August

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AMAZING STORIES

HUGO GERNSBACK
EDITOR

Stories by
H. G. WELLS
A. HYATT VERRILL
JULIAN HUXLEY

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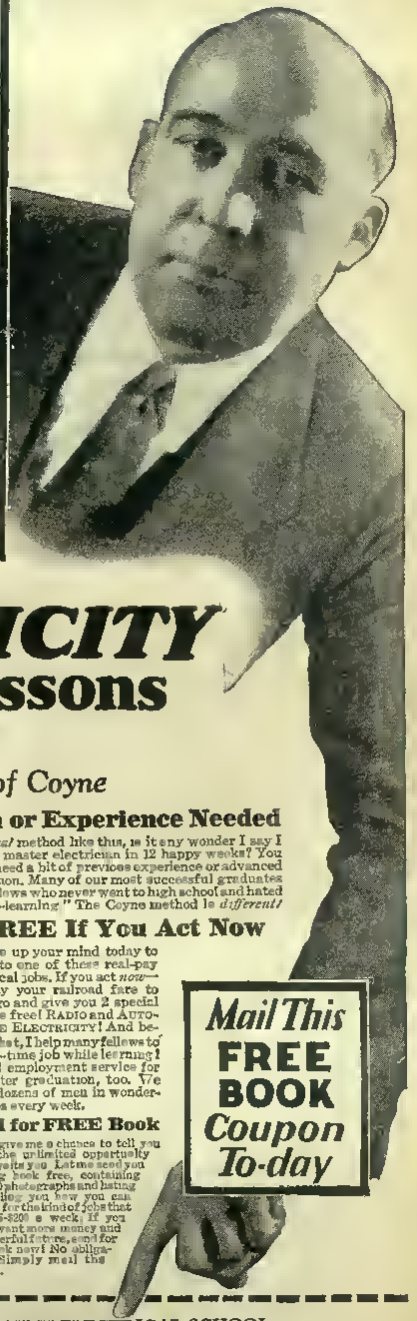

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AMAZING STORIES

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Contents for August

Our Cover

this month depicts a scene in "The War of the Worlds," by H G. Wells, in which the three Martians—highly developed intelligences in bodies vastly differing from ours are seen stalking in their machines, over a town near London, wreaking destruction of life and land by the use of their deadly Heat-Rays and long and wiry tentacles

In Our Next Issue:

THE RADIO GHOST, by Otis Adelbert Kline You can not fail to remember "The Malignant Entity," by this well-known author Here he has outdone himself in an original story, never published before, which shows you all of the wonders of radio when used for malignant purposes; a story so thrilling and yet so pregnant with possibilities, that you shudder to think that the same instrumentalities which we actually have today might be put to use by some one with a criminal mentality

THE WINGED DOOM, by Kenneth Gilbert Now that aviation has come to the fore again, through the exploits of our American flyers, "The Winged Doom," gives you a peep into the future, and you see what may happen when a powerful nation is about to invade this country Here we have aviation to the nth degree and yet, as you read on, you will become convinced of the possibilities contained in the story.

THE STONE CAT—" by Miles J Breuer, M D. " . but his (Lot's) wife looked back from behind him, and she became a pillar of salt" Thus reads the Bible (Genesis xix 26) In reading this story by the author of "The Man with the Strange Head," you will instinctively think of petrified forests and prehistoric animals, many of which can be found in our national museums We simply mention this to show that the idea of petrifying human beings is, after all, not so-far-fetched.

THE WAR OF THE WORLDS, by H G Wells In the second installment we find the Martians in possession of the earth By means of their superior intelligence and their death-dealing war implements, they have thoroughly subjugated everybody The author describes graphically what might happen on earth should any nation be able to acquire such power You will read with intense interest the concluding part of this great scientifiction story.

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AMAZING STORIES

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AUGUST, 1927
No. 5

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

Editorial and General Offices: 230 Fifth Avenue, New York, N. Y.

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

A DIFFERENT STORY

By HUGO GERNSBACK

NOW that AMAZING STORIES has put the first year safely behind it, it is safe to say that the magazine has definitely "arrived." Much work, however, is still left to be done. I wish to say here how much we all appreciate the continued support of our readers and their enthusiasm in supporting the magazine month after month.

While the experimental period is over, and the magazine is on a fair road to success, much ground has yet to be covered. For one thing, the magazine is not yet on a paying basis, notwithstanding the fact that 150,000 copies are printed monthly The expense of publishing and distributing the magazine and placing it on some 30,000 newsstands throughout the country is enormous. On the other hand, it takes several years to establish a magazine with the advertisers, and while AMAZING STORIES now enjoys the confidence of a few advertisers, much remains to be done Not until the magazine has some twenty or thirty pages of advertising will it be possible to realize a profit on the publication.

I believe you will appreciate a frank talk of this kind, for the simple reason that after all it is really your magazine, and is published at the present time more for your benefit than for the benefit of the publishers. It is with this thought in mind that I feel I am not expecting too much when I ask that you sign the blank below, giving us the names and addresses of as many of your friends as you think might be interested in AMAZING STORIES.

Only by having additional readers can the magazine hope to be put on a profitable basis. When we print 150,000 magazines, that does not mean that 150,000 are sold The publishers put out their magazines on the newsstands, and only those that are sold are paid for. Those that are not sold are returned for credit It is my idea, then, to send these returned copies to your friends so that those who have never seen the magazine may become acquainted with it and become steady readers. We believe this is a small favor to ask, and of course, we would like to have only the names of such of your friends as have never seen the magazine before, and who, you think, might be interested in AMAZING STORIES.

After all, we are doing pioneer work with an entirely new and different kind of magazine, and must, therefore, have whatever assistance you can give us by sending us good prospects and then let the magazine succeed on its own merits. If you do not wish to mutilate the magazine, just copy the blank and send it to us properly filled in. A copy of the magazine will then be sent free, to your friends.

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

The WAR of the WORLDS

By H. G. Wells

Author of "Under the Knife," "The Time Machine," etc.

These who have never seen a living Martian can scarcely imagine the strange horror of their appearance. The peculiar V-shaped mouth with its pointed upper lip, the absence of brow ridges, the absence of a chin beneath the wedge-like lower lip, the incessant quivering of this mouth, the Gorgon groups of tentacles,—above all, the extraordinary intensity of the immense eyes—culminated in an effect of nausea. Even at this first glimpse, we were overcome with disgust and dread.

CHAPTER I

The Eve of the War

NO one would have believed, in the last years of the nineteenth century, that human affairs were being watched keenly and closely by intelligences greater than man's and yet as mortal as his own; that as men busied themselves about their affairs they were scrutinized and studied, perhaps almost as narrowly as a man with a microscope might scrutinize the transient creatures that swarm and multiply in a drop of water. With infinite complacency men went to and fro over this globe about their little affairs, serene in their assurance of their empire over matter. It is possible that the infusoria under the microscope do the same. No one gave a thought to the older worlds of space as sources of human danger, or thought of them only to dismiss the idea of life upon them as impossible or improbable. It is curious to recall some of the mental habits of those departed days. At most, terrestrial men fancied there might be other men upon Mars, perhaps inferior to themselves and ready to welcome a missionary enterprise. Yet, across the gulf of space, minds that are to our minds as ours are to those of the beasts that perish, intellects vast and cool and unsympathetic, regarded this earth with envious eyes, and slowly and surely drew their plans against us. And early in the twentieth century came the great disillusionment.

The planet Mars, I scarcely need remind the reader, revolves about the sun at a mean distance of 140,000,000 miles, and the light and heat it receives from the sun is less than half of that received by this world. It must be, if the nebular hypothesis has any truth, older than our world, and long before this earth ceased to be molten, life upon its surface must have begun its course. The fact that it is scarcely one-seventh of the volume of the earth must have accelerated its cooling to the temperature at which life could begin. It has air and water, and all that is necessary for the support of animated existence.

Yet so vain is man, and so blinded by his vanity, that no writer, up to the very end of the nineteenth century, expressed any idea that intelligent life might have developed there far beyond its earthly level, or indeed at all. Nor was it generally understood that since Mars is older than our earth, with scarcely a quarter of the superficial area, and remoter from the sun, it necessarily follows that it is not only more distant from life's beginning but nearer its end.

The secular cooling that must some day overtake our planet has already gone far indeed with our neighbor. Its physical condition is still largely a mystery, but we know now that even in its equatorial region the midday temperature barely approaches that of our coldest winter. Its air is much more attenuated than ours, its oceans have shrunk until they cover but a third of its surface, and as its slow seasons change huge snowcaps gather and melt about either pole, and periodically inundate its temperate zones. That last stage of exhaustion, which to us is still incredibly remote, has become a present-day problem for the inhabitants of Mars. The immediate pressure of necessity has brightened their intellects, enlarged their powers, and hardened their hearts. And looking across space, with instruments and intelligences such as we have scarcely dreamt of, they see, at its nearest distance, only 35,000,000 of miles sunward of them, a morning star of hope, our own warmer planet green with vegetation and gray with water, with a cloudy atmosphere eloquent of fertility, with glimpses through its drifting cloud-wisps of broad stretches of populous country and narrow navy-crowded seas.

And we men, the creatures who inhabit this earth, must be to them at least as alien and lowly as are the monkeys and lemurs to us. The intellectual side of man already admits that life is an incessant struggle for existence, and it would seem that this too is the belief of the minds upon Mars. Their world is far gone in its cooling, and this world is still crowded with life, but crowded only with what they regard as inferior animals. To carry warfare sunward is indeed their only escape from the destruction that generation after generation creeps upon them.

And before we judge of them too harshly, we must remember what ruthless and utter destruction our own species has wrought, not only upon animals, such as the vanished bison and the dodo, but upon its own inferior races. The Tasmanians, in spite of their human likeness, were entirely swept out of existence in a war of extermination waged by European immigrants, in the space of fifty years. Are we such apostles of mercy as to complain if the Martians warred in the same spirit?

The Martians seem to have calculated their descent with amazing subtlety—their mathematical learning is evidently far in excess of ours—and to have carried out their preparations with a well-

OF all the stories that H. G Wells wrote, perhaps none has become so justly famous as "The War of the Worlds" In this classic, one of the first great Martian stories, the Martians make war upon our world with far-reaching consequences. In it, Wells makes the point that the actual Martian does not remotely resemble a human being. This is excellent science, because after all there is hardly a chance in a million that in the evolution of Mars their intelligent beings should even suggest the human race. Evolutionists today agree that the human race, in being endowed with its intelligence, was, after all, only a biological accident There is no reason why insects or some other species could not just as well be the rulers of some planet.

Wells has often been condemned because of his pictured ruthlessness of Martians, but, after all, why should they not be ruthless? Are we not ourselves as ruthless when we dissect insects and low animals for our scientific investigations? If there were a superior intelligence, to which, by comparison, ours was as inferior as that of a chicken compared to a man's, there would be no good reason why it should not be ruthless if it wanted to conquer the planet for its own designs We humans ourselves would not hesitate to do the same thing if we sent an expedition, let us say, to the moon, if we found what we considered a low species there

In any event, the "War of the Worlds" is a tremendous document that will remain a classic for centuries to come.

nigh perfect unanimity. Had our instruments permitted it, we might have seen the gathering trouble far back in the nineteenth century. Men like Schiaparelli watched the red planet—it is odd, by-the-by, that for countless centuries Mars has been the star of war—but failed to interpret the fluctuating appearances of the markings they mapped so well. All that time the Martians must have been getting ready.

DURING the opposition of 1894, a great light was seen on the illuminated part of the disc, first at the Lick Observatory, then by Perrotin of Nice, and then by other observers. English readers heard of it first in the issue of *Nature* dated August 2. I am inclined to think that the appearance may have been the casting of the huge gun, the vast pit sunk into their planet, from which their shots were fired at us. Peculiar markings, as yet unexplained, were seen near the site of that outbreak during the next two oppositions.

The storm burst upon us six years ago now. As Mars approached opposition, Lavelle of Java set the wires of the astronomical exchange palpitating with the amazing intelligence of a huge outbreak of incandescent gas upon the planet. It had occurred towards midnight of the 12th, and the spectroscope, to which he had at once resorted, indicated a mass of flaming gas, chiefly hydrogen, moving with an enormous velocity towards this earth. This jet of fire had become invisible about a quarter past twelve. He compared it to a colossal puff of flame, suddenly and violently squirted out of the planet, "as flaming gas rushes out of a gun."

A singularly appropriate phrase it proved. Yet the next day there was nothing of this in the papers, except a little note in the *Daily Telegraph*, and the world went in ignorance of one of the gravest dangers that ever threatened the human race. I might not have heard of the eruption at all had I not met Ogilvy, the well-known astronomer, at Ottershaw. He was immensely excited at the news, and in the excess of his feelings invited me up to take a turn with him that night in a scrutiny of the red planet.

In spite of all that has happened since, I still remember that vigil very distinctly: the black and silent observatory, the shadowed lantern throwing a feeble glow upon the floor in the corner, the steady ticking of the clockwork of the telescope, the little slit in the roof—an oblong profundity with the star dust streaked across it. Ogilvy moved about, invisible but audible. Looking through the telescope, one saw a circle of deep blue, and the little round planet swimming in the field. It seemed such a little thing, so bright and small and still, faintly marked with transverse stripes, and slightly flattened from the perfect round. But so little it was, so silvery warm, a pin's head of light! It was as if it quivered a little, but really this was the telescope vibrating with the activity of the clockwork that kept the planet in view.

As I watched, the little star seemed to grow larger and smaller, and to advance and recede, but it was simply because my eye was tired. Forty millions of miles it was from us—more than 40,000,000 miles of void. Few people realize the immensity of vacancy in which the dust of the material universe swims.

Near it in the field, I remember, were three little points of light, three telescopic stars infinitely remote, and all around it was the unfathomable darkness of empty space. You know how that blackness looks on a frosty starlight night. In a telescope it seems far profounder. And invisible to me, because it was so remote and small, flying swiftly and steadily towards me across that incredible distance, drawing nearer every minute by so many thousands of miles, came the Thing they were sending us, the Thing that was to bring so much struggle and calamity and death to the earth. I never dreamt of it then as I watched; no one on earth dreamt of that unerring missile.

That night, too, there was another jetting out of gas from the distant planet. I saw it. A reddish flash at the edge, the slightest projection of the outline, just as the chronometer struck midnight, and at that I told Ogilvy, and he took my place. The night was warm and I was thirsty, and I went, stretching my legs clumsily, and feeling my way in the darkness, to the little table where the siphon stood, while Ogilvy exclaimed at the streamer of gas that came out towards us.

That night another invisible missile started on its way to the earth from Mars, just a second or so under twenty-four hours after the first one. I remember how I sat on the table there in the blackness, with patches of green and crimson swimming before my eyes. I wished I had a light to smoke by, little suspecting the meaning of the minute gleam I had seen, and all that it would presently bring me. Ogilvy watched till one, and then gave it up, and we lit the lantern and walked over to his house. Down below in the darkness were Ottershaw and Chertsey, and all their hundreds of people, sleeping in peace.

He was full of speculation that night about the condition of Mars, and scoffed at the vulgar idea of its having inhabitants who were signalling us. His idea was that meteorites might be falling in a heavy shower upon the planet, or that a huge volcanic explosion was in progress. He pointed out to me how unlikely it was that organic evolution had taken the same direction in the two adjacent planets.

"The chances against anything man-like on Mars are a million to one," he said.

Hundreds of observers saw the flame that night and the night after, about midnight, and again the night after, and so for ten nights, a flame each night. Why the shots ceased after the tenth no one on earth has attempted to explain. It may be the gases of the firing caused the Martians inconvenience. Dense clouds of smoke or dust, visible through a powerful telescope on earth as little gray, fluctuating patches, spread through the clearness of the planet's atmosphere, and obscured its more familiar features.

