameter. Close by was an aperture in the rock and half-filled with water, and it was evident that this was connected with the outlet below by means of a shaft. Whether this was a natural formation or had been laboriously cut by hand I could not tell, but I was prepared for almost anything by this time and was not greatly surprised to find a cleverly constructed sluice gate arranged above the opening to regulate the flow of water. I had seen similar crater lakes in the extinct volcanoes of the West Indies, but I was surprised that Hazen had not mentioned it. But on second thought I realized that when flying over it, the dark water surrounded by vegetation would hardly be visible and might easily be mistaken for heavy shadow or an empty crater, while the aviator's surprise at the city would fix his attention upon it to the exclusion of all surroundings.

Standing upon the rock ridge several hundred feet above the city I had almost the same view as Hazen had from his plane and I could understand how, at an elevation of 5000 feet or more, he had been unable to obtain any very accurate idea of the buildings or people. I also realized, with a sinking of my heart, that it would be next to impossible for him to recognize me or to see any signals I might make.

The most prominent spot in the entire valley was the pyramid, for this was isolated upon the green plain and the sun, striking through a gap in the eastern rim of the crater, shone directly upon the altar's summit, thus bringing it out in sharp relief. Indeed, it looked for all the world like a pylon on an aviation field. If I expected to make my presence known to Hazen or to signal to him, my best point of vantage would be the summit of the pyramid and I determined to climb there and await his arrival when he should be due, two days later.

Little did I dream at the time of the conditions under which I would await him upon that gruesome altar.

CHAPTER IV

The Sacrifice

BY the time we had descended the mountain and had reached the city it was noon, and going to my quarters I was glad to find an excellent meal. Having finished eating I threw myself into the hammock and despite my scarcity of matches and tobacco, indulged in a smoke. Then, feeling drowsy, I took off my coat, placed it on the floor beside my hammock and closed my eyes.

I awoke refreshed and reached for my coat only to leap from the hammock with a cry of alarm. The coat was gone! Quickly I searched the room, thinking Zip might have placed the garment elsewhere while I slept, but the place was bare. Zip was nowhere to be seen, and even the rug on which meals were served had been removed.

Here was a pretty state of affairs. My coat contained my matches, pipe, tobacco, pocket knife and handkerchief. Without it I was lost, helpless, incapable of maintaining my prestige of position. Death or worse hovered over me. My life depended on regaining my precious garment and its contents. Who could have taken it? What could have been their object? And instantly the truth flashed upon my mind. It was that rascally high priest. He had seen me take pipe, tobacco and matches from my coat pocket. He had watched me narrowly, perhaps had kept his eyes upon me through some hidden peep-hole or opening, and had seen me remove my coat, and while I slept had seized it. Or perhaps he had ordered Zip to secure it for him. It made little difference which, for if it were in his possession he would have me in his power. He could order me to smoke and when I failed he could perform the miracle himself and denounce me as an imposter. My only hope was to regain my possessions by fair means or foul, and knowing that every second I delayed increased my peril, I rushed to the ladder and across the roofs to the throne room.

From beneath me, as I started to descend, came the sounds of the hissing language in excited tones, and as my head came below the level of the roof my heart sank. The dark air of the room was heavy with tobacco smoke!

The next instant my feet were jerked from beneath me, I was seized, tumbled on the floor, and before I could strike or rise I was bound hand and foot. Dazed, startled and helpless I glanced about. Surrounding me were a dozen of the repulsive dwarfs. Gathered about the sides of the room were crowds of people, and seated upon the throne, puffing great clouds of smoke from my pipe, a wicked leer upon his ugly face, and thoroughly enjoying himself, was the priest, while beside him the king coughed and sneezed and looked very miserable.

All this I took in at a glance. Then I was seized and dragged roughly before the throne. I fully realized my doom was sealed. I was no longer a supernatural being to be feared and adored—my treatment proved that—but merely a prisoner, an ordinary mortal. Oddly enough, however, I was no longer frightened. My first fears had given place to anger, and I raged and fumed and prayed that the grinning fiend before me might be stricken with all the torturing sickness, which usually follows the beginner's first smoke.

But apparently he was immune to the effects, and as soon as I was dragged before the throne he rose, and pointing at me, addressed the crowd before him. That he was denouncing me as an imposter and at the same time tremendously increasing his own importance was evident by his tones, his gestures and the expression on his black face. Moreover, he had another card to play. Pointing upward and waving his arm and making quite creditable imitation of an airplane's exhaust, he spoke vehemently and then pointed to a man who crouched on the dais.

At first I was at a loss to grasp his meaning, and then, as the trembling creature beside the throne spoke in frightened tones and gesticulated vividly, I realized he was the chap I had bumped into upon my arrival. He had spilled the beans and had informed

the old scarecrow of a priest that I had arrived via the tunnel and not from the sky.

I felt sure now that my doom was sealed. But there was nothing I could do or say. There was one chance in a million that I might be escorted from the valley and turned loose in the tunnel; but that gave me no comfort, for I knew that hideous certain death awaited me on that slope covered with the devilish man-eating-trees.

The chances, however, were all in favor of my being tortured and butchered. Strangely enough my greatest regret, the matter which troubled me the most and made me curse my carelessness in removing my coat while I slept, was not that I should be killed—I had faced death too often for that—but the fact that I would be unable to report the wonderful discoveries I had made or give my knowledge of the city and its people to the world. Indeed, my thoughts were so concentrated on this that I gave little attention to the priest, until he stepped forward, and, with a nasty grimace, struck me savagely across the face. Maddened at the blow I lunged forward like a butting ram. My head struck squarely in the pit of his stomach, and with a gasping yell he doubled up and fell sprawling on the dais while the pipe flew from his lips and scattered its contents far and near. Before I could roll to one side, my guards seized and pulled me across the room. Despite my plight and the fate in store for me I laughed loudly and heartily as I saw the priest with hands pressed to stomach, eyes rolling wildly and a sickly greenish pallor on his face. The blow plus the tobacco had done its work. I had evened up the score a bit at any rate.

The next moment I was hauled through a low doorway hidden by draperies, and, bumping like a bag of meal over the rough stones, was pitched into an inky black cell. Bruised, scratched and bleeding I lay there unable to move or see while the occasional sounds of shuffling footsteps, or rather handsteps, told me a guard was close at hand. For hour after hour I lay motionless, expecting each minute that I would be dragged out to torture or death and wondering dully what form it would take, until at last—numb, exhausted and worn out, I lost consciousness.

I was brought to my senses by being seized and jerked to a sitting posture, and found the cell illuminated by a spluttering torch, while two of the men supported my shoulders and a third held a gourd of water to my lips. My throat was parched and the liquid was most welcome, and a moment later, a fourth man appeared with food. It was evident that the priest had no intention of letting me die of thirst or starvation, and I wondered why he should be so solicitous of my comfort if I were doomed to an early death.

As soon as I had eaten, the guards withdrew, taking the torch, and I was once more left in stygian blackness with my thoughts. I wondered whether it were day or night, but I had no means of judging. It had been the middle of the afternoon when I had missed my coat, and, reasoning that the food served was probably the evening meal, I decided that it was now about sundown. In that case I should probably be put out of the way the next morning. That would be a full twenty-four hours before Hazen was due and I wondered what he would think when he saw no sign of me in the valley—whether he would surmise that I had not reached the city and had been killed by the Kunas, and what he would report to my friends in Colon.

But Colon, friends and Hazen seemed very far away as I thought of them there in that black hole awaiting death at the hands of the strange black dwarfs and, as far as any aid they could give me, was concerned I might as well have been in Mars.

My thoughts were interrupted by my guards reappearing with the torch. Lifting me to my feet they loosened the bonds about my legs and urged me through a small doorway, where I was compelled to bend low to pass, and along a winding, narrow, low-ceilinged stone tunnel. That I was on my way to my execution I was sure, and vague thoughts of selling my life dearly and of overpowering my puny guards crossed my mind. But I dismissed such ideas as useless, for even were I to succeed I would be no better off. There were thousands of the tiny men in the city, it was impossible to escape from the valley unseen, and I had not the least idea where the underground passage led. To attempt to escape meant certain death, and there still remained a faint chance, a dim hope that I might yet be spared and merely deported. So, ducking my head and with stooping shoulders, I picked my way along the tunnel by the fitful glare of the flaming torch.

For what seemed miles the way led on and I began to think that the entrance was outside the valley and that I was being led to freedom, when a glimmer of light showed ahead, the floor sloped upward, and, an instant later, I emerged in the open air.

For a moment my eyes were blinded by the light after the darkness of the passage and I could not grasp where I was. I had thought it evening, but my first glance told me it was early morning and I knew the night had passed and another day had come. Then, as I looked about at my surroundings and it dawned upon me where I was, a shudder of horror, a chill of deadly fear swept over me. I was on the summit of the pyramid. The sacrificial altar was within three paces. Beside it stood the fiendish priest and his assistants, and gathered upon the green plain were hordes of people with faces upturned towards me. I was about to be sacrificed, to be bound fast to the bloodstained awful stone, to have my still-beating heart torn from my living body!

Anything were preferable to that and with a sudden bound I strove to gain the altar's edge and hurl myself to certain death. But to no avail. Two of the dwarfs held me fast by the cord which fastened my wrists and I was jerked back to fall heavily upon the stones. Before I could struggle up, four of the priest's assistants sprang forward and, grasping me by legs and shoulders, lifted me and tossed me upon the stinking sacrificial stone. I was helpless, and instantly my ankles were tied fast to the metal staples, the bonds of my wrists were severed, my arms were drawn apart and securely lashed to other staples, the stone collar was placed about my neck forcing my head far back and I was ready

for the glowering priest to wreak his awful vengeance.

Stepping close to the altar he drew a glittering obsidian knife—and even in my terrible predicament I noted this, and realized that he was adhering strictly to Aztec customs—and, raising his arms, he began a wailing, blood-curdling chant. Up from the thousands of throats below came the chanting chorus, rising and falling like a great wave of sound. How long I wondered, would this keep on? How much longer must this agony, this torture of suspense be borne? Why did he not strike his stone dagger into my chest and have it over with?

And then, from some dormant cell in my brain, came the answer. I was to be sacrificed to the sun god, and I remembered that, according to the Aztec religion, the blow could not be struck until the rising sun cast its rays upon the victim's chest above the heart. The priest was awaiting that moment. He was delaying until the sun, still behind the crater's rim, should throw its first rays upon me.

How long would it be? How many minutes must pass before the fatal finger of light pointed to my heart? With a mighty effort I turned my head slightly towards the east. Above the rugged mountain edge was a blaze of light. Even as I looked with aching eyes a golden beam shot across the valley and flashed blindingly into my face. It was now only a matter of seconds. The priest raised his knife aloft. The chant from the multitude ceased and over city and valley fell an ominous, awful silence. Upon the sacrificial knife the sun gleamed brilliantly, transforming the glass-like stone to burnished gold. With his free hand the priest tore open my shirt and bared my bosom. I felt that the end had come. I closed my eyes. And then, at the very instant when the knife was about to sweep down, faint and far away, like the humming of a giant bee, I caught a sound. It was unmistakable unlike anything else in all the world—the exhaust of an airplane's engines!

And my straining ears were not the only ones that heard that note. Over the priest's face swept a look of deadly fear. The poised knife was slowly lowered. He turned trembling towards the west and from the waiting throng below rose a mighty sigh of terror.

A new hope sprang up in my breast. Was it Hazen? He was not due until the next day and it might be only some army plane that would pass far to one side of the valley. No, the sound was increasing, the plane was approaching. But even were it Hazen would it help me any? Would he see my plight and descend or would he fly too far above the city to note what was taking place? For a space my life was saved. The fear of that giant, roaring bird would prevent the sacrifice. The priest feared he had made a mistake, that I *was* a god, that, from the sky, vengeance would swoop upon him and his people for the contemplated butchery. But if the plane passed? Or would his dread of it be greater than his fear of defying the sun god by failing in the sacrifice?

Now the roar of the motor sounded directly overhead and the next moment I glimpsed the plane speeding across the blue morning sky. Then it was gone. The exhaust grew fainter and fainter. All hope was lost. Whoever it was had flown on, all unsuspecting the awful fate of a fellow man upon that sunlit pyramid.

And now the priest was again towering over me. Once more he raised his knife. I could feel the warm sun beating upon my throat and shoulders. I could feel it creeping slowly but surely downward. The knife quivered in the impatient hand of the priest, I saw his muscles tense themselves for the blow, I caught the grim smile that flitted across his face as he prepared to strike.

An instant more and my palpitating heart would be held aloft for all to see.

But the blow never fell. With a deafening roar, that drowned the mighty shout of terror from the people, the airplane swooped like an eagle from the sky and clove the air within a hundred feet of the altar. With a gurgling cry the priest flung himself face down, and his knife fell clattering with the sound of broken glass upon the stones.

Was it Hazen? Would he see me? Would he alight? Was I saved?

The answer was a thunderous, fear maddened cry from below, a swishing whirr as of a gale of wind and a dark shadow sweeping over me.

And then my overwrought senses, my frazzled nerves could stand no more and all went black before my eyes.

Dimly consciousness came back. I heard the sounds of rushing feet, the panting labored breaths of men, sharp, half uttered exclamations and grunting noises. Then a shrill scream of mortal terror and a deep drawn sigh of relief. Above my wondering eyes a figure suddenly loomed. A weird uncanny figure with strangely smooth and rounded head and great goggling, glassy eyes. With a jerk the stone collar was lifted from my strained neck and as full consciousness came back I gasped. It was Hazen! By some miracle he was ahead of time!

From somewhere, muffled behind that grotesque mask, came a hoarse: "My God, are you hurt?"

Before I could speak the bonds were slashed from my ankles and wrists. A strong arm raised me and pulled me from the slab.

"For God's sake, hurry!" cried Hazen, as half supporting me he rushed toward the altar stairs. "I've got 'em buffaloed for a minute, but the Lord alone knows how long it'll hold 'em."

Rapidly as my numbed limbs would permit I rushed down the sloping, spiral way. Half carried by Hazen I raced across the few yards of grass between the base of the pyramid and the plane, and as I did so I caught a fleeting glimpse of a huddled, shapeless, bloodly bundle of green and white. It was all that remained of the priest whom Hazen had hurled from the altar top!

The next moment I was in the plane and Hazen was twirling the propeller. There was a roar as the motor started. Hazen leaped like an acrobat to his seat and slowly the machine moved across the plain.

Everywhere the people were prostrate, but as the machine started forward one after another glanced up. Ere we had traveled a score of yards

the creatures were rising and with frightful screams were scattering from our pathway. It was impossible to avoid them. With sickening shocks the whirring propeller struck one after another. Blood spattered our faces and becrimsoned the windshield and the wings. But uninjured the plane gathered headway; the uneven bumping over the ground ceased; we were traveling smoothly, lifting from the earth.

Then with a strange wild roar the people rushed for us. Racing on their hands they came. Rocks and missiles whizzed about us. An arrow whirred by my head and struck quivering in a strut. But now we were rising rapidly. We were looking down upon the maddened hosts, their arrows and sling-flung stones were striking the under surface of the fuselage and wings. We were safe at last. A moment more and we would be above the crater rim.

A sudden exclamation from Hazen startled me. I glanced up. Straight ahead rose the precipitous mountain side above the quarry. To clear it we must ascend far more rapidly than we were doing.

"Must have splintered the blades!" jerked out Hazen. "She's not making it. Can't swing her. Rudder's jammed. Heave out everything you can find. Hurry or we'll smash!"

Before us loomed the ragged, rocky wall. We were rushing to our doom at lightning speed. At Hazen's words I grasped whatever I could find and tossed it over the side. A box of provisions, a roll of tools, a leather jacket, a thermos bottle, canteens, an automatic pistol and a cartridge belt all went. I glanced up. We were rising faster. A few pounds more overboard, a few feet higher and we would be clear. Was there anything else I could throw out? Frantically I searched. I saw a can-like object resting on a frame. Spare gasoline I decided, but fuel was of no value now. With an effort I dragged it out. I lifted it and hurled it over.

With a sudden jerk the plane sprung upward. There was a terrific muffled roar from below and with barely a yard to spare we rose above the crater rim.

"Lord, you must have dropped that old bomb!" cried Hazen. "The concussion jarred the rudder free."

I glanced over the side. Far beneath, a cloud of smoke and dust was drifting slowly aside exposing the aqueduct, broken, smashed and in ruins. From the opening in the mountain side a mighty stream of water was roaring in a rushing, tearing torrent. The bomb had landed squarely in the quarry. The aqueduct had fallen, the shock had let loose the gates of the lake and the whole vast crater reservoir was pouring in a mighty flood across the valley.

In a wide arc Hazen swung the plane about. "Poor devils!" he muttered as we soared above the doomed city.

Already the green plain was shimmering with the glint of water. We could see the frantic, frenzied people running and scrambling up their ladders. Again we wheeled and circled far above them and now only the roof tops of the houses were above the flood. Presently these too sank from sight and above the sunlit waters only the sacrificial stone remained.

"It's all over!" exclaimed Hazen, and heading northward we sped beyond the encircling mountain sides.

Beneath us now was forest, and with a shudder I recognized it as that death-dealing, nightmare grove of cannibal trees. Fascinated I gazed down and suddenly from the mountain side behind us burst a frothing yellow torrent. The pressure of the flood had been too great. The overwhelming waters had forced the stone door of the tunnel by which I had entered that incredible valley. Before my wondering eyes the devastating deluge swept down the slope. I saw the monstrous trees shiver and sway and crash before the irresistible force. They gave way and like matchsticks went tossing, tumbling, bobbing down the hillside.

Higher and higher we rose. The water-filled crater was now but a silvery lake. The slope up which I had fought and raced from the ravenous, blood-sucking trees was bare, red earth scarred deep by the plunging stream that flowed over it. Far to the west gleamed the blue Pacific. Like a vast map Darien was spread below us. Northward we sped. Before us was civilization. Behind us death and destruction. The man-eating trees were a thing of the past. The lost city was lost forever.

THE END

The LORD of the WINDS

By Augusto Bissiri

He was lifted bodily from the ground as if he had been a rag, and blown along with such violence that his body struck the wall of the stone house with terrific impact.

A Puzzling Companion

MY companion had three peculiarities that puzzled me. The first was the sharp contrast between his refined manners and his shabby outfit, which made me suspect he was not an ordinary prospector any more than I, although he surely seemed to feel more comfortable in those clothes and in such a place. It entered my mind that his disguise had the same purpose as mine—and that we were both engaged in the same adventure. Such a possibility both amused and irritated me.

I watched him swinging from one side of the saddle to the other, as his horse, just ahead of mine, cautiously went down the dangerous slope.

His second peculiarity was the sack bound to his back. This sack was small but heavy, as I judged from the effort he displayed, now and then, in arranging it on his shoulders. What puzzled me was the fact that he carried this burden on his back, when he could easily have tied it to the saddle.

His third peculiarity, which had been first to strike me, was his remarkably long upper lip. I was sure I had seen that gorilla lip once before. But where and when?

We had met a couple of miles from Rhyolite. There I had exchanged my automobile for a horse—not because a motor car would have failed to travel the sixteen miles of Boundary Canyon, from the summit of the Funeral Range down to the Desert Valley, but because a horse was more suitable to my disguise. Finding that we were bound to the same place, we had agreed to travel together.

When we reached "Hole-in-the-Rock," a little spring making its way out of the Canyon, we dismounted to water the horses and refill our canteens. Then we sat down to rest awhile on a malapais boulder shaded by a giant cactus.

"We've been riding two hours," he said, looking at his watch.

An Old Acquaintance

HIS watch had a fob, and the fob carried a pendant with the emblem of a fraternal lodge.

There flashed across my memory a name.

"Is your name Wells?" I asked.

"Yes," he answered in amazement. "How do you know?"

"Three years ago I went for a week from San Francisco to Los Angeles. One night I visited your lodge. You were one of the two appointed to examine my credentials and give me the ritual examination before I could gain entrance."

"You are right"; and he shook my hand cordially.

As soon as he was satisfied that he could trust me, Wells became so communicative that his bag ceased to be a mystery. He said with a smile:

"If I had told you that I was a prospector, a gold hunter, when you saw me in my evening dress at the lodge, you would have doubted me."

"It is true, my idea of a miner is somewhat different."

"Well," he explained, "mining for me is a sport, a hobby, a passion. California has gold in every hill, once a man gets a glance at the yellow stuff in the bottom of the pan, he is a miner for life. The gold mania gets more of a grip on the mind than does alcohol or morphine."

"At times I'd return to the city—to the real estate business; but presently my old passion would master me. Again I would find myself roaming in these mountains, searching, thinking, hoping, dreaming nothing but gold, gold, gold. But this time, thank God, I can quit for good."

"Lost your courage?"

"No, I made a find."

"Gold vein?"

"No, gems—rubies—just look!"

A Bag-Full of Great Rubies

HE unstrapped his bag from his shoulders, placed it on his lap, and opened it, showing the contents. I saw a quantity of stones, both large and small. Wells picked out two of the largest stones, each as big as an egg.

"You see these? These two alone may be worth $100,000. Altogether in this bag, I think I have more than $400,000."

"Is that possible?" I returned, with an accent that betrayed my skepticism.

"Do you know anything about gems?" he asked.

I confessed that I did not.

"Well, I do, and rubies are rarer than diamonds. The largest imported into this country do not reach the size of the smallest one in this bag.

"Of course, when they are faceted and polished, they will be much more brilliant. But look at this one as it is." He held a large stone against the light, close to my eyes. "You will never find other rubies so transparent and of a red so rich."

I expressed my admiration. "And you said the value of this collection is—?"

"At least $400,000. Maybe twice as much—this sack contains my fortune."

"But why do you carry it on your shoulders? It must be heavy."

"Heavy! Say, did you ever hear a mother say her baby was heavy? I love to feel the weight against my back. Besides it is safer. This bag has not left my shoulders for three days, not even during my sleep, and it shan't until I reach my home in Los Angeles."

But you are going in a quite different direction."

"I am doing that to see Professor Matheson."

"The Lord of the Winds?"

"That's what they call him. He knows more geology than any one else in the world. I want to see what he thinks of these stones of mine. But why do you look at me like that?"

FOR centuries we have had with us all sorts of "weather makers," but only during the last few decades has science actually begun to get some vague results in artificially creating rain or sunshine. In England they are experimenting at present with a machine to disperse fog. In California, extensive experiments have been made to produce rain by sending electrically-charged kites or balloons aloft. And the dispersion of clouds by electrified sand has had some success.

In this interesting story a novel scheme has been woven—not at all impossible from a scientific standpoint. Who knows that at some future date a scheme such as developed here may not come about to serve humanity? You can not fail to be interested in this story.

Wells could not understand my sudden exultation mixed with surprise.

"You know Professor Matheson well?" I asked.

"Yes. Why?"

"Since you have trusted me by showing your treasure, I will tell you my secret. I am only disguised as a prospector."

"I knew it," Wells rejoined laughing.

A Newspaper Man Disguised

"I'M a newspaper man, working for the San Francisco *Tribune*, on my way to get an interview with Professor Matheson."

"You might as well say that you are going to interview your horse."

"I know it. No reporter ever got a word from him, and for these last six months no reporter has been able even to approach him."

"Do you blame him, after they have all called him a lunatic?"

"The press of this country was in his favor till Sir Oliver Lodge in London, and Professor Brillouin in Paris, almost at the same time declared that Matheson's theories were wrong."

"I stake my rubies he is not."

"Perhaps not, but you will agree with me that Matheson's claims are of such stupendous magnitude as to stagger the wildest imagination."

"Yes, but that's no reason why he should be ridiculed. They should wait at least until the experiments are over."

"Well, some papers take his side, my paper for instance. But nevertheless, when one of our editors tried to have a talk with him, all he could get from him was: "Facts will convince more than words." So, when it became known that the experiments were going to start in a few days, I asked leave to attempt the impossible—to interview the unapproachable Matheson. The interest of the public is intense. But, to tell you the truth, I have no definite plans of attack. I am just relying on luck."

"You can rely on me," Wells promised, smiling.

Mounting our horses, we continued our descent into the canyon. The sun had set, a dark orange disc in a sea of pulverized gold. In the narrow strip of skies that the deep canyon permitted me to see, some stars began to twinkle, and the summits of the high cliffs, in shadowy outline, assumed fantastic shapes.

"What is your scheme?" I inquired, keeping my horse close to Wells.

"A very simple one—you are my partner. We found the treasure together and come to him together for advice. I will make him talk about his invention also, and you will listen and note."

"Every word of the conversation to-morrow will be wired to my paper. Meanwhile I wish you would tell me all you know about him."

A Wonderful Project and Its Creator

"I DOUBT," Wells said, "if I know more than has already been published in the papers. They have even printed his picture several times, but it does not look like him. You must see that little fellow's eyes, like electric sparks, brilliant, restless and irresistible. He must be fifty, but there are times when he looks twenty-five. I happened to be there two months ago, when his three hundred men were erecting the steel towers that you will see as we reach the Desert Valley. You should have seen him. I doubt if he weighs 130 pounds, whiskers and all; but he showed the energy of a giant. He was everywhere, giving commands like a general. And when you see what has been done there in less than a year, you will marvel at the prodigy of that wizard."

"He must have overcome great difficulties."

"Great? Look at this road, if we may call it that. Over it Matheson had sixteen motor trucks going back and forth from Rhyolite to Wind City, as they call his works in the valley. He transported more than three thousand tons of steel bars, seventy-five tons of cement, two tons of copper wire, lumber for twenty-five bungalows, provisions and tools, a thousand other things. Then he had a water pipe laid from the Ermite Mine to Windville."

"But why did he come to this forsaken place, so difficult to reach?"

"I never asked him, but I imagine he needed a place where the air would be still for long periods of time, also perhaps a region quite deserted."

"Imagine the expense!"

"I've heard there are more than two million dollars invested in this—which is but an experiment in diminutive proportions."

"Two million dollars for an experiment is a proof of strong faith on the part of the stockholders."

"There are no stockholders," Wells declared. "One man has financed Matheson—a multi-millionaire."

"I surely remember having read of a tremendous corporation behind Matheson."

"Yes, I understand that if these trials prove the soundness of the idea, the largest corporation that the world has ever known will invest some billions of dollars to put the scheme into action. Enough money to buy all the railroad lines and the Panama Canal, with plenty left over to buy the United States Navy. But they say it will be the best investment any country can make. Matheson claims he will transform the whole globe, producing more real wealth than all the world's industries."

"Don't forget the opinion of Sir Oliver Lodge and the two great meteorologists."

"Their skepticism will have an interesting set back, I'm sure, before the week is over. Look! There is the Ermite Mine."

A One-Man Mine and Its Strange Owner

I COULD not see any signs of a camp.

"Is it really a mine?" I inquired.

"Yes, a mine that has no equal in the world—a one-man mine. You will be interested to see this man Davy—the 'Hermit,' as they usually call him. Tall and massive as one of these boulders, he has a neck as large as my horse's neck, and eyebrows so black and thick that you cannot see his eyes. He lives alone in his mine, a gold mine that he discovered six years ago. He operates it himself, with only the aid of a mule."

"A rich mine?"

"Very poor ground. He tried to sell it several times; nobody would give him enough, so he thought that he would exploit it himself. He has been living here these six years, and he has done wonders. Should you pass this way in the daytime you would see what a lone man can do. He has bored two

tunnels, and constructed a mining plant that crushes two tons of rocks daily. Of course, the whole outfit is the simplest that one can imagine. Once a month he goes to town with his mule, to deposit his little treasure and to get provisions for another month."

"Does he make much?"

"Nobody knows; but I'm sure he makes very little out of it. He told me once that his idea was to get enough money to operate the mine on a larger scale with modern machinery; but I wonder how long he will have to wait. He is more than fifty now."

"And isn't he afraid of keeping gold in this solitude?"

"The Hermit afraid? Wait until you see him!"

By this time we had left the main road and taken to a narrow path at the left of the canyon, which ascended a slight hill. When he had gone a hundred yards, Wells shouted, "Davy," and stopped his horse. He repeated his call. A voice very near us answered, "Hello there!" My eyes spotted the silhouette of a man in front of a hut.

I remember little of the few minutes that we spent in that small, bare, one-room cabin, faintly illuminated by a sooty lamp. About the man I remember only his eyes, the eyes that Wells found hard to see under those thick eyebrows. I always scoffed at such things as presentment; but those savage, rapacious eyes had a sinister meaning to me.

I remembered afterward that when Wells, in a general way, asserted that he had "struck rich," the eyes of the Hermit assumed a strange expression, fearful and repulsive. Of this much I was certain then: his attention was abnormally attracted by the sack on Wells' back.

The Hermit insisted that we spend the night with him, but we declined.

"Thanks old man," said Wells. "We must hustle along. We have chosen this time of day to escape the heat, and expect to reach the valley by nine o'clock. My friend will start back by twelve. It is moonlight tonight, and by five he will be in Rhyolite again. I will sleep in camp in the stone house."

"Where the machinery is?" inquired the Hermit.