Even the daily papers woke up to the disturbances at last, and popular notes appeared here, there and everywhere concerning the volcanoes upon Mars. The serio-comic periodical *Punch*, I remember, made a happy use of it in the political cartoon. And, all unsuspected, those missiles the Martians had fired at us drew earthward, rushing now at a pace of

many miles a second through the empty gulf of space, hour by hour and day by day, nearer and nearer. It seems to me now almost incredibly wonderful that, with that swift fate hanging over us, men could go about their petty concerns as they did. I remember how jubilant Markham was at securing a new photograph of the planet for the illustrated paper he edited in those days. People in these latter times scarcely realize the abundance and enterprise of our nineteenth-century papers. For my own part, I was much occupied in learning to ride the bicycle, and busy upon a series of papers discussing the probable developments of moral ideas as civilization progressed.

One night (the first missile then could scarcely have been 10,000,000 miles away) I went for a walk with my wife. It was starlight, and I explained the Signs of the Zodiac to her, and pointed out Mars, a bright dot of light creeping zenithward, towards which so many telescopes were pointed. It was a warm night. Coming home, a party of excursionists from Chertsey or Isleworth passed us singing and playing music. There were lights in the upper windows of the houses as the people went to bed. From the railway station in the distance came the sound of shunting trains, ringing and rumbling softened almost into melody by the distance. My wife pointed out to me the brightness of the red, green and yellow signal lights, hanging in a frame work against the sky. It seemed so safe and tranquil.

CHAPTER II

The Falling Star

THEN came the night of the first falling star. It was seen early in the morning rushing over Winchester eastward, a line of flame, high in the atmosphere. Hundreds must have seen it, and taken it for an ordinary falling star. Albin described it as leaving a greenish streak behind it that glowed for some seconds. Denning, our greatest authority on meteorites, stated that the height of its first appearance was about ninety or one hundred miles. It seemed to him that it fell to earth about one hundred miles east of him.

I was at home at that hour and writing in my study, and although my French windows face towards Ottershaw and the blind was up (for I loved in those days to look up at the night sky), I saw nothing of it. Yet this strangest of all things that ever came to earth from outer space must have fallen while I was sitting there, visible to me had I only looked up as it passed. Some of those who saw its flight say it travelled with a hissing sound. I myself heard nothing of that. Many people in Berkshire, Surrey, and Middlesex must have seen the fall of it, and, at most, have thought that another meteorite had descended. No one seems to have troubled to look for the fallen mass that night.

But very early in the morning poor Ogilvy, who had seen the shooting star, and who was persuaded that a meteorite lay somewhere on the common between Horsell, Ottershaw and Woking, rose early with the idea of finding it. Find it he did, soon after dawn, and not far from the sand-pits. An enormous hole had been made by the impact of the projectile, and the sand and gravel had been flung violently in every direction over the heath and heather, forming heaps visible a mile and a half away. The heather was on fire eastward, and a thin blue smoke rose against the dawn.

The Thing itself lay almost entirely buried in sand, amidst the scattered splinters of a fir-tree it had shivered to fragments in its descent. The uncovered part had the appearance of a huge cylinder, caked over, and its outline softened by a thick, scaly dun-colored incrustation. It had a diameter of about thirty yards. He approached the mass, surprised at the size and more so at the shape, since most meteorites are rounded more or less completely. It was, however, still so hot from its flight through the air as to forbid his near approach. A stirring noise within its cylinder he ascribed to the unequal cooling of its surface; for at that time it had not occurred to him that it might be hollow.

He remained standing at the edge of the pit that the thing had made for itself, staring at its strange appearance, astonished chiefly at its unusual shape and color, and dimly perceiving even then some evidences of design in its arrival. The early morning was wonderfully still, and the sun, just clearing the pine-trees towards Weybridge, was already warm. He did not remember hearing any birds that morning, there was certainly no breeze stirring, and the only sounds were the faint movements from within the cindery cylinder. He was all alone on the common.

Then suddenly he noticed with a start that some of the gray clinker, the ashy incrustation that covered the meteorite, was falling off the circular edge of the end. It was dropping off in flakes and raining down upon the sand. A large piece suddenly came off and fell with a sharp noise that brought his heart into his mouth.

For a minute he scarcely realized what this meant, and, although the heat was excessive, he clambered down into the pit close to the hulk to see the thing more clearly. He fancied even then that the cooling of the body might account for this, but what disturbed that idea was the fact that the ash was falling only from the end of the cylinder.

And then he perceived that, very slowly, the circular top of the cylinder was rotating on its body. It was such a gradual movement that he discovered it only through noticing that a black mark that had been near him five minutes ago was now at the other side of the circumference. Even then he scarcely understood what this indicated, until he heard a muffled grating sound and saw the black mark jerk forward an inch or so. Then the thing came upon him in a flash. The cylinder was artificial—hollow—with an end that screwed out! Something within the cylinder was unscrewing the top!

"Good heavens!" said Ogilvy. "There's a man in it—men in it! Half roasted to death! Trying to escape!"

At once, with a quick mental leap, he linked the thing with a flash upon Mars.

THE thought of the confined creature was so dreadful to him that he forgot the heat, and went forward to the cylinder to help turn. But luckily the dull radiation arrested him before he could burn his hands on the still glowing metal.

At that he stood irresolute for a moment, then turned, scrambled out of the pit, and set off running wildly into Woking. The time then must have been somewhere about six o'clock. He met a waggoner and tried to make him understand, but the tale he told, and his appearance, were so wild—his hat had fallen off in the pit—that the man simply drove on. He was equally unsuccessful with the potman who was just unlocking the doors of the public-house by Horsell Bridge. The fellow thought he was a lunatic at large, and made an unsuccessful attempt to shut him into the tap-room. That sobered him a little, and when he saw Henderson, the London journalist, in his garden, he called over the palings and made himself understood.

"Henderson," he called, "you saw that shooting star last night?"

"Well?" said Henderson.

"It's out on Horsell Common now."

"Good Lord!" said Henderson. "Fallen meteorite! That's good."

"But it's something more than a meteorite. It's a cylinder—an artificial cylinder, man! And there's something inside."

Henderson stood up with his spade in his hand.

"What's that?" he said. He is deaf in one ear.

Ogilvy told him all that he had seen. Henderson was a minute or so taking it in. Then he dropped his spade, snatched at his jacket, and came out into the road. The two men hurried back at once to the common, and found the cylinder still lying in the same position. But now the sounds inside had ceased, and a thin circle of bright metal showed between the top and the body of the cylinder. Air was either entering or escaping at the rim with a thin, sizzling sound.

They listened, rapped on the scale with a stick, and, meeting with no response, they both concluded the man or men inside must be insensible or dead.

Of course the two were quite unable to do anything. They shouted consolation and promises, and went off back to the town again to get help. One can imagine them, covered with sand, excited and disordered, running up the little street in the bright sunlight, just as the shop folks were taking down their shutters and people were opening their bedroom windows. Henderson went into the railway station at once, in order to telegraph the news to London. The newspaper articles had prepared men's minds for the reception of the idea.

By eight o'clock a number of boys and unemployed men had already started for the common to see the "dead men from Mars." That was the form the story took. I heard of it first from my newspaper boy, about a quarter to nine, when I went out to get my *Daily Chronicle*. I was naturally startled, and lost no time in going out and across the Ottershaw bridge to the sand-pits.

CHAPTER III

On Horsell Common

I FOUND a little crowd of perhaps twenty people surrounding the huge hole in which the cylinder lay. I have already described the appearance of that colossal bulk, imbedded in the ground. The turf and gravel about it seemed charred as if by a sudden explosion. No doubt its impact had caused a flash of fire. Henderson and Ogilvy were not there. I think they perceived that nothing was to be done for the present, and had gone away to breakfast at Henderson's house.

There were four or five boys sitting on the edge of the pit, with their feet dangling, and amusing themselves—until I stopped them—by throwing stones at the giant mass. After I had spoken to them about it, they began playing at "touch" in and out of the group of bystanders.

Among these were a couple of cyclists, a jobbing gardener I employed sometimes, a girl carrying a baby, Gregg the butcher and his little boy, and two or three loafers and golf caddies who were accustomed to hang about the railway station. There was very little talking. Few of the common people in England had anything but the vaguest astronomical ideas in those days. Most of them were staring quietly at the big table-like end of the cylinder, which was still as Ogilvy and Henderson had left it. I fancy the popular expectation of a heap of charred corpses was disappointed at this inanimate bulk. Some went away while I was there, and other people came. I clambered into the pit and fancied I heard a faint movement under my feet. The top had certainly ceased to rotate.

It was only when I got thus close to it that the strangeness of this object was at all evident to me. At the first glance it was really no more exciting than an overturned carriage or a tree blown across the road. Not so much so, indeed. It looked like a rusty gas-float half buried, more than anything else in the world. It required a certain amount of scientific education to perceive that the gray scale of the thing was no common oxide, that the yellowish-white metal that gleamed in the crack between the lid and the cylinder had an unfamiliar hue. "Extra-terrestrial" had no meaning for most of the onlookers.

At that time it was quite clear in my own mind that the Thing had come from the planet Mars, but I judged it improbable that it contained any living creature. I thought the unscrewing might be automatic. In spite of Ogilvy, I still believed that there were men in Mars. My mind ran fancifully on the possibilities of its containing manuscript, on the difficulties in translation that might arise, whether we should find coins and models in it, and so forth. Yet it was a little too large for assurance on this idea. I felt an impatience to see it opened. About eleven, as nothing seemed happening, I walked back, full of such thoughts, to my home in Maybury. But I found it difficult to get to work upon my abstract investigations.

In the afternoon the appearance of the common had altered very much. The early editions of the evening papers had startled London with enormous headlines:

"A MESSAGE RECEIVED FROM MARS,"

"REMARKABLE STORY FROM WOKING,"

and so forth. In addition, Ogilvy's wire to the Astronomical Exchange had roused every observatory in the three kingdoms.

There were half a dozen cabs or more from the Woking station standing in the road by the sand-pits, a basket chaise from Chobham, and a rather

lordly carriage. Besides that, there was quite a heap of bicycles. In addition, a large number of people must have walked, in spite of the heat of the day, from Woking and Chertsey, so that there was altogether quite a considerable crowd—one or two gaily dressed ladies among the others.

It was glaringly hot, not a cloud in the sky, nor a breath of wind, and the only shadow was that of the few scattered pine-trees. The burning heather had been extinguished, but the level ground towards Ottershaw was blackened as far as one could see, and still giving off vertical streamers of smoke. An enterprising sweetstuff dealer in the Chobham Road had sent up his son with a barrow-load of green apples and ginger-beer.

Going to the edge of the pit, I found it occupied by a group of about half a dozen men—Henderson, Ogilvy, and a tall fair-haired man that I afterwards learned was Stent, the Astronomer Royal, with several workmen wielding spades and pickaxes. Stent was giving directions in a clear, high-pitched voice. He was standing on the cylinder, which was now evidently much cooler; his face was crimson and streaming with perspiration, and something seemed to have irritated him.

A large portion of the cylinder had been uncovered, though its lower end was still embedded. As soon as Ogilvy saw me among the staring crowd on the edge of the pit, he called to me to come down, and asked me if I would mind going over to see Lord Hilton, the lord of the manor.

The growing crowd, he said, was becoming a serious impediment to their excavations, especially the boys. They wanted a light railing put up, and help to keep the people back. He told me that a faint stirring was occasionally still audible within the case, but that the workmen had failed to unscrew the top, as it afforded no grip to them. The case appeared to be enormously thick, and it was possible that the faint sounds we heard represented a noisy tumult in the interior.

I was very glad to do as he asked, and so become one of the privileged spectators within the contemplated enclosure. I failed to find Lord Hilton at his house, but I was told he was expected from London by the six o'clock train from Waterloo; and as it was then about a quarter past five, I went home, had some tea, and walked up to the station to waylay him.

CHAPTER IV

The Cylinder Unscrews

WHEN I returned to the common the sun was setting. Scattered groups were hurrying from the direction of Woking, and one or two persons were returning. The crowd about the pit had increased, and stood out black against the lemon-yellow of the sky—a couple of hundred people perhaps. There were a number of voices raised, and some sort of struggle appeared to be going on about the pit. Strange imaginings passed through my mind. As I drew nearer I heard Stent's voice:

"Keep back! Keep back!"

A boy came running towards me.

"It's a movin'," he said to me as he passed—"a-screwin' and a-screwin' out. I don't like it. I'm a-goin' 'ome, I am."

I went on to the crowd. There were really, I should think, two or three hundred people elbowing and jostling one another, the one or two ladies there being by no means the least active.

"He's fallen in the pit!" cried someone.

"Keep back!" said several.

The crowd swayed a little, and I elbowed my way through. Everyone seemed greatly excited. I heard a peculiar humming sound from the pit.

"I say!" said Ogilvy, "help keep those idiots back. We don't know what's in the confounded thing, you know!"

I saw a young man, a shop assistant in Woking I believe he was, standing on the cylinder and trying to scramble out of the hole again. The crowd had pushed him in.

The end of the cylinder was being screwed out from within. Nearly two feet of shining screw projected. Somebody blundered against me, and I narrowly missed being pitched on to the top of the screw. I turned, and as I did so the screw must have come out, and the lid of the cylinder fell upon the gravel with a ringing concussion. I stuck my elbow into the person behind me, and turned my head towards the Thing again. For a moment that circular cavity seemed perfectly black. I had the sunset in my eyes.

I think everyone expected to see a man emerge—possibly something a little unlike us terrestrial men, but in all essentials a man. I know I did. But, looking, I presently saw something stirring within the shadow—grayish billowy movements, one above another, and then two luminous discs like eyes. Then something resembling a little snake, about the thickness of a walking-stick, coiled up out of the writhing middle, and wriggled in the air towards me—and then another.

A sudden chill came over me. There was a loud shriek from a woman behind. I half turned, keeping my eyes fixed upon the cylinder still, from which other tentacles were now projecting, and began pushing my way back from the edge of the pit. I saw astonishment giving place to horror on the faces of the people about me. I heard inarticulate exclamations on all sides. There was a general movement backward. I saw the shopman struggling still on the edge of the pit. I found myself alone, and saw the people on the other side of the pit running off, Stent among them. I looked again at the cylinder, and ungovernable terror gripped me. I stood petrified and staring.

A big grayish, rounded bulk, the size, perhaps, of a bear, was rising slowly and painfully out of the cylinder. As it bulged up and caught the light, it glistened like wet leather. Two large dark-colored eyes were regarding me steadfastly. It was rounded, and had, one might say, a face. There was a mouth under the eyes, the lipless brim of which quivered and panted, and dropped saliva. The body heaved and pulsated convulsively. A lank tentacular appendage gripped the edge of the cylinder, another swayed in the air.

Those who have never seen a living Martian can scarcely imagine the strange horror of their appearance. The peculiar V-shaped mouth with its pointed upper lip, the absence of brow ridges, the absence of a chin beneath, the wedge-like lower lip,

the incessant quivering of this mouth, the Gorgon groups of tentacles, the tumultuous breathing of the lungs in a strange atmosphere, the evident heaviness and painfulness of movement, due to the greater gravitational energy of the earth—above all, the extraordinary intensity of the immense eyes—culminated in an effect akin to nausea. There was something fungoid in the oily brown skin, something in the clumsy deliberation of their tedious movements unspeakably terrible. Even at this first encounter, this first glimpse, I was overcome with disgust and dread.

SUDDENLY the monster vanished. It had toppled over the brim of the cylinder and fallen into the pit, with a thud like the fall of a great mass of leather. I heard it give a peculiar thick cry, and forthwith another of these creatures appeared darkly in the deep shadow of the aperture.

At that my rigour of terror passed away. I turned and, running madly, made for the first group of trees, perhaps a hundred yards away; but I ran slantingly and stumbling, for I could not avert my face from these things.

There, among some young pine-trees and furze bushes, I stopped, panting, and waited further developments. The common round the sand-pits was dotted with people, standing, like myself, in a half-fascinated terror, staring at these creatures, or, rather, at the heaped gravel at the edge of the pit in which they lay. And then with a renewed horror, I saw a round, black object bobbing up and down on the edge of the pit. It was the head of the shopman who had fallen in, but showing as a little black object against the hot western sky. Now he got his shoulder and knee up, and again he seemed to slip back until only his head was visible. Suddenly he vanished, and I could have fancied a faint shriek had reached me. I had a momentary impulse to go back and help him that my fears overruled.