"Yes; one of the overseers who has his bed there, is away tonight."

We bade the Hermit good-bye. He did not answer.

First View of the Great Station

HALF an hour later we were out of the canyon. The valley appeared before us. The moon was high and its glow inundated the plain, transforming it into an ocean of dead calmness. Wells pointed toward the north. A tower as slim as the steeple of a Gothic Church rose against the sky to a great height.

During my journalistic career, I have had to cover many exciting stories, filled with pathos or danger. But never have I been so thrilled as when I stopped my horse, for a minute, to gaze at that shadowy tower. I felt sure that I was going to witness a prodigious achievement, which, for its arduousness, its gigantic possibilities and its sublimity, had no equal in the history of the world. I exulted over the opportunity that was so soon to be mine—to meet the man who, by the power of his genius, was going to transform the earth almost like a God.

As we came nearer, I distinguished other constructions besides the tower. There were five or six houses of different shapes and dimensions. One of them was lighted. Toward that one Wells went. I examined the tower as carefully as I could in the scanty light of the moon. It was a skeleton tower of steel bars, built on a massive concrete base that covered a surface about four hundred feet square. Tapering, as the height increased, it ended almost in a point, supporting a large sphere, which by the way it reflected the rays of the moon, appeared to be made of glass. Innumerable wire cables, parting from the tower at regular intervals and fastened to the ground, insured the stability of the construction, which I judged to be fully five hundred feet high.

"Some work!" I exclaimed in admiration.

"Yes, when you think that they built thirty of these spikes in the valley. See another one over there?"

I discerned, a couple of miles away, a narrow shadow rising from the flat horizon, brilliant at its extremity, like a lighthouse in the ocean.

We did not need to rap at the door of the one story house; it was open, as were all the windows. We went in, to find ourselves face to face with Professor Matheson.

His personality did not lend itself to a picturesque description. He had the ordinary appearance of a middle aged man, with a calm and cheerful face, as if he had never been troubled by any problem. But I had not been five minutes in the room before I realized that I was in the presence of an extraordinary man.

Wells made his introduction as planned, mentioning me as his partner. Then without delay he put into the hands of the Professor two of the largest gems of his collection.

Meanwhile I looked around the spacious room, illuminated by two electric lights. The confusion, the multitude, and the variety of the objects scattered about made of that place a strange combination of library, draughting room, work-shop, museum, laboratory and storehouse. A wooden partition separated the room from the other part of the building, accessible through a large doorway which was wide open. Desirous of finding out what the next room contained, I gradually reached the doorway and looked inside. The place was dark, but the moonlight, entering through the open window, allowed me to see that the floor was covered with boxes, all of one dimension three feet long by two feet wide, placed six inches apart, and each connected to the next by wires. The boxes were placed in parallel rows, with room enough for a person to step between the rows. I figured that there must be fully forty boxes in each row—in all more than one thousand boxes. I could not see anything else in that vast room.

Examining the Rubies—Explanations of the Project

MY conjectures did not lead me to any plausible explanation of the nature of what I was seeing so I turned to the two men, who were still talking about the precious stones.

The Professor was holding one against the bulb of the electric light.

"These are star rubies," he said with profound conviction. "See the asterism that is so marked in this stone? It is produced by crystals of extreme minuteness parallel to the crystalline axis. I know of only two other rubies as nearly perfect as this one, but they are not so large. One is a Bohemian ruby preserved in the imperial treasury at Vienna; the other one is in Dresden."

"Then you really believe I have something valuable?" asked Wells.

"Something of a remarkable value, I am sure," said the other adding to the words a vigorous shake of his head.

"Hurrah!" exclaimed Wells, and picked from his bag a stone of medium size, which he offered to the Professor, who thanked him warmly.

"I shall be glad to keep it as a rare specimen," he concluded. "And speaking of gems, you will be interested in seeing a beautiful tourmaline that one of my men found while digging for the foundation of the tower."

"Where is it?" Wells inquired.

"In the third building where two of my men have made their quarters. I will take you there. Very likely they are all in by this time." And he started for the door.

He had not reached the middle of the room, when I inquired with a voice that I strove to make indifferent, "Would you mind, professor, telling me what you keep in that room?" The look that Wells sent me clearly indicated that I was guilty of a serious imprudence. But the Professor turned his head, smiling.

"Those are the batteries, the electric batteries that will furnish the current to the thirty towers."

And instead of proceeding toward the door, he walked back to the partition, turned a switch, and illuminated the second room. I noticed then something I had not seen before. That room, besides the rows of boxes, contained a very large bench to which the wires of the batteries ran, and which had a number of electrometers and two very conspicuous switches. I noticed also (and this detail had the most important bearing on the events that succeeded) that the bench ran along the wall, directly under the open window.

"Over there you shift the electric current?" I asked.

"Right," answered the Professor. And he smiled again at my curiosity.

A hundred questions crowded my mind at once; but Wells came to my rescue. Seeing that the Professor was unusually communicative, he thought the time was at hand to try the effect of the story he had concocted for my benefit.

"Professor," he began, endeavoring to make his voice sound indifferent. "I wish you would tell my friend something about your work. I explained it all to him, but I must have done a poor job, because he couldn't make head or tail of my account. You can go into details, because he has some education. He went to college before the mining bug got him. Am I right, Pal?"

I answered with a nod. I was so anxious about the Professor's reaction that I could not utter a word.

Wells noticed my confusion. To save the situation he added:

The Project Is Explained by the Inventor

"OF course, there is one thing he has understood —that you are the greatest genius of this and of any other generation, and that your invention is the most astonishing thing———."

"Now, now," interrupted the Professor, laughing at the earnestness of Wells' enthusiasm. "Let us not exaggerate. I have found nothing new; I have only applied old and well known discoveries to a practical and useful purpose." Then, addressing himself to me, "Young man, do you know much about Roentgen rays?"

Did I know! Before starting on my adventure, I had gone through all the books that could enlighten me on the subject of Professor Matheson's invention. But I answered hesitatingly.

"Well, I remember they are produced by an electrical discharge passed through a tube from which the air has been exhausted."

"Exactly! Now, I have found a new application of these rays. I have found a practical way of electrifying the air of a vast area with a single tube which does not differ much from the one introduced by Porter. There is nothing essentially new in my invention."

"Professor, you are too modest," interrupted Wells.

"I am telling you the truth, and I can prove it. Come over here, and I will show you something."

We returned to the front room. The Professor directed our attention to two spherical glasses, of about six inches in diameter and four feet apart, mounted on pedestals.

"These are the miniatures of the apparatus that I have placed in the towers—nothing but a Porter tube, with one or two changes. As you can see, the cathode is the same: a segment of a hollow sphere. The anti-cathode is also connected with the anode; but instead of platinum or tantalum I use a composition of my invention which is not affected by the extreme heat of the discharge. The tube, instead of being exhausted as usual, contains a gaseous substance, about which I keep silent. And the common induction coil, with a mercury interrupter, produces the discharge. The usual ionization of a gas is due to the splitting up of '*some*' of the atoms of that gas, resulting in the detachment of electrons, constituents of the atoms. Each electron carries a constant negative charge, while the part of the atom that is left behaves like a positive ion, with the units charged positively, but with a mass that is large compared with that of the negative ions. Do you follow me?"

"Yes," I answered, while Wells stared at me to find out if I meant it.

Perhaps my "yes" was not as convincing as it could have been. Even the Professor seemed to have noticed this.

The Artificial Production and Control of Winds

"YOU may not be up to date in the recent researches in this field," he resumed. "But I can tell you now, in one word, what my application is. One of these tubes ionizes the surrounding air, and the positive nuclei are attracted by the second tube which ionizes the air, not with a smaller but with a larger proportion of negative electrons. That is absolutely all."

The Professor stopped as if he had finished. I looked at him in suspense, and Wells kept staring at the Professor and at me with evident confusion. At length Wells spoke.

"But what about the winds?"

"Here, place your hand here," said the inventor, holding the hand of the miner at the level of the Roentgen tubes, and midway between them.

The Professor turned a switch on the table. A bluish glare appeared in both tubes, sparkling, dancing, while the crisp, short discharges sounded in rapid succession. Wells pulled out his hand brusquely.

"I feel a breeze," he exclaimed.

I placed my hand where he had held his, and I, too, felt a gentle breeze blowing against my palm.

"It is the air electrified by the tube on the left, and violently attracted by the tube on the right," explained the Professor. "Here is the basis of my invention."

"And the towers you have erected?"

"They serve to produce this same experiment on a larger scale. Each tower supports a Roentgen tube large enough to ionize the air within a radius of two miles, if my calculations are correct."

"And what do you intend to do with them?" I asked.

"I want to try their maximum efficiency. I have erected thirty towers in this desert, at two mile intervals, covering thus fifty-eight miles, in a straight line across the plains."

"Is the work all done?"

"Yes, it was completed a week ago, but we have had to delay our test until everything and everybody are out of the way. We shall have to demolish all the huts we have built for the workmen, all the small houses you have seen around here, except this one that has been purposely built with massive stone walls and low roof. You see, I must take every precaution, because it is hard to foresee the velocity of the wind that will be produced during the trials. In a couple of days more, all will be cleared away, and all the men and animals will go to a safe place in the canyons. I will remain here with Carter, my chief engineer and will begin the tests."

"Do you need anybody at the towers?"

"No, I have absolute control of them from this house—from that bench in the next room."

We went again into the room of the storage batteries, and I saw again the bench under the open window.

The Mystery Explained—What Wind Can Do

"YOU see these switches?" asked the Professor, pointing to the bench. "With these I regulate the discharge to all the towers."

"And why are you doing all this?" I asked.

"To produce wind, of course."

"Wind?"

"Yes."

"You don't expect to sell wind, do you?"

"I surely do."

"God knows there is plenty of free wind in the world."

"Yes, but not always the kind of wind you want, nor when you want it. If the trials I am going to start here in a couple of days are successful, as I am sure they will be, in five years' time the whole United States will be thickly dotted with my towers, in lines that will run in all directions from the Atlantic to the Pacific, from Canada to Mexico, in innumerable parallel rows that will cover the whole country—and eventually will cover all the other continents, and the whole globe from the poles to the equator."

"Just to make wind?"

"Yes, to produce winds artificially."

"For any practical good?"

"For the greatest good that man ever dreamed," exclaimed the inventor, sweeping the air with both extended arms, and smiling triumphantly. Then he resumed: "When I succeed in forcing at will a current of air from any place to any place, I shall have under my control the winds, and, with the winds, the clouds, and, with the clouds, the rain. Do you see now? I will regulate the seasons. I will regulate the climates. Do you know what that means? It means transforming the earth into a veritable paradise. I will make cold regions warm, pumping hot winds from the south, and I will make hot places cool, sending fresh air from the north. The temperature will be made even throughout the year. Yuma, in Arizona will not roast any more at 120 degrees in the shade, and Havre in Montana will not freeze at 48 degrees below zero."

"But there is more than temperature. Do you know how many people in our country, in the Orient, in Africa, some everywhere, suffer unspeakable tortures for the lack of a little water, and with dried throats pray for months for a cloud from the burning skies—and when at last the cloud, blessed as a deliverer, rises in the horizon, and the rain comes, the little water gathered with great care in wells, in hides, in vases, hot, muddy, noisome and full of microbes, will have to last God knows how long? Those people will cease to suffer. A telegram to my central meteorologic office will cause me to send them from the north all the rain they need, and when they have enough, another telegram—and the clouds will be pumped back and the skies will be clear again."

Weather and Temperature Supplied to Order

"I'LL tell you what you can do, Professor," interrupted Wells. "In the summer, when the people of New York, Chicago, Boston and Philadelphia are prostrated by the heat, you ask them how much they will be willing to give you for every nice cool day. Do the same when the thermometer is going below zero, and you will get your expenses back in less than a year, and pile up a fortune besides."

"There is something in that," I said. "But, Professor, have you figured out what will be the cost of installing your towers everywhere?"

"No, not with accuracy; but I estimate that for the United States alone it will be necessary to invest about two billion dollars."

"Two thousand millions! It is enormous."

"It is; but look here, young man. Do you know the amount of farm produce of this country? Eight and one-half billion dollars a year. I can double that amount. I can more than double the fertility of the country. Even considering the land that is now being cultivated, have you an idea of the economic values of a normal season? Last year on

account of abnormal weather—with frosts in April, and no rain in June and July—the crops were cut practically in two, with a tremendous loss. Yes, the installation of my towers will require a huge capital; but it will pay. It will pay, not in comfort and crops alone, but it will pay in other ways besides. When Siberia as well as the Sahara desert, and Congo as well as Alaska, have perpetual spring, and the peoples of the earth find in the tilling of the soil, where they were born, a sure, unfailing source of wealth, and the differences of climates and products are eliminated, we will see the disappearance of all the other differences that separate nations from nations; and all men, saved from famine and strife, will hasten in harmony on the road of a glorious progress."

"Good!" Wells and I exclaimed.

"And at last we shall realize the dream of all ages. Wars will be made impossible. All the nations will have to obey the verdicts of the International Supreme Court, and no people will dare to rebel. They would have to face my wrath. Do not smile gentlemen. Think how the winds in my hands may become weapons, the most dreadful weapons. The gentle breeze, if I choose, may be turned into a violent storm, and the beneficent rain, if I wish, may become a deluge. Woe to that nation that will dare disturb universal peace! I will thrust upon them with full force my means of destruction, against which whole armies will be powerless—the hurricane!"

"You will be mightier than a king," I exclaimed.

The Earth His Kingdom by His Power Over the Air

"YES, because my kingdom, the air, covering all the kingdoms of the earth, will be as vast as the earth."

The inventor said these words calmly, with his perpetual smile; but the expression of his eyes revealed how well he appreciated the full significance of that assertion.

"Are you sure the apparatus will work?" I inquired.

"I am positive of it. What I am not certain about is the degree of power that it will develop. You see, the problem consists, not only in originating the winds, but also in fighting back the winds that, formed by the difference of atmospheric pressures, may be contrary to my pre-arranged plan. We must be able to develop a current strong enough to win the strongest winds."

"That is to say?"

"In St. Paul, Minnesota, there has been recorded a wind of the velocity of 102 miles an hour, the maximum observed in this country. I expect to reach and surpass that speed, if everything goes well."

"That is a terrific speed," said Wells.

"And the effects are in proportion," added the inventor. "The pressure of a hurricane of 100 miles an hour is 49,200 pounds per square foot. You understand now why I have chosen this desert place for my experiments, and why I must wait to begin the tests until all the wooden houses built by my helpers are demolished, and men and animals sent to a safe distance."

"Professor," I ventured with some hesitancy, "I had planned to go back tonight; but if you would let me, I should like to stay and see your towers work."

"I have no objections; but I warn you there may be some risk, and you must take upon yourself all the responsibility."

"I will," I assented with enthusiasm.

"Now, Professor," interrupted Wells, "you have satisfied my friend's curiosity; I wish you would satisfy mine."

"Oh, about the tourmaline that I told you Andrews keeps in his cabin?"

"Yes."

"Well, let us go there. It is just half past nine. Andrews must be in; perhaps he is in bed already."

We turned off all the lights and went out. The night was balmy, the air still, and the moon high in the sky.

Andrews' cabin was only fifty to sixty steps from the stone house. Nobody was in.

"I know where he keeps that stone," said the Professor. "Come in gentlemen."

We entered. The cabin was not more than nine feet square, and the slanting roof was so low that I could almost reach it with my outstretched arm.

As we entered, the Professor proved his familiarity with the place by finding the electric switch in the dark.

"The powerful batteries we have stored," he explained, "allow us the luxury of a good light. I will find the tourmaline for you, Mr. Wells."

A Catastrophe—Disaster at Large

THE inventor had scarcely ended his sentence, when a sudden roaring noise broke the stillness of the night. The sound clearly resembled the coming of a mighty storm. We looked at one another in great astonishment. The wind was blowing against the back of the cabin with violence. We had to shout at the top of our voices to be heard.

We went to the door, looked outside.

The Professor pointed into the air. The summit of the tower was illuminated. The large glass globe was glittering with green and blue sparks.

I looked at the Professor, and trembled. I had never before seen a like expression of stupor and dismay. He held his head with both hands—then, as if struck by a sudden idea, he made for the open. I caught him by his coat, and pulled him back.

"It is folly to go out," I yelled; but I could not hear my own voice, as the wind, increasing in violence, had increased its roaring.

The Professor, turning quickly, struck me a powerful blow in the chest, then freeing his coat from my grip, leaped toward the stone house.

The Inventor Perishes in the Wind of His Creation

WHAT I had expected happened. The ill-fated man had scarcely taken ten steps, when, once out of protection of the shielding cabin, he was seized by the wind and thrown to the ground. There he struggled frantically, while the wind rolled, knocked and tossed him. A little farther on I saw him stop: perhaps he had succeeded in getting hold of some rock protruding from the sand. I saw him rising again, and then, (the moon was so bright that I could distinguish everything) he was lifted bodily from the ground, as if he

had been a rag, and blown along with such violence that his body struck the wall of the stone house with a terrific impact.

I closed my eyes in horror. But presently I realized the danger that I too was facing. The cabin was about to be smashed; the boards were coming apart. Evidently Wells shared my fears.

What were we to do?

I quickly analyzed the situation. If the towers were in action, the electric power of the storage batteries must have been turned on by something or somebody. The breaking of the current would stop that cyclone and save us from destruction.

But how could we reach the stone house to open the switches when a sally from the cabin meant sure death?

As if he had read that fearful question in my mind, Wells answered it in an unexpected way. He grabbed a rope lying in a corner, and showed it to me. To talk was useless; so he acted. First he counted the rope by arm lengths. I counted at the same time, and figured out that there were fully 75 yards of strong rope, more than the distance from the cabin to the stone house.

Then with gestures, Wells asked me to tie one end of the rope around his body, under his shoulders, as he could not do it himself, because of his inseparable sack of precious gems. To the knots I made, Wells added one more, then took the other end of the rope, passed it around one of the main supporting posts of the hut, pulled until all the rope had passed through, and handed it to me.

His plan was clear. Securely tied he would venture outside, and I would let the rope slide easily until he could reach the stone house.

He lay on the ground, face down, and moving like a turtle, began his perilous journey. I seated myself on the floor, my back to the door, my feet against the boards of the wall, my hands holding the rope.

A Ray of Hope But No More

THIS unexpected chance of salvation gave me such joy that I heard no more of the rushing of the hurricane, nor the cracking of the cabin: all my attention was concentrated on my task of letting the rope slide out inch by inch.

Of a sudden there was a tremendous crash, and I found myself lying on my back with the moonlight shining in my face. The cabin had gone; the rope had slipped out of my hands.

When I recovered from my stupor, I wondered at two things—why I had not been hurt when the cabin went to pieces and why I was still in the same place, not the prey of the devastating wind.

I explained the first by a mere miracle—and the second by looking in the direction of my feet. The sand, blown up in great quantity by the wind, had gathered against the back of the cabin; and now that the cabin was gone, this sand formed a dune, nine feet long and two feet high, which shielded me from the full force of the hurricane.

I decided to take a still safer position. Crawling on my back, I placed myself lengthwise close to the dune. Now I could see the tower and the stone house; but of the half dozen huts I saw not a sign.

I was by no means at ease; the shelter was uncomfortable, and not fully reassuring, but I could do nothing except wait for that inferno to come to a stop.

"The batteries will become exhausted sooner or later," I said to myself, "but when? In an hour, in a day, or in a week?"

With horror, I soon discovered the presence of a more imminent danger. I should say two dangers, one as deadly as the other. I discovered that the height of the little hill of sand was gradually becoming lower, and that the time was not far off when it would become so low that the wind could get its mighty grip on my body.

I discovered also that the sand carried in large clouds by the tornado was accumulating in the hollow where I lay, and threatened to cover me. Of course, I was greatly frightened, yet my mind was clear, and, strange, as it may sound, I immediately began to calculate which of the two deaths would get me first—to be buried alive in the sand, or to be caught by the wind and smashed against the walls of the stone house. I even tried to speculate which of the two was less terrible.

The hurricane now held full sway. It seemed that the whole earth was trembling. The roaring and shrilling and shrieking lacerated my ears. It was like the thundering of a hundred tempests over an infuriated ocean, or the crashing of a cataract a thousand times larger than Niagara.

Now and then, I even seemed to distinguish some special sounds in that unbelievable noise. Yes, there was the discordant dissonance of a million violins and 'cellos played in seven different keys, and accompanied by a gigantic organ with all the pipes wide open. And then it sounded like the moaning of infinite herds caught in a forest fire, and the screams and groans of distress of all the mobs of the world threatened by unavoidable destruction.

The Wind Bridled and Wreaking Destruction

BUT above all this, I heard the enraged voices of the wind—of the wind that, free since the beginning of creation, free to roam over the immensities of the seas, free to dominate over the wild forests, free to speed over the boundless deserts and over the mountain peaks, free to come and go in the infinite vastness of the earth, was feeling now for the first time the touch of the bridle suddenly imposed by the genius of man, and with desperate convulsions was in vain rebelling against that conquering power.

My God! its revolt was horrible beyond words! What was passing above my head? I could not be mistaken; those were bodies of men, of horses and cattle, some tumbling to the ground and rising up again in clouds of sand, then fast disappearing from my sight.

Strange as it may seem, even in the agitation of all my nerves, the magnitude and horror of that scene brought some verses to my memory. I was viewing what Dante saw, in the second Circle of the Inferno, while he was witnessing the punishment of carnal sinners, where:

(*Continued on page* 868)

The TELEPATHIC PICK-UP

By Samuel M. Sargent, Jr.

There sounded a wild scream. Dr. Spaulding leaped upon the machine, gibbering incoherently, and smashed the mechanism into a thousand pieces.

THERE was a strange light in Doctor Spaulding's eyes. His face was immobile, but the lines were set in an expression of jubilance and triumph. "Come on, Brant," he said quietly, "I have something interesting to show you."

With that remark, he wheeled, and strode into the gloom of the hall. I followed, and our footsteps echoed with hollowness in that spacious, blank space.

I had always felt a certain timidity when with Doctor Spaulding. We had been friends for years, and yet strangers. His was a personality which had seemingly been fashioned for dominance over me. I had never been able, in our long acquaintance, to raise my head squarely, and hold the gaze of his eyes. My fount of conversation dried up beneath the queer influence of him, and I was reserved and stumbling in my speech.

I admired, with no malice, his genius—his eccentric and versatile genius that had placed him at the head of his profession, had made him an eminent scientist, and had allowed him to conquer the field of electricity. He had performed, during his career, many marvelous feats of surgery, had made important advances in both astronomy and chemistry, and had given countless electrical inventions to the world. Of late years, he had devoted himself entirely to electrical research.

I had seen him but once in the last year and a half. At that meeting he had hinted to me that he was at work on a radio apparatus that would startle the world.

"It won't be called radio though, Brant," he had told me with a dry, rasping chuckle. "It shall have another name. When it is finished, I shall explain it all first to you."

So when I received his phone call I concluded that he had completed the invention, and I was burning with curiosity as I followed him down the hall.

He turned into the living room. That chamber was no darker, no emptier, and no more gloomy than any other room in his house, but I loathed it even more than the other. For always as I entered, I was brought face to face with a portrait of the doctor's brother, and the tragedy was forcibly recalled to me. It had been many years ago, but time had not dulled it in my friend's mind, nor my own. I could well remember that night, and Tom Spaulding's flight, a jump ahead of the law, because he was wanted for embezzlement of fifty thousand dollars. The disgrace of it had crushed the doctor, and because it was his beloved brother, the blow was even greater. It had aged and changed him, and sent him into the life of a recluse. That it was responsible for his many invaluable discoveries was probable, but not any less regrettable, at least to me. As for Tom Spaulding, we had not heard of him since that night, but perhaps that was just as well, for we learned later that he had sunk to the lowest level of the underworld.

I gave the picture as fleeting a glance as possible, but the doctor stood for a long while gazing up at it. He seemed lost in revery. At last he recovered himself with a start, motioned me to a chair, and turned to the huge mahogany table. He bent over a large, box-like cabinet of dark wood, like and yet unlike the ordinary radio set. He tinkered for a few minutes with the knobs and dials. Then he faced me again.

"This is the invention," he said. "Remember, the last time I saw you I told you I was working on a super-radio? This is it, a telepathy radio. I have succeeded in trapping those elusive emanations—thought-waves. I won't bore you with any explanation of the inner workings of the machine. It is enough that I went to the radio and the seismograph to produce it. I called you so that I could give you a demonstration, as I promised. You are the first person to whom I have shown it. Of course, I have given it a number of tests. It seems to be a success."

His eyes had lighted with ardor, and his voice had risen to an unusual pitch. But almost simultaneously this enthusiasm waned, and his face became very grave.

"You know, Brant," he said slowly. "I have never given up hope of finding Tom. I believe he is still living. I am sure of it. I want to find him. That was the incentive for this invention. I can locate him with this apparatus. That is what I am going to try to do tonight. If he lives, his mind will speak through this loud speaker. You understand the radio. Well, this machine is similar. It must be tuned into the thought-wave length of the man you wish to reach. But the machine must broadcast to receive, that is, the tuning consists of the broadcasting of a key thought. If you were seeking a murderer: you would broadcast some thought concerning the crime, whereupon the receiving section of the machine would draw in every unspoken reflection on it, and convert each into words. If your key thought were something known to many, perhaps published in the papers, the machine would utter a jumble of tones and voices, blurred by one another. It would be a Babel, so many thoughts, each from a different head. But then the operator would continue his broadcasting, thinking into the machine, with these pseudo-receiving phones, varying reflections on the crime, gradually leading to some clue, some phase known only to the police and the criminal. The million voices would instantly dwindle to a dozen or so, whereupon it would be easy to vary the wave-length a millionth part of a hairsbreadth, and so bring in the felon's thoughts, alone and clear. You may see then that I have a very dangerous contraption here, the more so since the mind is un-

THIS gripping story— worthy of a Poe—is based in a degree, upon radio. A machine developed by the hero of the story, can be tuned in to the wave-lengths of any given person's thoughts, thus giving the possessor a wonderful power. And this story, with its tragic termination, tells not only of the possibilities of radio in the future, but also touches on—and elaborates—the fantastic theory that the electric shock sustained by the human system while in the electric chair, does not really kill, but simply puts the victim into a state of unconsciousness with a temporary cessation of organic function. But this is not a mere scientific treatise on the possibilities of the future for radio or capital punishment, it is a story full of human interest, though not without a touch of the ghastly. Anyhow, you will be glad to have read it.

aware that it is being tapped. I could accomplish great evil or great good with it. (But, as I said before, I made it only that I might find Tom, and now I shall make the attempt. There is a key thought that only he can respond to, an incident of our boyhood known, I believe, only to us."

He seated himself at the apparatus and adjusted the head-phones. He became intent, lapsing into a deep study. I sat silent, tense with curiosity and awe. There was a long stillness, broken only by the ticking of the hall clock. The methodical sound of its mechanism so frayed my nerves that I got up, and stopped it. Then I tiptoed back to my seat. Dr. Spaulding had not noticed my move.

Presently, with an abruptness that made me start, the loud speaker began to utter sounds. The doctor removed his headpiece, and we leaned forward tautly. The sounds were unintelligible at first. Then they became clear.

"It's Tom," murmurd the doctor, as he recognized the voice, and he looked happy for the first time in years.

"Dawn is coming," said the machine. "The first hint of light. Oh God!"

There came a confusion of sounds, a jumble of incoherent words, then clearly:

"Here they come. I see the guards and the priest. Oh God! They are coming! They are coming!

"They walk so slowly, so solemnly. The guards and the priest. He is in his robe. I see his crucifix. It is swaying on its chain as he walks. The heels are beating so regularly. So perfectly in time. Oh God! The guards. They look grim, grim as the law! Law! It is law! There is no escape. Can I beat them down? The window. The door. A gun. Rush them when they open the door. They'll kill me. Kill me! The chair!"

The doctor's face had gone white and drawn. He seemed turned to stone. His fingers were tight. The machine went on in its monotonous monotone.

"A rat is watching. Its eyes are bright. It is a gray rat. How long its nose is. Long and sharp. It is laughing. There. The key is turning. How slowly it grits. The bolt is drawn. The door is opening. It is opening slowly, so slowly. How gray everything is. How strange they look. The chair! There is no chance. Is there a chance? A chance? They are in . . . in a group. The guards have many buttons, one, two, three. The priest: how deep his eyes are. His face is very grave. He is talking. The rat is watching. Its eyes are bright, so bright. God save me!"

The sounds became incoherent and jangling. The doctor had not moved. The voice became audible again:

"Now, walk, walk, walk. Click, click, click. Guards, so grim. I'll run. Useless. There's so much steel. Steel everywhere. I'm caught. I'm caught in the steel. The chair! Death! What will it be? Will it hurt? I must be quiet. I must not tremble. I must be brave. Walk, walk, walk. Now the little door. We are going through. The chamber. How gray it is. Who are these men? There is a crowd. They are grim and sober. Some are white, and trembling. I am trembling. I must be brave. I must smile. But I am going to die! How silent it is. Oh God!