Everything was then quite invisible, hidden by the deep pit and the heap of sand that the fall of the cylinder had made. Anyone coming along the road from Chobham or Woking would have been amazed at the sight—a dwindling multitude of perhaps a hundred people or more standing in a great irregular circle, in ditches, behind bushes, behind gates and hedges, saying little to one another, and that in short, excited shouts, and staring, staring hard at a few heaps of sand. The barrow of ginger-beer stood, a queer derelict, black against the burning sky, and in the sand-pits was a row of deserted vehicles with their horses feeding out of nose-bags or pawing the ground.

CHAPTER V

The Heat-Ray

AFTER the glimpse I had had of the Martians emerging from the cylinder in which they had come to the earth from their planet, a kind of fascination paralyzed my actions. I remained standing knee-deep in the heather, staring at the mound that hid them. I was a battle-ground of fear and curiosity.

I did not dare to go back toward the pit, but I felt a passionate longing to peer into it. I began walking, therefore, in a big curve, seeking some point of vantage, and continually looking at the sand-heaps that hid these new-comers to our earth. Once a leash of thin black whips, like the arms of an octopus, flashed across the sunset and was immediately withdrawn, and afterwards a thin rod rose up, joint by joint, bearing at its apex a circular disc that spun with a wobbling motion. What could be going on there?

Most of the spectators had gathered in one or two groups—one a little crowd towards Woking, the other a knot of people in the direction of Chobham. Evidently they shared my mental conflict. There were few near me. One man I approached—he was, I perceived, a neighbour of mine, though I did not know his name—and accosted. But it was scarcely a time for articulate conversation.

"What ugly *brutes!*" he said. "Good God! what ugly brutes!" He repeated this over and over again.

"Did you see a man in the pit?" I said; but he made me no answer to that. We became silent, and stood watching for a time side by side, deriving, I fancy, a certain comfort in one another's company. Then I shifted my position to a little knoll that gave me the advantage of a yard or more of elevation, and when I looked for him presently he was walking towards Woking.

The sunset faded to twilight before anything further happened. The crowd far away on the left, towards Woking, seemed to grow, and I heard now a faint murmur from it. The little knot of people towards Chobham dispersed. There was scarcely an intimation of movement from the pit.

It was this, as much as anything, that gave people courage, and I suppose the new arrivals from Woking also helped to restore confidence. At any rate, as the dusk came on, a slow intermittent movement upon the sand-pits began, a movement that seemed to gather force as the stillness of the evening about the cylinder remained unbroken. Vertical black figures in twos and threes would advance, stop, watch, and advance again, spreading out as they did so in a thin irregular crescent that promised to enclose the pit in its attenuated horns. I, too, on my side began to move towards the pit.

Then I saw some cabmen and others had walked boldly into the sand-pits, and heard the clatter of hoofs and the grind of wheels. I saw a lad trundling off the barrow of apples. And then, within thirty yards of the pit, advancing from the direction of Horsell I noted a little black knot of men, the foremost of whom was waving a white flag.

This was the Deputation. There had been a hasty consultation, and, since the Martians were evidently, in spite of their repulsive forms, intelligent creatures, it had been resolved to show them, by approaching them with signals, that we, too, were intelligent.

Flutter, flutter, went the flag, first to the right, then to the left. It was too far for me to recognize anyone there, but afterwards I learned that Ogilvy, Stent, and Henderson were with others in this attempt at communication. This little group had in its advance dragged inward, so to speak, the circumference of the now almost complete circle

of people, and a number of dim black figures followed it at discreet distances.

Suddenly there was a flash of light, and a quantity of luminous greenish smoke came out of the pit in three distinct puffs, which drove up, one after the other, straight into the still air.

This smoke (or flame, perhaps, would be the better word for it) was so bright that the deep blue sky overhead, and the hazy stretches of brown common towards Chertsey, set with black pine-trees, seemed to darken abruptly as these puffs arose, and to remain the darker after their dispersal. At the same time a faint hissing sound became audible.

BEYOND the pit stood the little wedge of people, with the white flag at its apex, arrested by these phenomena, a little knot of small vertical black shapes upon the black ground. As the green smoke rose, their faces flashed out pallid green, and faded again as it vanished.

Then slowly the hissing passed into a humming, into a long, loud, droning noise. Slowly a humped shape rose out of the pit, and the ghost of a beam of light seemed to flicker out from it.

Forthwith flashes of actual flame, a bright glare leaping from one to another, sprang from the scattered group of men. It was as if some invisible jet impinged upon them and flashed into white flame. It was as if each man were suddenly and momentarily turned to fire.

Then, by the light of their own destruction, I saw them staggering and falling, and their supporters turning to run.

I stood staring, not as yet realizing that this was death leaping from man to man in that little distant crowd. All I felt was that it was something strange. An almost noiseless and blinding flash of light, and a man fell headlong and lay still, and as the unseen shaft of heat passed over them, pine-trees burst into fire, and every dry furze-bush became with one dull thud a mass of flames. And far away towards Knaphill I saw the flashes of trees and hedges and wooden buildings suddenly set alight.

It was sweeping round swiftly and steadily, this flaming death, this invisible, inevitable sword of heat. I perceived it coming towards me by the flashing bushes it touched, and was too astounded and stupefied to stir. I heard the crackle of fire in the sand-pits and the sudden squeal of a horse that was as suddenly stilled. Then it was as if an invisible yet intensely heated finger was drawn through the heather between me and the Martians, and all along a curving line beyond the sand-pits the dark ground smoked and crackled. Something fell with a crash, far away to the left where the road from Woking Station opens out on the common. Forthwith the hissing and humming ceased, and the black, dome-like object sank slowly out of sight into the pit.

All this had happened with such swiftness that I had stood motionless, dumfounded and dazzled by the flashes of light. Had that death swept through a full circle, it must inevitably have slain me in my surprise. But it passed and spared me, and left the night about me suddenly dark and unfamiliar.

The undulating common seemed now dark almost to blackness, except where its roadways lay gray and pale under the deep-blue sky of the early night. It was dark, and suddenly void of men. Overhead the stars were mustering, and in the west the sky was still a pale, bright, almost greenish blue. The tops of the pine-trees and the roofs of Horsell came out sharp and black against the western afterglow. The Martians and their appliances were altogether invisible, save for that thin mast upon which their restless mirror wobbled. Patches of bush and isolated trees here and there smoked and glowed still, and the houses towards Woking Station were sending up spires of flame into the stillness of the evening air.

Nothing was changed save for that and a terrible astonishment. The little group of black specks with the flag of white had been swept out of existence, and the stillness of the evening, so it seemed to me, had scarcely been broken.

It came to me that I was upon this dark common, helpless, unprotected and alone. Suddenly like a thing falling upon me from without came—Fear.

With an effort I turned and began a stumbling run through the heather.

The fear I felt was no rational fear but a panic terror, not only of the Martians, but of the dusk and stillness all about me. Such an extraordinary effect in unmanning me it had that I ran weeping silently as a child might do. Once I had turned, I did not dare to look back.

I remember I felt an extraordinary percussion that I was being played with, that presently, when I was upon the very verge of safety, this mysterious death—as swift as the passage of light—would leap after me from the pit about the cylinder, and strike me down.

CHAPTER VI

The Heat-Ray in the Chobham Road

IT is still a matter of wonder how the Martians are able to slay men so swiftly and so silently. Many think that in some way they are able to generate an intense heat in a chamber of practically absolute non-conductivity. This intense heat they project in a parallel beam against any object they choose by means of a polished parabolic mirror of unknown composition—much as the parabolic mirror of a lighthouse projects a beam of light. But no one has absolutely proved these details. However it is done, it is certain that a beam of heat is the essence of the matter. Heat, and invisible, instead of visible light. Whatever is combustible flashes into flame at its touch, lead runs like water, it softens iron, cracks and melts glass, and when it falls upon water incontinently that explodes into steam.

That night nearly forty people lay under the starlight about the pit, charred and distorted beyond recognition, and all night long the common from Horsell to Maybury was deserted, and brightly ablaze.

The news of the massacre probably reached Chobham, Woking, and Ottershaw about the same

time. In Woking the shops had closed when the tragedy happened, and a number of people, shop-people and so forth, attracted by the stories they had heard, were walking over Horsell Bridge and along the road between the hedges that run out at last upon the common. You may imagine the young people brushed up after the labors of the day, and making this novelty, as they would make any novelty, the excuse for walking together and enjoying a trivial flirtation. You may figure to yourself the hum of voices along the road in the gloaming. . . .

As yet, of course, few people in Woking even knew that the cylinder had opened, though poor Henderson had sent a messenger on a bicycle to the post-office with a special wire to an evening paper.

As these folks came out by twos and threes upon the open they found little knots of people talking excitedly, and peering at the spinning mirror over the sand-pits, and the new-comers were, no doubt, soon infected by the excitement of the occasion.

By half-past eight, when the Deputation was destroyed, there may have been a crowd of 300 people or more at this place, besides those who had left the road to approach the Martians nearer. There were three policemen, too, one of whom was mounted, doing their best, under instructions from Stent, to keep the people back and deter them from approaching the cylinder. There was some hooing from those more thoughtless and excitable souls to whom a crowd is always an occasion for noise and horse-play.

Stent and Ogilvy, anticipating some possibilities of a collision, had telegraphed from Horsell to the barracks as soon as the Martians emerged, for the help of a company of soldiers to protect these strange creatures from violence After that they returned to lead that ill-fated advance. The description of their death, as it was seen by the crowd, tallies very closely with my own impressions: the three puffs of green smoke, the deep humming note, and the flashes of flame.

But that crowd of people had a far narrower escape than mine. Only the fact that a hummock of heathery sand intercepted the lower part of the Heat-Ray saved them. Had the elevation of the parabolic mirror been a few yards higher, none could have lived to tell the tale. They saw the flashes, and the men falling, and an invisible hand, as it were, lit the bushes as it hurried towards them through the twilight. Then, with a whistling note that rose above the droning of the pit, the beam swung close over their heads, lighting the tops of the beech-trees that line the road, and splitting the bricks, smashing the windows, firing the window-frames, and bringing down in crumbling ruin a portion of the gable of the house nearest the corner.

In the sudden thud, hiss and glare of the igniting trees, the panic-stricken crowd seems to have swayed hesitatingly for some moments.

Sparks and burning twigs began to fall into the road, and single leaves like puffs of flame. Hats and dresses caught fire. Then came a crying from the common.

There were shrieks and shouts, and suddenly a mounted policeman came galloping through the confusion with his hands clasped over his head, screaming.

"They're coming!" a woman shrieked, and incontinently everyone was turning and pushing at those behind, in order to clear their way to Woking again. They must have bolted as blindly as a flock of sheep. Where the road grows narrow and black between the high banks the crowd jammed and a desperate struggle occurred. All that crowd did not escape; three persons at least, two women and a little boy, were crushed and trampled there and left to die amidst the terror and the darkness.

CHAPTER VII

How I Reached Home

FOR my own part, I remember nothing of my flight except the stress of blundering against trees and stumbling through the heather. All about me gathered the invisible terrors of the Martians; that pitiless sword of heat seemed whirling to and fro, flourishing overhead before it descended and smote me out of life. I came into the road between the cross-roads and Horsell, and ran along this to the cross-roads.

At last I could go no further; I was exhausted with the violence of my emotion and of my flight, and I staggered and fell by the wayside. That was near the bridge that crosses the canal by the gas-works. I fell and lay still.

I must have remained there some time.

I sat up, strangely perplexed. For a moment, perhaps, I could not clearly understand how I came there. My terror had fallen from me like a garment. My hat had gone, and my collar had burst away from its stud. A few minutes before there had only been three real things before me—the immensity of the night and space and nature, my own feebleness and anguish, and the near approach of death. Now it was as if something turned over, and the point of view altered abruptly. There was no sensible transition from one state of mind to the other. I was immediately the self of every day again, a decent ordinary citizen. The silent common, the impulse of my flight, the starting flames, were as if it were a dream. I asked myself had these latter things indeed happened. I could not credit it.

I rose and walked unsteadily up the steep incline of the bridge. My mind was blank wonder. My muscles and nerves seemed drained of their strength. I dare say I staggered drunkenly. A head rose over the arch, and the figure of a workman carrying a basket appeared. Beside him ran a little boy. He passed me, wishing me good-night. I was minded to speak to him, and did not. I answered his greeting with a meaningless mumble and went on over the bridge

Over the Maybury arch a train, a billowing tumult of white, firelit smoke, and a long caterpillar of lighted windows, went flying south: clatter, clatter, clap, rap, and it had gone. A dim group of people talked in the gate of one of the houses in the pretty little row of gables that was called Oriental Terrace. It was all so real and so familiar. And that behind me! It was frantic, fantastic! Such things, I told myself, could not be.

Perhaps I am a man of exceptional moods. I do not know how far my experience is common. At times I suffer from the strangest sense of detachment from myself and the world about me, I seem to watch it all from the outside, from somewhere inconceivably remote, out of time, out of space, out of the stress and tragedy of it all. This feeling was very strong upon me that night. Here was another side to my dream.

But the trouble was the blank incongruity of this serenity and the swift death flying yonder, not two miles away. There was a noise of business from the gasworks and the electric lamps were all alight. I stopped at the group of people.

"What news from the common?" said I.

There were two men and a woman at the gate.

"Eh?" said one of the men, turning.

"What news from the common?" I said.

"Ain't yer just *been* there?" asked the men.

"People seem fair silly about the common," said the woman over the gate. "What's it all about?"

"Haven't you heard of the men from Mars?" said I. "The creatures from Mars?"

"Quite enough," said the woman over the gate. "Thanks;" and all three of them laughed.

I felt foolish and angry. I tried and found I could not tell them what I had seen. They laughed again at my broken sentences.

"You'll hear more yet," I said, and went on to my home.

I STARTLED my wife at the doorway, so haggard was I. I went into the dining-room, sat down, drank some wine, and so soon as I could collect myself sufficiently told her the things I had seen. The dinner, which was a cold one, had already been served, and remained neglected on the table while I told my story.

"There is one thing," I said to allay the fears I had aroused. "They are the most sluggish things I ever saw crawl. They may keep the pit and kill people who come near them, but they cannot get out of it. . . . But the horror of them!"

"Don't, dear!" said my wife, knitting her brows and putting her hand on mine

"Poor Ogilvy!" I said. "To think he may be lying dead there!"

My wife at least did not find my experience incredible. When I saw how deadly white her face was, I ceased abruptly.

"They may come here," she said again and again.

I pressed her to take wine, and tried to reassure her.

"They can scarcely move," I said.

I began to comfort her and myself by repeating all that Ogilvy had told me of the impossibility of the Martians establishing themselves on the earth. In particular I laid stress on the gravitational difficulty. On the surface of the earth the force of gravity is three times what it is on the surface of Mars. A Martian, therefore, would weigh three times more than on Mars, albeit his muscular strength would be the same. His own body would be a cope of lead to him, therefore. That indeed was the general opinion. Both the *Times* and the *Daily Telegraph*, for instance, insisted on it the next morning, and both overlooked, just as I did, two obvious modifying influences.

The atmosphere of the earth, we now know, contains far more oxygen or far less nitrogen (whichever way one likes to put it) than does Mars. The invigorating influences of this excess of oxygen upon the Martians indisputably did much to counterbalance the increased weight of their bodies. And, in the second place, we all overlooked the fact that such mechanical intelligence as the Martian possessed was quite able to dispense with muscular exertion at a pinch.

But I did not consider these points at the time, and so my reasoning was dead against the chances of the invaders. With wine and food, the confidence of my own table, and the necessity of reassuring my wife, I grew, by insensible degrees, courageous and secure.

"They have done a foolish thing," said I, fingering my wineglass. "They are dangerous, because no doubt they are mad with terror. Perhaps they expected to find no living things—certainly no intelligent living things. A shell in the pit," said I, "if the worst comes to the worst, will kill them all."

The intense excitement of the events had no doubt left my perceptive powers in a state of erethism. I remember that dinner-table with extraordinary vividness even now. My dear wife's sweet, anxious face peering at me from under the pink lamp-shade, the white cloth with its silver and glass table furniture—for in those days even philosophical writers had many little luxuries—the crimson-purple wine in my glass, are photographically distinct. At the end of it I sat, tempering nuts with a cigarette, regretting Ogilvy's rashness, and denouncing the short-sighted timidity of the Martians.

So some respectable dodo in the Mauritius might have lorded it in his nest, and discussed the arrival of that shipful of pitiless sailors in want of animal food. "We will peck them to death tomorrow, my dear."

I did not know it, but that was the last civilized dinner I was to eat for very many long and terrible days.

CHAPTER VIII

Friday Night

THE most extraordinary thing to my mind, of all the strange and wonderful things that happened upon that Friday, was the dovetailing of the commonplace habits of our social order with the first beginnings of the series of events that was to topple that social order headlong. If on Friday night you had taken a pair of compasses and drawn a circle with a radius of five miles round the Woking sand-pits, I doubt if you would have had one human being outside it, unless it was some relation of Stent or of the three or four cyclists or London people who lay dead on the common, whose emotions or habits were not at all affected by the new-comers. Many people had heard of the cylinder, of course, and talked about it in their leisure, but it certainly did not make the sensation an ultimatum to Germany would have done.

In London that night poor Henderson's telegram

describing the gradual unscrewing of the shot was judged to be a canard, and his evening paper, after wiring for authentication from him and receiving no reply—the man was killed—decided not to print a special edition.

Within the five-mile circle even the great majority of people were inert. I have already described the behaviour of the men and women to whom I spoke. All over the district people were dining and supping; working-men were gardening after the labors of the day, children were being put to bed, young people were wandering through the lanes love-making, students sat over their books.

Maybe there was a murmur in the village streets, a novel and dominant topic in the public-houses, and here and there a messenger, or even an eye-witness of the later occurrences, caused a whirl of excitement, a shouting and a running to and fro; but for the most part the daily routine of working, eating, drinking, sleeping, went on as it had done for countless years— as though no planet Mars existed in the sky. Even at Woking Station and Horsell and Chobham that was the case.

In Woking Junction, until a late hour, trains were stopping and going on, others were shunting on the sidings, passengers were alighting and waiting, and everything was proceeding in the most ordinary way. A boy from town, trenching on Smith's monopoly, was selling papers with the afternoon's news. The ringing and impact of trucks, the sharp whistle of the engines from the junction, mingled with his shouts of "Men from Mars!" Excited men came into the station about nine o'clock, with incredible tidings, and caused no more disturbance than drunkards might have done. People rattling Londonwards peered into the darkness outside the carriage windows and saw only a rare, flickering, vanishing spark dance up from the direction of Horsell, a red glow and a thin veil of smoke driving across the stars, and thought that nothing more serious than a heath fire was happening. It was only around the edge of the common that any disturbance was perceptible. There were half a dozen villas burning on the Woking border. There were lights in all the houses on the common side of the three villages, and the people there kept awake till dawn.

A curious crowd lingered restlessly, people coming and going but the crowd remaining, both on the Chobham and Horsell bridges. One or two adventurous souls, it was afterwards found, went into the darkness and crawled quite near the Martians, but they never returned, for now and again a light-ray, like the beam of a warship's searchlight, swept the common, and the Heat-Ray was ready to follow. Save for such, that big area of common was silent and desolate, and the charred bodies lay about on it all night under the stars, and all the next day. A noise of hammering from the pit was heard by many people.

So you have the state of things on Friday night. In the centre, sticking into the skin of our old planet Earth like a poisoned dart, was this cylinder. But the poison was scarcely working yet. Around it was a patch of silent common, smouldering in places, and with a few dark, dimly-seen objects lying in contorted attitudes here and there. Here and there was a burning bush or tree. Beyond was a fringe of excitement, and further than that fringe the inflammation had not crept as yet. In the rest of the world the stream of life still flowed as it had flowed for immemorial years. The fever of war that would presently clog vein and artery, deaden nerve and destroy brain, had still to develop.

All night long the Martians were hammering and stirring, sleepless, indefatigable, at work upon the machines they were making ready, and ever and again a puff of greenish-white smoke whirled up to the starlit sky.

About eleven a company of soldiers came through Horsell, and deployed along the edge of the common to form a cordon. Later a second company marched through Chobham to deploy on the north side of the common. Several officers from the Inkerman barracks had been on the common earlier in the day, and one, Major Eden, was reported to be missing. The Colonel of the regiment came to the Chobham bridge, and was busy questioning the crowd at midnight. The military authorities were certainly alive to the seriousness of the business. About eleven, the next morning's papers were able to say, a squadron of hussars, two Maxims, and about 400 men of the Cardigan regiment, started from Aldershot.

A few seconds after midnight the crowd in the Chertsey road, Woking, saw a star fall from heaven into the pine-woods to the north-west. It fell with a greenish light, causing a flash of light like summer lightning. This was the second cylinder.

CHAPTER IX

The Fighting Begins

Saturday lives in my memory as a day of suspense. It was a day of lassitude too, hot and close, with, I am told, a rapidly fluctuating barometer. I had slept but little, though my wife had succeeded in sleeping, and I rose early. I went into my garden before breakfast, and stood listening, but towards the common there was nothing stirring but a lark.

The milkman came as usual. I heard the rattle of his chariot, and I went round to the side-gate to ask the latest news. He told me that during the night the Martians had been surrounded by troops, and that guns were expected. Then, a familiar reassuring note, I heard a train running towards Woking.

"They aren't to be killed," said the milkman, "if that can possibly be avoided."

I saw my neighbor gardening, chatted with him for a time, and then strolled in to breakfast. It was a most unexceptional morning. My neighbor was of opinion that the troops would be able to capture or to destroy the Martians during the day.

"It's a pity they make themselves so unapproachable," he said. "It would be curious to learn how they live on another planet; we might learn a thing or two."

He came up to the fence and extended a handful of strawberries, for his gardening was as generous as it was enthusiastic. At the same time he told

me of the burning of the pine-woods about the Byfleet Golf Links.

"They say," said he, "that there's another of those blessed things fallen there—number two. But one's enough, surely. This lot'll cost the insurance people a pretty penny before everything's settled." He laughed with an air of the greatest good-humor as he said this The woods, he said, were still burning, and pointed out a haze of smoke to me. "They will be hot under foot for days on account of the thick soil of pine-needles and turf," he said, and then grew serious over "poor Ogilvy!"

After breakfast, instead of working, I decided to walk down towards the common. Under the railway-bridge I found a group of soldiers—sappers, I think, men in small round caps, dirty red jackets unbuttoned, and showing their blue shirts, dark trousers, and boots coming to the calf. They told me no one was allowed over the canal, and, looking along the road towards the bridge, I saw one of the Cardigan men standing sentinel there. I talked with these soldiers for a time; I told them of my sight of the Martians on the previous evening. None of them had seen the Martians, and they had but the vaguest ideas of them, so that they plied me with questions. They said that they did not know who had authorized the movements of the troops; their idea was that a dispute had arisen at the Horse Guards. The ordinary sapper is a great deal better educated than the common soldier, and they discussed the peculiar conditions of the possible fight with some acuteness. I described the Heat-Ray to them, and they began to argue among themselves.

"Crawl up under cover and rush 'em, say I," said one.

"Get aht!" said another. "What's Cover against this 'ere 'eat? Sticks to cook yer! What we got to do is to go as near as the ground'll let us, and then drive a trench."

"Blow yer trenches! You always want trenches; you ought to ha' been born a rabbit, Snippy."

"Ain't they got any necks, then?" said a third abruptly—a little, contemplative, dark man, smoking a pipe

I repeated my description.

"Octopuses," said he, "that's what I calls 'em. Talk about fishers of men—fighters of fish it is this time!"

"It ain't no murder killing beasts like that," said the first speaker.

"Why not shell the darn things strite off and finish 'em?" said the little dark man. "You carnt tell what they might do"

"Where's your shells?" said the first speaker. "There ain't no time. Do it in a rush, that's my tip, and do it at once"

So they discussed it. After a while I left them, and went on to the railway-station to get as many morning papers as I could.

But I will not weary the reader with a description of that long morning and of the longer afternoon. I did not succeed in getting a glimpse of the common, for even Horsell and Chobham church towers were in the hands of the military authorities. The soldiers I addressed didn't know anything; the officers were mysterious as well as busy. I found people in the town quite secure again in the presence of the military, and I heard for the first time from Marshall, the tobacconist, that his son was among the dead on the common. The soldiers had made the people on the outskirts of Horsell lock up and leave their houses.

I GOT back to lunch about two, very tired, for, as I have said, the day was extremely hot and dull, and in order to refresh myself I took a cold bath in the afternoon. About half-past four I went up to the railway-station to get an evening paper, for the morning papers had contained only a very inaccurate description of the killing of Stent, Henderson, Ogilvy, and the others. But there was little I didn't know. The Martians did not show an inch of themselves. They seemed busy in their pit, and there was a sound of hammering and an almost continuous streamer of smoke. Apparently, they were busy getting ready for a struggle. "Fresh attempts have been made to signal, but without success," was the stereotyped formula of the papers. A sapper told me it was done by a man in a ditch with a flag on a long pole. The Martians took as much notice of such advances as we should of the lowing of a cow.

I must confess the sight of all this armament, all this preparation, greatly excited me. My imagination became belligerent, and defeated the invaders in a dozen striking ways; something of my schoolboy dreams of battle and heroism came back. It hardly seemed a fair fight to me at that time. They seemed very helpless in this pit of theirs.

About three o'clock there began the thud of a gun at measured intervals from Chertsey or Addlestone. I learned that the smouldering pine-wood into which the second cylinder had fallen was being shelled, in the hope of destroying that object before it opened. It was only about five, however, that a field-gun reached Chobham for use against the first body of Martians.

About six in the evening, as I sat at tea with my wife in the summer-house talking vigorously about the battle that was lowering upon us, I heard a muffled detonation from the common, and immediately after a gust of firing. Close on the heels of that came a violent, rattling crash, quite close to us, that shook the ground; and, starting out upon the lawn, I saw the tops of the trees about the Oriental College burst into smoky red flame, and the tower of the little church beside it slide down into ruin. The pinnacle of the mosque had vanished, and the roof-line of the college itself looked as if a hundred-ton gun had been at work upon it. One of our chimneys cracked as if a shot had hit it, flew, and the piece of it came clattering down the tiles and made a heap of broken red fragments upon the flower-bed by my study window.

I and my wife stood amazed. Then I realized that the crest of Maybury Hill must be within range of the Martians' Heat-Ray now that the college was cleared out of the way.

At that I gripped my wife's arm, and without ceremony ran her out into the road. Then I fetched

out the servant, telling her I would go upstairs myself for the box she was clamouring for.

"We can't possibly stay here," I said, and as I spoke the firing re-opened for a moment upon the common.

"But where are we to go?" said my wife in terror.

I thought, perplexed. Then I remembered her cousins at Leatherhead.

"Leatherhead!" I shouted above the sudden noise.

She looked away from me downhill. The people were coming out of their houses astonished.

"How are we to get to Leatherhead?" she said.

Down the hill I saw a bevy of hussars ride under the railway-bridge; three galloped through the open gates of the Oriental College; two others dismounted, and began running from house to house. The sun, shining through the smoke that drove up from the tops of the trees, seemed blood-red, and threw an unfamiliar lurid light upon everything.

"Stop here," said I; "you are safe here;" and I started off at once for the Spotted Dog, for I knew the landlord had a horse and dogcart. I ran, for I perceived that in a moment everyone upon this side of the hill would be moving. I found him in his bar, quite unaware of what was going on behind his house. A man stood with his back to me, talking to him.

"I must have a pound," said the landlord, "and I've no one to drive it."

"I'll give you two," said I, over the stranger's shoulder.

"What for?"

"And I'll bring it back by midnight," I said.

"Lord!" said the landlord, "what's the hurry? I'm selling my bit of a pig. Two pounds, and you bring it back? What's going on now?"

I explained hastily that I had to leave my home, and so secured the dogcart. At the time it did not seem to me nearly so urgent that the landlord should leave his. I took care to have the cart there and then, drove it off down the road, and, leaving it in charge of my wife and servant, rushed into my house and packed a few valuables, such plate as we had, and so forth. The beech-trees below the house were burning while I did this, and the palings up the road glowed red. While I was occupied in this way, one of the dismounted hussars came running up. He was going from house to house, warning people to leave. He was going on as I came out of my front door, lugging my treasures, done up in a table-cloth. I shouted after him:

"What news?"

He turned, stared, bawled something about "crawling out in a thing like a dish cover," and ran on to the gate of the house at the crest. A sudden whirl of black smoke driving across the road hid him for a moment. I ran to my neighbor's door, and rapped to satisfy myself, what I already knew, that his wife had gone to London with him, and had locked up their house. I went in again according to my promise to get my servant's box, lugged it out, clapped it beside her on the tail of the dogcart, and then caught the reins and jumped up into the driver's seat beside my wife. In another moment we were clear of the smoke and noise, and spanking down the opposite slope at Maybury Hill towards Old Woking.

In front was a quiet sunny landscape, a wheatfield ahead on either side of the road, and the Maybury Inn with its swinging sign. I saw the doctor's cart ahead of me. At the bottom of the hill I turned my head to look at the hillside I was leaving. Thick streamers of black smoke shot with threads of red fire were driving up into the still air, and throwing dark shadows upon the green tree-tops eastward. The smoke already extended far away to the east and west—to the Byfleet pinewoods eastward, and to Woking on the west. The road was dotted with people running towards us. And very faint now, but very distinct through the hot, quiet air, one heard the whirr of a machine-gun that was presently stilled, and an intermittent crackling of rifles. Apparently, the Martians were setting fire to everything within range of their Heat-Ray.

I am not an expert driver, and I had immediately to turn my attention to the horse. When I looked back again the second hill had hidden the black smoke. I slashed the horse with the whip, and gave him a loose rein until Woking and Send lay between us and that quivering tumult. I overtook and passed the doctor between Woking and Send.

CHAPTER X

In the Storm

LEATHERHEAD is about twelve miles from Maybury Hill. The scent of hay was in the air through the lush meadows beyond Pyrford, and the hedges on either side were sweet and gay with multitudes of dog-roses. The heavy firing that had broken out while we were driving down Maybury Hill ceased as abruptly as it began, leaving the evening very peaceful and still. We got to Leatherhead without misadventure about nine o'clock, and the horse had an hour's rest while I took supper with my cousins and commended my wife to their care.

My wife was curiously silent throughout the drive, and seemed oppressed with forebodings of evil. I talked to her reassuringly, pointing out that the Martians were tied to the pit by sheer heaviness, and, at the utmost, could but crawl a little out of it, but she answered only in monosyllables. Had it not been for my promise to the innkeeper, she would, I think, have urged me to stay in Leatherhead that night. Would that I had! Her face, I remember, was very white as we parted.

For my own part, I had been feverishly excited all day. Something very like the war-fever, that occasionally runs through a civilized community, had got into my blood, and in my heart I was not so very sorry that I had to return to Maybury that night. I was even afraid that last fusillade I had heard might mean the extermination of our invaders from Mars. I can best express my state of mind by saying that I wanted to be in at the death.

It was nearly eleven when I started to return. The night was unexpectedly dark; to me, walking out of the lighted passage of my cousin's house, it

seemed indeed black, and it was as hot and close as the day. Overhead the clouds were driving fast, albeit not a breath stirred the shrubs about us. My cousin's man lit both lamps. Happily, I knew the road intimately. My wife stood in the light of the doorway, and watched me until I jumped up into the dogcart. Then abruptly she turned and went in, leaving my cousins side by side wishing me good hap.

I was a little depressed at first with the contagion of my wife's fears, but very soon my thoughts reverted to the Martians. At that time I was absolutely in the dark as to the course of the evening's fighting. I did not know even the circumstances that had precipitated the conflict. As I came through Ockham (for that was the way I returned, and not through Send and Old Woking) I saw along the western horizon a blood-red glow, which, as I drew nearer, crept slowly up the sky. The driving clouds of the gathering thunderstorm mingled there with masses of black and red smoke.