"They are strapping me into the chair. I am putty. They are strapping me in. It is cold—so cold. I must be brave. I must smile and joke. But I am going to die. How still it is. They have strapped me in. He has his hand on a lever. He is waiting to kill me. The current is going to be shot. God save me! It is cold. It is so dim. His hand is moving the lever—

"Oh Christ! Christ! I am bruised. I am burning. I am burning up. Oh God! . . . Now I am numb. My flesh is sizzling and burning. I can feel it. I am writhing in the chair. But it doesn't hurt now. I can't move. My muscles won't move. I can't close my eyes. My mouth is dropped open. My jaws won't move. Am I paralyzed? Am—am I . . . dead? Dead? No. Everything is the same. I can't be dead. The doctor is examining me. He says, 'I pronounce this man dead.'"

There was a pause. The doctor had not moved a muscle. His face was the hue of the grave. His eyes were indescribable, frozen.

He had not seized the significance of the last words, apparently, but I had. In spite of the horror. I was sunk in, I realized that a theory of Dr. Spaulding's had been proven.

It was fully ten years since the doctor had aroused much interest with his attack on the use of the electric chair. It was his theory that in no case did electricity actually kill—that it merely brought on a paresis that simulated death, striking dormant the entire organism. He had cited instances of men struck by lightning, who had recovered, after many days, of total paralysis during which they retained only sight, hearing, and consciousness. Strange it was, and hideous, that tonight the doctor's own brother was proving the theory. The machine spoke again:

"The fool. He says I am dead. The fool. I wish I could talk. I would call him a fool. I would laugh at him. But I can't move.

"The men are leaving. The guards are unstrapping me. They catch me as I fall. They are taking me out, through the little door. They are taking me down a long hall.

"I would like to shout at them. They think I am dead.

"The numbness has gone. I can feel their hands holding me. I can feel more intensely than before.

"They are carrying me into a room. What are they going to do? My God, are they going to bury me? No, it is the prison hospital. They are going to bring me to life. Thank the good God! They lay me on a table, the guards. But are they the guards? They act differently. Never mind.

"Ah, the surgeon is preparing to bring me to life. He is getting some instruments. He has a chisel or a saw or something in his hand. He is leaning above——

"Oh Christ! Oh bleeding Jesus! He is cutting my head——"

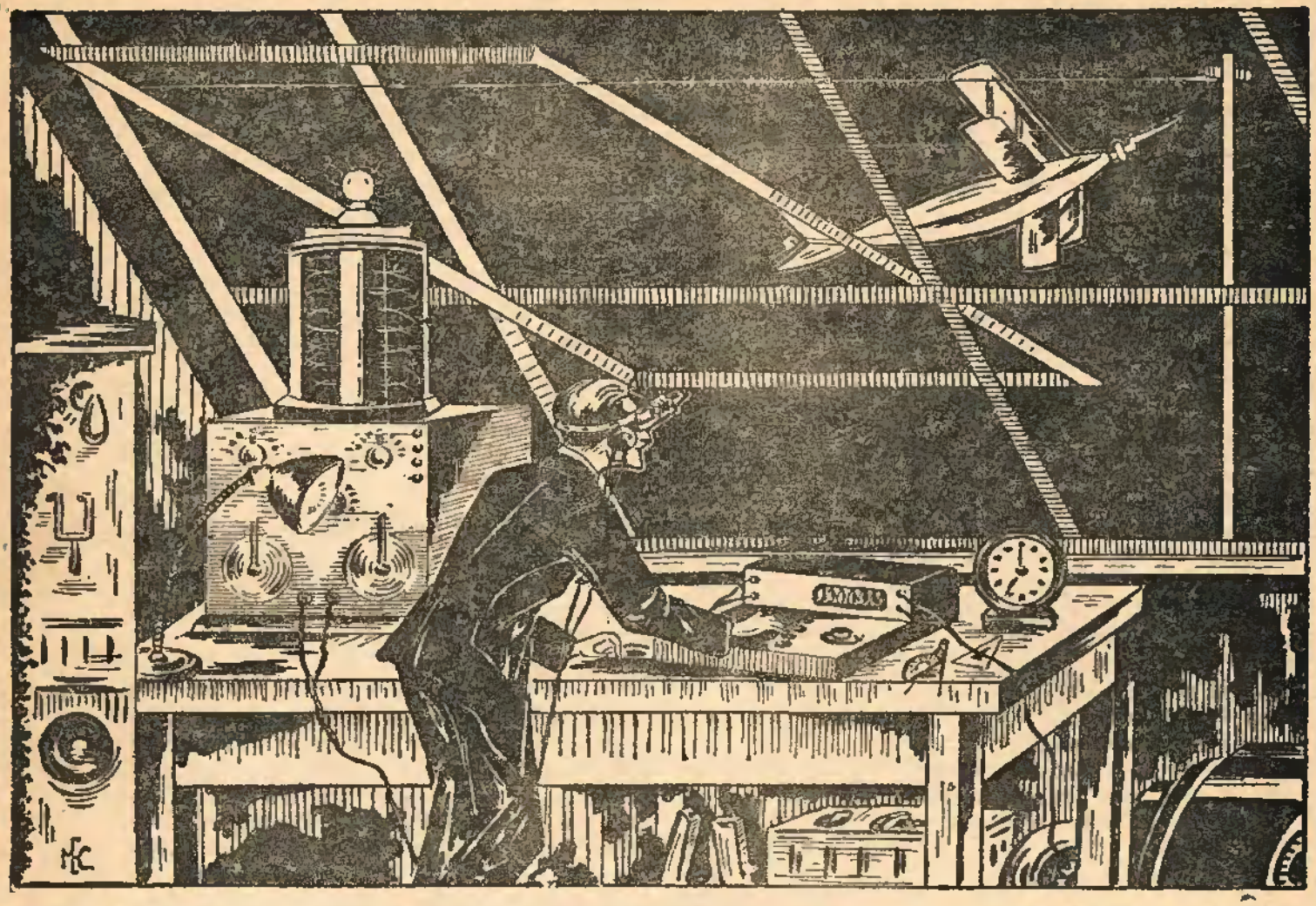
There sounded a wild scream. Dr. Spaulding leaped upon the machine, gibbering incoherently, and smashed the mechanism into a thousand pieces.

THE END

The EDUCATED HARPOON

By Charles S. Wolfe

Author of "Whispering Ether"



"There are at least a dozen new ideas involved here, and new applications of hundreds of old ones. Under the spur of a great emotion—REVENGE—this man has produced a thing of terrible possibilities."

THE Chief of Police gave me a hostile questioning stare. I'm not exceptionally quick-witted, but I don't have to be hit with a club in order to grasp an idea. I rose instantly. "Something tells me I am *de trop*," I murmured.

My friend put out a protesting hand. "Sit down, you touchy ass," he said. "Chief, this man is a particular friend of mine. You can safely say anything in his presence. It will go no farther."

Undecided whether to go or stay, I hesitated. The Chief smiled sourly. "Oh, it's all right, Mister, if Joe here says so. But forget anything you hear, get me? We can't afford leaks."

Joe saw that I intended to go, and he crossed and forced me back into my chair. "Don't mind the Chief, Bill," he said, laughingly, "for he has an inherently suspicious disposition. Now then, Chief, what is troubling you?"

I gasped. I knew Joe Fenner as a fellow student, wireless telegraph enthusiast and scientific dabbler. A mighty likable, but not extraordinary, sort of fellow. To find him on terms of intimacy—to say nothing of equality—with the Chief of our city's police force was astounding. Personally, I've always had a little fear of policemen, a relic of boyhood days and pranks. Apparently the kingbee of the whole clan had no terrorizing influence on Joe.

The Chief dropped wearily into the nearest chair. "You'll have to pardon me, friend," he growled at me, "I'm a little short on manners at the best of times, and this thing is getting on my nerves. Joe," turning to Fenner, "I want you to help us again."

I turned a mental somersault. The Chief of Police addressing my chum as Joe. Asking him to help them—again. Ye Gods! Was my seemingly commonplace chum a detective?

OUR author Chas. S. Wolfe seems at home with murders and the police. He has a special talent in bringing a mystery before us and in picturing some of the efforts of the ordinary mind, solving it and then in his own gripping way developing all the details so as to bring the story to a conclusion which is a revelation of a mystery. Here is a mysterious stabbing, no weapon to be seen or found, the ingress and regress of the murderer a profound mystery, and we almost fear the very name of the story tells too much, but we know our readers will find plenty of suspense in its text.

The Chief was speaking. "There was a man killed in the Atwood building an hour ago. I've just come from there."

My face must have reflected the varying emotions that this statement produced within me, but Joe's countenance remained passive. "Murdered," he asked quietly. "How?"

"Stabbed in the back." The Chief might have been saying "Please pass the potatoes," for all the feeling expressed in his tones.

Joe shrugged his shoulders. "I don't think you want me, then," he said. "It's out of my line."

"Yes, you'd think so," agreed the Chief, "if it wasn't for the peculiar circumstances surrounding the crime."

"Peculiar circumstances? What's peculiar about them, anyway, Chief?" queried Joe.

"Well, for one thing, we can't find the knife, or whatever it was that he was stabbed with."

"Murderer took it away with him," suggested Fenner.

The Chief's face took on a pained look. "Maybe he did," he said, wearily, "only—there's no possible way he could get in to stab the man in the first place, and no way that he could get out after he had stabbed him in the second place. And in the third place the crime simply couldn't have been committed at all, but it was. And there you are."

"Chief, you talk through your hat," reproved the amazing Fenner with astounding disregard of the deference due one in the Chief's position. "There must be a perfectly simple way in which some one got into the place and away again."

The Chief arose. "My car's outside," he said. "Come along down and have a look."

As Fenner hesitated I took my cue. "I'll ride along as far as my house if you don't mind," I said.

"You'll ride along and have a look with me" said Fenner, warmly. "I know you're just as curious as I am to get a look at the scene of this remarkable crime."

The Chief was almost friendly. "Yes," he invited, "come along. It's possible that an outsider might see something that we've all missed and you can't do any harm."

Nothing loath, I accepted the invitation and rode down to the Atwood Building in the tonneau with Fenner. The Chief was busy driving and I managed to whisper to Fenner, "When did you get such a pull with the police?"

He gave an amused laugh. "Oh, I answer technical questions for them occasionally. My chief asset is the fact that few know that I have any interest in these affairs at all. You'll be a clam, I know."

The car stopped in front of the Atwood just then and I had no chance to question him further.

The Atwood was one of our skyscraper office buildings. The Chief entered the corridor, steered us into an elevator and we were whisked aloft. "Sixteenth floor," grunted the Chief to the operator, and we stepped out into the corridor on that story.

Following Chief Davidson, we came to a suite of offices, the frosted glass on the door bearing the legend, "Corey & Co., General Offices." "Phew!" gasped Fenner. "Who was it? Not——?"

Davidson paused with his hand on the knob. "Yes, it was. Old John Corey and you can guess the commotion this'll make."

He flung open the door, and we filed in. The policeman on guard touched his cap in salute to his superior. We were in an outer office. Several desks were arranged around the room, and at one of them three girls huddled in a scared little group. One was sobbing softly. I noticed a man with his back toward us, looking out the window into space, apparently.

Paying no attention to the occupants of this room, Davidson strode across to a door marked "John Corey, Private." Opening it, he paused on the threshold. Fenner and I crowded at his back. Over his shoulder I could see into the inner office. A man, clad in a grey suit, was on the floor on his hands and knees. He looked up quickly.

"Come ahead," he said to the Chief, "you can't spoil any marks. There's nothing to spoil."

We entered.

Seated at a desk in the center of the room was a man. His head rested on the flat top of the desk, his arms flung forward before him. Davidson nodded toward him. "Just as he was found," he said, simply. It was my first sight of violent death.

Horror, or some other violent emotion, making my heart throb jerkily, I moved forward with Fenner, and looked down at the corpse.

A glance at the bowed back told the tale. The coat was soaked with blood, which had welled from a gaping wound below the left shoulder blade. I'll never tell you why I didn't faint. I wanted to.

Fenner turned to the man in grey. "What have you learned, Frank?" he asked.

Frank, who was evidently a detective, shook his head gloomily. "Nothing," he replied, "except what you see. He's been stabbed, that's evident, and whoever did it took the weapon away with him. But how he got in here, and how he got out, God alone knows. I've been over this floor on my hands and knees with a microscope. There's not a mark. Not a foot print in the dust, except those made by Corey himself. Nothing. Not a finger print on the walls, on the desk, on the body, on the floor, on the door knob—inside or out—not anywhere. It's beyond me."

"Couldn't come in through the outer office, eh?" Fenner's eyes were roving over the room. Frank shook his head slowly in negation. "Three girls and the head bookkeeper out there all evening, working overtime. All swear not one of them has been in this room this evening. Corey came in through the outer office—the only way he could come in, for this office has only the one entrance—and closed the door. About half past eight one of the girls opened the door to come in. She saw that something had happened to Corey, and she didn't cross the threshold. All of them had sense enough to stay out. They telephoned for us. I was the first man in."

"No other doors?"

"Nope. Only one way in. Through that office."

Fenner was gazing at the wall on the street side. "Did you open that window?" he asked.

"No. It was open. But it might as well have been bricked up for all the good it's going to do us. Corey opened it himself, no doubt. It's just sixteen stories to the street, and you can bet no one climbed up to it. It's five stories to the roof. One chance in one thousand that any one climbed down. It would take nerves of steel to drop over the edge on

a rope, and if some one did have the nerve, he couldn't have gotten in by that window noiselessly enough not to warn Corey. And just assuming that he did, he'd surely leave a mark doing it, wouldn't he?"

Fenner nodded. "He certainly would," he acquiesced. "How about the people in the office out there? Are they all above suspicion?"

"All above it," complained Frank, "and not only that, but the very number of them lets them out without question. It's not reasonable to suppose that three girls and a man, all trusted employees, would conspire to kill their employer without a motive for doing so. One of them might try it, or maybe even two, but it's hardly likely that all four would be against the man."

"Right you are," admitted Fenner, "I thought that way myself, but we have to eliminate the possibility of an inside job first. Well, Chief, I don't see that I can do you any good in this matter. It is unusual enough to be interesting, and if you don't mind I'll drop in and have a look around in the morning."

"Help yourself," gloomed Davidson. "I don't believe you can do anything in this case myself. I just took a chance. You might have, you know."

"I wish that I could have. And I'll look it over in the morning on the off chance. Good night, Frank, and good luck. Good night, Chief. Come on, Bill," and we left.

As we walked homeward, Fenner said: "It seems that the days of miracles are not gone by, after all. What do you think of that for a puzzle?"

"It's beyond me," I replied, soberly. "The only possible explanation that I can think of is that the man committed suicide."

Joe stood still and rocked with laughter. "Oh, Bill, Bill," he gasped, "there's only one man in a million—yes, I'll make it a billion—that commits suicide by stabbing himself in the back, to say nothing of calmly disposing of the weapon just after he's dead."

"Well, then," I demanded, sullenly, "how do you account for the thing?"

He grew thoughtful at once. "I can't," he admitted, "unless——"

"Unless what?" I asked, as he paused.

"Unless—unless—well, I wouldn't want to say unless anything just now. Would you like to go down with me again tomorrow morning?".

"I certainly would," I rejoined, instantly. "This thing's got my goat."

"All right, then. I'll stop for you on my way down."

I lay awake for hours trying to figure out how the thing could have been done. There didn't seem to be a plausible explanation. If the facts in the case had been handed to me as a sort of a puzzle, I would have said that it simply couldn't be done. And yet—there was the dead man.

Eventually I gave it up and fell into a restless slumber.

* * * * * * * * *

Next morning Fenner called for me as arranged. "Well," he asked, cheerfully, "have you solved the mystery over night?"

"No," I said. "It seems more baffling than ever after a night's thought. Have you found the answer?"

"Not yet. Do you happen to have a good pair of field glasses?"

I had, and I produced them. "That's fine," said Fenner after carefully examining them. "Let's go."

We had no trouble getting into Corey's offices. The body had been removed, and practically all traces of the tragedy had disappeared.

Fenner dropped into the chair which so lately had been used by the hapless victim. As he sat at the desk his back was to the window, which had been closed.

"Well," he mused, "how was this man killed? If this chair could only talk. Suppose I was across the street in another building. Ah! Say I'm an old whaler. I have a harpoon and a coil of rope. The window is open in this office. That broad back is a fine target ——. Bill, look out that window and see if I couldn't do it."

I turned to Fenner, and in my most sarcastic tones I said: "You could, Joe, if you had an educated harpoon. After you threw it, it would pause cannily in mid-air, turn at an angle of forty-five degrees, leap agilely up about six stories, make another forty-five degree turn, slide gracefully through the window, and——."

But Fenner was on his feet and beside me. His face was grave, but his eyes twinkled. "Sufficient, William," he said, "your sarcasm is excellent, but I'm too busy to listen to the rest of it. Let's have those field glasses."

Ten minutes passed. I began to grow fidgety, when he suddenly handed the glasses to me. "Bill," he said, "do you see that building out there—the one that appears to be as high as this one?"

"I do," I replied. "That could only be the Yeakle. It and the Atwood are the two tallest buildings we have."

"Well, look it over carefully, and tell me if you make out a clothes line on the roof."

I gazed. At first I didn't see one, but presently I located it. I told Fenner that there was undoubtedly a clothes line there.

"So I thought," he said, absently. "Well—let's call Davidson over here. It's up to him now."

I stared, amazed. "Up to him," I parroted. "What's up to him?"

"The arrest of the murderer," said Fenner, rather impatiently. "You're on to the thing, aren't you?"

"Do you mean that you know who killed Corey?" I asked, excitedly, as Fenner reached for the telephone.

He paused with his hand on the receiver. "No, I don't. But I know what he was killed with—and Davidson will find out the rest."

"Well," I demanded, "what was he killed with?"

Fenner called a number into the 'phone and gave me a sweet smile over his shoulder as he waited. "That chunk of clothes line, and——" he grew exceedingly sarcastic, "an educated harpoon."

Nor would he say more until Davidson, with Frank at his heels, burst into the room seething with excitement.

"What's this, Joe," panted the Chief. "Find something? Got anything?"

Joe leaned back in his chair, and I saw that he was enjoying himself immensely. "Yes, Chief," he said, cheerfully, "I know what Corey was killed with."

The Chief darted a fiery glance at Frank. "And

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The DIAMOND LENS

By Fitz-James O'Brien

Author of "The Wondersmith"

While Simon was relating this to me, I regarded the great diamond attentively. Never had I beheld anything so beautiful. All the glories of light, ever imagined or described, seemed to pulsate in its crystalline chambers. Its weight, as I learned from Simon, was exactly one hundred and forty carats.

CHAPTER I

The Bending of the Twig

FROM a very early period of my life the entire bent of my inclinations had been towards microscopic investigations. When I was not more than ten years old, a distant relative of our family, hoping to astonish my inexperience, constructed a simple microscope for me, by drilling in a disk of copper a small hole, in which a drop of pure water was sustained by capillary attraction. This very primitive apparatus, magnifying some fifty diameters, presented, it is true, only indistinct and imperfect forms, but still sufficiently wonderful to work up my imagination to a preternatural state of excitement.

Seeing me so interested in this rude instrument, my cousin explained to me all that he knew about the principles of the microscope, related to me a few of the wonders which had been accomplished through its agency, and ended by promising to send me one regularly constructed, immediately on his return to the city. I counted the days, the hours, the minutes, that intervened between that promise and his departure.

Meantime I was not idle. Every transparent substance that bore the remotest resemblance to a lens I eagerly seized upon, and employed in vain attempts to realize that instrument, the theory of whose construction I as yet only vaguely comprehended. All panes of glass containing those oblate spheroidal knots familiarly known as "bull's eyes" were ruthlessly destroyed, in the hope of obtaining lenses of marvellous power. I even went so far as to extract the crystalline humor from the eyes of fishes and animals, and endeavored to press it into the microscopic service. I plead guilty to having stolen the glasses from my Aunt Agatha's spectacles, with a dim idea of grinding them into lenses of wondrous magnifying properties,—in which attempt it is scarcely necessary to say that I totally failed.

THIS classic, by the famous author, is not as widely known as it deserves to be. The story is a masterpiece from every angle, although it was written over fifty years ago. There is no question that Mr. O'Brien must have been an expert on microscopy, because only a master could go into the details as he does in this story.

The theme, while fantastic, is beautiful in its extreme, and the advent of the ultra-microscope, invented long after O'Brien had died, lends new color to this story, which can be read and re-read many times—a story that will stand out from many others for generations to come.

A Real Microscope at Last

AT last the promised instrument came. It was of that order known as Field's simple microscope, and had cost perhaps about fifteen dollars. As far as educational purposes went, a better apparatus could not have been selected. Accompanying it was a small treatise on the microscope,—its history, uses, and discoveries. I comprehended then for the first time the "Arabian Nights Entertainments." The dull veil of ordinary existence that hung across the world seemed suddenly to roll away, and to lay bare a land of enchantments. I felt towards my companions as the seer might feel towards the ordinary masses of men. I held conversations with nature in a tongue which they could not understand. I was in daily communication with living wonders, such as they never imagined in their wildest visions. I penetrated beyond the external portal of things, and roamed through the sanctuaries. Where they beheld only a drop of rain slowly rolling down the window-glass, I saw a universe of beings animated with all the passions common to physical life, and convulsing their minute sphere with struggles as fierce and protracted as those of men. In the common spots of mould, which my mother, good housekeeper that she was, fiercely scooped away from her jam pots, there abode for me, under the name of mildew, enchanted gardens, filled with dells and avenues of the densest foliage and most astonishing verdure, while from the fantastic boughs of these microscopic forests hung strange fruits glittering with green, and silver, and gold.

It was no scientific thirst that at this time filled my mind. It was the pure enjoyment of a poet to whom a world of wonders had been disclosed. I talked of my solitary pleasures to none. Alone with my microscope, I dimmed my sight, day after day and night after night, poring over the marvels which it unfolded to me. I was like one who, having discovered the ancient Eden still existing in all its primitive glory, should resolve to enjoy it in solitude, and never betray to mortal the secret of its locality. The rod of my life was bent at this moment. I destined myself to be a microscopist.

He Imagines Himself a Discoverer

OF course, like every novice, I fancied myself a discoverer. I was ignorant at the time of the thousands of acute intellects engaged in the same pursuit as myself, and with the advantage of instruments a thousand times more powerful than mine. The names of Leeuwenhoek, Williamson, Spencer, Ehrenberg, Schultz, Dujardin, Schact, and Schleiden were then entirely unknown to me, or if known, I was ignorant of their patient and wonderful researches. In every fresh specimen of cryptogamia which I placed beneath my instrument I believed that I discovered wonders of which the world was as yet ignorant. I remember well the thrill of delight and admiration that shot through me the first time that I discovered the common wheel animalcule (*Rotifera vulgaris*) expanding and contracting its flexible spokes, and seemingly rotating through the water. Alas! as I grew older, and obtained some works treating of my favorite study, I found that I was only on the threshhold of a science to the investigation of which some of the greatest men of the age were devoting their lives and intellects.

As I grew up, my parents, who saw but little likelihood of anything practical resulting from the examination of bits of moss and drops of water through a brass tube and a piece of glass, were anxious that I should choose a profession. It was their desire that I should enter the counting-house of my uncle, Ethan Blake, a prosperous merchant,

who carried on business in New York. This suggestion I decisively combated. I had no taste for trade; I should only make a failure; in short, I refused to become a merchant.

But it was necessary for me to select some pursuit. My parents were staid New England people, who insisted on the necessity of labor; and therefore, although, thanks to the bequest of my poor Aunt Agatha, I should, on coming of age, inherit a small fortune sufficient to place me above want, it was decided that, instead of waiting for this, I should act the nobler part, and employ the intervening years in rendering myself independent.

Selecting a Profession

AFTER much cogitation I complied with the wishes of my family, and selected a profession. I determined to study medicine at the New York Academy. This disposition of my future suited me. A removal from my relatives would enable me to dispose of my time as I pleased without fear of detection. As long as I paid my Academy fees, I might shirk attending the lectures if I chose; and, as I never had the remotest intention of standing an examination, there was no danger of my being "plucked." Besides, a metropolis was the place for me. There I could obtain excellent instruments, the newest publications, intimacy with men of pursuits kindred with my own,—in short, all things necessary to insure a profitable devotion of my life to my beloved science. I had an abundance of money, few desires that were not bounded by my illuminating mirror on one side and my object-glass on the other; what, therefore, was to prevent my becoming an illustrious investigator of the veiled worlds? It was with the most buoyant hope that I left my New England home and established myself in New York.

CHAPTER II

The Longing of a Man of Science

MY first step, of course, was to find suitable apartments. These I obtained, after a couple of days' search, in Fourth Avenue; a very pretty second-floor unfurnished, containing sitting-room, bed-room, and a smaller apartment which I intended to fit up as a laboratory. I furnished my lodgings simply, but rather elegantly, and then devoted all my energies to the adornment of the temple of my worship. I visited Pike, the celebrated optician, and passed in review his splendid collection of microscopes,—Field's Compound, Hingham's, Spencer's, Nachet's Binocular (that founded on the principles of the stereoscope), and at length fixed upon that form known as Spencer's Trunnion Microscope, as combining the greatest number of improvements with an almost perfect freedom from tremor. Along with this I purchased every possible accessory,—draw-tubes, micrometers, a *camera-lucida*, lever-stage, achromatic condensers, white cloud illuminators, prisms, parabolic condensers, polarizing apparatus, forceps, aquatic boxes, fishing-tubes, with a host of other articles, all of which would have been useful in the hands of an experienced microscopist, but, as I afterwards discovered, were not of the slightest present value to me. It takes years of practice to know how to use a complicated microscope. The optician looked suspiciously at me as I made these wholesale purchases. He evidently was uncertain whether to set me down as some scientific celebrity or a madman. I think he inclined to the latter belief. I suppose I was mad. Every great genius is mad upon the subject in which he is greatest. The unsuccessful madman is disgraced and called a lunatic.

At Last Some Real Discoveries Are Made

MAD or not, I set myself to work with a zeal which few scientific students have ever equalled. I had everything to learn relative to the delicate study upon which I had embarked,—a study involving the most earnest patience, the most rigid analytic powers, the steadiest hand, the most untiring eye, the most refined and subtile manipulation.

For a long time half my apparatus lay inactively on the shelves of my laboratory, which was now most amply furnished with every possible contrivance for facilitating my investigations. The fact was that I did not know how to use some of my scientific implements,—never having been taught microscopics,—and those whose use I understood theoretically were of little avail, until by practice I could attain the necessary delicacy of handling. Still, such was the fury of my ambition, such the untiring perseverance of my experiments, that, difficult of credit as it may be, in the course of one year I became theoretically and practically an accomplished microscopist.

During this period of my labors, in which I submitted specimens of every substance that came under my observation to the action of my lenses, I became a discoverer,—in a small way, it is true, for I was very young, but still a discoverer. It was I who destroyed Ehrenberg's theory that the *Volvox globator* was an animal, and proved that his "monads" with stomachs and eyes were merely phases of the formation of a vegetable cell, and were, when they reached their mature state, incapable of the act of conjugation, or any true generative act, without which no organism rising to any stage of life higher than vegetable can be said to be complete. It was I who resolved the singular problem of rotation in the cells and hairs of plants into ciliary attraction, in spite of the assertions of Mr. Wenham and others, that my explanation was the result of an optical illusion.

But notwithstanding these discoveries, laboriously and painfully made as they were, I felt horribly dissatisfied. At every step I found myself stopped by the imperfections of my instruments. Like all active microscopists, I gave my imagination full play. Indeed, it is a common complaint against many such, that they supply the defects of their instruments with the creations of their brains. I imagined depths beyond depths in nature which the limited power of my lenses prohibited me from exploring. I lay awake at night constructing imaginary microscopes of immeasurable power, with which I seemed to pierce through all the envelopes of matter down to its original atom. How I cursed those imperfect media which necessity through ignorance compelled me to use! How I longed to discover the secret of some perfect lens, whose magnifying power should be limited only

by the resolvability of the object, and which at the same time should be free from spherical and chromatic aberrations, in short from all the obstacles over which the poor microscopist finds himself continually stumbling! I felt convinced that the simple microscope, composed of a single lens of such vast yet perfect power was possible of construction. To attempt to bring the compound microscope up to such a pitch would have been commencing at the wrong end; this latter being simply a partially successful endeavor to remedy those very defects of the simple instrument, which, if conquered, would leave nothing to be desired.

Working On the Manufacture of Microscopes

IT was in this mood of mind that I became a constructive microscopist. After another year passed in this new pursuit, experimenting on every imaginable substance,—glass, gems, flints, crystals, artificial crystals formed of the alloy of various vitreous materials,—in short, having constructed as many varieties of lenses as Argus had eyes, I found myself precisely where I started, with nothing gained save an extensive knowledge of glass-making. I was almost dead with despair. My parents were surprised at my apparent want of progress in my medical studies, (I had not attended one lecture since my arrival in the city,) and the expenses of my mad pursuit had been so great as to embarrass me very seriously.