Ripley Street was deserted, and except for a lighted window or so the village showed not a sign of life; but I narrowly escaped an accident at the corner of the road to Pyrford, where a knot of people stood with their hacks to me. They said nothing to me as I passed. I do not know what they knew of the things happening beyond the hill, nor do I know if the silent houses I passed on my way were sleeping securely, or deserted and empty, or harassed and watching against the terror of the night.

From Ripley until I came through Pyrford I was in the valley of the Wey, and the red glare was hidden from me. As I ascended the little hill beyond Pyrford Church the glare came into view again, and the trees about me shivered with the first intimation of the storm that was upon me. Then I heard midnight pealing out from Pyrford Church behind me, and then came the silhouette of Maybury Hill, with its tree-tops and roofs black and sharp against the red.

Even as I beheld this a lurid green glare lit the road about me, and showed the distant woods towards Addlestone. I felt a tug at the reins. I saw that the driving clouds had been pierced as it were by a thread of green fire, suddenly lighting their confusion and falling into the fields to my left. It was the Third Falling Star!

Close on its apparition, and blindingly violet by contrast, danced out the first lightning of the gathering storm, and the thunder burst like a rocket overhead. The horse took the bit between his teeth and bolted.

A moderate incline runs down towards the foot of Maybury Hill, and down this we clattered. Once the lightning had begun, it went on in as rapid a succession of flashes as I have ever seen. The thunder-claps, treading one on the heels of another and with a strange crackling accompaniment, sounded more like the working of a gigantic electric machine than the usual detonating reverberations. The flickering light was blinding and confusing, and a thin hail smote gustily at my face as I drove down the slope.

At first I regarded little but the road before me, and then abruptly my attention was arrested by something that was moving rapidly down the opposite slope of Maybury Hill. At first I took it for the wet roof of a house, but one flash following another showed it to be in swift rolling movement. It was an elusive vision—a moment bewildering darkness, and then in a flash like daylight, the red masses of the Orpbanage near the crest of the hill, the green tops of the pine-trees, and this problematical object came out clear and sharp and bright.

And this thing I saw! How can I describe it? A monstrous tripod, higher than many houses, striding over the young pine-trees, and smashing them aside in its career; a walking engine of glittering metal, striding now across the heather; articulate ropes of steel dangling from it, and the clattering tumult of its passage mingling with the riot of the thunder. A flash, and it came out vividly, heeling over one way with two feet in the air, to vanish and reappear almost instantly as it seemed, with the next flash, a hundred yards nearer. Can you imagine a milking-stool tilted and bowled violently along the ground? That was the impression those instant flashes gave. But instead of a milking-stool imagine it a great body of machinery on a tripod stand.

Then suddenly the trees in the pine-wood ahead of me were parted, as brittle reeds are parted by a man thrusting through them; they were snapped off and driven headlong, and a second huge tripod appeared, rushing, as it seemed, headlong towards me. And I was galloping hard to meet it! At the sight of the second monster my nerve went altogether. Not stopping to look again, I wrenched the horse's head hard round to the right, and in another moment the dogcart had heeled over upon the horse; the shafts smashed noisily, and I was flung sideways and fell heavily into a shallow pool of water.

I crawled out almost immediately, and crouched, my feet still in the water, under a clump of furze. The horse lay motionless (his neck was broken, poor brute!), and by the lightning flashes I saw the black bulk of the overturned dogcart, and the silhouette of the wheel still spinning slowly. In another moment the colossal mechanism went striding by me, and passed uphill towards Pyrford.

Seen nearer, the thing was incredibly strange, for it was no mere insensate machine driving on its way. Machine it was, with a ringing metallic pace, and long flexible glittering tentacles (one of which gripped a young pine-tree) swinging and rattling about its strange body. It picked its road as it went striding along, and the brazen hood that surmounted it moved to and fro with the inevitable suggestion of a head looking about it. Behind the main body was a huge thing of white metal like a gigantic fisherman's basket, and puffs of green smoke squirted out from the joints of the limbs as the monster swept by me. And in an instant it was gone.

So much I saw then, all vaguely for the flickering of the lightning, in blinding high lights and dense black shadows.

As it passed it set up an exultant deafening

howl that drowned the thunder, "Aloo! aloo!" and in another minute it was with its companion, and half a mile away, stooping over something in the field. I have no doubt this thing in the field was the third of the ten cylinders they had fired at us from Mars.

For some minutes I lay there in the rain and darkness watching, by the intermittent light, these monstrous beings of metal moving about in the distance over the hedge-tops. A thin hail was now beginning, and as it came and went, their figures grew misty and then flashed into clearness again. Now and then came a gap in the lightning, and the night swallowed them up.

I was soaked with hail above and puddle-water below. It was some time before my blank astonishment would let me struggle up the bank to a drier position, or think at all about my imminent peril.

Not far from me was a little one-roomed squatter's hut of wood, surrounded by a patch of potato-garden. I struggled to my feet at last, and, crouching and making use of every chance of cover, I made a run for this. I hammered at the door, but I could not make the people hear (if there were any people inside), and after a time I desisted, and, availing myself of a ditch for the greater part of the way, succeeded in crawling, unobserved by these monstrous machines, into the pine-wood towards Maybury.

Under cover of this I pushed on, wet and shivering now, towards my own house. I walked among the trees trying to find the footpath. It was very dark indeed in the wood, for the lightning was now becoming infrequent, and the hail, which was pouring down in a torrent, fell in columns through the gaps in the heavy foliage.

If I had fully realized the meaning of all the things I had seen I should have immediately worked my way round through Byfleet to Street Cobham, and so gone back to rejoin my wife at Leatherhead. But that night the strangeness of things about me, and my physical wretchedness, prevented me, for I was bruised, weary, wet to the skin, deafened and blinded by the storm.

I had a vague idea of going to my own house, and that was as much motive as I had. I staggered through the trees, fell into a ditch and bruised my knees against a plank, and finally splashed out into the lane that ran down from the College Arms. I say splashed, for the storm water was sweeping the sand down the hill in a muddy torrent. There in the darkness a man blundered into me and sent me reeling back.

He gave a cry of terror, sprang sideways, and rushed on before I could gather my wits sufficiently to speak to him. So heavy was the stress of the storm just at this place that I had the hardest task to win my way up the hill. I went close up to the fence on the left and worked my way along its palings.

Near the top I stumbled upon something soft, and, by a flash of lightning, saw between my feet a heap of black broadcloth and a pair of boots. Before I could distinguish clearly how the man lay, the flicker of light had passed. I stood over him waiting for the next flash. When it came, I saw that he was a sturdy man, cheaply but not shabbily dressed; his head was bent under his body, and he lay crumpled up close to the fence, as though he had been flung violently against it.

Overcoming the repugnance natural to one who had never before touched a dead body, I stooped and turned him over to feel for his heart. He was quite dead. Apparently his neck had been broken. The lightning flashed for a third time, and his face leapt upon me. I sprang to my feet. It was the landlord of the Spotted Dog, whose conveyance I had taken.

I stepped over him gingerly and pushed on up the hill. I made my way by the police station and the College Arms towards my own house. Nothing was burning on the hillside, though from the common there still came a red glare and a rolling tumult of ruddy smoke beating up against the drenching hail. So far as I could see by the flashes, the houses about me were mostly uninjured. By the College Arms a dark heap lay in the road.

Down the road towards Maybury Bridge there were voices and the sound of feet, but I had not the courage to shout or to go to them. I let myself in with my latchkey, closed, locked and bolted the door, staggered to the foot of the staircase and sat down. My imagination was full of those striding metallic monsters, and of the dead body smashed against the fence.

I crouched at the foot of the staircase with my back to the wall, shivering violently.

CHAPTER XI

At the Window

I HAVE said already that my storms of emotion have a trick of exhausting themselves. After a time I discovered that I was cold and wet, and with little pools of water about me on the stair-carpet. I got up almost mechanically, went into the dining-room and drank some whisky, and then I was moved to change my clothes.

After I had done that I went upstairs to my study, but why I did so I do not know. The window of my study looks over the trees and the railway towards Horsell Common. In the hurry of our departure this window had been left open. The passage was dark, and, by contrast with the picture the window-frame enclosed, that side of the room seemed impenetrably dark. I stopped short in the doorway.

The thunderstorm had passed. The towers of the Oriental College and the pine-trees about it had gone, and very far away, lit by a vivid red glare, the common about the sand-pits was visible. Across the light, huge black shapes, grotesque and strange, moved busily to and fro.

It seemed, indeed, as if the whole country in that direction was on fire—a broad hillside set with minute tongues of flame, swaying and writhing with the gusts of the dying storm, and throwing a red reflection upon the cloud scud above. Every now and then a haze of smoke from some nearer conflagration drove across the window and hid the Martian shapes. I could not see what they were doing, nor the clear form of them, nor recognize the black objects they were busied upon. Neither could I see the nearer fire, though the reflections

of it danced on the wall and ceiling of the study. A sharp, resinous twang of burning was in the air.

I closed the door noiselessly and crept towards the window. As I did so, the view opened out until, on the one hand, it reached to the houses about Woking Station, and on the other to the charred and blackened pine-woods of Byfleet. There was a light down below the hill, on the railway, near the arch, and several of the houses along the Maybury road and the streets near the station were glowing ruins. The light upon the railway puzzled me at first; there was a black heap and a vivid glare, and to the right of that a row of yellow oblongs. Then I perceived this was a wrecked train, the fore part smashed and on fire, the hinder carriages still upon the rails.

Between these three main centres of light, the houses, the train, and the burning country towards Chobham, stretched irregular patches of dark country, broken here and there by intervals of dimly glowing and smoking ground. It was the strangest spectacle, that black expanse set with fire. It reminded me, more than anything else, of the Potteries seen at night. People at first I could distinguish none, though I peered intently for them. Later I saw against the light of Woking Station a number of black figures burrying one after the other across the line.

And this was the little world in which I had been living securely for years, this fiery chaos! What had happened in the last seven hours I still did not know, nor did I know, though I was beginning to guess, the relation between these mechanical colossuses and the sluggish lumps I had seen disgorged from the cylinder. With a queer feeling of impersonal interest I turned my desk-chair to the window, sat down, and stared at the blackened country, and particularly at the three gigantic black things that were going to and fro in the glare about the sand pits.

They seemed amazingly busy. I began to ask myself what they could be. Were they intelligent mechanisms? Such a thing I felt was impossible. Or did a Martian sit within each, ruling, directing, using, much as a man's brain sits and rules in his body? I began to compare the things to human machines, to ask myself for the first time in my life how an ironclad or a steam-engine would seem to an intelligent lower animal.

The storm had left the sky clear, and over the smoke of the burning land the little fading pinpoint of Mars was dropping into the west, when the soldier came into my garden. I heard a slight scraping at the fence, and rousing myself from the lethargy that had fallen upon me, I looked down and saw him dimly, clambering over the palings. At the sight of another human being my torpor passed, and I leaned out of the window eagerly.

"Hist!" said I in a whisper.

He stopped astride of the fence in doubt. Then he came over and across the lawn to the corner of the house. He bent down and stepped softly.

"Who's there?" he said, also whispering, standing under the window and peering up.

"Where are you going?" I asked.

"God knows."

"Are you trying to hide in here?" I inquired.

"That's it."

"Come into the house," I said.

I went down, unfastened the door and let him in, and locked the door again. I could not see his face. He was hatless, and his coat was unbuttoned.

"MY God!" he said as I drew him in.

"What has happened?" I asked.

"What hasn't?" In the obscurity I could see he made a gesture of despair. "They wiped us out—simply wiped us out," he repeated again and again.

He followed me, almost mechanically, into the dining-room.

"Take some whisky," I said, pouring out a stiff dose.

He drank it. Then abruptly he sat down before the table, put his head on his arms, and began to sob and weep like a little boy, in a perfect passion of emotion, while I, with a curious forgetfulness of my own recent despair, stood beside him wondering.

It was a long time before he could steady his nerves to answer my questions, and then he answered perplexingly and brokenly. He was a driver in the artillery, and had only come into action about seven. At that time firing was going on across the common, and it was said the first party of Martians were crawling slowly towards their second cylinder under cover of a metal shield.

Later this shield staggered up on tripod legs, and became the first of the fighting machines I had seen. The gun he drove had been unlimbered near Horsell, in order to command the sand pits, and its arrival had precipitated the action. As the limber gunners went to the rear, his horse trod in a rabbit-hole and came down, throwing him into a depression of the ground. At the same moment the gun exploded behind him, the ammunition blew up, there was fire all about him, and he found himself lying among a heap of charred dead men and dead horses.

"I lay still," he said, "scared out of my wits, with the fore-quarter of a horse atop of me. We'd been wiped out. And the smell—good God! Like burnt meat! I was hurt across the back by the fall of the horse, and there I had to lie until I felt better. Just like parade it had been a minute before—then stumble, bang, swish!

"Wiped out!" he said.

He had hidden behind the dead horse for a long time, peeping out furtively across the common. The Cardigan men had tried a rush, in skirmishing order, at the pit, simply to be swept out of existence. Then the monster had risen to its feet, and had begun to walk leisurely to and fro across the common, among the few fugitives, with its head-like hood turning about exactly like the head of a cowled human being. A kind of arm carried a complicated metallic case, about which green flashes scintillated, and out of the funnel of this there smote the Heat-Ray.

In a few minutes there was, so far as the soldier could see, not a living thing left upon the common, and every bush and tree upon it that was not already a blackened skeleton was burning. The hus-

sars had bsen on the road beyond the curvature of the ground, and he saw nothing of them. He heard the Maxims rattle for a time, and then become still. The giant saved Woking Station and its cluster of houses until last; then in a moment the Heat-Ray was brought to bear, and the town became a heap of fiery ruins. Then the thing shut off the Heat-Ray, and, turning its back upon the artilleryman, began to waddle away towards the smouldering pine-woods that sheltered the second cylinder. As it did so, a second glittering Titan built itself up out of the pit.

The second monster followed the first, and at that the artilleryman began to crawl very cautiously across the hot heather ash towards Horsell. He managed to get alive into the ditch along by the side of the road, and so escaped to Woking. There his story became ejaculatory. The place was impassable. It seems there were a few people alive there, frantic for the most part, and many burnt and scalded. He was turned aside by the fire, and hid among some almost scorching heaps of broken wall as one of the Martian giants returned. He saw this one pursue a man, catch him up in one of its steely tentacles, and knock his head against the trunk of a pine-tree. At last, after nightfall, the artilleryman made a rush for it and got over the railway embankment.

Since then he had been skulking along towards Maybury, in the hope of getting out of danger Londonward. People were hiding in trenches and cellars, and many of the survivors had made off towards Woking Village and Send. He had been consumed with thirst until he found one of the water mains near the railway arch smashed, and the water bubbling out like a spring upon the road.

That was the story I got from him bit by bit. He grew calmer telling me and trying to make me see the things he had seen. He had eaten no food since midday, he told me early in his narrative, and I found some mutton and bread in the pantry and brought it into the room. We lit no lamp, for fear of attracting the Martians, and ever and again our hands would touch upon bread or meat. As he talked, things about us came darkly out of the darkness, and the trampled bushes and broken rose-trees outside the window grew distinct. It would seem that a number of men or animals had rushed across the lawn. I began to see his face, blackened and haggard, as no doubt mine was also.

WHEN we had finished eating we went softly upstairs to my study, and I looked again out of the open window. In one night the valley had become a valley of ashes. The fires had dwindled now. Where flames had been there were now streamers of smoke; but the countless ruins of shattered and gutted houses and blasted and blackened trees that the night had hidden stood out now gaunt and terrible in the pitiless light of dawn. Yet here and there some object had had the luck to escape—a white railway signal here, the end of a greenhouse there, white and fresh amidst the wreckage. Never before in the history of warfare had destruction been so indiscriminate and so universal. And, shining with the growing light of the east, three of the metallic giants stood about the pit, their cowls rotating as though they were surveying the desolation they had made.

It seemed to me that the pit had been enlarged, and ever and again puffs of vivid green vapor streamed up out of it towards the brightening dawn—streamed up, whirled, broke, and vanished.

Beyond were the pillars of fire about Chobham. They became pillars of bloodshot smoke at the first touch of day.

CHAPTER XII

What I Saw of the Destruction of Weybridge and Shepperton

AS the dawn grew brighter we withdrew ourselves from the window from which we had watched the Martians, and went very quietly downstairs.

The artilleryman agreed with me that the house was no place to stay in. He proposed, he said, to make his way Londonward, and thence rejoin his battery—No. 12, of the Horse Artillery. My plan was to return at once to Leatherhead, and so greatly had the strength of the Martians impressed me that I had determined to take my wife to Newhaven, and go with her out of the country forthwith. For I already perceived clearly that the country about London must inevitably be the scene of a disastrous struggle before such creatures as these could be destroyed.

Between us and Leatherhead, however, lay the third cylinder, with its guarding giants. Had I been alone, I think I should have taken my chance and struck across country. But the artilleryman dissuaded me: "It's no kindness to the right sort of wife," he said, "to make her a widow"; and in the end I agreed to go with him, under cover of the woods, northward as far as Street Cobham before I parted with him. Thence I would make a big détour by Epsom to reach Leatherhead.

I should have started at once, but my companion had been in active service, and he knew better than that. He made me ransack the house for a flask, which he filled with whisky; and we lined every available pocket with packets of biscuits and slices of meat. Then we crept out of the house, and ran as quickly as we could down the ill-made road by which I had come overnight. The houses seemed deserted. In the road lay a group of three charred bodies close together, struck dead by the Heat-Ray; and here and there were things that the people had dropped—a clock, a slipper, a silver spoon, and the like poor valuables. At the corner turning up towards the post-office a little cart, filled with boxes and furniture, and horseless, heeled over on a broken wheel. A cash-box had been hastily smashed open, and thrown under the débris.

Except the lodge at the Orphanage, which was still on fire, none of the houses had suffered very greatly here. The Heat-Ray had shaved the chimney-tops and passed. Yet, save ourselves, there did not seem to be a living soul on Maybury Hill. The majority of the inhabitants had escaped, I suppose, by way of the Old Woking road—the road I had taken when I drove to Leatherhead—or they had hidden.

We went down the lane, by the body of the man in black, sodden now from the overnight hail, and broke into the woods at the foot of the hill. We pushed through these towards the railway, without meeting a soul. The woods across the line were but the scarred and blackened ruins of woods; for the most part the trees had fallen, but a certain proportion still stood, dismal gray stems, with dark-brown foliage instead of green,

On our side the fire had done no more than scorch the nearer trees; it had failed to secure its footing. In one place the woodmen had been at work on Saturday; trees, felled and freshly trimmed, lay in a clearing, with heaps of sawdust, by the sawing machine and its engine. Hard by was a temporary hut, deserted. There was not a breath of wind this morning, and everything was strangely still. Even the birds were hushed, and as we hurried along, I and the artilleryman talked in whispers, and looked now and again over our shoulders. Once or twice we stopped to listen.

After a time we drew near the road, and as we did so we heard the clatter of hoofs, and saw through the tree-stems three cavalry soldiers riding slowly towards Woking. We hailed them, and they halted while we hurried towards them. It was a lieutenant and a couple of privates of the 8th Hussars, with a stand like a theodolite, which the artilleryman told me was a heliograph.

"You are the first men I've seen coming this way this orning," said the lieutenant. "What's brewing?"

HIS voice and face were eager. The men behind him stared curiously. The artilleryman jumped down the bank into the road and saluted.

"Gun destroyed last night, sir. Have been hiding. Trying to rejoin battery, sir. You'll come in sight of the Martians, I expect, about half a mile along this road."

"What the dickens are they like?" asked the lieutenant.

"Giants in armor, sir. Hundred feet high. Three legs and a body like 'luminium, with a mighty great head in a hood, sir."

"Get out!" said the lieutenant. "What confounded nonsense!"

"You'll see, sir. They carry a kind of box, sir, that shoots fire and strikes you dead."

"What d'ye mean—a gun?"

"No, sir," and the artilleryman began a vivid account of the Heat-Ray. Halfway through the lieutenant interrupted him and looked up at me I was still standing on the bank by the side of the road.

"Did you see it?" said the lieutenant.

"It's perfectly true," I said.

"Well," said the lieutenant, "I suppose it's my business to see it too. Look here"—to the artilleryman—"we're detailed here clearing people out of their houses. You'd better go along and report yourself to Brigadier-General Marvin, and tell him all you know. He's at Weybridge. Know the way?"

"I do," I said; and he turned his horse southward again.

"Half a mile, you say?" said he.

"At most," I answered, and pointed over the tree-tops southwards. He thanked me and rode on, and we saw them no more.

Further along we came upon a group of three woman and two children in the road, busy clearing out a laborer's cottage. They had got hold of a little hand-truck, and were piling it up with unclean looking bundles and shabby furniture. They were all too assiduously engaged to talk to us as we passed.

By Byfleet Station we emerged from the pine-trees, and found the country calm and peaceful under the morning sunlight. We were far beyond the range of the Heat-Ray there, and had it not been for the silent desertion of some of the houses, the stirring movement of packing in others, and the knot of soldiers standing on the bridge over the railway and staring down the line towards Woking, the day would have seemed very like any other Sunday.

Several farm wagons and carts were moving creakily along the road to Addlestone, and suddenly through the gate of a field we saw, across a stretch of flat meadow, six twelve-pounders standing neatly at equal distances and pointing toward Woking. The gunners stood by the guns waiting, and the ammunition wagons were at a business-like distance. The men stood almost as if under inspection.

"That's good!" said I. "They will get one fair shot, at any rate."

The artilleryman hesitated at the gate.

"I shall go on," he said.

Further on towards Weybridge, just over the bridge, there were a number of men in white fatigue jackets throwing up a long rampart, and more guns behind

"It's bows and arrows against the lightning, anyhow," said the artilleryman. "They 'aven't seen that fire-beam yet."

The officers who were not actively engaged stood and stared over the tree-tops south-westward, and the men digging would stop every now and again to stare in the same direction.

Byfleet was in a tumult, people packing, and a score of hussars, some of them dismounted, some on horseback, were hunting them about. Three or four black Government wagons, with crosses in white circles, and an old omnibus, among other vehicles, were being loaded in the village street. There were scores of people, most of them sufficiently Sabbatical to have assumed their best clothes. The soldiers were having the greatest difficulty in making them realize the gravity of their position. We saw one shrivelled old fellow with a huge box and a score or more of flower-pots containing orchids, angrily expostulating with the corporal who would leave them behind. I stopped and gripped his arm.

"Do you know what's over there?" I said, pointing at the pine-tops that hid the Martians.

"Eh?" said he, turning. "I was explainin' these is vallyble."

"Death!" I shouted. "Death is coming! Death!" and, leaving him to digest that if he could, I hurried on after the artilleryman. At the corner I looked back. The soldier had left him, and he was still standing by his box with the pots of orchids on the lid of it, and staring vaguely over the trees.

NO one in Weybridge could tell us where the headquarters were established; the whole place was in such confusion as I had never seen in any town before. Carts, carriages everywhere, the most astonishing miscellany of conveyances and horseflesh. The respectable inhabitants of the place, men in golf and boating costumes, wives prettily dressed, were packing, riverside loafers energetically helping, children excited, and, for the most part, highly delighted at this astonishing variation of their Sunday experiences. In the midst of it all the worthy vicar was very pluckily holding an early celebration, and his bell was jangling out above the excitement.

I and the artilleryman, seated on the step of the drinking-fountain, made a very passable meal upon what we had brought with us. Patrols of soldiers—here no longer hussars, but grenadiers in white—were warning people to move now or to take refuge in their cellars as soon as the firing began. We saw as we crossed the railway bridge that a growing crowd of people had assembled in and about the railway-station, and the swarming platform was piled with boxes and packages. The ordinary traffic had been stopped, I believe, in order to allow the passage of troops and guns to Chertsey, and I have heard since that a savage struggle occurred for places in the special trains that were put on at a later hour.

WE remained at Weybridge until mid-day, and at that hour we found ourselves at the place near Shepperton Lock where the Wey and Thames join. Part of the time we spent helping two old women to pack a little cart. The Wey had a treble mouth, and at this point boats are to be hired, and there was a ferry across the river. On the Shepperton side was an inn, with a lawn, and beyond that the tower of Shepperton Church—it has been replaced by a spire—rose above the trees.

Here we found an excited and noisy crowd of fugitives. As yet the flight had not grown to a panic, but there were already far more people than all the boats going to and fro could enable to cross. People came panting along under heavy burdens; one husband and wife were even carrying a small outhouse door between them, with some of their household goods piled thereon. One man told us he meant to try to get away from Shepperton Station.

There was a lot of shouting, and one man was even jesting. The idea people seemed to have here was that the Martians were simply formidable human beings, who might attack and sack the town, to be certainly destroyed in the end. Every now and then people would glance nervously across the Wey, at the meadows towards Chertsey, but everything over there was still.

Across the Thames, except just where the boats landed, everything was quiet, in vivid contrast with the Surrey side. The people who landed there from the boats went tramping off down the lane. The big ferry-boat had just made a journey. Three or four soldiers stood on the lawn of the inn, staring and jesting at the fugitives, without offering to help. The inn was closed, as it was now within prohibited hours.

"What's that!" cried a boatman, and "Shut up, you fool!" said a man near me to a yelping dog. Then the sound came again, this time from the direction of Chertsey, a muffled thud—the sound of a gun.

The fighting was beginning. Almost immediately unseen batteries across the river to our right, unseen because of the trees, took up the chorus, firing heavily one after the other. A woman screamed. Every one stood arrested by the sudden stir of battle, near us and yet invisible to us. Nothing was to be seen save flat meadows, cows feeding unconcernedly for the most part, and silvery pollard willows motionless in the warm sunlight.

"The sojers 'll stop 'em," said a woman beside me doubtfully. A haziness rose over the tree-tops.

Then suddenly we saw a rush of smoke far away up the river, a puff of smoke that jerked up into the air, and hung, and forthwith the ground heaved under foot and a heavy explosion shook the air, smashing two or three windows in the houses near, and leaving us astonished.

"Here they are!" shouted a man in a blue jersey. "Yonder! D'yer see them? Yonder!"

Quickly, one after the other, one, two, three, four of the armored Martians appeared, far away over the little trees, across the flat meadows that stretch towards Chertsey and striding hurriedly towards the river. Little crowded figures they seemed at first, going with a rolling motion and as fast as flying birds.

Then, advancing obliquely towards us, came a fifth. Their armored bodies glittered in the sun, as they swept swiftly forward upon the guns, growing rapidly larger as they drew nearer. One on the extreme left, the remotest, that is, flourished a huge case high in the air, and the ghostly terrible Heat-Ray I had already seen on Friday night smote towards Chertsey, and struck the town.

At sight of these strange, swift, and terrible creatures, the crowd along by the water's edge seemed to me to be for a moment horror-struck. There was no screaming or shouting, but a silence. Then a hoarse murmur and a movement of feet—a splashing from the water. A man, too frightened to drop the portmanteau he carried on his shoulder, swung round and sent me staggering with a blow from the corner of his burden. A woman thrust at me with her hand and rushed past me. I turned, too, with the rush of the people, but I was not too terrified for thought. The terrible Heat-Ray was in my mind. To get under water! That was it!

"Get under water!" I shouted unheeded.

I faced about again, and rushed towards the approaching Martians—rushed right down the gravelly beach and headlong into the water. Others did the same. A boatload of people putting back came leaping out as I rushed past. The stones under my feet were muddy and slippery, and the river was so low that I ran perhaps twenty feet scarcely waist-deep. Then as the Martian towered overhead, scarcely a couple of hundred yards away, I flung myself forward under the surface. The splashes of the people in the boats leaping into the river sounded like thunderclaps in my ears. People were landing hastily on both sides of the river.

But the Martian machine took no more notice for

the moment of the people running this way and that than a man would of the confusion of ants in a nest against which his foot was kicked. When, half suffocated, I raised my head above water the Martian's hood pointed at the batteries that were still firing across the river, and as it advanced it swung loose what must have been the generator of the Heat-Ray.

IN another moment it was on the bank, and in a stride wading half-way across. The knees of its foremost legs bent at the further bank, and in another moment it had raised itself to its full height again, close to the village of Shepperton. Forthwith the six guns, which, unknown to any one on the right bank, had been hidden behind the outskirts of that village, fired simultaneously. The sudden near concussions, the last close upon the first, made my heart jump. The monster was already raising the case generating the Heat-Ray, as the first shell burst six yards above the hood.

I gave a cry of astonishment. I saw and thought nothing of the other four Martian monsters: my attention was riveted upon the nearer incident. Simultaneously two other shells burst in the air near the body as the hood twisted round in time to receive, but not in time to dodge, the fourth shell.

The shell burst clean in the face of the thing. The hood bulged, flashed, was whirled off in a dozen tattered fragments of red flesh and glittering metal.

"Hit!" shouted I, with something between a scream and a cheer.

I heard answering shouts from the people in the water about me. I could have leapt out of the water with that momentary exultation.

The decapitated colossus reeled like a drunken giant; but it did not fall over. It recovered its balance by a miracle, and, no longer heeding its steps, and with the camera that fired the Heat-Ray now rigidly upheld, it reeled swiftly upon Shepperton. The living intelligence, the Martian within the hood, was slain and splashed to the four winds of heaven, and the thing was now but a mere intricate device of metal whirling to destruction. It drove along in a straight line, incapable of guidance. It struck the tower of Shepperton Church, smashing it down as the impact of a battering ram might have done, swerved aside, blundered on, and collapsed with a tremendous impact into the river out of my sight.

A violent explosion shook the air, and a spout of water, steam, mud, and shattered metal, shot far up into the sky. As the camera of the Heat-Ray hit the water, the latter had incontinently flashed into steam. In another moment a huge wave, like a muddy tidal bore, but almost scaldingly hot, came sweeping round the bend upstream. I saw people struggling shorewards and heard their screaming and shouting faintly above the seething and roar of the Martian's collapse.

For the moment I heeded nothing of the heat, forgot the patent need of self-preservation. I splashed through the tumultuous water, pushing aside a man in black to do so, until I could see round the bend. Half a dozen deserted boats pitched aimlessly upon the confusion of the waves. The fallen Martian came into sight downstream, lying across the river, and for the most part submerged.

Thick clouds of steam were pouring off the wreckage, and through the tumultuously whirling wisps I could see, intermittently and vaguely, the gigantic limbs churning the water and flinging a splash and spray of mud and froth into the air. The tentacles swayed and struck like living arms, and, save for the helpless purposelessness of these movements, it was as if some wounded thing struggled for life amidst the waves. Enormous quantities of a ruddy brown fluid were spurting up in noisy jets out of the machine.

My attention was diverted from this sight by a furious yelling, like that of the thing called a siren in our manufacturing towns. A man, knee-deep near the towing-path, shouted inaudibly to me and pointed. Looking back, I saw the other Martians advancing with gigantic strides down the river-bank from the direction of Chertsey. The Shepperton guns spoke this time unavailingly.

At that I ducked at once under water, and, holding my breath until movement was an agony, blundered painfully along under the surface as long as I could. The water was in a tumult about me, and rapidly growing hotter.

When for a moment I raised my head to take breath, and throw the hair and water from my eyes, the steam was rising in a whirling white fog that at first hid the Martians altogether. The noise was deafening. Then I saw them dimly, colossal figures of gray, magnified by the mist. They had passed by me, and two were stooping over the frothing tumultuous ruins of their comrade.

The third and fourth stood beside him in the water, one perhaps 200 yards from me, the other towards Laleham. The generators of the Heat-Rays waved high, and the hissing beams smote down this way and that.

The air was full of sound, a deafening and confusing conflict of noises, the clangorous din of the Martians, the crash of falling houses, the thud of trees, fences, sheds, flashing into flame, and the crackling and roaring of fire. Dense black smoke was leaping up to mingle with the steam from the river, and as the Heat-Ray went to and fro over Weybridge, its impact was marked by flashes of incandescent white, that gave place at once to a smoky dance of lurid flames. The nearer houses still stood intact, awaiting their fate, shadowy, faint and pallid in the stream, with the fire behind them going to and fro.