I was in this frame of mind one day, experimenting in my laboratory on a small diamond,—that stone, from its great refracting power, having always occupied my attention more than any other,—when a young Frenchman, who lived on the floor above me, and who was in the habit of occasionally visiting me, entered the room.

In Search of a Diamond Microscope Lens

I THINK that Jules Simon was a Jew. He had many traits of the Hebrew character: a love of jewelry, of dress, and of good living. There was something mysterious about him. He always had something to sell, and yet went into excellent society. When I say sell, I should perhaps have said peddle; for his operations were generally confined to the disposal of single articles,—a picture, for instance, or a rare carving in ivory, or a pair of duelling-pistols, or the dress of a Mexican *caballero*. When I was first furnishing my rooms, he paid me a visit, which ended in my purchasing an antique silver lamp, which he assured me was a Cellini,—it was handsome enough even for that,—and some other knickknacks for my sitting-room. Why Simon should pursue this petty trade I never could imagine. He apparently had plenty of money, and had the *entrée* of the best houses in the city,—taking care, however, I suppose, to drive no bargains within the enchanted circle of the Upper Ten. I came at length to the conclusion that this peddling was but a mask to cover some greater object, and even went so far as to believe my young acquaintance to be implicated in the slave-trade. That, however, was none of my affair.

On the present occasion, Simon entered my room in a state of considerable excitement.

"*Ah! mon ami!*" he cried, before I could even offer him the ordinary salutation, "it has occurred to me to be the witness of the most astonishing things in the world. I promenade myself to the house of Madame—— How does the little animal —*le renard*—name himself in the Latin?"

A Spiritualistic Medium

"VULPES," I answered.

"Ah! yes.—Vulpes. I promenade myself to the house of Madame Vulpes."

"The spirit medium?"

"Yes, the great medium. Great heavens! what a woman! I write on a slip of paper many questions concerning affairs the most secret,—affairs that conceal themselves in the abysses of my heart the most profound; and behold! by example! what occurs? This devil of a woman makes me replies the most truthful to all of them. She talks to me of things that I do not love to talk of to myself. What am I to think? I am fixed to the earth!"

"Am I to understand you, M. Simon, that this Mrs. Vulpes replied to questions secretly written by you, which questions related to events known only to yourself?"

"Ah! more than that, more than that," he answered, with an air of some alarm. "She related to me things— But," he added, after a pause, and suddenly changing his manner, "why occupy ourselves with these follies? It was all the biology, without doubt. It goes without saying that it has not my credence.—But why are we here, *mon ami?* It has occurred to me to discover the most beautiful thing as you can imagine,—a vase with green lizards on it, composed by the great Bernard Palissy. It is in my apartment; let us mount. I go to show it to you."

I followed Simon mechanically; but my thoughts were far from Palissy and his enamelled ware, although I, like him, was seeking in the dark a great discovery. This casual mention of the spiritualist, Madame Vulpes, set me on a new track. What if this spiritualism should be really a great fact? What if, through communication with more subtile organisms than my own, I could reach at a single bound the goal, which perhaps a life of agonizing mental toil would never enable me to attain?

While purchasing the Palissy vase from my friend Simon, I was mentally arranging a visit to Madame Vulpes.

CHAPTER III

The Spirit of Leeuwenhoek

TWO evenings after this, thanks to an arrangement by letter and the promise of an ample fee, I found Madame Vulpes awaiting me at her residence alone. She was a coarse-featured woman, with keen and rather cruel dark eyes, and an exceedingly sensual expression about her mouth and under jaw. She received me in perfect silence, in an apartment on the ground floor, very sparely furnished. In the centre of the room, close to where Mrs. Vulpes sat, there was a common round mahogany table. If I had come for the purpose of sweeping her chimney, the woman could not have looked more indifferent to my appearance. There was no attempt to inspire the visitor with awe. Everything bore a simple and practical aspect.

This intercourse with the spiritual world was evidently as familiar an occupation with Mrs. Vulpes as eating her dinner or riding in an omnibus.

"You come for a communication, Mr. Linley?" said the medium, in a dry, business-like tone of voice.

"By appointment,—yes."

"What sort of communication do you want?—a written one?"

"Yes,—I wish for a written one."

"From any particular spirt?"

"Yes."

"Have you ever known this spirit on this earth?"

"Never. He died long before I was born. I wish merely to obtain from him some information which he ought to be able to give better than any other."

"Will you seat yourself at the table, Mr. Linley," said the medium, "and place your hands upon it?"

I obeyed,—Mrs. Vulpes being seated opposite to me, with her hands also on the table. We remained thus for about a minute and a half, when a violent succession of raps came on the table, on the back of my chair, on the floor immediately under my feet, and even on the windowpanes. Mrs. Vulpes smiled composedly.

"They are very strong to-night," she remarked. "You are fortunate." She then continued, "Will the spirits communicate with this gentleman?"

Vigorous affirmative.

"Will the particular spirit he desires to speak with communicate?"

A very confused rapping followed this question.

"I know what they mean," said Mrs. Vulpes, addressing herself to me; "they wish you to write down the name of the particular spirit that you desire to converse with. Is that so?" she added, speaking to her invisible guests.

That it was so was evident from the numerous affirmatory responses. While this was going on, I tore a slip from my pocket-book, and scribbled a name, under the table.

"Will this spirit communicate in writing with this gentleman?" asked the medium once more.

After a moment's pause, her hand seemed to be seized with a violent tremor, shaking so forcibly that the table vibrated. She said that a spirit had seized her hand and would write. I handed her some sheets of paper that were on the table, and a pencil. The latter she held loosely in her hand, which presently began to move over the paper with a singular and seemingly involuntary motion. After a few moments had elapsed, she handed me the paper, on which I found written, in a large, uncultivated hand, the words, "He is not here, but has been sent for." A pause of a minute or so now ensued, during which Mrs. Vulpes remained perfectly silent, but the raps continued at regular intervals. When the short period I mention had elapsed, the hand of the medium was again seized with its convulsive tremor, and she wrote, under this strange influence, a few words on the paper, which she handed to me. They were as follows:—

"I am here. Question me.

"LEEUWENHOEK."

I was astounded. The name was identical with that I had written beneath the table, and carefully kept concealed. Neither was it at all probable that an uncultivated woman like Mrs. Vulpes should know even the name of the great father of microscopics. It may have been biology; but this theory was soon doomed to be destroyed. I wrote on my slip—still concealing it from Mrs. Vulpes—a series of questions, which, to avoid tediousness, I shall place with the responses, in the order in which they occurred:—

I.—Can the microscope be brought to perfection?

SPIRIT.—Yes.

I.—Am I destined to accomplish this great task?

SPIRIT.—You are.

I.—I wish to know how to proceed to attain this end. For the love which you bear to science, help me!

SPIRIT.—A diamond of one hundred and forty carats, submitted to electro-magnetic currents for a long period, will experience a rearrangement of its atoms *inter se,* and from that stone you will form the universal lens.

I.—Will great discoveries result from the use of such a lens?

SPIRIT.—So great that all that has gone before is as nothing.

I.—But the refractive power of the diamond is so immense, that the image will be formed within the lens. How is that difficulty to be surmounted?

SPIRIT.—Pierce the lens through its axis, and the difficulty is obviated. The image will be formed in the pierced space, which will itself serve as a tube to look through. Now I am called. Good night.

The Diamond Found

I CANNOT at all describe the effect that these extraordinary communications had upon me. I felt completely bewildered. No biological theory could account for the *discovery* of the lens. The medium might, by means of biological *rapport* with my mind, have gone so far as to read my questions, and reply to them coherently. But biology could not enable her to discover that magnetic currents would so alter the crystals of the diamond as to remedy its previous defects, and admit of its being polished into a perfect lens. Some such theory may have passed through my head, it is true; but if so, I had forgotten it. In my excited condition of mind there was no course left but to become a convert, and it was in a state of the most painful nervous exaltation that I left the medium's house that evening. She accompanied me to the door, hoping that I was satisfied. The raps followed us as we went through the hall, sounding on the balusters, the flooring, and even the lintels of the door. I hastily expressed my satisfaction, and escaped hurriedly into the cool night air. I walked home with but one thought possessing me,—how to obtain a diamond of the immense size required. My entire means multiplied a hundred times over would have been inadequate to its purchase. Besides, such stones are rare, and become historical. I could find such only in the regalia of Eastern or European monarchs.

CHAPTER IV

The Eye of Morning

THERE was a light in Simon's room as I entered my house. A vague impulse urged me to visit him. As I opened the door of his

sitting-room unannounced, he was bending, with his back toward me, over a Carcel lamp, apparently engaged in minutely examining some object which he held in his hands. As I entered, he started suddenly, thrust his hand into his breast pocket, and turned to me with a face crimson with confusion.

"What!" I cried, "poring over the miniature of some fair lady? Well, don't blush so much; I won't ask to see it."

Simon laughed awkardly enough, but made none of the negative protestations usual on such occasions. He asked me to take a seat.

"Simon," said I, "I have just come from Madame Vulpes."

This time Simon turned as white as a sheet, and seemed stupefied, as if a sudden electric shock had smitten him. He babbled some incoherent words, and went hastily to a small closet where he usually kept his liquors. Although astonished at his emotion, I was too preoccupied with my own idea to pay much attention to anything else.

"You say truly when you call Madame Vulpes a devil of a woman," I continued. "Simon, she told me wonderful things to-night, or rather was the means of telling me wonderful things. Ah! if I could only get a diamond that weighed one hundred and forty carats!"

Scarcely had the sigh with which I uttered this desire died upon my lips, when Simon, with the aspect of a wild beast, glared at me savagely, and, rushing to the mantelpiece, where some foreign weapons hung on the wall, caught up a Malay creese, and brandished it furiously before him.

"No!" he cried in French, into which he always broke when excited. "No! you shall not have it! You are perfidious! You have consulted with that demon, and desire my treasure! But I shall die first! Me! I am brave! You cannot make me fear!"

The Dealer Is Suspicious.

ALL this, uttered in a loud voice trembling with excitement, astounded me. I saw at a glance that I had accidentally trodden upon the edges of Simon's secret, whatever it was. It was necessary to reassure him.

"My dear Simon," I said, "I am entirely at a loss to know what you mean. I went to Madame Vulpes to consult her on a scientific problem, to the solution of which I discovered that a diamond of the size I just mentioned was necessary. You were never alluded to during the evening, nor, so far as I was concerned, even thought of. What can be the meaning of this outburst? If you happen to have a set of valuable diamonds in your possession, you need fear nothing from me. The diamond which I require you could not possess; or, if you did possess it, you would not be living here."

Something in my tone must have completely reassured him; for his expression immediately changed to a sort of constrained merriment, combined, however, with a certain suspicious attention to my movements. He laughed, and said that I must bear with him; that he was at certain moments subject to a species of vertigo, which betrayed itself in incoherent speeches, and that the attacks passed off as rapidly as they came. He put his weapon aside while making this explanation, and endeavored, with some success, to assume a more cheerful air.

All this did not impose on me in the least. I was too much accustomed to analytical labors to be baffled by so flimsy a veil. I determined to probe the mystery to the bottom.

"Simon," I said gayly, "let us forget all this over a bottle of Burgundy. I have a case of Lausseure's *Clos Vougeot* down-stairs, fragrant with the odors and ruddy with the sunlight of the Côte d'Or. Let us have up a couple of bottles. What say you?"

"With all my heart," answered Simon, smilingly.

I produced the wine and we seated ourselves to drink. It was of a famous vintage, that of 1848, a year when war and wine throve together,—and its pure but powerful juice seemed to impart renewed vitality to the system. By the time we had half finished the second bottle, Simon's head, which I knew was a weak one, had begun to yield, while I remained calm as ever, only that every draught seemed to send a flush of vigor through my limbs. Simon's utterance became more and more indistinct. He took to singing French chansons of a not very moral tendency. I rose suddenly from the table just at the conclusion of one of those incoherent verses, and, fixing my eyes on him with a quiet smile, said: "Simon, I have deceived you. I learned your secret this evening. You may as well be frank with me. Mrs. Vulpes, or rather one of her spirits, told me all."

A Wonderful Rose Diamond

HE started with horror. His intoxication seemed for the moment to fade away, and he made a movement towards the weapon that he had a short time before laid down. I stopped him with my hand.

"Monster" he cried, passionately, "I am ruined! What shall I do? You shall never have it! I swear by my mother!"

"I don't want it," I said; "rest secure, but be frank with me. Tell me all about it."

The drunkenness began to return. He protested with maudlin earnestness that I was entirely mistaken,—that I was intoxicated; then asked me to swear eternal secrecy, and promised to disclose the mystery to me. I pledged myself, of course, to all. With an uneasy look in his eyes, and hands unsteady with drink and nervousness, he drew a small case from his breast and opened it. Heavens! How the mild lamp-light was shivered into a thousand prismatic arrows, as it fell upon a vast rose-diamond that glittered in the case! I was no judge of diamonds, but I saw at a glance that this was a gem of rare size and purity. I looked at Simon with wonder, and—must I confess it?—with envy. How could he have obtained this treasure? In reply to my questions, I could just gather from his drunken statements (of which, I fancy, half the incoherence was affected) that he had been superintending a gang of slaves engaged in diamond-washing in Brazil; that he had seen one of them secrete a diamond, but, instead of informing his employers, had quietly watched the negro until he saw him bury his treasure; that he had dug it up and fled with it, but that as yet he was afraid to attempt to dispose of it publicly,—so valuable a gem being almost certain to attract too much attention to its

owner's antecedents,—and he had not been able to discover any of those obscure channels by which such matters are conveyed away safely. He added, that, in accordance with the oriental practice, he had named his diamond with the fanciful title of "The Eye of Morning."

While Simon was relating this to me, I regarded the great diamond attentively. Never had I beheld anything so beautiful. All the glories of light, ever imagined or described, seemed to pulsate in its crystalline chambers. Its weight, as I learned from Simon, was exactly one hundred and forty carats. Here was an amazing coincidence. The hand of destiny seemed in it. On the very evening when the spirit of Leeuwenhoek communicates to me the great secret of the microscope, the priceless means which he directs me to employ start up within my easy reach! I determined, with the most perfect deliberation, to possess myself of Simon's diamond.

He Murders the Dealer

I SAT opposite to him while he nodded over his glass, and calmly revolved the whole affair. I did not for an instant contemplate so foolish an act as a common theft, which would of course be discovered, or at least necessitate flight and concealment, all of which must interfere with my scientific plans. There was but one step to be taken,—to kill Simon. After all, what was the life of a little peddling Jew, in comparison with the interests of science? Human beings are taken every day from the condemned prisons to be experimented on by surgeons. This man, Simon, was by his own confession a criminal, a robber, and I believed on my soul a murderer. He deserved death quite as much as any felon condemned by the laws: why should not I, like the government, contrive that his punishment should contribute to the progress of human knowledge?

The means for accomplishing everything I desired lay within my reach. There stood upon the mantelpiece a bottle half full of French laudanum. Simon was so occupied with his diamond, which I had just restored to him, that it was an affair of no difficulty to drug his glass. In a quarter of an hour he was in a profound sleep.

I now opened his waistcoat, took the diamond from the inner pocket in which he had placed it, and removed him to the bed, on which I laid him so that his feet hung down over the edge. I had possessed myself of the Malay creese, which I held in my right hand, while with the other I discovered as accurately as I could by pulsation the exact locality of the heart. It was essential that all the aspects of his death should lead to the surmise of self-murder. I calculated the exact angle at which it was probable that the weapon, if levelled by Simon's own hand, would enter his breast; then with one powerful blow I thrust it up to the hilt in the very spot which I desired to penetrate. A convulsive thrill ran through Simon's limbs. I heard a smothered sound issue from his throat, precisely like the bursting of a large air-bubble, sent up by a diver, when it reaches the surface of the water; he turned half round on his side, and, as if to assist my plans more effectually, his right hand, moved by some mere spasmodic impulse, clasped the handle of the creese, which it remained holding with extraordinary muscular tenacity. Beyond this there was no apparent struggle. The laudanum, I presume, paralyzed the usual nervous action. He must have died instantly.

There was yet something to be done. To make it certain that all suspicion of the act should be diverted from any inhabitant of the house to Simon himself, it was necessary that the door should be found in the morning *locked on the inside*. How to do this, and afterwards escape myself? Not by the window; that was a physical impossibility. Besides, I was determined that the windows *also* should be found bolted. The solution was simple enough. I descended softly to my own room for a peculiar instrument which I had used for holding small slippery substances, such as minute spheres of glass, etc. This instrument was nothing more than a long slender hand-vice, with a very powerful grip, and a considerable leverage, which last was accidentally owing to the shape of the handle. Nothing was simpler than, when the key was in the lock, to seize the end of its stem in this vice, through the keyhole, from the outside, and so lock the door. Previously, however, to doing this, I burned a number of papers on Simon's hearth. Suicides almost always burn papers before they destroy themselves. I also emptied some more laudanum into Simon's glass,—having first removed from it all traces of wine,—cleaned the other wine-glass, and brought the bottles away with me. If traces of two persons drinking had been found in the room, the question naturally would have arisen, Who was the second? Besides, the wine-bottles might have been identified as belonging to me. The laudanum I poured out to account for its presence in his stomach, in case of a *post-mortem examination*. The theory naturally would be, that he first intended to poison himself, but, after swallowing a little of the drug, was either disgusted with its taste, or changed his mind from other motives, and chose the dagger. These arrangements made, I walked out, leaving the gas burning, locked the door with my vice, and went to bed.

A Verdict of Suicide

SIMON'S death was not discovered until nearly three in the afternoon. The servant, astonished at seeing the gas burning,—the light streaming on the dark landing from under the door,—peeped through the keyhole and saw Simon on the bed. She gave the alarm. The door was burst open, and the neighborhood was in a fever of excitement.

Every one in the house was arrested, myself included. There was an inquest; but no clew to his death beyond that of suicide could be obtained. Curiously enough, he had made several speeches to his friends the preceding week, that seemed to point to self-destruction. One gentleman swore that Simon had said in his presence that "he was tired of life." His landlord affirmed that Simon, when paying him his last month's rent, remarked that "he should not pay him rent much longer." All the other evidence corresponded,—the door locked inside, the position of the corpse, the burnt papers. As I anticipated, no one knew of the possession of the diamond by Simon, so that no motive was suggested for his murder. The jury, after a prolonged examination, brought in the usual verdict, and the

neighborhood once more settled down into its accustomed quiet.

CHAPTER V

Animula

THE three months succeeding Simon's catastrophe I devoted night and day to my diamond lens. I had constructed a vast galvanic battery, composed of nearly two thousand pairs of plates,—a higher power I dared not use, lest the diamond should be calcined. By means of this enormous engine I was enabled to send a powerful current of electricity continually through my great diamond, which it seemed to me gained in lustre every day. At the expiration of a month I commenced the grinding and polishing of the lens, a work of intense toil and exquisite delicacy. The great density of the stone, and the care required to be taken with the curvatures of the surfaces of the lens, rendered the labor the severest and most harassing that I had yet undergone.

At last the eventful moment came; the lens was completed. I stood trembling on the threshold of new worlds. I had the realization of Alexander's famous wish before me. The lens lay on the table, ready to be placed upon its platform. My hand fairly shook as I enveloped a drop of water with a thin coating of oil of turpentine, preparatory to its examination,—a process necessary in order to prevent the rapid evaporation of the water. I now placed the drop on a thin slip of glass under the lens, and throwing upon it, by the combined aid of a prism and a mirror, a powerful stream of light, I approached my eye to the minute hole drilled through the axis of the lens. For an instant I saw nothing save what seemed to be an illuminated chaos, a vast luminous abyss. A pure white light, cloudless and serene, and seemingly limitless as space itself, was my first impression. Gently, and with the greatest care, I depressed the lens a few hair's-breadths. The wondrous illumination still continued, but as the lens approached the object a scene of indescribable beauty was unfolded to my view.

I seemed to gaze upon a vast space, the limits of which extended far beyond my vision. An atmosphere of magical luminousness permeated the entire field of view. I was amazed to see no trace of animalculous life. Not a living thing, apparently, inhabited that dazzling expanse. I comprehended instantly that, by the wondrous power of my lens, I had penetrated beyond the grosser particles of aqueous matter, beyond the realms of infusoria and protozoa, down to the original gaseous globule, into whose luminous interior I was gazing, as into an almost boundless dome filled with a supernatural radiance.

The First Visions of Beauty

IT was, however, no brilliant void into which I looked. On every side I beheld beautiful organic forms, of unknown texture, and colored with the most enchanting hues. These forms presented the appearance of what might be called, for want of a more specific definition, foliated clouds of the highest rarity; that is, they undulated and broke into vegetable formations, and were tinged with splendors compared with which the gilding of our autumn woodlands is as dross compared with gold. Far away into the illimitable distance stretched long avenues of these gaseous forests, dimly transparent, and painted with prismatic hues of unimaginable brilliancy. The pendent branches waved along the fluid glades until every vista seemed to break through half-lucent ranks of many-colored drooping silken pennons. What seemed to be either fruits or flowers, pied with a thousand hues, lustrous and ever varying, bubbled from the crowns of this fairy foliage. No hills, no lakes, no rivers, no forms animate or inanimate, were to be seen, save those vast auroral copses that floated serenely in the luminous stillness, with leaves and fruits and flowers gleaming with unknown fires, unrealizable by mere imagination.

How strange, I thought, that this sphere should be thus condemned to solitude! I had hoped, at least, to discover some new form of animal life,—perhaps of a lower class than any with which we are at present acquainted, but still, some living organism. I found my newly discovered world, if I may so speak, a beautiful chromatic desert.

While I was speculating on the singular arrangements of the internal economy of Nature, with which she so frequently splinters into atoms our most compact theories, I thought I beheld a form moving slowly through the glades of one of the prismatic forests. I looked more attentively, and found that I was not mistaken. Words cannot depict the anxiety with which I awaited the nearer approach of this mysterious object. Was it merely some inanimate substance, held in suspense in the attenuated atmosphere of the globule? Or was it an animal endowed with vitality and motion? It approached, flitting behind the gauzy, colored veils of cloud-foliage, for seconds dimly revealed, then vanishing. At last the violet pennons that trailed nearest to me vibrated; they were gently pushed aside, and the form floated out into the broad light.

The Glorious Animula

IT was a female human shape. When I say human, I mean it possessed the outlines of humanity,—but there the analogy ends. Its adorable beauty lifted it illimitable heights beyond the loveliest daughter of Adam.

I cannot, I dare not, attempt to inventory the charms of this divine revelation of perfect beauty. Those eyes of mystic violet, dewy and serene, evade my words. Her long, lustrous hair following her glorious head in a golden wake, like the track sown in heaven by a falling star, seems to quench my most burning phrases with its splendors. If all the bees of Hybla nestled upon my lips, they would still sing but hoarsely the wondrous harmonies of outline that enclosed her form.

She swept out from between the rainbow-curtains of the cloud-trees into the broad sea of light that lay beyond. Her motions were those of some graceful naiad, cleaving, by a mere effort of her will, the clear, unruffled waters that fill the chambers of the sea. She floated forth with the serene grace of a frail bubble ascending through the still atmosphere of a June day. The perfect roundness of her limbs formed suave and enchanting curves. It was like listening to the most spiritual symphony of Bee-

thoven the divine, to watch the harmonious flow of lines. This, indeed, was a pleasure cheaply purchased at any price. What cared I, if I had waded to the portal of this wonder through another's blood? I would have given my own to enjoy one such moment of intoxication and delight.

Breathless with gazing on this lovely wonder, and forgetful for an instant of everything save her presence, I withdrew my eye from the microscope eagerly,—alas! As my gaze fell on the thin slide that lay beneath my instrument, the bright light from mirror and from prism sparkled on a colorless drop of water! There, in that tiny bead of dew, this beautiful being was forever imprisoned. The planet Neptune was not more distant from me than she. I hastened once more to apply my eye to the microscope.

Animula (let me now call her by that dear name which I subsequently bestowed on her) had changed her position. She had again approached the wondrous forest, and was gazing earnestly upwards. Presently one of the trees—as I must call them—unfolded a long ciliary process, with which it seized one of the gleaming fruits that glittered on its summit, and, sweeping slowly down, held it within reach of Animula. The sylph took it in her delicate hand and began to eat. My attention was so entirely absorbed by her, that I could not apply myself to the task of determining whether this singular plant was or was not instinct with volition.

More About His Love, Animula

I WATCHED her, with the most profound attention as she made her repast, The suppleness of her motions sent a thrill of delight through my frame; my heart beat madly as she turned her beautiful eyes in the direction of the spot in which I stood. What would I not have given to have had the power to precipitate myself into that luminous ocean, and float with her through those groves of purple and gold! While I was thus breathlessly following her every movement, she suddenly started, seemed to listen for a moment, and then cleaving the brilliant ether in which she was floating, like a flash of light, pierced through the opaline forest, and disappeared.

Instantly a series of the most singular sensations attacked me. It seemed as if I had suddenly gone blind. The luminous sphere was still before me, but my daylight had vanished. What caused this sudden disappearance? Had she a lover or a husband? Yes, that was the solution! Some signal from a happy fellow-being had vibrated through the avenues of the forest, and she had obeyed the summons.

The agony of my sensations, as I arrived at this conclusion, startled me. I tried to reject the conviction that my reason forced upon me. I battled against the fatal conclusion,—but in vain. It was so. I had no escape from it. I loved an animalcule!

It is true that, thanks to the marvellous power of my microscope, she appeared of human proportions. Instead of presenting the revolting aspect of the coarser creatures, that live and struggle and die, in the more easily resolvable portions of the water-drop, she was fair and delicate and of surpassing beauty. But of what account was all that? Every time that my eye was withdrawn from the instrument, it fell on a miserable drop of water, within which, I must be content to know, dwelt all that could make my life lovely.

Could she but see me once! Could I for one moment pierce the mystical walls that so inexorably rose to separate us, and whisper all that filled my soul, I might consent to be satisfied for the rest of my life with the knowledge of her remote sympathy. It would be something to have established even the faintest personal link to bind us together,—to know that at times, when roaming through those enchanted glades, she might think of the wonderful stranger, who had broken the monotony of her life with his presence, and left a gentle memory in her heart!

But it could not be. No invention of which human intellect was capable could break down the barriers that nature had erected. I might feast my soul upon her wondrous beauty, yet she must always remain ignorant of the adoring eyes that day and night gazed upon her, and, even when closed, beheld her in dreams. With a bitter cry of anguish I fled from the room, and, flinging myself on my bed, sobbed myself to sleep like a child.

CHAPTER VI

The Spilling of the Cup

I AROSE the next morning almost at daybreak, and rushed to my microscope. I trembled as I sought the luminous world in miniature that contained my all. Animula was there. I had left the gas-lamp, surrounded by its moderators, burning, when I went to bed the night before. I found the sylph bathing, as it were, with an expression of pleasure animating her features, in the brilliant light which surrounded her. She tossed her lustrous golden hair over her shoulders with innocent coquetry. She lay at full length in the transparent medium, in which she supported herself with ease, and gambolled with the enchanting grace that the nymph Salamacis might have exhibited when she sought to conquer the modest Hermaphroditus. I tried an experiment to satisfy myself if her powers of reflection were developed. I lessened the lamplight considerably. By the dim light that remained, I could see an expression of pain flit across her face. She looked upward suddenly, and her brows contracted. I flooded the stage of the microscope again with a full stream of light, and her whole expression changed. She sprang forward like some substance deprived of all weight. Her eyes sparkled and her lips moved. Ah! if science had only the means of conducting and reduplicating sounds, as it does the rays of light, what carols of happiness would then have entranced my ears! what jubilant hymns to Adonis would have thrilled the illumined air!

I now comprehended how it was that the Count de Gabalis peopled his mystic world with sylphs,—beautiful beings whose breath of life was lambent fire, and who sported forever in regions of purest ether and purest light. The Rosicrucian had anticipated the wonder that I had practically realized.

The Passion Grows Stronger

HOW long this worship of my strange divinity went on thus I scarcely know. I lost all note of time. All day from early dawn, and far into the

night, I was to be found peering through that wonderful lens. I saw no one, went nowhere, and scarce allowed myself sufficient time for my meals. My whole life was absorbed in contemplation as rapt as that of any of the Romish saints. Every hour that I gazed upon the divine form strengthened my passion,—a passion that was always overshadowed by the maddening conviction, that, although I could gaze on her at will, she never, never could behold me!

At length, I grew so pale and emaciated, from want of rest, and continual brooding over my insane love and its cruel conditions, that I determined to make some effort to wean myself from it. "Come," I said, "this is at best but a fantasy. Your imagination has bestowed on Animula charms which in reality she does not possess. Seclusion from female society has produced this morbid condition of mind. Compare her with the beautiful women of your own world, and this false enchantment will vanish."

The Dancer On the Stage at Niblo's Garden

I LOOKED over the newspapers by chance. There I beheld the advertisement of a celebrated *danseuse* who appeared nightly at Niblo's*. The Signorina Caradolce had the reputation of being the most beautiful as well as the most graceful woman in the world. I instantly dressed and went to the theatre.

The curtain drew up. The usual semicircle of fairies in white muslin were standing on the right toe around the enamelled flower-bank, of green canvas, on which the belated prince was sleeping. Suddenly a flute is heard. The fairies start. The trees open, the fairies all stand on the left toe, and the queen enters. It was the Signorina. She bounded forward amid thunders of applause, and, lighting on one foot, remained poised in air. Heavens! was this the great enchantress that had drawn monarchs at her chariot-wheels? Those heavy muscular limbs, those thick ankles, those cavernous eyes, that stereotyped smile, those crudely painted cheeks! Where were the vermeil blooms, the liquid expressive eyes, the harmonious limbs of Animula?

The Signorina danced. What gross, discordant movements! The play of her limbs was all false and artificial. Her bounds were painful athletic efforts; her poses were angular and distressed the eye. I could bear it no longer; with an exclamation of disgust that drew every eye upon me, I rose from my seat in the very middle of the Signorina's *pas-de-fascination*, and abruptly quitted the house.

I hastened home to feast my eyes once more on the lovely form of my sylph. I felt that henceforth to combat this passion would be impossible. I applied my eye to the lens. Animula was there,—but what could have happened? Some terrible change seemed to have taken place during my absence. Some secret grief seemed to cloud the lovely features of her I gazed upon. Her face had grown thin and haggard; her limbs trailed heavily; the wondrous lustre of her golden hair had faded. She was ill!—ill, and I could not assist her! I believe at that moment I would have gladly forfeited all claims to my human birthright, if I could only have been dwarfed to the size of an animalcule, and permitted to console her from whom fate had forever divided me.

I racked my brain for the solution of this mystery. What was it that afflicted the sylph? She seemed to suffer intense pain. Her features contracted, and she even writhed, as if with some internal agony. The wondrous forests appeared also to have lost half their beauty. Their hues were dim and in some places faded away altogether. I watched Animula for hours with a breaking heart, and she seemed absolutely to wither away under my very eye. Suddenly I remembered that I had not looked at the water-drop for several days. In fact, I hated to see it; for it reminded me of the natural barrier between Animula and myself. I hurriedly looked down on the stage of the microscope. The slide was still there,—but, great heavens! the water-drop had vanished! The awful truth burst upon me; it had evaporated, until it had become so minute as to be invisible to the naked eye; I had been gazing on its last atom, the one that contained Animula,—and she was dying!

The Disappearance of Animula

I rushed again to the front of the lens, and looked through. Alas! the last agony had seized her. The rainbow-hued forests had all melted away, and Animula lay struggling feebly in what seemed to be a spot of dim light. Ah! the sight was horrible: the limbs once so round and lovely shrivelling up into nothings; the eyes—those eyes that shone like heavens—being quenched into black dust; the lustrous golden hair now lank and discolored. The last throe came. I beheld that final struggle of the blackening form—and I fainted.

When I awoke out of a trance of many hours, I found myself lying amid the wreck of my instrument, myself as shattered in mind and body as it. I crawled feebly to my bed, from which I did not rise for months.

They say now that I am mad; but they are mistaken. I am poor, for I have neither the heart nor the will to work; all my money is spent, and I live on charity. Young men's associations that love a joke invite me to lecture on Optics before them, for which they pay me, and laugh at me while I lecture. "Linley, the mad microscopist," is the name I go by. I suppose that I talk incoherently while I lecture. Who could talk sense when his brain is haunted by such ghastly memories, while ever and anon among the shapes of death I behold the radiant form of my lost Animula!

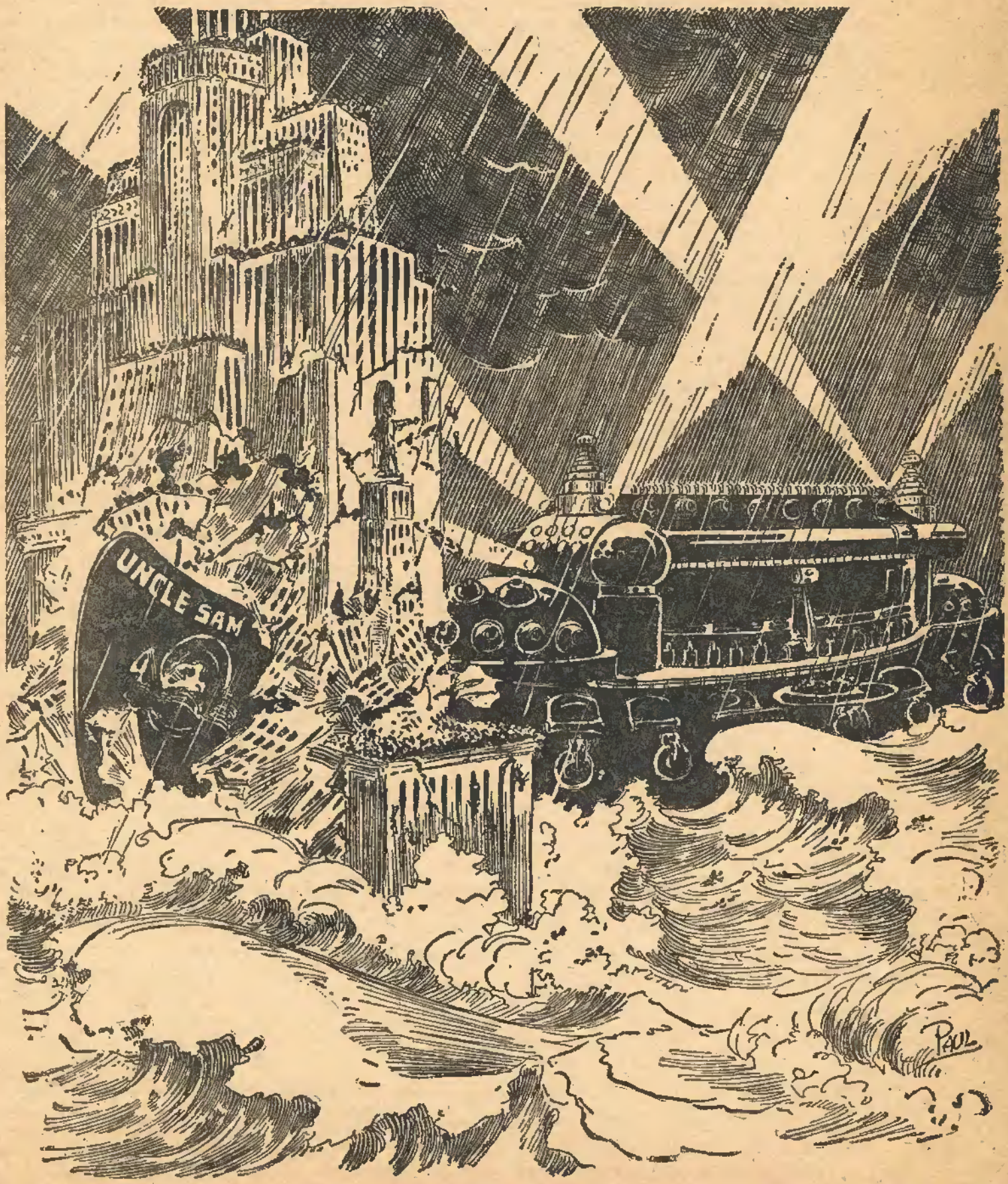
*Niblo's Garden was a famous old-time New York theatre.—Ed.

THE END

The SECOND DELUGE

By Garrett P. Serviss

Author of "The Moon Metal," "A Columbus of Space," etc.



. . . and before they could comprehend what it was, the battleship crashed, prow-on, into the steel-ribbed walls. So tremendous was its momentum that the huge vessel passed, like a projectile, through walls and floors and partitions of the Municipal Building.

What Went Before

COSMO VERSÁL, known as an eccentric astronomer, has made the astounding discovery, based on mathematical deductions, that the world is on the eve of a second deluge. Notwithstanding he is reviled and scoffed at for this announcement, he placards New York with posters, calling to all to harken to his prophecy and to prepare for the coming flood. For his own safety he begins the building of an enormous ark and barely has it completed when reports are flashed about the world that the waters are actually beginning to rise.

Suddenly, in midday, the world grew dark and people became terror-stricken. The rain descended from an invisible source and the waters rose. Literally, the world sweat. But the flood as quickly abated when light came again, and great was the ridicule heaped upon Cosmo and his ark, but the scientist proceeded with the building of his mammoth vessel and began to gather the people he had chosen to accompany him, and the animals as well, from all quarters of the earth. Again came the darkness upon the land and once more the world sweat. About his ark Cosmo had placed electric wires, and when the maddened populace, now terrified beyond measure, attempted to storm the ark, hundreds fell to the ground, shocked, and many were killed.

THE SECOND DELUGE

By GARRETT P. SERVISS

Part II

COSMO'S warning to them of the necessity of secrecy was superfluous, for the selfishness of human nature never had a better illustration than they afforded. The lucky recipients of the invitations stole away without a word of farewell, circumspectly disappearing, generally at night, and often in disguise; and when the attack occurred on the ark, there were, behind the port-holes, many anxious eyes cautiously staring out and recognizing familiar faces in the mob, while the owners of those eyes trembled in their shoes lest their friends might succeed in forcing an entrance. After all, it was to be doubted if Cosmo Versál, with all his vigilance, had succeeded in collecting a company representing anything above the average quality of the race.

But there was one thing that did great credit to his heart. When he found that he had room unoccupied, before adding to his lists he consented to take more than two children in a family. It was an immense relief, for—it must be recorded—there were some who, in order to qualify themselves, had actually abandoned members of their own families! Let it also be said, however, that many, when they found that the conditions imposed were inexorable, and that they could only save themselves by leaving behind others as dear to them as their own lives, indignantly refused, and most of these did not even reply to the invitations.

It was another indication of Cosmo's real humanity, as well as of his shrewdness, that, as far as they were known, and could be reached, the persons who had thus remained true to the best instincts of nature were the first to receive a second invitation, with an injunction to bring their entire families. So it happened that, after all, there were aged men and women, as well as children-in-arms, mingled in that remarkable assemblage.

It will be recalled that thirteen places had been specially reserved, to be filled by Cosmo Versál's personal friends. His choice of these revealed another pleasing side of his mind. He took thirteen men and women who had been, in one capacity or another, employed for many years in his service. Some of them were old family servants that had been in his father's house.

"Every one of these persons," he said to Joseph Smith, "is worth his weight in gold. Their disinterested fidelity to duty is a type of character that almost became extinct generations ago, and no more valuable leaven could be introduced into the society of the future. Rather than leave them, I would stay behind myself."

Finally there was the crew. This comprised one hundred and fifty members, all of them chosen from the body of engineers, mechanics, and workmen who had been employed in the construction of the ark. Cosmo himself was, of course, the commander, but he had for his lieutenants skilled mariners, electrical and mechanical engineers, and men whom he himself had instructed in the peculiar duties that would fall to them in the navigation and management of the ark, every detail of which he had laboriously worked out with a foresight that seemed all but superhuman.

All of the passengers and crew were aboard when the baffled mob retreated from Mineola, and some, when that danger was past, wished to descend to the ground, and go and look at the rising waters, which had not yet invaded the neighborhood. But Cosmo absolutely forbade any departures from the ark. The condensation of the nebula,

SLOWLY the world is sinking below the rising waters. Those who have not as yet been drowned admit that Cosmo Versál had been right, but it is now too late. The watery nebula is engulfing the earth, and the waters will rise until the entire surface of the globe is covered to such an extent that even the highest mountain tops will be submerged.

In the meanwhile, Cosmo Versál's ark is drifting over new, uncharted oceans. But through a strange freak of the nebula, it seems that after all Versál was not correct in his calculations, because suddenly the flood stops. Was Cosmo Versál really wrong? And will the flood subside? These are the vital questions that engross those who have fled to the mountain tops.

he declared, was likely to begin any minute, and the downpour would be so fierce that a person might be drowned in the open field.

It came even sooner than he had anticipated, with the results that we had already noted in New York. At first many thought that the ark itself would be destroyed, so dreadful was the impact of the falling water. The women and children, and some of the men, were seized with panic, and Cosmo had great difficulty in reassuring them.

"The flood will not reach us for several hours yet," he said. "The level of the water must rise at least a hundred feet more before we shall be afloat. Inside here we are perfectly safe. The ark is exceedingly strong and absolutely tight. You have nothing to fear."

Then he ordered an ingenious sound-absorbing screen, which he had prepared, to be drawn over the great ceiling of the saloon, the effect of which was to shut out the awful noise of the water roaring upon the roof of the ark. A silence that was at first startling by contrast to the preceding din prevailed as soon as the screen was in place.

Amid a hush of expectancy, Cosmo now mounted a dais at one end of the room. Never before had the intellectual superiority of the man seemed so evident. His huge "dome of thought," surmounting his slight body, dominated the assembly like the front of Jove. Chairs near him were occupied by Professor Jeremiah Moses, Professor Abel Able, Professor Alexander Jones, and the two "speculative geniuses" whom he had named to Joseph Smith. These were Costaké Theriadé, of Rumania, a tall, dark, high-browed thinker, who was engaged in devising ways to extract and recover intra-atomic energy; and Sir Wilfred Athelstone, whose specialty was bio-chemistry, and who was said to have produced amazing results in artificial parthenogenesis and the production of new species.

As soon as attention was concentrated upon him, Cosmo Versál began to speak.

"My friends," he said, "the world around us is now sinking beneath a flood that will not be arrested until America, Europe, Africa, Asia, and Australia have disappeared. We stand at the opening of a new age. You alone who are here assembled, and your descendants, will constitute the population of the new world that is to be.

"In this ark, which owes its existence to the foreseeing eye of science, you will be borne in safety upon the bosom of the battling waters, and we will disembark upon the first promising land that reappears, and begin the plantation and development of a new society of men and women, which, I trust, will afford a practical demonstration of the principles of eugenics.

"I have, as far as possible, and as far as the pitiful blindness of mankind permitted me to go, selected and assembled here representatives of the best tendencies of humanity. You are a chosen remnant, and the future of this planet depends upon you.

"I have been fortunate in securing the companionship of men of science who will be able to lead and direct. The ark is fully provisioned for a period which must exceed the probable duration of the flood. I have taken pains not to overcrowd it, and every preparation has been made for any contingencies which may arise.

"It is inexpressibly sad to part thus with the millions of our fellow beings who would not heed the warnings that were lavished upon them; but, while our hearts may be rent with the thought, it is our duty to cast off the burden of vain regrets and concentrate all our energies upon the work before us.

"I salute," he continued, raising his voice and lifting a glass of wine from the little table before him, "the world of the past—may its faults be forgotten—and the world of the future—may it rise on the wings of science to nobler prospects!"

He poured out the wine like a libation; and as his voice ceased to echo, and he sank into his seat, an uncontrollable wave of emotion ran over the assembly. Many of the women wept, and the men conversed in whispers. After a considerable interval, during which no one spoke above his breath, Professor Abel Able arose and said:

"The gratitude which we owe to this man"— indicating Cosmo Versál, "can best be expressed, not in words, but by acts. He has led us thus far; he must continue to lead us to the end. We were blind, while he was full of light. It will become us hereafter to heed well whatever he may say. I now wish to ask if he can foresee where upon the re-emerging planet a foothold is first likely to be obtained. Where lies our land of promise?"

"I can answer that question," Cosmo replied, "only in general terms. You are all aware that the vast table-land of Tibet is the loftiest region upon the globe. In its western part it lies from fourteen to seventeen or eighteen thousand feet above the ordinary level of the sea. Above it rise the greatest mountain-peaks in existence. Here the first considerable area is likely to be uncovered. It is upon the Pamirs, the 'Roof of the World,' that we shall probably make our landing."

"May I ask," said Professor Abel Able, "in what manner you expect the waters of the flood to be withdrawn, after the earth is completely drowned?"

"That," was the reply, "was one of the fundamental questions that I examined, but I do not care to enter into a discussion of it now. I may simply say that it is not only upon the disappearance of the waters that our hopes depend, but upon circumstances that I shall endeavor to make clear hereafter. The new cradle of mankind will be located near the old one, and the roses of the Vale of Cashmere will canopy it."

Cosmo Versál's words made a profound impression upon his hearers, and awoke thoughts that carried their minds off into strange reveries. No more questions were asked, and gradually the assemblage broke up into groups of interested talkers.

It was near midnight. Cosmo, beckoning Professor Abel Able, Professor Alexander Jones, and Professor Jeremiah Moses to accompany him, made his way out of the saloon, and, secretly opening one of the gangway doors, they presently stood, sheltering themselves from the pouring rain, in a position which enabled them to look toward New York.

Nothing, of course, was visible through the downpour; but they were startled at hearing fearful cries issuing out of the darkness. The rural parts of the city, filled with gardens and villas, lay round within a quarter of a mile of the ark, and the sound, accelerated by the water-charged atmosphere, struck upon their ears with terrible distinctness. Sometimes, when a gust of wind blew the rain in to their faces, the sound deepened into a long, despairing wail, which seemed to be borne from afar off, mingled with the roar of the descending torrent—the death-cry of the vast metropolis!

"Merciful Heaven, I cannot endure this!" cried Professor Moses.

"Go to my cabin," Cosmo yelled in his ear, "and take the others with you. I will join you there in a little while. I wish to measure the rate of rise of the water."

They gladly left him, and fled into the interior of the ark. Cosmo procured an electric lamp; and the moment its light streamed out he perceived that the water had already submerged the great cradle in which the ark rested, and was beginning to creep up the metallic sides. He lowered a graduated tape into it, provided with an automatic register. In a few minutes he had completed his task, and then he went to rejoin his late companions in his cabin.

"In about an hour," he said to them, "we shall be afloat. The water is rising at the rate of one-thirtieth of an inch per second."

"No more than that?" asked Professor Jones with an accent of surprise.

"That is quite enough," Cosmo replied. "One-thirtieth of an inch per second means two inches in a minute, and ten feet in an hour. In twenty-four hours from now the water will stand two hundred and forty feet above its present level, and then only the tallest structures in New York will lift their tops above it, if indeed, they are not long before overturned by undermining or the force of the waves."

"But it will be a long time before the hills and highlands are submerged," suggested Professor Jones. "Are you perfectly sure that the flood will cover them?"

Cosmo Versál looked at his interlocutor, and slowly shook his head.

"It is truly a disappointment to me," he said at length, "to find that, even now, remnants of doubt cling to your minds. I tell you that the nebula is condensing at its maximum rate. It is likely to continue to do so for at least four months. In four months, at the rate of two inches per minute, the level of the water will rise 28,800 feet. There is only one peak in the world which is surely known to attain a slightly greater height than that—Mount Everest, in the Himalayas. Even in a single month the rise will amount to 7,200 feet. That is 511 feet higher than the loftiest mountain in the Appalachians. In one month, then, there will be nothing visible of North America east of the Rockies. And in another month they will have gone under."

Not another word was said. The three professors sat, wide-eyed and open-mouthed, staring at Cosmo Versál, whose bald head was crowned with an aureole by the electric light that beamed from the ceiling, while with a gold pocket-pencil, he fell to figuring upon a sheet of paper.

CHAPTER X

The Last Day of New York

WHILE Cosmo Versál was calculating, from the measured rise of the water, the rate of condensation of the nebula, and finding that it added twenty-nine trillion two hundred and ninety billion tons to the weight of the earth every minute—a computation that seemed to give him great mental satisfaction—the metropolis of the world, whose nucleus was the island of Manhattan, and every other town and city on the globe that lay near the ordinary level of the sea, was swiftly sinking beneath the swelling flood.

Everywhere, over all the broad surface of the planet, a wail of despair arose from the perishing millions, beaten down by the water that poured from the unpitying sky. Even on the highlands the situation was but little better than in the valleys. The hills seemed to have been turned into the crests of cataracts from which torrents of water rushed down on all sides, stripping the soil from the rocks, and sending the stones and boulders roaring and leaping into the lowland and the gorges. Farmhouses, barns, villas, trees, animals, human beings—all were swept away together.

Only on broad elevated plateaus, where higher points rose above the general level, were a few of the inhabitants able to find a kind of refuge. By seeking these high places, and sheltering themselves as best they could among immovable rocks, they succeeded, at least, in delaying their fate. Notwithstanding the fact that the atmosphere was filled with falling water, they could yet breathe, if they kept the rain from striking directly in their faces. It was owing to this circumstance, and to some extraordinary occurrences which we shall have to relate, that the fate of the human race was not precisely that which Cosmo Versál had predicted.

We quitted the scene in New York when the shadow of night had just fallen, and turned the gloom of the watery atmosphere into impenetrable darkness. The events of that dreadful night we shall not attempt to depict. When the hours of daylight returned, and the sun should have brightened over the doomed city, only a faint, phosphorescent luminosity filled the sky. It was just sufficient to render objects dimly visible. If the enclosing nebula had remained in a cloud-like state it would have cut off all light, but having condensed into rain-drops, which streamed down in parallel lines, except when sudden blasts of wind swept them into a confused mass, the sunlight was able to penetrate through the interstices, aided by the transparency of the water, and so a slight but variable illumination was produced.

In this unearthly light many tall structures of the metropolis, which had as yet escaped the effects of undermining by the rushing torrents in the streets, towered dimly toward the sky, shedding streams of water from every cornice. Most of the buildings

of only six or eight stories had already been submerged, with the exception of those that stood on high grounds in the upper part of the island, and about Spuyten Duyvil.

In the towers and upper stories of the lofty buildings still standing in the heart of the city, crowds of unfortunates assembled, gazing with horror at the spectacles around them, and wringing their hands in helpless despair. When the light brightened they could see below them the angry water, creeping every instant closer to their places of refuge, beaten into foam by the terrible downpour, and sometimes, moved by a mysterious impulse, rising in sweeping waves which threatened to carry everything before them.

Every few minutes one of the great structures would sway, crack, crumble, and go down into the seething flood, the cries of the perishing being swallowed up in the thunder of the fall. And when this occurred within sight of neighboring towers yet intact, men and women could be seen, some with children in their arms, madly throwing themselves from windows and ledges, seeking quick death now that hope was no more!

Strange and terrible scenes were enacted in the neighborhood of what had been the water-fronts. Most of the vessels moored there had been virtually wrecked by the earlier invasion of the sea. Some had been driven upon the shore, others had careened and been swamped at their wharves. But a few had succeeded in cutting loose in time to get fairly afloat. Some tried to go out to sea, but were wrecked by running against obstacles, or by being swept over the Jersey flats. Some met their end by crashing into the submerged pedestal of the Statue of Liberty. Others steered up the course of the Hudson River, but that had become a narrow sea, filled with floating and tossing débris of every sort, and all landmarks being invisible, the luckless navigators lost their way, and perished, either through collisions with other vessels, or by driving upon a rocky shore.

The fate of the gigantic building containing the offices of the municipal government, which, for a century, had stood near the ancient City Hall, and which had been the culminating achievement of the famous epoch of "sky-scrapers," was a thing so singular, and at the same time dramatic, that in a narrative dealing with less extraordinary events than we are obliged to record it would appear altogether incredible.

With its two-score lofty stories, and its massive base, this wonderful structure rose above the lower quarter of the city, and dominated it, like a veritable Tower of Babel, made to defy the flood. Many thousands of people evidently regarded it in that very light, and they had fled from all quarters, as soon as the great downpour began, to find refuge within its mountainous flanks. There were men—clerks, merchants, brokers from the down-town offices, and women and children from neighboring tenements.

By good chance, but a few weeks before, this building had been fitted with a newly invented system of lighting, by which each story was supplied with electricity from a small dynamo of its own, and so it happened that now the lamps within were all aglow, lightening the people's hearts a little with their cheering radiance.

Up and up they climbed, the water ever following at their heels, from floor to floor, until ten of the great stages were submerged. But there were more than twice as many stages yet above, and they counted them with unexpiring hope, telling one another, with the assurance of desperation, that long before the flood could attain so stupendous an altitude the rain would surely cease, and the danger, as far as they were concerned, would pass away.

"See! See!" cries one. "It is stopping! It is coming no higher! I've been watching that step, and the water has stopped! It hasn't risen for ten minutes!"

"Hurrah! Hurrah!" yells the crowd behind and above. And the glad cry is taken up and reverberated from story to story until it bursts wildly out into the rain-choked air at the very summit.

"Hurrah! Hurrah! We are saved! The flood has stopped!"

Men madly embrace each other. Women burst into tears and hug their children to their breasts, filled with a joy and thankfulness that can find no words.

"You are wrong," says another man, crouched beside him who first spoke. "It has not stopped—it is still rising."

"*What!* I tell you it *has* stopped," snaps the other. "Look at that step! It stopped right below it."

"*You've been watching the wrong step.* It's rising!"

"You fool! Shut your mouth! I say it has *stopped.*"

"No, it has not."

"*It has! It has!*"

"Look at *that* step, then! See the water just now coming over it."

The obstinate optimist stares a moment, turns pale, and then, with an oath, strikes his more clear-headed neighbor in the face! And the excited crowd behind, with the blind instinctive feeling that, somehow, he has robbed them of the hope which was but now as the breath of life to them, strike him and curse him, too.

But he had seen only too clearly.

With the steady march of fate—two inches a minute, as Cosmo Versál had accurately measured it—the water still advances and climbs upward.

In a little while they were driven to another story, and then to another. But hope would not down. They could not believe that the glad news, which had so recently filled them with joy, was altogether false. The water *must* have stopped rising *once;* it had been *seen.* Then, it would surely stop *again,* stop to rise no more.

Poor deluded creatures! With the love of life so strong within them, they could not picture, in their affrighted minds, the terrible consummation to which they were being slowly driven, when, jammed into the narrow chambers at the very top of the mighty structure, their remorseless enemy would seize them at last.

But they were nearer the end than they could

have imagined even if they had accepted and coolly reasoned upon the facts that were so plain before them. And, after all, it was not to come upon them until after they had fought their way to the highest loft and into the last corner.

A link of this strange chain of fatal events now belongs to the spot where the United States Navy Yard in Brooklyn once existed. That place was sunk deep beneath the waters. All of the cruisers, battleships, and other vessels that had been at anchor or at moorings there had gone under. One only, the boast of the American navy, the unconquerable Uncle Sam, which, in the last great war that the world had known, had borne the starry flag to victories whose names broke men's voices and filled their eyes with tears of pride, had escaped, through the incomparable seamanship of Capt. Robert Decatur, who had been her commander for thirty years.

But though the Uncle Sam managed to float upon the rising flood, she was unable to get away because of the obstructions lodged about the great bridges that spanned the East River. A curious eddy that the raging currents formed over what was once the widest part of that stream kept her revolving round and round, never departing far in any direction, and, with majestic strength, riding down or brushing aside the floating timbers, wooden houses, and other wreckage that pounded against her mighty steel sides.

Just at the time when the waters had mounted to the eighteenth story of the beleaguered Municipal Building, a sudden change occurred in these currents. They swept westward with resistless force, and the Uncle Sam was carried directly over the drowned city. First she encountered the cables of the Manhattan Bridge, striking them near the western tower, and, swinging round, wrenched the tower itself from its foundations and hurled it beneath the waters.

Then she rushed on, riding with the turbid flood high above the buried roofs, finding no other obstruction in her way until she approached the Municipal Building, which was stoutly resisting the push of the waves.

Those who were near the windows and on the balconies, on the eastern side of the building, saw the great battleship coming out of the gray gloom like some diluvian monster, and before they could comprehend what it was, it crashed, prow on, into the steel-ribbed walls, driving them in as if they had been the armored sides of an enemy.

So tremendous was the momentum of the striking mass that the huge vessel passed, like a projectile, through walls and floors and partitions. But as she emerged in the central court the whole vast structure came thundering down upon her, and ship and building together sank beneath the boiling waves.

But out of the awful tangle of steel girders, that whipped the air and the water as if some terrible spidery life yet clung to them, by one of those miracles of chance which defy all the laws of probability and reason, a small boat of levium, that had belonged to the Uncle Sam, was cast forth, and floated away, half submerged but unsinkable; and clinging to its thwarts, struggling for breath, insane with terror, were two men, the sole survivors of all those thousands.

One of them was a seaman who had taken refuge, with a crowd of comrades, in the boat before the battleship rushed down upon the building. All of his comrades had been hurled out and lost when the blow came, while his present companion was swept in and lodged against the thwarts. And so those two waifs drove off in the raging waves. Both of them were bleeding from many wounds, but they had no fatal hurts.

The boat, though filled with water, was so light that it could not sink. Moreover, it was ballasted, and amid all its wild gyrations it kept right side up. Even the ceaseless downpour from the sky could not drive it beneath the waves.