For a moment, perhaps, I stood there, breast-high in the almost boiling water dumfounded at my position, hopeless of escape. Through the reek I could see the people who had been with me in the river scrambling out of the water through the reeds, like little frogs hurrying through grass from the advance of a man, or running to and fro in utter dismay on the towing-path.

Then suddenly the white flashes of the Heat-Ray came leaping towards me. The houses caved in as they dissolved at its touch, and darted out flames; the trees changed to fire with a roar. It flickered up and down the towing-path, licking off the people who ran this way and that, and came down to the water's edge not fifty yards from where I stood. It swept across the river to Shepperton, and the water in its track rose in a boiling wheal created with steam. I turned shoreward.

In another momsnt tha huge wave, well-nigh at the bolling-point, had rushed upon ms. I screamed aloud, and scalded, half blinded, agonized, I staggered through the leaping, biasing water towarda tha shora. Had my foot stumhlad it would have heen tha end. I fell helpleasly, in full aight of ths Martians, upon the broad, hars gravelly spit that runa down to mark the angle of the Wey and Thames. I expected nothing hut death.

I have a dim memory of the foot of a Martian coming down within a score of yards of my head, driving straight into the loose gravel, whirling it this way and that, and lifting again; of a long suspenss, and thsn of the four carrying the débris of their comrads between them, now clesr, and then presently faint, tbrough a veil of smoke, receding interminahly, as it seemed to me, across a vast space of river and meadow. And then, very alowly, I realized that by a miracle I had sacaped.

CHAPTER XIII

In London

How I Fell In with the Curate

AFTER getting this sudden lesson in the power of terrestrial weapons, the Martiana retreated to thair original position upon Horsell Common, and in their haste, and ancumhered with tbe déhrls of thelr amashed companlon, they no doubt overlooked many such a stray and unnecessary victim aa myself. Had they left thelr comrade, and pushed on forthwith, there was nothing at that time betwasn them and London but batterles of twelve-pounder guns, and they would certainly have reached the capital in advancs of the tidinga of their approach; as sudden, dreadful and destructive their advent would have been as the earthquake that destroyed Lishon a century ago.

But they were in no hurry. Cylinder followed cylinder in its interplanetary flight; every twenty-four houra hrought them reinforcement. And meanwhile the military and naval authorities, now fully alive to the tremendous power of their antagonists, worked with furious energy. Every minute a fresh gun came into position, until, before twilight, every copse, every row of auhurban villas on the hilly slopes about Kingston and Richmond, masked an expectant hlack muzzle. And through the charred and desolated area—perhaps twenty square miles altogether—that encircled the Martian encampment on Horsell Common, tbrough charred and ruined villages among tbe green trees, through the blackened and smoking arcades that had been but a day ago pine spinneys, crawled the dsvoted scouts with the heliographs that were presently to warn the gunners of the Martian approach. But the Martians now understood our command of artillery and ths danger of human proximity, and not a man ventured within a mils of either cylinder, save at the price of his life.

It would seem these giants apent the earlier part of ths afternoon in going to and fro, transferring everything from the second snd third cylinders—the saoond in Addlestone Golf Links, and the third at Pyrford—to tbeir original pit upon Horsell Common. Ovsr that, above the blackened heather and ruined huildings that stretched far and wide, stood one as sentinel, while the rest ahandoned tbeir vast fighting-machines and descended into the pit. They were hard at work there far into the night, and the towering pillar of dsnse green amoke that rose therefrom could he aeen from the hills about Merrow, and even, it is aaid, from Banstead and Epsom Downs.

And while the Martians behind me were thus preparing for their next sally, and in front of me Humanity gathered for the hattle, I made my way, with infinite pains and labor, from the fire and smoke of burning Weybridge towards London.

I saw an abandoned boat, very amall and remote, drifting down-stream, and, throwing off the most of my sodden clothes, I went after it, gained it, and so eacaped out of that destruction. There were no oara in the boat, but I contrived to paddle, as much as my parboiled hands would allow, down the river towards Halliford and Walton, going very tediously, and continually looking behind me, as you may well understand. I followed the river because I considered the watsr gave me my beat chance of escapa, should thesa giants return.

The hot water from the Martian's overthrow drifted down-stream witb me, so that for the hest part of a mile I could sea little of either hank. Once, however, I made out a string of black figures hurrying across the meadows from the direction of Weybridge. Halliford, it seemed, was quite deserted, and several of the bouses facing the river were on fire. It was strange to see the place quite tranquil, quite desolats under the hot blue sky, with the smoke and little threads of flame going straight up into the heat of the afternoon. Never before had I seen houses burning without the accompaniment of an inconvenient crowd. A little further on the dry reeds up the bank were smoking and glowing, and a line of fire inland was marching steadily across a late field of hay.

For a long time I drifted, so painful and weary was I after the violence I had been through, and so intense the heat upon the water. Then my fears got the better of me again, and I resumed my paddling. The sun scorched my bare back. At last, as the bridge at Walton was coming into sight round the bend, my fever and faintness overcame my fears and I landed on the Middlesex bank, and lay down, deadly sick, amidst the long grass. I suppose the time was then about four or five o'clock. I got up presently, walked perhaps half a mile without meeting a soul, and then lay down again in the shadow of a hedge. I seem to remember talking wanderingly to myself during tbat last spurt. I was also very thirsty, and bitterly regretful I bad drunk no more water. It is a curious thing that I felt angry with my wife; I cannot account for it, but my impotent desire to reach Leatherhead worried me excessively.

I DO not clearly remember the arrival of the curate, so that I probably dozed. I became aware of him as a seated figure in soot-smudged shirt-sleeves, and with his upturned clean-shaven face staring at a faint flickering that danced over the sky. The sky was what is called a mackerel sky, rows and rows of faint down-plumes of cloud, just tinted with the midsummer sunset.

I sat up, and at the rustle of my motion he looked at me quickly.

"Have you any water?" I asked abruptly.

He shook his head.

"You have been asking for water for the last hour," he said.

For a moment we were silent, taking stock of one another. I dare say he found me a strange enough figure, naked save for my water-soaked trousers and socks, scalded, and my face and shoulders blackened from the smoke. His face was a fair weakness, his chin retreated, and his hair lay in crisp, almost flaxen curls on his low forehead; his eyes were rather large, pale blue, and blankly staring. He spoke abruptly, looking vacantly away from me.

"What does it mean?" he said. "What do these things mean?"

I stared at him and made no answer.

He extended a thin white hand and spoke in almost a complaining tone.

"Why are these things permitted? What sins have we done? The morning service was over, I was walking through the roads to clear my brain for the afternoon, and then—fire, earthquake, death! As if it were Sodom and Gomorrah! All our work undone, all the work . . . What are these Martians?"

"What are we?" I answered, clearing my throat.

He gripped his knees and turned to look at me again. For half a minute, perhaps, he stared silently.

"I was walking through the roads to clear my brains," he said. "And suddenly fire, earthquake, death!"

He relapsed into silence, with his chin now sunken almost to his knees.

Presently he began waving his hand:

"All the work—all the Sunday-schools. What have we done—what has Weybridge done? Everything gone—everything destroyed. The church! We rebuilt it only three years ago. Gone!—swept out of existence! Why?"

Another pause, and he broke out again like one demented.

"The smoke of her burning goeth up for ever and ever!" he shouted.

His eyes flamed, and he pointed a lean finger in the direction of Weybridge.

By this time I was beginning to take his measure. The tremendous tragedy in which he had been involved—it was evident he was a fugitive from Weybridge—had driven him to the very verge of his reason.

"Are we far from Sunbury?" I said in a matter-of-fact tone.

"What are we to do?" he asked. "Are these creatures everywhere? Has the earth been given over to them?"

"Are we far from Sunbury?"

"Only this morning I officiated at early celebration. . . ."

"Things have changed," I said quietly. "You must keep your head. There is still hope."

"Hope!"

"Yes; plentiful hope—for all this destruction!"

I began to explain my view of our position. He listened at first, but as I went on the interest in his eyes changed to their former stare, and his regard wandered from me.

"This must be the beginning of the end," he said, interrupting me. "The end! The great and terrible day of the Lord! When men shall call upon the mountains and the rocks to fall upon them and hide them—hide them from the face of Him that sitteth upon the throne!"

I began to understand the position. I ceased my labored reasoning, struggled to my feet, and, standing over him, laid my hand on his shoulder.

"Be a man," said I. "You are scared out of your wits. What good is religion if it collapses at calamity? Think of what earthquakes and floods, wars and volcanoes, have done before to men. Did you think God had exempted Weybridge? . . . He is not an insurance agent, man."

For a time he sat in blank silence.

"But how can we escape?" he asked suddenly. "They are invulnerable, they are pitiless. . . ."

"Neither the one nor, perhaps, the other," I answered. "And the mightier they are, the more sane and wary should we be. One of them was killed yonder not three hours ago."

"Killed!" he said, staring about him. "How can God's ministers be killed?"

"I saw it happen," I proceeded to tell him. "We have chanced to come in for the thick of it," said I, "and that is all."

"What is that flicker in the sky?" he asked abruptly.

I told him it was the heliograph signalling—that it was the sign of human help and effort in the sky.

"We are in the midst of it," I said, "quiet as it is. That flicker in the sky tells of the gathering storm. Yonder, I take it, are the Martians, and Londonward, where those hills rise about Richmond and Kingston, and the trees give cover, earthworks are being thrown up and guns are being laid. Presently the Martians will be coming this way again."

And even as I spoke, he sprang to his feet and stopped me by a gesture.

"Listen!" he said. . . .

From beyond the low hills across the water came the dull resonance of distant guns and a remote, weird crying. Then everything was still. A cockchafer came droning over the hedge and past us. High in the west the crescent moon hung faint and pale, above the smoke of Weybridge and Shepperton and the hot still splendor of the sunset.

"We had better follow this path," I said, "northward."

CHAPTER XIV

In London

MY younger brother was in London when the Martians fell at Woking. He was a medical student, working for an imminent examination, and he heard nothing of the arrival until Saturday morning. The morning papers on Saturday contained, in addition to lengthy special articles on the planet Mars, on life in the planets, and so forth, a brief and vaguely-worded telegram, all the more striking for its brevity.

The Martians, alarmed by the approach of a

crowd, had killed a number of people with a quick-firing gun, so the story ran. The telegram concluded with the words: "Formidable as they seem to be, the Martians have not moved from the pit into which they have fallen, and, indeed, seem incapable of doing so. Probably this is due to the relative strength of the earth's gravitational energy." On that last text the leader-writers expanded very comfortingly.

Of course, all the students in the crammer's biology class, to which my brother went that day, were intensely interested, but there were no signs of any unusual excitement in the streets. The afternoon papers puffed scraps of news under big headlines. They had nothing to tell beyond the movements of troops about the common, and the burning of the pine-woods between Woking and Weybridge, until eight. Then the *St. James's Gazette*, in an extra special edition, announced the bare fact of the interruption of telegraphic communication. This was thought to be due to the falling of burning pine-trees across the line. Nothing more of the fighting was known that night, the night of my drive to Leatherhead and back.

My brother felt no anxiety about us, as he knew from the description in the papers that the cylinder was a good two miles from my house. He made up his mind to run down that night to me, in order, as he says, to see the things before they were killed. He despatched a telegram, which never reached me, about four o'clock, and spent the evening at a music-hall.

In London, also, on Saturday night there was a thunderstorm, and my brother reached Waterloo in a cab. On the platform from which the midnight train usually starts he learnt, after some waiting, that an accident prevented trains from reaching Woking that night. The nature of the accident he could not ascertain; indeed, the railway authorities did not clearly know at that time. There was very little excitement in the station, as the officials, failing to realize that anything further than a breakdown between Byfleet and Woking Junction had occurred, were running the theatre trains, which usually passed through Woking, round by Virginia Water or Guildford. They were busy making the necessary arrangements to alter the route of the Southampton and Portsmouth Sunday League excursions. A nocturnal newspaper reporter, mistaking my brother for the traffic manager, whom he does to a slight extent resemble, waylaid and tried to interview him. Few people, excepting the railway officials, connected the breakdown with the Martians.

I have read, in another account of these events, that on Sunday morning "all London was electrified by the news from Woking." As a matter of fact, there was nothing to justify that very extravagant phrase. Plenty of people in London did not hear of the Martians until the panic of Monday morning. Those who did took some time to realize all that the hastily-worded telegrams in the Sunday papers conveyed. The majority of people in London do not read Sunday papers.

The habit of personal security, moreover, is so deeply fixed in the Londoner's mind, and startling intelligence so much a matter of course in the papers, that they could read without any personal tremors: "About seven o'clock last night the Martians came out of the cylinder, and, moving about under an armor of metallic shields, have completely wrecked Woking Station, with the adjacent houses, and massacred an entire battalion of the Cardigan Regiment. No details are known. Maxims have been absolutely useless against their armor; the field-guns have been disabled by them. Flying hussars have been galloping into Chertsey. The Martians appear to be moving slowly towards Chertsey or Windsor. Great anxiety prevails in West Surrey, and earthworks are being thrown up to check the advance Londonwards." That was how the *Sunday Sun* put it, and a clever and remarkably prompt "hand-book" article in the *Referee* compared the affair to a menagerie suddenly let loose in a village.

No one in London knew positively of the nature of the armored Martians, and there was still a fixed idea that these monsters must be sluggish: "crawling," "creeping painfully"—such expressions occurred in almost all the earlier reports. None of the telegrams could have been written by an eye witness of their advance. The Sunday papers printed separate editions as further news came to hand, some even in default of it. But there was practically nothing more to tell people until late in the afternoon, when the authorities gave the press agencies the news in their possession. It was stated that the people of Walton and Weybridge, and all that district, were pouring along the roads Londonward, and that was all.

MY brother went to church at the Foundling Hospital in the morning, still in ignorance of what had happened on the previous night. There he heard allusions made to the invasion, and a special prayer for peace. Coming out, he bought a *Referee*. He became alarmed at the news in this, and went again to Waterloo Station to find out if communication were restored. The omnibuses, carriages, cyclists, and innumerable people walking in their best clothes, seemed scarcely affected by the strange intelligence that the newsvendors were disseminating. People were interested, or, if alarmed, alarmed only on account of the local residents. At the station he heard for the first time that the Windsor and Chertsey lines were now interrupted. The porters told him that several remarkable telegrams had been received in the morning from Byfleet and Chertsey Stations, but that these had abruptly ceased. My brother could get very little precise detail out of them. "There's fighting going on about Weybridge," was the extent of their information.

The train service was now very much disorganized. Quite a number of people, who had been expecting friends from places on the South-Western network, were standing about the station. One gray-headed old gentleman came and abused the South-Western Company bitterly to my brother. "It wants showing up," he said.

One or two trains came in from Richmond, Putney, and Kingston, containing people who had gone out for a day's boating, and found the locks closed and a feeling of panic in the air. A man in a blue

and white blazer addressed my brother, full of strange tidings.

"There's hosts of people driving into Kingston in traps and carts and things, with boxes of valuables and all that," he said. "They come from Molesey and Weybridge and Walton, and they say there's been guns heard at Chertsey, heavy firing, and that mounted soldiers have told them to get off at once because the Martians are coming. *We* heard guns firing at Hampton Court Station, but we thought it was thunder. What the dickens does it all mean? The Martians can't get out of their pit, can they?"

My brother could not tell him.

Afterwards he found that the vague feeling of alarm had spread to the clients of the underground railway, and that the Sunday excursionists began to return from all the South-Western "lungs"—Barnes, Wimbledon, Richmond Park, Kew, and so forth—at unnaturally early hours but not a soul had anything but vague hearsay to tell of. Everyone connected with the terminus seemed ill-tempered.