After a while the currents that had been setting westward changed their direction, and the boat was driven toward the north. It swept on past toppling sky-scrapers until it was over the place where Madison Square once spread its lawns, looked down upon by gigantic structures, most of which had now either crumbled and disappeared or were swaying to their fall. Here there was an eddy, and the boat turned round and round amid floating débris until two other draggled creatures, who had been clinging to floating objects, succeeded by desperate efforts in pulling themselves into it. Others tried but failed, and no one lent a helping hand. Those who were already in the boat neither opposed nor aided the efforts of those who battled to enter it. No words were heard in the fearful uproar—only inarticulate cries.

Suddenly the current changed again, and the boat, with its dazed occupants, was hurried off in the direction of the Hudson. Night was now beginning once more to drop an obscuring curtain over the scene, and under that curtain the last throes of drowning New York were hidden. When the sun again faintly illuminated the western hemisphere the whole Atlantic seaboard was buried under the sea.

As the water rose higher, Cosmo Versál's Ark at last left its cradle, and cumbrously floated off, moving first eastward, then turning in the direction of Brooklyn and Manhattan. Cosmo had his engines in operation, but their full power was not developed as soon as he had expected, and the great vessel drifted at the will of the currents and the wind, the latter coming now from one side and now from another, rising at times to hurricane strength and then dying away until only a spanking breeze swept the ever-falling rain into swishing sheets. Occasionally the wind failed entirely, and for many minutes at a time the water fell in vertical streams.

At length the motive power of the Ark was developed, and it began to obey its helm. From the shelter of a "captain's bridge," constructed at the forward end of the huge levium dome that covered the vessel, Cosmo Versál, with Captain Arms, a veteran navigator in whose skill he confided, peered over the interminable waste of waters. There was nothing in sight except floating objects that had welled up from the drowned city and the surround-

ing villages. Here and there the body of an animal or of a human being was seen in the tossing waves, and Cosmo Versál sadly shook his head as he pointed them out, but the stout mariner at his side chewed his tobacco, and paid attention only to his duties, shouting orders from time to time through a speaking-tube, or touching an electric button.

Cosmo Versál brought a rain-gauge and again and again allowed it to fill itself. The story was always the same—two inches per minute, ten feet per hour, the water mounted.

The nebula had settled down to regular work, and, if Cosmo's calculations were sound, there would be no intermission for four months.

After the power of the propellers had been developed the Ark was steered south-eastward. Its progress was very slow. In the course of eight hours it had not gone more than fifty miles. The night came on, and the speed was reduced until there was only sufficient way to insure the command of the vessel's movements. Powerful search-lights were employed as long as the stygian darkness continued.

With the return of the pallid light, at what should have been daybreak, Cosmo and his navigator were again at their post. In fact, the former had not slept at all, keeping watch through the long hours, with Captain Arms within easy call.

As the light became stronger, Cosmo said to the captain:

"Steer toward New York. I wish to see if the last of the tall buildings on the upper heights have gone under."

"It will be very dangerous to go that way," objected Captain Arms. "There are no landmarks, and we may strike a snag."

"Not if we are careful," replied Cosmo. "All but the highest ground is now buried very deep."

"It is taking a fool's risk," growled Captain Arms, but nevertheless he obeyed.

It was true that they had nothing to go by. The air was too thick with water, and the light too feeble for them to be able to lay their course by sighting the distant hills of New Jersey which yet remained above the level of the flood. Still, by a kind of seaman's instinct, Captain Arms made his way, until he felt that he ought to venture no farther. He had just turned to Cosmo Versál with the intention of voicing his protest, when the Ark careened slightly, shivered from stem to stern, and then began a bumping movement that nearly threw the two men from their feet.

"We are aground!" cried the captain, and instantly turned a knob that set in motion automatic machinery which cut off the engines from the propellers, and at the same time slowed down the engines themselves.

CHAPTER XI

"A Billion for a Share"

THE Ark had lodged on the loftiest part of the Palisades. It was only after long and careful study of their position, rendered possible by occasional glimpses of the Orange Hills and high points further up the course of the Hudson, that Cosmo Versál and Captain Arms were able to reach that conclusion. Where New York had stood nothing was visible but an expanse of turbid and rushing water.

But suppose the hard trap rocks had penetrated the bottom of the Ark! It was a contingency too terrible to be thought of. Yet the facts must be ascertained at once.

Cosmo, calling Joseph Smith, and commanding him to go among the frightened passengers and assure them, in his name, that there was no danger, hurried, with the captain and a few trusty men, into the bowels of the vessel. They thoroughly sounded the bottom plates. No aperture and no indentation was to be found.

But, then, the bottom was double, and the outer plates might have been perforated. If this had happened the fact would reveal itself through the leakage of water into the intervening space. To ascertain if that had occurred it was necessary to unscrew the covers of some of the manholes in the inner skin of levium.

It was an anxious moment when they cautiously removed one of these covers. At the last turns of the screw the workman who handled it instinctively turned his head aside, and made ready for a spring, more than half expecting that the cover would be driven from his hands, and a stream of water would burst in.

But the cover remained in place after it was completely loosened, and until it had been lifted off. A sigh of relief broke from every breast. No water was visible.

"Climb in there, and explore the bottom," Cosmo commanded.

There was a space of eighteen inches between the two bottoms, which were connected and braced by the curved ribs of the hull. A man immediately disappeared in the opening and began the exploration. Cosmo ordered the removal of other covers at various points, and the exploration was extended over the whole bottom. He himself passed through one of the manholes and aided in the work.

At last it was determined, beyond any doubt, that even the outer skin was uninjured. Not so much as a dent could be found in it.

"By the favor of Providence," said Cosmo Versál, as his head emerged from a manhole, "the Ark has touched upon a place where the rocks are covered with soil, and no harm has come to us. In a very short time the rising water will lift us off."

"And, with my consent, you'll do no more navigating over hills and mountains," grumbled Captain Arms. "The open sea for the sailor."

The covers were carefully replaced, and the party, in happier spirits, returned to the upper decks, where the good news was quickly spread.

The fact was that while the inspection was under way the Ark had floated off, and when Cosmo and the captain reached their bridge the man who had been left in charge reported that the vessel had swung halfway round.

"She's headed for the old Atlantic," sung out Captain Arms. "The sooner we're off the better."

But before the captain could signal the order

to go ahead, Cosmo Versál laid his hand on his arm and said:

"Wait a moment; listen."

Through the lashing of the rain a voice penetrated with a sound between a call and a scream. There could be no doubt that it was human. The captain and Cosmo looked at one another in speechless astonishment. The idea that any one outside the Ark could have survived, and could now be afloat amid this turmoil of waters, had not occurred to their minds. They experienced a creeping of the nerves. In a few minutes the voice came again, louder than before, and the words that it pronounced being now clearly audible, the two listeners could not believe their ears.

"Cosmo Versál!" it yelled. "Cosm-o-o Ver-sá-al! A billion for a share! A *billion*, I say, a *bil-li-on* for a share!"

Then they perceived, a little way off to the left, something which looked like the outline of a boat, sunk to the gunwales, washed over by every wave, and standing in it, up to their knees in water, were four men, one of whom was gesticulating violently, while the others seemed dazed and incapable of voluntary movement.

It was the boat of levium that had been thrown out of the wreckage when the battleship ran down the Municipal tower, and we must now follow the thread of its adventures up to the time of its encounter with the Ark.

As the boat was driven westward from the drowned site of Madison Square it gradually freed itself from the objects floating around, most of which soon sunk, and in an hour or two its inmates were alone—the sole survivors of a population of many millions.

Alone they were in impenetrable darkness, for, as we have said, night had by this time once more fallen. They floated on, half drowned, chilled to the bone, not trying to speak, not really conscious of one another's presence. The rain beat down upon them, the waves washed over them, the unsinkable boat sluggishly rose and fell with the heaving of the water, and occasionally they were nearly flung overboard by a sudden lurch—and yet they clung with desperate tenacity to the thwarts, as if life were still dear, as if they thought that they might yet survive, though the world was drowned.

Thus hours passed, and at last a glimmer appeared in the streaming air, and a faint light stole over the face of the water. If they saw one another, it was with unrecognizing eyes. They were devoured with hunger, but they did not know it.

Suddenly one of them—it was he who had been so miraculously thrown into the boat when it shot out of the tangle of falling beams and walls—raised his head and threw up his arms, a wild light gleaming in his eyes.

In a hoarse, screaming voice he yelled:

"Cosmo Versál!"

No other syllables that the tongue could shape would have produced the effect of that name. It roused the three men who heard it from their lethargy of despair, and thrilled them to the marrow. With amazed eyes they stared at their companion. He did not look at them, but gazed off into the thick rain. Again his voice rose in a maniacal shriek:

"Cosmo Versál! Do you hear me? Let me in! A billion for a share!"

The men looked at each other, and even in their desperate situation, felt a stir of pity in their hearts. They were not too dazed to comprehend that their companion had gone mad. One of them moved to his side, and laid a hand upon his shoulder, as if he would try to soothe him.

But the maniac threw him off, nearly precipitating him over the side of the submerged boat, crying:

"What are you doing in my boat? Over-board with you! I am looking for Cosmo Versál! He's got the biggest thing afloat! Securities! Securities! Gilt-edged! A *billion*, I tell you! Here I have them—look! Gilt-edged, every one!" and he snatched a thick bundle of papers from his pocket and waved them wildly until they melted into a pulpy mass with the down-pour.

The others now shrank away from him in fear. Fear? Yes, for still they loved their lives, and the staggering support beneath their feet had become as precious to them as the solid earth. They would have fought with the fury of madmen to retain their places in that half-swamped shell. They were still capable of experiencing a keener fear than that of the flood. They were as terrified by the presence of this maniac as they would have been on encountering him in their homes.

But he did not attempt to follow them. He still looked off through the driving rain, balancing himself to the sluggish lurching of the boat, and continued to rave, and shout, and shake his soaked bundle of papers, until, exhausted by his efforts, and half-choked by the water that drove in his face, he sank helpless upon a thwart.

Then they fell back into their lethargy, but in a little while he was on his feet again, gesticulating and raging—and thus hours passed on, and still they were afloat, and still clinging to life.

Suddenly, looming out of the strange gloom, they perceived the huge form of the Ark, and all struggled to their feet, but none could find voice but the maniac.

As soon as he saw the men, Cosmo Versál had run down to the lowest deck, and ordered the opening of a gangway on that side. When the door swung back he found himself within a few yards of the swamped boat, but ten feet above its level. Joseph Smith, Professor Moses, Professor Jones, Professor Able, and others of the passengers, and several of the crew, hurried to his side, while the rest of the passengers crowded as near as they could get.

The instant that Cosmo appeared the maniac redoubled his cries.

"Here they are," he yelled, shaking what remained of his papers. "A billion—all gilt-edged! Let me in. But shut out the others. They're only little fellows. They've got no means. They can't float an enterprise like this. Ah, you're a bright one! You and me, Cosmo Versál—we'll squeeze 'em all out. I'll give you the secrets. We'll own the earth! I'm *Amos Blank!*"

Cosmo Versál recognized the man in spite of the dreadful change that had come over him. His face was white and drawn, his eyes staring, his head bare, his hair matted with water, his clothing in shreds—but it was unmistakably Amos Blank, a man whose features the newspapers had rendered familiar to millions, a man who had for years stood before the public as the unabashed representative of the system of remorseless repression of competition, and shameless corruption of justice and legislation. After the world, for nearly three generations, had enjoyed the blessings of the reforms in business methods and social ideals that had been inaugurated by the great uprising of the people in the first quarter of the twentieth century, Amos Blank, and lesser men of his ilk, had swung back the pendulum, and reestablished more firmly than ever the reign of monopoly and iniquitous privilege.

The water-logged little craft floated nearer until it almost touched the side of the Ark directly below the gangway. The madman's eyes glowed with eagerness, and he reached up his papers, continually yelling his refrain: "A billion! Gilt-edged! Let me in! Don't give the rabble a show!"

Cosmo made no reply, but gazed down upon the man and his bedraggled companions with impassive features, but thoughtful eyes. Any one who knew him intimately, as Joseph Smith alone did, could have read his mind. He was asking himself what he ought to do. Here was the whole fundamental question to be gone over again. To what purpose had he taken so great pains to select the flower of mankind? Here was the head and chief of the offense that he had striven to eliminate appealing to him to be saved under circumstances which went straight to the heart and awoke every sentiment of humanity.

Presently he said in as low a voice as could be made audible:

"Joseph, advise me. What should I do?"

"You were willing to take Professor Pludder," replied Smith evasively, but with a plain leaning to the side of mercy.

"You know very well that that was different," Cosmo returned irritably. "Pludder was not morally rotten. He was only mistaken. He had the fundamental scientific quality, and I'm sorry he threw himself away in his obstinacy. But this man—"

"Since he is *alone*," broke in Joseph Smith with a sudden illumination, "he could do no harm."

Cosmo Versál's expression instantly brightened.

"You are right!" he exclaimed. "By himself he can do nothing. I am sure there is no one aboard who would sympathize with his ideas. Alone, he is innocuous. Besides, he's insane, and I can't leave him to drown in that condition. And I must take the others, too. Let down a landing stage," he continued in a louder voice, addressing some members of the crew.

In a few minutes all four of the unfortunates, seeming more dead than alive, were helped into the Ark.

Amos Blank immediately precipitated himself upon Cosmo Versál, and, seizing him by the arm, tried to lead him apart, saying in his ear, as he glared round upon the faces of the throng which crowded every available space:

"Hist! Overboard with 'em! What's all this trash? Shovel 'em out! They'll want to get in with us; they'll queer the game!"

Then he turned furiously upon the persons nearest him, and began to push them toward the open gangway. At a signal from Cosmo Versál, two men seized him and pinioned his arms. At that his mood changed, and, wrenching himself loose, he once more ran to Cosmo, waving his bedraggled bundle, and shouting:

"A billion! Here's the certificates—gilt-edge! But," he continued, with a cunning leer, and suddenly thrusting the sodden papers into his pocket, "you'll make out the receipts first. I'll put in *five* billions to make it a sure go, if you won't let in another soul."

Cosmo shook off the man's grasp, and again calling the two members of the crew who had before pinioned his arms, told them to lead him away, at the same time saying to him:

"You go with these men into my room. I'll see you later."

Blank took it in the best part, and willingly accompanied his conductors, only stopping a moment to wink over his shoulder at Cosmo, and then he was led through the crowd, which regarded him with unconcealed astonishment, and in many cases with no small degree of fear. As soon as he was beyond earshot, Cosmo directed Joseph Smith to hurry ahead of the party and conduct them to a particular apartment, which he designated at the same time, saying to Smith:

"Turn the key on him as soon as he's inside."

Amos Blank, now an insane prisoner in Cosmo Versál's Ark, had been the greatest financial power in the world's metropolis, a man of iron nerve and the clearest of brains, who always kept his head and never uttered a foolish word. It was he who had stood over the flight of steps in the Municipal Building, coolly measuring with his eye the rise of the water, exposing the terrible error that sent such a wave of unreasoning joy through the hearts of the thousands of refugees crowded into the doomed edifice, and receiving blows and curses for making the truth known.

He had himself taken refuge there, after visiting his office and filling his pockets with his most precious papers. How, by a marvelous stroke of fate, he became one of the four persons who alone escaped from New York after the downpour began is already known.

The other men taken from the boat were treated like rescued mariners snatched from a wreck at sea. Every attention was lavished upon them, and Cosmo Versál did not appear to regret, as far as they were concerned, that his ship's company had been so unexpectedly recruited.

CHAPTER XII

Submergence of the Old World

WE now turn our attention for a time from the New World to the Old. What did the thronging populations of Europe, Africa,

and Asia do when the signs of coming disaster chased one another, when the swollen oceans began to burst their bonds, and when the windows of the firmament were opened?

The picture that can be drawn must necessarily be very fragmentary, because the number who escaped was small and the records that they left are few.

The savants of the older nations were, in general, quite as incredulous and as set in their opposition to Cosmo Versál's extraordinary outgivings as those of America. They decried his science and denounced his predictions as the work of a fool or a madman. The president of the Royal Astronomical Society of Great Britain proved to the satisfaction of most of his colleagues that a nebula could not possibly contain enough water to drown an asteroid, let alone the earth.

"The nebulæ," said this learned astronomer, amid the plaudits of his hearers, "are infinitely rarer in composition than the rarest gas left in the receiver of an exhausted air-pump. I would undertake to swallow from a wine-glass the entire substance of any nebula that could enter the space between the earth and the sun, if it were condensed into the liquid state."

"It might be intoxicating," called out a facetious member.

"Will the chair permit me to point out," said another with great gravity, "that such a proceeding would be eminently rash, for the nebulous fluid might be highly poisonous." ["Hear! Hear!" and laughter.]

"What do you say of this strange darkness and these storms?" asked an earnest-looking man. (This meeting was held after the terrors of the "Third Sign" had occurred.)

"I say," replied the president, "that that is the affair of the Meteorological Society, and has nothing to do with astronomy. I dare say that they can account for it."

"And I dare say they can't," cried a voice.

"Hear! Hear!" "Who are you?" "Put him out!" "I dare say he's right!" "Cosmo Versál!" Everybody was talking at once.

"Will this gentleman identify himself?" asked the president. "Will he please explain his words?"

"That I will," said a tall man with long whiskers, rising at the rear end of the room. "I am pretty well known. I—"

"It's Jameson, the astrologer," cried a voice. "What's *he* doing here?"

"Yes," said the whiskered man," "it's Jameson, the astrologer, and he has come here to let you know that Cosmo Versál was born under the sign Cancer, the first of the watery triplicity, and that Berosus, the Chaldean, declared—"

An uproar immediately ensued; half the members were on their feet at once; there was a scuffle in the back part of the room, and Jameson, the astrologer, was hustled out, shouting at the top of his voice:

"Berosus, the Chaldean, predicted that the world would be drowned when all the planets should assemble in the sign Cancer—*and where are they now?* Blind and stupid dolts that you are—*where are they now?*"

It was some time before order could be restored, and a number of members disappeared, having followed Jameson, the astrologer, possibly through sympathy, or possibly with a desire to learn more about the prediction of Berosus, the father of astrology.

When those who remained, and who constituted the great majority of the membership, had quieted down, the president remarked that the interruption which they had just experienced was quite in line with all the other proceedings of the disturbers of public tranquillity who, under the lead of a crazy American charlatan, were trying to deceive the ignorant multitude. But they would find themselves seriously in error if they imagined that their absurd ideas were going to be "taken over" in England.

"I dare say," he concluded, "that there is some *scheme* behind it all."

"Another American 'trust'!" cried a voice.

The proceedings were finally brought to an end, but not before a modest member had risen in his place and timidly remarked that there was one question that he would like to put to the chair—one thing that did not seem to have been made quite clear—"Where *were* the planets now?"

A volley of hoots, mingled with a few "hears!" constituted the only reply.

Scenes not altogether unlike this occurred in the other great learned societies—astronomical, meteorological, and geological. The official representatives of science were virtually unanimous in condemnation of Cosmo Versál, and in persistent assertion that nothing that had occurred was inexplicable by known laws. But in no instance did they make it clear to anybody precisely what were the laws that they invoked, or how it happened that Cosmo Versál had been able to predict so many strange things which everybody knew really had come to pass, such as the sudden storms and the great darkness.

We are still, it must not be forgotten, dealing with a time anterior to the rising of the sea.

The Paris Academy of Sciences voted that the subject was unworthy of serious investigation, and similar action was taken in Berlin, Leningrad, Vienna, and elsewhere.

But among the people at large universal alarm prevailed, and nothing was so eagerly read as the despatches from New York, detailing the proceedings of Cosmo Versál, and describing the progress of his great levium ark. In England many procured copies of Cosmo's circulars, in which the proper methods to be pursued in the construction of arks were carefully set forth. Some set to work to build such vessels; but, following British methods of construction, they doubled the weight of everything, with the result that, if Cosmo had seen what they were about he would have told them that such arks would go to the bottom faster than to the top.

In Germany the balloon idea took full possession of the public mind. Germany had long before developed the greatest fleet of dirigibles in existence, preferring them to every other type of flying apparatus. It was reported that if worst came to

worst the best manner of meeting the emergency would be by the multiplication of dirigibles and the increase of their capacity.

The result was that a considerable number of wealthy Germans began the construction of such vessels. But when interviewed they denied that they were preparing for a flood. They said that they simply wished to enlarge and increase the number of their pleasure craft. All this was in contemptuous defiance of the warning which Cosmo Versál had been careful to insert in his circulars, that "balloons and aeros of all kinds will be of no use whatever; the only safety will be found in arks, and they must be provisioned for at least five years."

The most remarkable thing of all happened in France. It might naturally have been expected that a Frenchman who thought it worth his while to take any precautions against the extinction of the human race, would, when it became a question of a flood, have turned to the aero, for from the commencement of aerial navigation French engineers had maintained an unquestionable superiority in the construction and perfection of that kind of machine.

Their aeros could usually fly longer and carry more dead weight than those of any other nation. In the transoceanic aero races which occasionally took place the French furnished the most daring and the most frequently successful competitors.

Then, too, the French mind is masterly in appreciation of details, and Cosmo Versál's reasons for condemning the aero and the balloon as means of escaping the flood were promptly divined. In the first place it was seen that no kind of airship could be successfully provisioned for a flight of indefinite length, and in the second place the probable strength of the winds, or the crushing weight of the descending water, in case, as Cosmo predicted, a nebula should condense upon the earth, would either sweep an aero or a balloon to swift destruction, or carry it down into the waves like a water-soaked butterfly.

Accordingly, when a few Frenchmen began seriously to consider the question of providing a way of escape from the flood—always supposing, for the sake of argument, that there would be a flood—they got together, under the leadership of an engineer officer named Yves de Beauxchamps, and discussed the matter in all its aspects. They were not long in arriving at the conclusion that the best thing that could possibly be done would be to construct a *submarine.*

In fact, this was almost an inevitable conclusion for them, because before the abandonment of submarines in war on account of their *too* great powers of destruction—a circumstance which had also led to the prohibition of the use of explosive bombs in the aerial navies—the French had held the lead in the construction and management of submersible vessels, even more decisively than in the case of aeros.

"A large submarine," said de Beauxchamps, "into whose construction a certain amount of levium entered, would possess manifest advantages over Versál's Ark. It could be provisioned to any extent desired, it would escape the discomforts of the waves, winds, and flooding rain, and it could easily rise to the surface whenever that might be desirable for change of air. It would have all the amphibious advantages of a whale."

The others were decidedly of de Beauxchamps's opinion, and it was enthusiastically resolved that a vessel of this kind should be begun at once.

"If we don't need it for a flood," said de Beauxchamps, "we can employ it for a pleasure vessel to visit the wonders of the deep. We will then make a reality of that marvelous dream of our countryman of old, that prince of dreamers, Jules Verne."

"Let's name it for him!" cried one.

"Admirable! Charming!" they all exclaimed *"Vive le 'Jules Verne'!"*

Within two days, but without the knowledge of the public, the keel of the submersible "Jules Verne" was laid. But we shall hear of that remarkable craft again.

While animated, and in some cases violent, discussions were taking place in the learned circles of Europe, and a few were making ready in such manner as they deemed most effective for possible contingencies, waves of panic swept over the remainder of the Old World. There were yet hundreds of millions in Africa and Asia to whom the advantages of scientific instruction had not extended, but who, while still more or less under the dominion of ignorance and superstition, were in touch with the *news* of the whole planet.

The rumor that a wise man in America had discovered that the world was to be drowned was not long in reaching the most remote recess of the African forests and of the boundless steppes of the greater continent, and, however it might be ridiculed or received with skeptical smiles in the strongholds of civilization, it met with ready belief in less enlightened minds.

Then, the three "signs"—the first great heat, the onslaught of storm and lightning, and the *Noche Triste,* the great darkness—had been world-wide in their effects, and each had heightened the terror caused by its predecessor. Moreover, in the less enlightened parts of the world the reassurances of the astronomers and others did not penetrate at all, or, if they did, had no effect, for not only does bad news run while good news walks, but it talks faster.

It will be recalled that one of the most disquieting incidents in America, immediately preceding the catastrophic rising of the oceans, was the melting of the Arctic snows and ice-fields, with consequent inundations in the north. This stage in the progress of the coming disaster was accentuated in Europe by the existence of the vast glaciers of the Alps. The Rocky Mountains, in their middle course, had relatively little snow and almost no true glaciers, and consequently there were no scenes of this kind in the United States comparable with those that occurred in the heart of Europe.

After the alarm caused by the great darkness in September had died out, and the long spell of continuous clear skies began, the summer resorts of Switzerland were crowded as they had seldom been. People were driven there by the heat, for one thing;

and then, owing to the early melting of the winter's deposit of snow, the Alps presented themselves in a new aspect.

Mountain-climbers found it easy to make ascents upon peaks which had always hitherto presented great difficulties on account of the vast snow-fields, seamed with dangerous crevasses, which hung upon their flanks. These were now so far removed that it was practicable for amateur climbers to go where always before only trained alpinists, accompanied by the most experienced guides, dared to venture.

But as the autumn days ran on and on new snows fell, the deep-seated glaciers began to dissolve, and masses of ice that had lain for untold centuries in the mighty laps of the mountains, projecting their frozen noses into the valleys, came tumbling down, partly in the form of torrents of water and partly in roaring avalanches.

The great Aletsch glacier was turned into a river that swept down into the valley of the Rhône, carrying everything before it. The glaciers at the head of the Rhône added their contribution. The whole of the Bernese Oberland seemed to have suddenly been dissolved like a huge mass of sugar candy, and on the north the valley of Interlaken was inundated, while the lakes of Thun and Brientz were lost in an inland sea which rapidly spread over all the lower lands between the Alps and the Swiss Jura.

Farther north the Rhine, swollen by the continual descent of the glacier water, burst its banks, and broadened out until Strasbourgh lay under water with the finger of its ancient cathedral helplessly pointing skyward out of the midst of the flood. All the ancient cities of the great valley from Basle to Mayence saw their streets inundated and the foundations of their most precious architectural monuments undermined by the searching water.

The swollen river reared back at the narrow pass through the Taunus range, and formed a huge eddy that swirled over the old city of Bingen. Then it tore down between the castle-crowned heights, sweeping away the villages on the river banks from Bingen to Coblentz, lashing the projecting rocks of the Lorelei, and carrying off houses, churches and old abbeys in a rush of ruin.

It widened out as it approached Bonn and Cologne, but the water was still deep enough to inundate those cities, and finally it spread over the plain of Holland, finding a score of new mouths through which to pour into the German ocean, while the reclaimed area of the Zuyder Zee once more joined the ocean, and Amsterdam and the other cities of the Netherlands were flooded, in many cases to the tops of the house doors.

West and south the situation was the same. The Mer de Glace at Chamonix, and all the other glaciers of the Mont Blanc range, disappeared, sending floods down to Geneva and over the Dauphiny and down into the plains of Piedmont and Lombardy. The ruin was tremendous and the loss of life incalculable. Geneva, Turin, Milan, and a hundred other cities, were swept by torrents.

The rapidity of this melting of the vast snow-beds and glaciers of the Alps was inconceivable, and the effect of the sudden denudation upon the mountains themselves was ghastly. Their seamed cavernous sides stood forth, gaunt and naked, a revelation of nature in her most fearful aspects such as men had never looked upon. Mont Blanc, without its blanket of snow and ice, towered like the blackened ruin of a fallen world, a sight that made the beholders shudder.

But this flood ended as suddenly as it had begun. When the age-long accumulations of snow had all melted, the torrents ceased to pour down from the mountains, and immediately the courageous and industrious inhabitants of the Netherlands began to repair their broken dikes, while in Northern Italy and the plains of Southeastern France every effort was made to restore the terrible losses.

Of course similar scenes had been enacted, and on even a more fearful scale, in the plains of India, flooded by the melting of the enormous icy burden that covered the Himalayas, the "Abode of Snow." And all over the world, wherever icy mountains reared themselves above inhabited lands, the same story of destruction and death was told.

Then, after an interval, came the yet more awful invasion of the sea.

But few details can be given from lack of records. The Thames roared backward on its course, and London and all central England were inundated. A great bore of sea-water swept along the shores of the English Channel, and bursting through the Skager-Rak, covered the lower end of Sweden, and rushed up the Gulf of Finland, burying Leningrad, and turning all Western Russia, and the plains of Pomerania into a sea. The Netherlands disappeared. The Atlantic poured through the narrow pass of the Strait of Gibraltar, leaving only the Lion Rock visible above the waves.

At length the ocean found its way into the Desert of Sahara, large areas of which had been reclaimed, and were inhabited by a considerable population of prosperous farmers. Nowhere did the sudden coming of the flood cause greater consternation than here—strange as that statement may seem. The people had an undefined idea that they were protected by a sort of barrier from any possible inundation.

It had taken so many years and such endless labor to introduce into the Sahara sufficient water to transform its potentially rich soil into arable land that the thought of any sudden superabundance of that element was far from the minds of the industrious agriculturists. They had heard of the inundations caused by the melting of the mountain snows elsewhere, but there were no snow-clad mountains near them to be feared.

Accordingly, when a great wave of water came rushing upon them, surmounted, where it swept over yet unredeemed areas of the desert, by immense clouds of whirling dust, that darkened the air and recalled the old days of the simoom, they were taken completely by surprise. But as the water rose higher they tried valiantly to escape. They were progressive people, and many of them had aeros. Besides, two or three lines of aero expresses crossed their country. All who could do so immediately embarked in airships, some fleeing toward Europe, and others hovering about,

gazing in despair at the spreading waters beneath them.

As the invasion of the sea grew more and more serious, this flight by airship became a common spectacle over all the lower-lying parts of Europe, and in the British Isles. But, in the midst of it, the heavens opened their flood-gates, as they had done in the New World, and then the aeros, flooded with rain, and hurled about by contending blasts of wind, drooped, fluttered, and fell by hundreds into the fast mounting waves. The nebula was upon them!

In the mean time those who had provided arks of one kind or another, tried desperately to get them safely afloat. All the vessels that succeeded in leaving their wharves were packed with fugitives. Boats of every sort were pressed into use, and the few that survived were soon floating over the sites of the drowned homes of their occupants.

Before it was too late Yves de Beauxchamps and his friends launched their submarine, and plunged into the bosom of the flood.

CHAPTER XIII

Strange Freaks of the Nebula

WE return to follow the fortunes of Cosmo Versál's Ark.

After he had so providentially picked up the crazed billionaire, Amos Blank, and his three companions, Cosmo ordered Capt. Arms to bear away southeastward, bidding farewell to the drowned shores of America, and sailing directly over the lower part of Manhattan, and western Long Island. The navigation was not easy, and if the ark had not been a marvelously buoyant vessel it would not long have survived. At the beginning the heavy and continuous rain kept down the waves, and the surface of the sea was comparatively smooth, but after a while a curious phenomenon began to be noticed; immense billows would suddenly appear, rushing upon the ark now from one direction and now from another, canting it over at a dangerous angle, and washing almost to the top of the huge ellipsoid of the dome. At such times it was difficult for anybody to maintain a footing, and there was great terror among the passengers. But Cosmo, and stout Capt. Arms, remained at their post, relieving one another at frequent intervals, and never entrusting the sole charge of the vessel to any of their lieutenants.

Cosmo Versál himself was puzzled to account for the origin of the mighty billows, for it seemed impossible that they could be raised by the wind notwithstanding the fact that it blew at times with hurricane force. But at last the explanation came of itself.

Both Cosmo and the captain happened to be on the bridge together when they saw ahead something that looked like an enormous column as black as ink, standing upright on the surface of the water. A glance showed that it was in swift motion, and, more than that, was approaching in a direct line toward the Ark. In less than two minutes it was upon them.

The instant that it met the Ark a terrific roaring deafened them, and the rounded front of the dome beneath their eyes disappeared under a deluge of descending water so dense that the vision could not penetrate it. In another half minute the great vessel seemed to have been driven to the bottom of the sea. But for the peculiar construction of the shelter of the bridge its occupants would have been drowned at their posts. As it was they were soaked as if they had been plunged overboard. Impenetrable darkness surrounded them.

But the buoyant vessel shook itself, rolled from side to side, and rose with a staggering motion until it seemed to be poised on the summit of a watery mountain. Immediately the complete darkness passed, the awful downpour ceased, although the rain still fell in torrents, and the Ark began to glide downward with sickening velocity, as if it were sliding down a liquid slope.

It was a considerable time before the two men, clinging to the supports of the bridge, were able to maintain their equilibrium sufficiently to render it possible to utter a few connected words. As soon as he could speak with reasonable comfort Cosmo exclaimed:

"Now I see what it is that causes the billows, but it is a phenomenon that I should never have anticipated. It is all due to the nebula. Evidently there are irregularities of some kind in its constitution which cause the formation of almost solid masses of water in the atmosphere—suspended lakes, as it were—which then plunge down in a body as if a hundred thousand Niagaras were pouring together from the sky.

"These sudden accessions of water raise stupendous waves which sweep off in every direction, and that explains the billows that we have encountered."

"Well, this nebular navigation beats all my experience," said Capt. Arms, wiping the water out of his eyes. "I was struck by a waterspout once in the Indian ocean, and I thought that that capped the climax, but it was only a catspaw to this. Give me a clear offing and I don't care how much wind blows, but blow me if I want to get under any more lakes in the sky."

"We'll have to take whatever comes," returned Cosmo, "but I don't think there is much danger of running directly into many of these downpours as we did into this one. Now that we know what they are, we can, perhaps, detect them long enough in advance to steer out of their way. Anyhow, we've got a good vessel under our feet. Anything but an ark of levium would have gone under for good, and if I had not covered the vessel with the dome there would have been no chance for a soul in her."

As a matter of fact, the Ark did not encounter any more of the columns of descending water, but the frequent billows that were met showed that they were careering over the face of the sea in every direction.

But there was another trouble of a different nature. The absence of sun and stars deprived them of the ordinary means of discovering their place. They could only make a rough guess as to the direction in which they were going. The compasses gave them considerable assistance, and they

had perfect chronometers, but these latter could be of no use without celestial observations of some kind.

At length Cosmo devised a means of obtaining observations that were of sufficient value to partially serve their purpose. He found that while the disk of the sun was completely hidden in the watery sky, yet it was possible to determine its location by means of the varying intensity of the light.

Where the sun was, a concentrated glow appeared, shading gradually off on all sides. With infinite pains Cosmo, assisted by the experience of the captain, succeeded in determining the center of maximum illumination, and, assuming that to represent the true place of the sun, they got something in the nature of observations for altitude and azimuth, and Capt. Arms even drew on his chart "Sumner lines" to determine the position of the Ark, although he smiled at the thought of their absurd inaccuracy. Still, it was the best they could do, and was better than nothing at all.

They kept a log going also, although, as the captain pointed out, it was not of much use to know how fast they were traveling, since they could not know the precise direction, within a whole point of the compass, or perhaps several points.

"Besides," he remarked, "what do we know of the currents? This is not the old Atlantic. If I could feel the Gulf Stream I'd know whereabouts I was, but these currents come from all directions, and a man might as well try to navigate in a tub of boiling water."

"But we can, at least, keep working eastward," said Cosmo. "My idea is first to make enough southing to get into the latitude of the Sahara Desert, and then run directly east, so as to cross Africa where there are no mountains, and where we shall be certain of having plenty of water under our keel.

"Then, having got somewhere in the neighborhood of Suez, we can steer down into the region of the Indian ocean, and circle round south of the Himalayas. I want to keep an eye on those mountains, and stay around the place where they disappear, because that will be the first part of the earth to emerge from the flood and it is there that we shall ultimately make land."

"Well, we're averaging eight knots," said the captain, " and at that rate we ought to be in the longitude of the African coast in about twenty days. How high will the water stand then?"

"My gages show," replied Cosmo, "that the regular fall amounts to exactly the same thing as at the beginning—two inches a minute. Of course the spouts increase the amount locally, but I don't think that they add materially to the general rise of the flood. Two inches per minute means 4,800 feet in twenty days. That'll be sufficient to make safe navigation for us all the way across northern Africa. We'll have to be careful in getting out into the Indian Ocean area, for there are mountains on both sides that might give us trouble, but the higher ones will still be in sight, and they will serve to indicate the location of the lower ranges already submerged, but not covered deeply enough to afford safe going over them."

"All right," said Captain Arms, "you're the commodore, but if we don't hang our timbers on the Mountain of the Moon, or the Alps, or old Ararat, I'm a porpoise. Why can't you keep circling round at a safe distance, in the middle of the Atlantic, until all these reefs get a good depth of water on 'em?"

"Because," Cosmo replied, "even if we keep right on now it will probably take two months, allowing for delays in getting around dangerous places, to come within sight of the Himalayas, and in two months the flood will have risen nearly 15,000 feet, thus hiding many of the landmarks. If we should hold off here a couple of months before starting eastward nothing but the one highest peak on the globe would be left in sight by the time we arrived there, and that wouldn't be anything more than a rock, so that with the uncertainty of our navigation we might not be able to find it at all. I must know the spot where Tibet sinks, and then manage to keep in its neighborhood."

That ended the argument.

"Give me a safe port, with lights and bearings, and I'll undertake to hit it anywhere in the two hemispheres, but blow me if I fancy steering for the top of the world by dead reckoning, or no reckoning at all," Capt. Arms said.

At night, of course, they had not even the slight advantage that their observations of the probable place of the sun gave them when it was above the horizon. Then they had to go solely by the indications of the compass. Still, they forged steadily ahead, and when they got into what they deemed the proper latitude, they ran for the site of the drowned Sahara.

After about a week the billowing motion caused by the descent of the "lakes in the sky" ceased entirely, to their great delight, but the lawless nebula was now preparing another surprise for them.

On the ninth night after their departure from their lodgment on the Palisades Cosmo Versál was sleeping in his bunk close by the bridge, where he could be called in an instant, dreaming perhaps of the glories of the new world that was to emerge out of the deluge, when he was abruptly awakened by the voice of Capt. Arms, who appeared to be laboring under uncontrollable excitement.

"Tumble up quicker'n you ever did in your life!" he exclaimed. "The flood's over!"

Cosmo sprang out of bed and pulled on his coat in a second.

"What do you mean?" he demanded.

"Look for yourself," said the captain, pointing overhead.

Cosmo Versál glanced up and saw the sky blue with stars! The rain had entirely ceased. The surface of the sea was almost as smooth as glass, though rising and falling slowly, with a long, rolling motion. The Ark rode steadily, shivering, like an ocean liner, under the impulse of its engines, and the sudden silence, succeeding the ceaseless roar of the downpour, which had never been out of their ears from the start of the voyage, seemed supernatural.

"When did this happen?" he demanded.

"It began not more than five minutes ago. I was

just saying to myself that we ought to be somewhere near the center of the old Atlantic as it used to be, and wondering whether we had got our course laid right to go fairly between the Canaries and the Cape de Verde, for I didn't want to be harpooned by Gogo or the Peak of Teneriffe, when all of a sudden there came a lightening in the nor'east and the stars broke out there.

"I was so set aback that I didn't do anything for two or three minutes but stare at the stars. Then the rain stopped and a curtain seemed to roll off the sky, and in a minute more it was clear down to the horizon all round. Then I got my wits together and ran to call you."

Cosmo glanced around and above, seeming to be as much astonished as the captain had been. He rubbed his huge bald dome and looked all round again before speaking. At last he said:

"It's the nebula again. There must be a hole in it."

"Its whole bottom's knocked out, I reckon," said the captain. "Maybe it's run out of water—sort o' squeezed itself dry."

Cosmo shook his head.

"We are not yet in the heart of it," he said. "It is evident to me now that what I took for the nucleus was only a close-coiled spiral, and we've run out of that, but the worst is yet to come. When we strike the center, then we'll catch it, and there'll be no more intermissions."

"How long will that be?" asked Captain Arms.

"It may be a week and it may be a month, though I hardly think it will be so long as that. The earth is going about twelve miles a second—that's more than a million miles a day—directly toward the center of the nebula. It has taken ten days to go through the spiral that we have encountered, making that about ten million miles thick. It's not likely that the gap between this spiral and the nucleus of the nebula is more than thirty million miles across, at the most; so you see we'll probably be in the nucleus within a month, and possibly much less than a month."

Captain Arms took a chew of tobacco.

"We can get our bearings now," he remarked. "Look, there's the moon just rising, and on my word, she is going to occult Aldebaran within an hour. I'll get an observation for longitude, and another on Polaris for latitude. No running on submerged mountains for us now."

The captain was as good as his word, and when his observations had been made and the calculations completed he announced that the position of the Ark was: Latitude, 16 degrees 10 minutes north; longitude, 42 degrees 28 minutes west.

"Lucky for us," he exclaimed, "that the sky cleared. If we'd kept on as we were going we'd have struck the Cape de Verde, and if that had happened at night we'd probably have left our bones on a drowning volcano. We ought to have been ten or twelve degrees farther north to make a safe passage over the Sahara. What's the course now? Are you still for running down the Himalaya mountains?"

"I'll decide later what to do," said Cosmo Versál. "Make your northing, and then we'll cruise around a little and see what is best to be done."

When day came on, brilliant with sunshine, and the astonished passengers, hurrying out of their bunks, crowded about the now opened gangways and the port holes, which Cosmo had also ordered to be opened, and gazed with delight upon the smooth blue sea, the utmost enthusiasm took possession of them.

The flood was over!

They were sure of it, and they shook hands with one another and congratulated themselves and hurrahed, and gave cheers for the Ark and cheers for Cosmo Versál. Then they began to think of their drowned homes and of their lost friends, and sadness followed joy. Cosmo was mobbed by eager inquirers wherever he made his appearance.

Was it all over for good? Would the flood dry up in a few days? How long would it be before New York would be free of water? Were they going right back there? Did he think there was a chance that many had escaped in boats and ships? Couldn't they pick up the survivors if they hurried back?

Cosmo tried to check the enthusiasm.

"It's too early for rejoicing," he assured them. "It's only a break in the nebula. We've got a respite for a short time, but there's worse coming. The drowning of the world will proceed. We are the only survivors, except perhaps some of those who inhabited the highlands. Everything less than 2,400 feet above the former level of the sea is now under water. When the flood begins again it will keep on until it is six miles deep over the old sea margins."

"Why not go back and try to rescue those who you say may have found safety on the highlands?" asked one.

"I have chosen my company," he said "and I had good reasons for the choice I made. I have already added to the number, because simple humanity compelled me, but I can take no more. The quantity of provisions aboard the Ark is not greater than will be needed by ourselves. If the rest of the world is drowned it is not my fault. I did my best to warn them. Besides, we could do nothing in the way of rescue even if we should go back for that purpose. We could not approach the submerged plateaus. We would be aground before we got within sight of them."

These words went far to change the current of feeling among the passengers. When they learned that there would be danger for themselves in the course that had been proposed their humanity proved to be less strong than their desire for self-preservation. Nevertheless, as we shall see, the Ark ultimately went back to America, though not for any reason that had yet been suggested.

Meanwhile the unexpected respite furnished by the sudden cessation of the downpour from the sky had other important results, to which we now turn.

CHAPTER XIV

Escape of the President

WHEN Professor Abiel Pludder indited his savage response to Cosmo Versál's invitation to become one of the regenerators of

mankind by embarking in the Ark, he was expressing his professional prejudice rather than his intellectual conviction. As Cosmo had remarked, Pludder had a good brain and great scientific acuteness, and, although he did not believe in the nebular theory of a flood, and was obstinately opposed to everything that was not altogether regular and according to recognized authority in science, yet he could not shut his eyes to the fact that something was going wrong in the machinery of the heavens. But it annoyed him to find that his own explanations were always falsified by the event, while Cosmo Versál seemed to have a superhuman fore-glimpse of whatever happened.

His pride would not allow him to recede from the position that he had taken, but he could not free himself from a certain anxiety about the future. After he had refused Cosmo Versál's invitation, the course of events strengthened this anxiety. He found that the official meteorologists were totally unable to account for the marvelous vagaries of the weather.

Finally, when the news came of tremendous floods in the north, and of the overflowing of Hudson Bay, he secretly determined to make some preparations of his own. He still rejected the idea of a watery nebula, but he began to think it possible that all the lowlands of the earth might be overflowed by the sea, and by the melting of mountain snows and glaciers, together with deluging rainfall. After what had passed, he could not think of making any public confession of his change of heart, but his sense of humanity compelled him to give confidential warning to his friends that it would be well to be prepared to get on high ground at a moment's notice.

He was on the point of issuing, but without his signature, an official statement cautioning the public against unprecedented inundations, when the first tidal wave arrived on the Atlantic coast and rendered any utterance of that kind unnecessary. People's eyes were opened, and now they would look out for themselves.

Pludder's private preparations amounted to no more than the securing of a large express aero, in which, if the necessity for suddenly leaving Washington should arise, he intended to take flight, together with President Samson, who was his personal friend, and a number of other close friends, with their families. He did not think that it would be necessary, in any event, to go farther than the mountains of Virginia.

The rising of the sea, mounting higher at each return, at length convinced him that the time had come to get away. Hundreds of air craft had already departed westward, not only from Washington, but from New York, Philadelphia, Baltimore, Boston, and other seaboard cities, before Professor Pludder assembled his friends by telephone on the Capitol grounds, where his aero was waiting.

The lower streets of the city were under water from the overflow of the Potomac, which was backed up by the influx of the Atlantic into Chesapeake Bay, and the most distressing scenes were enacted there, people fleeing in the utmost disorder toward higher ground, carrying their children and some of their household goods, and uttering doleful cries. Many, thinking it the best way to escape, embarked in frail boats on the river, which was running upstream with frightful velocity, and rising perceptibly higher every second. Most of these boats were immediately overturned or swamped.

If the start had been delayed but a little longer, the aero would have been mobbed by the excited people, who uttered yells of disappointment and rage when they saw it rise from its tower and sail over the city. It was the last air-ship that left Washington, and it carried the last persons who escaped from the national capital before the downpour from the atmosphere began which put an end to all possibility of getting away.

There were on board, in addition to a crew of three, twenty-two persons. These included President Samson, with his wife and three children, seven other men with their families, making, together, sixteen persons, and Professor Pludder, who had no family.

More because they wished to escape from the painful scenes beneath them than because they deemed that there was any occasion for particular haste, they started off at high speed, and it was probably lucky for them that this speed was maintained after they had left Washington out of sight. They rapidly approached the Blue Ridge in the neighborhood of Luray, and Pludder was about to order a landing there, as night was approaching, when with great suddenness the sky filled with dense clouds and a tremendous downpour began. This was the same phenomenon which has already been described as following closely the attack at New York on Cosmo Versál's Ark.

The aero, luckily, was one of the best type, and well covered, so that they were protected from the terrible force of the rain, but in the tumult there could be no more thought of descending. It would have been impossible to make a landing in the midst of the storm and the pouring water, which rushed in torrents down the mountainside. Professor Pludder was a brave man and full of resources when driven into a corner. Being familiar with the construction and management of aeros, for he had been educated as an engineer, he now took charge of the airship.

Within twenty minutes after the sky had opened its batteries—for the rain had almost the force of plunging shot—a mighty wind arose, and the aero, pitching, tossing, and dipping like a mad thing, was driven with frightful speed eastward. This wild rush continued for more than an hour. By this time it was full night, and the pouring rain around them was as impenetrable to the sight as a black wall.

They had their electric lamps inside, and their search-lights, but it was impossible to tell where they were. Pludder turned the search-light downward, but he could not make out the features of the ground beneath them. It is likely that they were driven at least as far as Chesapeake Bay, and they may have passed directly over Washington.

At last, however, the wind slewed round, and began to blow with undiminished violence from the northeast. Plunging and swerving, and sometimes

threatened with a complete somersault, the aero hurried away in its crazy flight, while its unfortunate inmates clung to one another, and held on by any object within reach, in the endeavor to keep from being dashed against the metallic walls.

The crew of the aero were picked men, but no experience could have prepared them for the work which they now had to do. Without the ready brain of Professor Pludder to direct their efforts, and without his personal exertions, their aerial ship would have been wrecked within a quarter of an hour after the storm struck it. He seemed transformed into another person. Hatless and coatless, and streaming with water, he worked like a demon. He was ready at each emergency with some device which, under his direction, had the effect of magic.

A hundred times the aero plunged for the ground, but was saved and turned upward again just as it seemed on the point of striking. Up and down, right and left, it ran and pitched and whirled, like a cork in a whirlpool. Sometimes it actually skimmed the ground, plowing its way through a torrent of rushing water, and yet it rose again and was saved from destruction.

This terrible contest lasted another hour after the turning of the wind, and then the latter died out. Relieved from its pressure, the aero ran on with comparative ease. Professor Pludder, suspecting that they might now be getting into a mountainous district, made every effort to keep the craft at a high elevation, and this, notwithstanding the depressing force of the rain, they succeeded in doing. After the dying out of the wind they kept on, by the aid of their propellers, in the same direction in which it had been driving them, because, in the circumstances, one way was as good as another.

The terrible discomfort of the President and his companions in the cabin of the aero was greatly relieved by the cessation of the wind, but still they were in a most unfortunate state. The rain, driven by the fierce blasts, had penetrated through every crevice, and they were drenched to the skin. No one tried to speak, for it would have been almost impossible to make oneself heard amid the uproar. They simply looked at one another in dismay and prayed for safety.

Professor Pludder, not now compelled to spend every moment in the management of the craft, entered the cabin occasionally, pressed the hand of the President, smiled encouragingly on the women and children, and did all he could, in pantomime, to restore some degree of confidence. Inside, the lights were aglow, but outside it was as dark as pitch, except where the broad finger of the searchlight, plunging into the mass of tumbling water, glittered and flashed.

The awful night seemed endless, but at last a pale illumination appeared in the air, and they knew that day had come. The spectacle of the sky deluge was now so terrible that it struck cold even to their already benumbed hearts. The atmosphere seemed to have been turned into a mighty cataract thundering down upon the whole face of the earth. Now that they could see as well as hear, the miracle of the preservation of the aero appeared incredible.

As the light slowly brightened, Professor Pludder, constantly on the outlook, caught a glimpse of a dark, misty object ahead. It loomed up so suddenly, and was already so close, that before he could sufficiently alter the course of the aero, it struck with such violence as to crush the forward end of the craft and break one of the planes. Everybody was pitched headforemost, those inside falling on the flooring, while Pludder and the three men of the crew were thrown out upon a mass of rocks. All were more or less seriously injured, but none was killed or totally disabled.

Pludder sprang to his feet, and, slipping and plunging amid the downpour, managed to get back to the wreck and aid the President and the others to get upon their feet.

"We're lodged on a mountain!" he yelled. "Stay inside, under the shelter of the roof!"

The three men who, together with the professor, had been precipitated out among the rocks, also scrambled in, and there they stood, or sat, the most disconsolate and despairing group of human beings that ever the eye of an overseeing Providence looked down upon.

The President presented the most pitiable sight of all. Like the rest, his garments were sopping, his eyes were bloodshot, his face was ghastly, and his tall silk hat, which he had jammed down upon his brow, had been softened by the water and crushed by repeated blows into the form of a closed accordion. Of the women and children it is needless to speak; no description could convey an idea of their condition.

In these circumstances, the real strength of Professor Abiel Pludder's mind was splendidly displayed. He did not lose his head, and he comprehended the situation, and what it was necessary to do, in a flash. He got out some provisions and distributed them to the company, in some cases actually forcing them to eat. With his own hands he prepared coffee, with the apparatus always carried by express aeros, and made them drink it.

When all had thus been refreshed he approached President Samson and shouted in his ear:

"We shall have to stay here until the downpour ceases. To guard against the effects of a tempest, if one should arise, we must secure the aero in its place. For that I need the aid of every man in the party. We have, fortunately, struck in a spot on the mountain where we are out of the way of the torrents of water that are pouring down through the ravines on either side. We can make our lodgment secure, but we must go to work immediately."

Stimulated by his example, the President and the others set to work, and with great difficulty, for they had to guard their eyes and nostrils from the driving rain, which, sometimes, in spite of their precautions, nearly smothered them, they succeeded in fastening the aero to the rocks by means of metallic cables taken from its stores. When this work was finished they returned under the shelter of the cabin roof and lay down, exhausted. So worn out were they that all of them quickly fell into a troubled sleep.

It would be needless to relate in detail the sufferings, mental and physical, that they underwent

during the next ten days. While they were hanging there on the mountain the seaboard cities of the world were drowned, and Cosmo Versál's Ark departed on the remarkable voyage that has been described in a former chapter. They had plenty of provisions, for the aero had been well stored, but partly through precaution and partly because of lack of appetite they ate sparingly. The electric generators of the aero had not been injured in the wreck of the craft, and they were able to supply themselves with sufficient heat and with light inside the cabin at night.

Once they had a strange visitor—a half-drowned bear, which had struggled up the mountain from its den somewhere below—but that was the only living creature beside themselves that they saw. After gazing wistfully at the aero from the top of a rock the poor bear stumbled into one of the torrents that poured furiously down on each side, and was swept from their sight.

Fortunately, the wind that they had anticipated did not come, but frequently they saw or heard the roaring downpours of solid watery columns like those that had so much astonished Cosmo Versál and Captain Arms in the midst of the Atlantic, but none came very near them.

Professor Pludder ventured out from time to time, clambering a little way up and down the projecting ridge of the mountain on which they were lodged, and at length was able to assure his companions that they were on the northwestern face of Mount Mitchell, the highest peak of the Appalachian range. With the aid of his pocket aneroid, making allowance for the effect of the lifting of the whole atmosphere by the flood, and summoning his knowledge of the locality—for he had explored, in former years, all the mountains in this region—he arrived at the conclusion that their place of refuge was elevated about four thousand feet above the former level of the sea.

At first their range of vision did not allow them to see the condition of the valleys below them, but as the water rose higher it gradually came into view. It crept steadily up the slopes beneath, which had already been stripped of their covering of trees and vegetation by the force of the descending torrents, until on the tenth day it had arrived almost within reach. Since, as has just been said, they were four thousand feet above the former level of the sea, it will be observed that the water must have risen much more rapidly than the measurements of Cosmo Versál indicated. Its average rate of rise had been three instead of two inches per minute, and the world was buried deeper than Cosmo thought. The cause of his error will be explained later.

The consternation of the little party when they thus beheld the rapid drowning of the world below them, and saw no possibility of escape for themselves if the water continued to rise, as it evidently would do, cannot be depicted. Some of them were driven insane, and were with difficulty prevented by those who retained their senses from throwing themselves into the flood.

Pludder was the only one who maintained a command over his nerves, although he now at last *believed in the nebula.* He recognized that there was no other possible explanation of the flood than that which Cosmo Versál had offered long before it began. In his secret heart he had no expectation of ultimate escape, yet he was strong enough to continue to encourage his companions with hopes which he could not himself entertain.

When, after nightfall on the tenth day, the water began to lap the lower parts of the aero, he was on the point of persuading the party to clamber up the rocks in search of some shelter above, but as he stepped out of the door of the cabin to reconnoiter the way, with the aid of a search-light which he had turned up along the ridge, he was astonished to find the rain rapidly diminishing in force; and a few minutes later it ceased entirely, and the stars shone out.

The sudden cessation of the roar upon the roof brought everybody to his feet, and before Professor Pludder could communicate the good news all were out under the sky, rejoicing and offering thanks for their delivery. The women were especially affected. They wept in one another's arms, or convulsively clasped their children to their breasts.

At length the President found his voice.

"What has happened?" he asked.

Professor Pludder, with the new light that had come to him, was as ready with an explanation as Cosmo Varsál himself had been under similar circumstances.

"We must have run out of the nebula."

"The nebula!" returned Mr. Samson in surprise. "Has there been a nebula, then?"

"Without question," was the professor's answer. "Nothing but an encounter with a watery nebula could have had such a result."

"But you always said—" began the President.

"Yes," Pludder broke in, "but one may be in error sometimes."

"Then, Cosmo Versál—"

"Let us not discuss Cosmo Versál," exclaimed Professor Pludder, with a return of his old dictatorial manner.

CHAPTER XV

Professor Pludder's Device

DAY dawned brilliantly on Mount Mitchell and revealed to the astonished eyes of the watchers an endless expanse of water, gleaming and sparkling in the morning sunlight. It was a spectacle at once beautiful and fearful, and calculated to make their hearts sink with pity no less than with terror. But for a time they were distracted from the awful thoughts which such a sight must inspire by anxiety concerning themselves. They could not drive away the fear that, at any moment, the awful clouds might return and the terrible downpour be resumed.

But Professor Pludder, whose comprehension of the cause of the deluge was growing clearer the more he thought about it, did not share the anxiety of the President and the others.

"The brightness of the sky," he said, "shows that there is no considerable quantity of condensing

vapor left in the atmosphere. If the earth has run out of the nebula, that is likely to be the end of the thing. If there is more of the nebulous matter in surrounding space we may miss it entirely, or, if not, a long time would elapse before we came upon it."

"The gaps that exist in nebulæ are millions of miles across, and the earth would require days and weeks to go such distances, granting that it were traveling in the proper direction. I think it altogether probable that this nebula, which must be a small one as such things go, consists of a single mass, and that, having traversed it, we are done with it. We are out of our troubles."

"Well, hardly," said the President. "Here we are, prisoners on a mountain, with no way of getting down, the whole land beneath being turned into a sea. We can't stay here indefinitely. For how long a time are we provisioned?"

"We have compressed food enough to last this party a month," replied Professor Pludder; "that is to say, if we are sparing of it. For water we cannot lack, since this that surrounds us is not salt, and if it were we could manage to distil it. But, of course, when I said we were out of our troubles I meant only that there was no longer any danger of being swallowed up by the flood. It is true that we cannot think of remaining here. We must get off."

"But how? Where can we go?"

Professor Pludder thought a long time before he answered this question. Finally he said, measuring his words:

"The water is four thousand feet above the former level of the sea. There is no land sufficiently lofty to rise above it this side of the Colorado plateau."

"And how far is that?"

"Not less than eleven hundred miles in an air line."

The President shuddered.

"Then, all this vast country of ours from here to the feet of the Rocky Mountains is now under water thousands of feet deep!"

"There can be no doubt of it. The Atlantic Coast States, the Southern States, the Mississippi Valley, the region of the Great Lakes, and Canada are now a part of the Atlantic Ocean."

"And all the great cities — gone! Merciful Father! What a thought!"

The President mused for a time, and gradually a frown came upon his brow. He glanced at Professor Pludder with a singular look. Then his cheek reddened, and an angry expression came into his eyes. Suddenly he turned to the professor and said sternly:

"You said you did not wish to discuss Cosmo Varsál. I should not think you would! Who predicted this deluge? Did *you?*"

"I—" began Professor Pludder, taken aback by the President's manner.

"Oh, yes," interrupted the President, "I know what you would say. You didn't predict it because you didn't see it coming. But *why* didn't you see it? What have we got observatories and scientific societies for if they can't *see* or comprehend anything? Didn't Cosmo Versál warn you? Didn't he tell you where to look, and what to look for? Didn't he show you his proofs?"

"We thought they were fallacious," stammered Professor Pludder.

"You *thought* they were fallacious—well, *were* they fallacious? Does this spectacle of a nation drowned look 'fallacious' to you? Why didn't you study the matter until you understood it? Why did you issue officially, and with my ignorant sanction—may God forgive me for my blindness!—statement after statement, assuring the people that there was no danger—statements that were even abusive towards him who alone should have been heard?

"And yet, as now appears, you knew nothing about it. Millions upon millions have perished through your obstinate opposition to the truth. They might have saved themselves if they had been permitted to listen to the reiterated warnings of Cosmo Versál.

"Oh, if *I* had only listened to him, and issued a proclamation as he urged me to do! But I followed *your* advice—*you*, in whose learning and pretended science I put blind faith! *Abiel Pludder, I would not have upon my soul the weight that now rests on yours for all the wealth that the lost world carried down into its watery grave!*"

As the President ceased speaking he turned away and sank upon a rock, pressing his hands upon his throat to suppress the sobs that broke forth despite his efforts. His form shook like an aspen.

The others crowded around excitedly, some of the women in hysterics, and the men not knowing what to do or say. Professor Pludder, completely overwhelmed by the suddenness and violence of the attack, went off by himself and sat down with his head in his hands. After a while he arose and approached the President, who had not moved from his place on the rock.

"George," he said—they had known each other from boyhood—"I have made a terrible mistake. And yet I was not alone in it. The majority of my colleagues were of my opinion, as were all the learned societies of Europe. No such thing as a watery nebula has ever been known to science. It was inconceivable."

"Some of your colleagues did not think so," said the President, looking up.

"But they were not really convinced, and they were aware that they were flying in the face of all known laws."

"I am afraid," said the President dryly, "that science does not know all the laws of the universe yet."

"I repeat," resumed Professor Pludder, "that I made a fearful mistake. I have recognized the truth too late. I accept the awful burden of blame that rests upon me, and I now wish to do everything in my power to retrieve the consequences of my error."

The President arose and grasped the professor's hand.

"Forgive me, Abiel," he said, with emotion, "if I have spoken too much in the manner of a judge pronouncing sentence. I was overwhelmed by the thought of the inconceivable calamity that has come upon us. I believe that you acted conscientiously

and according to your best lights, and it is not for any mortal to judge you for an error thus committed. Let us think only of what *we* must do now."

"To that thought," responded Professor Pludder, returning the pressure of the President's hand, "I shall devote all my energy. If I can save only this little party I shall have done something in the way of atonement."

It was a deep humiliation for a man of Professor Pludder's proud and uncompromising nature to confess that he had committed an error more fearful in its consequences than had ever been laid at the door of a human being, but Cosmo Versál had rightly judged him when he assured Joseph Smith that Pludder was morally sound, and, in a scientific sense, had the root of the matter in him. When his mental vision was clear, and unclouded by prejudice, no one was more capable of high achievements.

He quickly proved his capacity now, as he had already proved it during the preceding adventures of the President's party. It was perfectly plain to him that their only chance was in getting to Colorado at the earliest possible moment. The eastern part of the continent was hopelessly buried, and even on the high plains of the Middle West the fury of the downpour might have spread universal disaster and destroyed nearly all the vegetation; but, in any event, it was there alone that the means of prolonging life could be sought.

With the problem squarely before his mind, he was not long in finding a solution. His first step was to make a thorough examination of the aero, with the hope that the damage that it had suffered might be reparable. He had all the tools that would be needed, as it was the custom for express aeros to carry a complete equipment for repairs; but unfortunately one of the planes of the aero was wrecked beyond the possibility of repair. He knew upon what delicate adjustments the safety of the modern airship depended, and he did not dare undertake a voyage with a lame craft.

Then the idea occurred to him of trying to escape by water. The aero was a machine of the very latest type, and made of levium, consequently it would float better than wood.

If the opposition of ship-builders, incited and backed by selfish interests, had not prevented the employment of levium in marine construction, millions of lives might now have been saved; but, as we have before said, only a few experimental boats of levium had been made.

Moreover, like all aeros intended for long trips, this one had what was called a "boat-bottom," intended to enable it to remain afloat with its burden in case of an accidental fall into a large body of water. Pludder saw that this fact would enable him to turn the wreck into a raft.

It would only be necessary to reshape the craft a little, and this was the easier because the aero was put together in such a manner with screw-bolts and nuts that it could be articulated or disarticulated as readily as a watch. He had entire confidence in his engineering skill, and in the ability of the three experienced men of the crew to aid him. He decided to employ the planes for outriders, which would serve to increase the buoyancy and stability.

As soon as he had completed his plan in his mind he explained his intentions to the President. The latter and the other members of the party were at first as much startled as surprised by the idea of embarking on a voyage of eleven hundred miles in so questionable a craft, but Professor Pludder assured them that everything would go well.

"But how about the propulsion?" asked Mr. Samson. "You can't depend on the wind, and we've got no sails."

"I have thought that all out," said Pludder. "I shall use the engine, and rearrange one of the aerial screws so that it will serve for a propeller. I do not expect to get up any great speed, but if we can make only as much as two miles an hour we shall arrive on the borders of the Colorado upland, five thousand feet above sea, within about twenty-three days. We may be able to do better than that."

Nobody felt much confidence in this scheme except its inventor, but it appeared to be the only thing that could be done, and so they all fell to work, each aiding as best he could, and after four days of hard work the remarkable craft was ready for its adventurous voyage.

Professor Pludder had succeeded even better than he anticipated in transforming one of the aerial screws into a propeller. Its original situation was such that it naturally, as it were, fell into the proper place when the "hull" was partly submerged, and, the blades being made of concentric rows of small plates, there was no difficulty in reducing them to a manageable size. The position of the engine did not need to be changed at all.

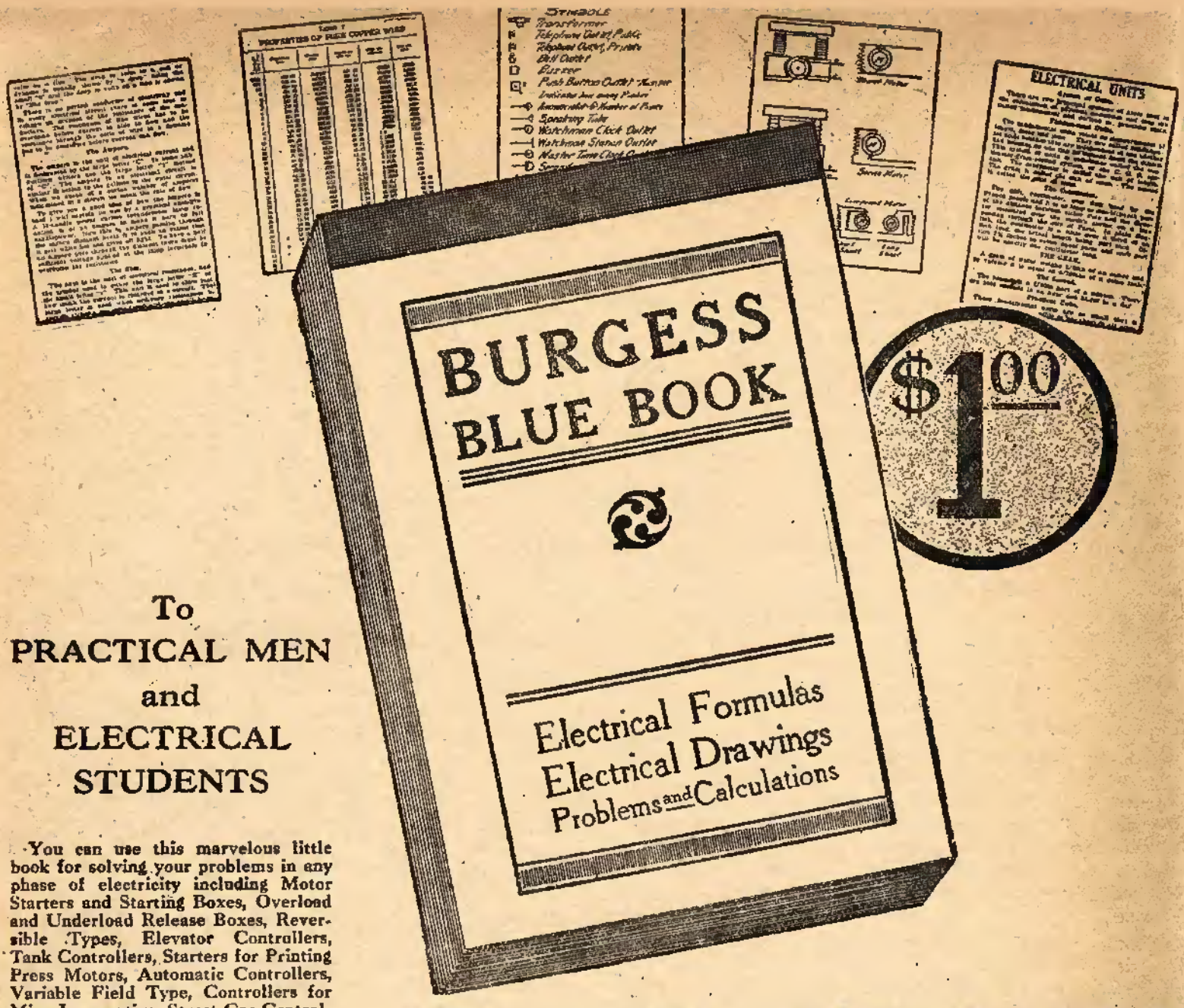
The "outriders," made up of the discarded planes, promised to serve their purpose well, and the cabin remained for a comfortable "deck-house." A rudder had been contrived by an alteration of the one which had served for guiding the aero in its flights.

The water was close to their feet, and there was no great difficulty in pushing the affair off the rocks and getting it afloat. The women and children were first put aboard, and then the men scrambled in, and Pludder set the motors going. The improvised propeller churned and spluttered, but it did its work after a fashion, and, under a blue sky, in dazzling sunshine, with a soft southerly breeze fanning the strange sea that spread around them, they soon saw the bared rocks and deeply scored flanks of Mount Mitchell receding behind them.

They were delighted to find that they were making, at the very start, no less than three miles an hour. Pludder clapped his hands and exclaimed:

"This is capital! In but little over two weeks we shall be safe on the great plains. I have good hope that many have survived there, and that we shall find a plenty of everything needed. With the instruments that were aboard the aero I can make observations to determine our position, and I shall steer for the Pike's Peak region."

When the party had become accustomed to their situation, and had gained confidence in their craft by observing how buoyantly it bore them, they became almost cheerful in their demeanor. The children gradually lost all fear, and, with the thoughtless joy of childhood in the pleasures and



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The Second Deluge

By GARRETT P. SERVISS

(Continued)

wonders of the present moment, amused themselves in the cabin, and about the deck, which had been surrounded with guard lines made of wire cable.

The water was almost waveless, and, if no storm should arise, there appeared to be no reason for anxiety concerning the outcome of their adventure. But as they drove slowly on over the submerged range of the Great Smokies, and across the valleys of Eastern Tennessee, and then over the Cumberland range, and so out above the lowlands, they could not keep their thoughts from turning to what lay beneath that fearful ocean. And occasionally something floated to the surface that wrenched their heart-strings and caused them to avert their faces.

Professor Pludder kept them informed of their location. Now they were over central Tennessee; now Nashville lay more than three thousand feet beneath their keel; now they were crossing the valley of the Tennessee River; now the great Mississippi was under them, hidden deep beneath the universal flood; now they were over the highlands of southern Missouri; and now over those of Kansas.

"George," said Professor Pludder one day, addressing the President, with more emotion than was often to be detected in his voice, "would you like to know what is beneath us now?"

"What is it, Abiel?"

"Our boyhood home—Wichita."

The President bowed his head upon his hands and groaned.

"Yes," continued Professor Pludder musingly, "there it lies, three thousand feet deep. There is the Arkansas, along whose banks we used to play, with its golden waters now mingling feebly with the mighty flood that covers them. There is the school house and the sandy road where we ran races barefoot in the hot summer dust. There is your father's house, and mine, and the homes of all our early friends—and where are *they?* Would to God that I had not been so blind!"

"But there was another not so blind," said the President, with something of the condemnatory manner of his former speech.

"I know it—I know it too well now," returned the professor. "But do not condemn me, George, for what I did not foresee and could not help."

"I am sorry, said the President sadly, "that you have awakened those old memories. But I do not condemn you, though I condemn your science—or your lack of science. But we can do nothing. Let us speak of it no more."

The weather was wonderful, considering what had so recently occurred. No clouds formed in the sky, there was only a gentle breeze stirring, at night, the heavens glittered with starry gems, and by day the sun shone so hotly that awnings were spread over those whose duties required them to be employed outside the shelter of the cabin. The improvised propeller and rudder worked to admiration, and some days they made as much as eighty miles in the twenty-four hours.

At length, on the fourteenth day of their strange voyage, they caught sight of a curiously shaped "pike" that projected above the horizon far to the west. At the same time they saw, not far away, toward the north and toward the south, a low line, like a sea-beach.

"We are getting into shallow water now," said Professor Pludder. "I have been following the course of the Arkansas in order to be sure of a sufficient depth, but now we must be very careful. We are close to the site of Las Animas, which is surrounded with land rising four thousand feet above sea level. If we should get aground there would be no hope for us. That peak in the distance is Pike's Peak."

"And what is that long line of beach that stretches on the north and south?" asked the President.

"It is the topographic line of four thousand feet," replied the professor.

"And we shall encounter it ahead."

"Yes, it makes a curve about Las Animas, and then the land lies at an average elevation of four thousand feet, until it takes another rise beyond Pueblo."

"But we cannot sail across this half-submerged area," said the President.

"There are depressions," Professor Pludder responded, "and I hope to be able to follow their traces until we reach land that still lies well above the water."

Near nightfall they got so close to the "beach" that they could hear the surf, not a thundering sound, but a soft, rippling wash of the slight waves. The water about them was ruddy with thick sediment. Professor Pludder did not dare to venture farther in the coming darkness, and he dropped overboard two of the aero's grapples, which he had heavily weighted and attached to wire cables. They took the ground at a depth of

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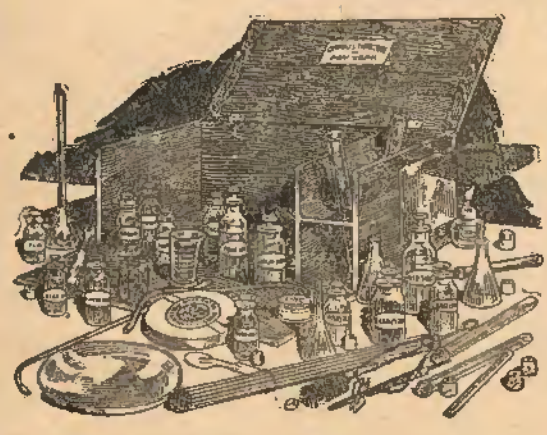

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The Second Deluge

BY GARRETT P. SERVISS

(Concluded)

only ten feet. There was no wind and no perceptible current, and so they rode all night at anchor off this strangest of coasts.

At daybreak they pulled up their anchors, and went in search of the depressions of which the professor had spoken. So accurate was his topographic knowledge and so great his skill, that late in the afternoon they saw a tall chimney projecting above the water a little ahead.

"There's all that remains of Pueblo," said Professor Pludder.

They anchored again that night, and the next day, cautiously approaching a bluff that arose precipitously from the water, their hearts were gladdened by the sight of three men, standing on a bluff, excitedly beckoning to them, and shouting at the top of their voices.

(To be concluded next month)

The Man Higher Up

BY EDWIN BALMER AND WM. B. MACHARG

(Concluded)

other word, went into the hall. But when his face was no longer visible to Trant, the hanging pouches under his eyes grew leaden gray, his fat lips fell apart loosely, his step shuffled; his mask had fallen!

"Besides, we need all the men we have, I think," said Trant, turning back to the prisoners, "to get these to a safe place. Miss Rowan," he turned then and put out his hand to steady the terrified and weeping girl, "I warned you that you had probably better not come here to-night. But since you have come and have had pain because of your stepfather's wrong doings, I am glad to be able to give you the additional assurance, beyond the fact, which you have heard, that your fiancé was not murdered, but merely put away on board the *Elizabethan Age;* that he is safe and sound, except for a few bruises, and, moreover, we expect him here any moment now. The police are bringing him down from Boston on the train which arrives at ten."

He went to the window and watched an instant, as Dickey and Rentland, having telephoned for a patrol, were waiting with their prisoners. Before the patrol wagon appeared, he saw the bobbing lanterns of a lurching cab that turned a corner a block away. As it stopped at the entrance, a police officer in plain clothes leaped out and helped after him a young man wrapped in an overcoat, with one arm in a sling, pale, and with bandaged head. The girl uttered a cry, and sped through the doorway. For a moment the psychologist stood watching the greeting of the lovers. He turned back then to the sullen prisoners.

"But it's some advance, isn't it, Rentland," he asked, "not to have to try such poor devils alone; but, at last, to capture the man who makes the millions and pays them the pennies—the man higher up?"

THE END

Ascension

BY LELAND S. COPELAND

AGE BY AGE the sun is rising
Toward the apex of its way;
Seeking heights where Vega sparkles,
Many trillion miles away.

So the soul of man is climbing;
Wistful ever, mortals wind
Farther from the brute and caveman,
Dawn and morning of the mind.

Into dust fall kings and idols,
Superstition, ancient gear,
For the strength of thought is stronger
Than the curb of hope or fear.

Man is breaking vain traditions,
Old injustice, legal wrong;
Giving outworn good for better,
While he thinks and toils along,

Quelling plagues, controlling nature—
Losing zest for martial fame—
Winning on this little planet
Glory for the human name.

Smiling upward, sweeping onward,
Through the night and through the day,
Mounts the soul of man still higher
Toward the apex of its way.

The Lord of the Winds

By Augusto Bissiri

(Continued)

".....bellowing there groaned
A noise, as of a sea in tempest torn,
By warring winds. The stormy blast of Hell
With restless fury drove the spirits on
Whirl'd round and dash'd amain."...

The gruesome fascination of that maddening scene was abruptly interrupted. The dune of sand was now almost as low as my head.

I pressed myself more tightly to the ground, and laid my head sideways on my left ear. I could not now see the edge of the dune, but I was "feeling" the little grains of sand puffed away every flying second.

How to describe the agony of those moments that seemed an eternity? Oh, anything except that uncertainty, as to what the hurricane would do with me, before death came! Suddenly a thought flashed through my mind. There was one way out of this mental torture—my gun. I felt the "joy" of meeting a milder death, and of cheating my cruel executioner. I composed myself to die as a man, and bringing the gun to my temple, I raised my head a little.

The Wind Ceases—One Only Survivor Tells This Story

WHEN I regained consciousness, the first thing I felt was a severe pain in my head. I recollected everything in a flash; but I could not remember having fired any shot, and could find no trace of blood. A piece of timber lying on my legs gave me the answer.

And, to my astonishment and exultation, the wind was no more. The air was still and the moon shone even more brightly.

I looked at the top of the tower. The green and blue flashings had disappeared, and the large glass bulb itself was no longer there. I was saved.

It was not difficult for me to imagine what had put the tower, and thus the whole system, out of action. Some flying piece of wreckage must have hit the top, smashing the bulb where the Roentgen rays were formed.

But what had put on the current and started that havoc?

I found the solution when I entered the stone house. Lying dead on the bench where the batteries were, his body resting on the largest switch, his right hand still holding a pistol, was the Hermit

Evidently the miner, determined to rob Wells, had followed us. Planning to hide in the stone house, he had entered through the open window. But, having to jump over the long bench, his hands searching for support, had pressed the largest switch, sending the full charge of the current to the towers, and, at the same time, electrocuting him.

THE END

The Educated Harpoon

BY CHAS. S. WOLFE

(Continued)

you found it in here some place, did you?" he barked.

"No," I could positively feel Frank's relief, "but I know what it was done with."

"Damn," exploded the Chief. "So do I. It was a knife, but where——"

"Oh, no, it wasn't," smiled Fenner. "It was a harpoon."

The Chief's lower jaw sagged and Frank darted to the window. Then he turned back listlessly to Joe. "Come again, Fenner," he said. "It can't be done."

"Not from those buildings below very handy," admitted Joe, "but this harpoon came from the Yeakle"

The Chief laughed shortly. "That's a poor joke, Joe," he snapped. "The Yeakle is a good quarter of a mile away."

Fenner laughed. "Yes, but this was an *educated harpoon,"* he said.

The detective Frank gave a sudden start. "I get you, Fenner," he yelled, and he was in motion while he spoke. "And I'll get him and bring him here."

"Hey," yelled the Chief, "What ——"

But a slamming door was the only answer. Frank was gone.

Davidson turned to Fenner. "What kind of a game is this?" he demanded. "You're a pair of crazy asses, you and Frank. Now tell me what you're up to."

"Bright boy, Frank," observed Fenner, "it didn't take him long to tumble, once he got the tip. Now sit down and wait until he gets back."

For a half hour we waited in silence. Fenner smoked nonchalantly and refused to talk. The Chief fumed and paced the room. "A waste of time," he muttered again and again. The minutes dragged by.

And then the door opened and Frank pushed into our presence a swarthy little man with waxed mustaches and a decidedly foreign air. He was handcuffed. Two uniformed policemen came behind, bearing a long

wooden box, which they placed on the desk. "Here's the bird, Chief," chortled Frank; "Fenner you're a dandy."

The Chief and I stared. Sure you got the right man?" he demanded. Then to the prisoner, "What have you got to say? Remember, it may be used against you."

"There is nothing to say," said the prisoner, in perfect English, "except that I killed Corey——"

"You confess?" yelled the Chief.

The man shrugged hopelessly "Confess!" he echoed, "what else is there to do? I suppose you want to know why. Well, because Corey ruined me financially. He stole my purse; I stole his life. But I'd like to know how you picked up the trail."

Fenner stepped over to the unfortunate man. "I found it," he said, simply. "Why didn't you keep that clothes line of yours indoors?"

The man started, paled, then cried in anguish, "My God, I never thought of that. I could have, couldn't I?"

"You could," agreed Fenner, grimly, "and if you had, you never would have been caught. Send him over, Chief, and I'll tell you how the trick was done."

The man departed in charge of the two officers and Fenner tore the lid off the wooden box which the officers had brought. He turned to me. "And here, Bill," he said mockingly, "Is your educated harpoon."

And he placed before my astonished eyes an educated harpoon in very truth. It was a small airplane, wirelessly controlled, and its nose was a long, bayonet-like knife.

"Then the clothes line——"

"Was his aerial," cut in Joe, "and for the distance over which he wanted to work he might just as well have kept it inside. Just look this thing over carefully, old man. It's a shame that fellow stooped to murder. He has ideas worked out here that would have retrieved his fallen fortunes. Notice that the airplane attachment is really two complete planes. I've been wondering ever since I realized how the job was done; how under the sun, after the knife was buried in Corey's back, it was gotten out again. Now I see. When it came through that window, the wings were right in back of the knife and the propellers in back of the wings with the rudder at the rear. Now notice the hinging arrangement which folded the wings into a rudder and opened the rudder out into a set of wings. The whole machine was reversed. Even an auxiliary propeller has been provided. And the lag of the knife in the wound held the whole thing like a brake just long enough for the propeller to get up speed before it gave and released the machine. At that the fellow must have had an anxious minute until he got the contrivance out through the window again. Only the fact that it is a large room allowed him to get the machine high enough to clear that window sill on its way out. The selective control offers nothing new. The control points are constantly traversed by a revolving, clock-work driven switch, and these miniature vari-colored lights were the *tell-tales* that told the distant pilot on what contact point the blade rested at any given minute. For instance, when the light showed red, the rudder could be swung to the right; when on green to the left. He followed its course through powerful night glasses. Take a look at the coherer. You never saw the like before. I'll bet it's a peach. And this relay's weight or rather, lack of it, would amaze you. But the masterpiece of the whole thing is the power plant. He must have worked for months on this model gasoline engine. I can imagine that for its weight it produces an awful power, and it is absolutely silenced.

"There are at least a dozen new ideas involved here, and new applications of hundreds of old ones. Under the spur of a great emotion—REVENGE—this man has produced a thing of terrible possibilities. You have seen what happened to Corey."

The Chief and I were gazing in awe at the little plane. I appreciated the disposition of wing surface which cut down the span sufficiently to allow it to pass through a window three feet wide. And I realized the patient paring away of a fraction of an ounce there that brought the total weight of the machine low enough to allow of the small supporting surface. There was not an unessential piece of material to be found on the plane. The only thing not needed in the operation of the thing was the knife, and even

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that had been ground down until it was little more than a very thick needle along its length, with a large cutting surface at its point.

The Chief finally broke the silence. "I think," he said, "that the educated harpoon is too dangerous a contrivance to survive. Science many need a lot of these *do-funny* things on it, but it will have to worry along without them. The details will not be made public, and just as soon as that man is convicted I'm going to personally destroy it.'

Fenner nodded thoughtfully. "Yes," he agreed, "it's a shame to do it, but God help us all if its constructional features become known."

He lifted it tenderly and placed it in the wooden box. With the lid in his hand he paused, looking down. His eyes shone with the love of an enthusiast for the delicate, wicked creation. "Good-bye, Educated Harpoon," he breathed.

THE END

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912.

Of AMAZING STORIES, published monthly at New York, N. Y., for October 1, 1926.

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Before me, a NOTARY PUBLIC in and for the State and county aforesaid, personally appeared HUGO GERNSBACK, who, having been duly sworn according to law, deposes and says that he is the Editor of the AMAZING STORIES and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411, Postal Laws and Regulations, printed on the reverse of this form, to wit:

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2. That the owner is: Experimenter Publishing Co., Inc., whose stockholders consist of: Hugo Gernsback, Sidney Gernsback, Robert W. DeMott, Dr. T. O'Conor Sloane, H. W. Secor, all of 53 Park Place, New York City; Mrs. Catherine Major, 545 West 158th Street, New York City; M. M. Finucan, 720 Cass Street, Chicago, Illinois.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent. or more of total amount of bonds, mortgages, or other securities are:
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4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

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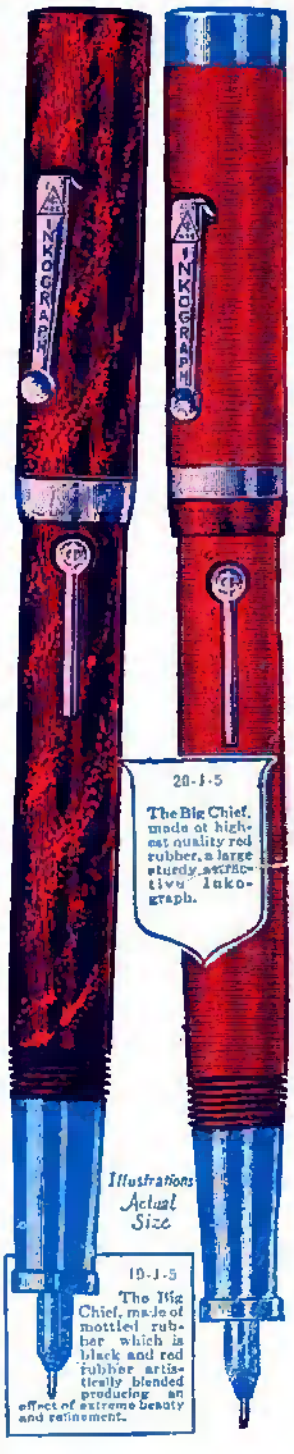

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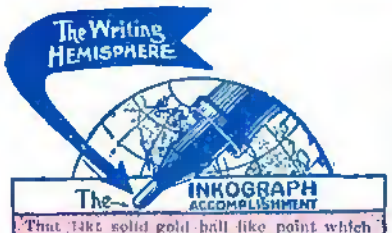

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