About five o'clock the gathering crowd in the station was immensely excited by the opening of the line of communication, which is almost invariably closed, between the South-Eastern and the South-Western stations, and the passage of carriage-trucks bearing huge guns, and carriages crammed with soldiers. These were the guns that were brought up from Woolwich and Chatham to cover Kingston. There was an exchange of pleasantries: "You'll get eaten!" "We're the beast-tamers!" and so forth. A little while after that a squad of police came into the station, and began to clear the public off the platforms, and my brother went out into the street again.

The church bells were ringing for evensong, and a squad of Salvation Army lasses came singing down Waterloo Road. On the bridge a number of loafers were watching a curious brown scum that came drifting down the stream in patches. The sun was just setting, and the Clock Tower and the Houses of Parliament rose against one of the most peaceful skies it is possible to imagine, a sky of gold, barred with long transverse stripes of reddish-purple cloud. There was talk of a floating body. One of the men there, a reservist he said he was, told my brother he had seen the heliograph flickering in the west.

In Wellington Street my brother met a couple of sturdy roughs, who had just rushed out of Fleet Street with still wet newspapers and staring placards. "Dreadful catastrophe!" they bawled one to the other down Wellington Street. "Fighting at Weybridge! Full description! Repulse of the Martians! London said to be in danger!" He had to give threepence for a copy of that paper.

Then it was, and then only, that he realized something of the full power and terror of these monsters. He learnt that they were not merely a handful of small sluggish creatures, but that they were minds swaying vast mechanical bodies, and that they could move swiftly and smite with such power that even the mightiest guns could not stand against them.

They were described as "vast spider-like machines, nearly a hundred feet high, capable of the speed of an express train, and able to shoot out a beam of intense heat." Masked batteries, chiefly of field-guns, had been planted in the country about Horsell Common, and especially between the Woking district and London. Five of the machines had been seen moving towards the Thames, and one, by a freak of chance, had been destroyed. In the other cases the shells had missed, and the batteries had been at once annihilated by the Heat-Rays. Heavy losses of soldiers were mentioned, but the tone of the despatch was optimistic.

The Martians had been repulsed; they were not invulnerable. They had retreated to their triangle of cylinders again, in the circle about Woking. Signallers with heliographs were pushing forward upon them from all sides. Guns were in rapid transit from Windsor, Portsmouth, Aldershot, Woolwich—even from the north; among others, long wire guns of ninety-five tons from Woolwich. Altogether one hundred and sixteen were in position or being hastily laid, chiefly covering London. Never before in England had there been such a vast or rapid concentration of military material.

Any further cylinders that fell, it was hoped, could be destroyed at once by high explosives, which were being rapidly manufactured and distributed. No doubt, ran the report, the situation was of the strangest and gravest description, but the public was exhorted to avoid and discourage panic. No doubt the Martians were strange and terrible in the extreme, but at the outside there could not be more than twenty of them against our millions.

The authorities had reason to suppose, from the size of the cylinders, that at the outside there could not be more than five in each cylinder—fifteen altogether. And one at least was disposed of—perhaps more. The public would be fairly warned of the approach of danger, and elaborate measures were being taken for the protection of the people in the threatened south-western suburbs. And so, with reiterated assurances of the safety of London, and the confidence of the authorities to cope with the difficulty, this *quasi* proclamation closed.

THIS was printed in enormous type, so fresh that the paper was still wet, and there had been no time to add a word of comment. It was curious, my brother said, to see how ruthlessly the other contents of the paper had been hacked and taken out to give this place.

All down Wellington Street, people could be seen fluttering out the pink sheets and reading, and the Strand was suddenly noisy with the voices of an army of hawkers following these pioneers. Men came scrambling off buses to secure copies. Certainly this news excited people intensely, whatever their previous apathy. The shutters of a map-shop in the Strand were being taken down, my brother said, and a man in his Sunday raiment, lemon-yellow gloves even, was visible inside the window, hastily fastening maps of Surrey to the glass.

Going on along the Strand to Trafalgar Square, the paper in his hand, my brother saw some of the fugitives from West Surrey. There was a man driving a cart such as greengrocers use, and his wife and two boys and some articles of furniture. He was driving from the direction of Westminster

Bridge, and close behind him came a hay wagon with five or six respectable-looking people in it, and some boxes and bundles. The faces of these people were haggard, and their entire appearance contrasted conspicuously with the Sabbath-best appearance of the people on the omnibuses. People in fashionable clothing peeped at them out of cabs. They stopped at the Square as if undecided which way to take, and finally turned eastward along the Strand. Some way after these came a man in workday clothes, riding one of those old-fashioned tricycles with a small front-wheel. He was dirty and white in the face.

My brother turned down towards Victoria, and met a number of such people. He had a vague idea that he might see something of me. He noticed an unusual number of police regulating the traffic. Some of the refugees were exchanging news with the people on the omnibuses. One was professing to have seen the Martians. "Boilers on stilts, I tell you, striding along like man." Most of them were excited and animated by their strange experience.

Beyond Victoria the public-houses were doing a lively trade with these arrivals. At all the street corners groups of people were reading papers, talking excitedly, or staring at these unusual Sunday visitors. They seemed to increase as night drew on, until at last the roads, my brother said, were like the Epsom High Street on a Derby Day. My brother addressed several of these fugitives and got unsatisfactory answers from most.

None of them could tell him any news of Woking except one man, who assured him that Woking had been entirely destroyed on the previous night.

"I come from Byfleet," he said; "a man on a bicycle came through the place in the early morning, and ran from door to door warning us to come away. Then came soldiers. We went out to look, and there were clouds of smoke to the south—nothing but smoke, and not a soul coming that way. Then we heard the guns at Chertsey, and folks coming from Weybridge. So I've locked up my house and come on."

At that time there was a strong feeling in the streets that the authorities were to blame for their incapacity to dispose of the invaders without all this inconvenience.

About eight o'clock, a noise of heavy firing was distinctly audible all over the south of London. My brother could not hear it for the traffic in the main streets, but by striking through the quiet backstreets to the river he was able to distinguish it quite plainly.

He walked back from Westminster to his apartments near Regent's Park about two. He was now very anxious on my account, and disturbed at the evident magnitude of the trouble. His mind was inclined to run, even as mine had run on Saturday, on military details. He thought of all those silent expectant guns, of the suddenly nomadic countryside; he tried to imagine "boilers on stilts" a hundred feet high.

There were one or two cartloads of refugees passing along Oxford Street, and several in the Marylebone Road, but so slowly was the news spreading that Regent Street and Portland Road were full of their usual Sunday night promenaders, albeit they talked in groups, and along the edge of Regent's Park there were as many silent couples "walking out" together under the scattered gas-lamps as ever there had been. The night was warm and still, and a little oppressive, the sound of guns continued intermittently, and after midnight there seemed to be sheet lightning in the south.

He read and re-read the paper, fearing the worst had happened to me. He was restless, and after supper prowled out again aimlessly. He returned and tried to divert his attention by his examination notes in vain. He went to bed a little after midnight, and he was awakened out of some lurid dreams in the small hours of Monday by the sound of door-knockers, feet running in the street, distant drumming, and a clamor of bells. Red reflections danced on the ceiling. For a moment he lay astonished, wondering whether day had come or the world had gone mad. Then he jumped out of bed and ran to the window.

His room was an attic, and as he thrust his head out, up and down the street there were a dozen echoes to the noise of his window-sash, and heads in every kind of night disarray appeared. Inquiries were being shouted. "They are coming!" bawled a policeman, hammering at the door; "the Martians are coming!" and hurried to the next door.

The noise of drumming and trumpeting came from the Albany Street Barracks, and every church within earshot was hard at work killing sleep with a vehement disorderly tocsin. There was a noise of doors opening, and window after window in the houses opposite flashed from darkness into yellow illumination.

Up the street came galloping a closed carriage, bursting abruptly into noise at the corner, rising to a clattering climax under the window, and dying away slowly in the distance. Close on the rear of this came a couple of cabs, the forerunners of a long procession of flying vehicles, going for the most part to Chalk Farm Station, where the North-Western special trains were loading up, instead of coming down the gradient into Euston.

FOR a long time my brother stared out of the window in blank astonishment, watching the policemen hammering at door after door, and delivering their incomprehensible message. Then the door behind him opened, and the man who lodged across the landing came in, dressed only in shirt, trousers, and slippers, his braces loose about his waist, his hair disordered from his pillow.

"What the devil is it?" he asked. "A fire? What a devil of a row!"

They both craned their heads out of the window, straining to hear what the policemen were shouting. People were coming out of the side-streets, and standing in groups at the corners talking.

"What the devil is it all about?" said my brother's fellow-lodger.

My brother answered him vaguely and began to dress, running with each garment to the window in order to miss nothing of the growing excitement of the streets. And presently men selling unnaturally early newspapers came bawling into the street:

"London in danger of suffocation! The Kingston and Richmond defences forced! Fearful massacres in the Thames Valley!"

And all about him—in the rooms below, in the houses on either side and across the road, and behind in the Park Terraces and in the hundred other streets of that part of Marylebone, and the Westbourne Park district and St. Pancras, and westward and northward in Kilburn and St. John's Wood and Hampstead, and eastward in Shoreditch and Highbury and Haggerston and Hoxton, and indeed, through all the vastness of London from Ealing to East Ham—people were rubbing their eyes, and opening windows to stare out and ask aimless questions, and dressing hastily as the first breath of the coming storm of Fear blew through the streets. It was the dawn of the great panic. London, which had gone to bed on Sunday night stupid and inert, was awakened in the small hours of Monday morning to a vivid sense of danger.

Unable from his window to learn what was happening, my brother went down and out into the street, just as the sky between the parapets of the houses grew pink with the early dawn. The flying people on foot and in vehicles grew more numerous every moment. "Black Smoke!" he heard people crying, and again "Black Smoke!" The contagion of such a unanimous fear was inevitable. As my brother hesitated on the doorstep, he saw another newsvendor approaching him, and got a copy forthwith. The man was running away with the rest, and selling his papers as he ran, for a shilling each—a grotesque mingling of profit and panic.

And from this paper my brother read that catastrophic despatch of the Commander-in-Chief:

"The Martians are able to discharge enormous clouds of a black and poisonous vapour by means of rockets. They have smothered our batteries, destroyed Richmond, Kingston, and Wimbledon, and are advancing slowly towards London, destroying everything on the way. It is impossible to stop them. There is no safety from the Black Smoke but in instant flight."

That was all, but it was enough. The whole population of the great six-million city was stirring, slipping, running; presently it would be pouring *en masse* northward.

"Black Smoke!" the voices cried. "Fire!"

The bells of the neighboring church made a jangling tumult, a cart carelessly driven smashed amidst shrieks and curses against the water-trough up the street. Sickly yellow light went to and fro in the houses, and some of the passing cabs flaunted unextinguished lamps. And overhead the dawn was growing brighter, clear and steady and calm.

He heard footsteps running to and fro in the rooms, and up and down stairs behind him. His landlady came to the door, loosely wrapped in dressing-gown and shawl; her husband followed, ejaculating.

As my brother began to realize the import of all these things, he turned hastily to his own room, put all his available money—some ten pounds altogether—into his pockets, and went out again into the streets.

CHAPTER XV

What Had Happened in Surrey

IT was while the curate had sat and talked so wildly to me under the hedge in the flat meadows near Halliford, and while my brother was watching the fugitives stream over Westminster Bridge, that the Martians had resumed the offensive. So far as one can ascertain from the conflicting accounts that have been put forth, the majority of them remained busied with preparations in the Horsell pit until nine that night, hurrying on some operation that disengaged huge volumes of green smoke.

But three certainly came out about eight o'clock and, advancing slowly and cautiously, made their way through Byfleet and Pyrford towards Ripley and Weybridge, and so came in sight of the expectant batteries against the setting sun. These Martians did not advance in a body, but in a line, each perhaps a mile and a half from his nearest fellow. They communicated with each other by means of siren-like howls, running up and down the scale from one note to another.

It was this howling and the firing of the guns at Ripley and St. George's Hill that we had heard at Upper Halliford. The Ripley gunners, unseasoned artillery volunteers who ought never to have been placed in such a position, fired one wild, premature, ineffectual volley, and bolted on horse and foot through the deserted village, and the Martian walked over their guns serenely without using his Heat-Ray, stepped gingerly among them, passed in front of them, and so came unexpectedly upon the guns in Painshill Park, which he destroyed.

The St. George's Hill men, however, were better led or of a better mettle. Hidden by a pine-wood as they were, they seem to have been quite unexpected by the Martian nearest to them. They laid their guns as deliberately as if they had been on parade, and fired at about a thousand yards' range.

The shells flashed all round the Martian, and they saw him advance a few paces, stagger, and go down. Everybody yelled together, and the guns were reloaded in frantic haste. The overthrown Martian set up a prolonged ululation, and immediately a second glittering giant, answering him, appeared over the trees to the south. It would seem that a leg of the tripod had been smashed by one of the shells. The whole of the second volley flew wide of the Martian on the ground, and simultaneously both his companions brought their Heat-Rays to bear on the battery. The ammunition blew up, the pine-trees all about the guns flashed into fire, and only one or two of the men who were already running over the crest of the hill escaped.

After this it would seem that the three took counsel together and halted, and the scouts who were watching them report that they remained absolutely stationary for the next half-hour. The Martian who had been overthrown crawled tediously out of his hood, a small brown figure, oddly suggestive from that distance of a speck of light, and apparently engaged in the repair of his sup-

port. About nine he had finished, for his cowl was then seen above the trees again.

It was a few minutes past nine that night when these three sentinels were joined by four other Martians, each carrying a thick black tube. A similar tube was handed to each of the three, and the seven proceeded to distribute themselves at equal distances along a curved line between St. George's Hill, Weybridge, and the village of Send, south-west of Ripley.

A dozen rockets sprang out of the hills before them so soon as they began to move, and warned the waiting batteries about Ditton and Esher. At the same time four of their Fighting Machines, similarly armed with tubes, crossed the river, and two of them, black against the western sky, came into sight of myself and the curate as we hurried wearily and painfully along the road that runs northward out of Halliford. They moved, as it seemed to us, upon a cloud, for a milky mist covered the fields and rose to a third of their height.

At this sight the curate cried faintly in his throat, and began running; but I knew it was no good running from a Martian, and I turned aside and crawled through dewy nettles and brambles into the broad ditch by the side of the road. He looked back, saw what I was doing, and turned to join me.

The two Martians halted, the nearer to us standing and facing Sunbury, the remoter being a gray indistinctness towards the evening star, away towards Staines.

THE occasional howling of the Martians had ceased; they took up their positions in the huge crescent about their cylinders in absolute silence. It was a crescent with twelve miles between its horns. Never since the devising of gunpowder was the beginning of a battle so still. To us and to an observer about Ripley it would have had precisely the same effect—the Martians seemed in solitary possession of the darkling night, lit only as it was by the slender moon, the stars, the afterglow of the daylight, and the ruddy glare from St. George's Hill and the woods of Painshill.

But facing that crescent everywhere, at Staines, Hounslow, Ditton, Esher, Ockham, behind hills and woods south of the river and across the flat grass meadows to the north of it, wherever a cluster of trees or village houses gave sufficient cover, the guns were waiting. The signal rockets burst and rained their sparks through the night and vanished, and the spirit of all those watching batteries rose to a tense expectation. The Martians had but to advance into the line of fire, and instantly those motionless black forms of men, those guns glittering so darkly in the early night, would explode into a thunderous fury of battle.

No doubt the thought that was uppermost in a thousand of those vigilant minds, even as it was uppermost in mine, was the riddle how much they understood of us. Did they grasp that we in our millions were organized, disciplined, working together? Or did they interpret our spurts of fire, the sudden stinging of our shells, our steady investment of their encampment, as we should the furious unanimity of onslaught in a disturbed hive of bees? Did they dream they might exterminate us? (At that time no one knew what food they needed.) A hundred such questions struggled together in my mind as I watched that vast sentinel shape. And in the back of my mind was the sense of all the huge unknown and hidden forces Londonward. Had they prepared pitfalls? Were the powder-mills at Hounslow ready as a snare? Would the Londoners have the heart and courage to make a greater Moscow of their mighty province of houses?

Then, after an interminable time as it seemed to us, crouching and peering through the hedge, came a sound like the distant concussion of a gun. Another nearer, and then another. And then the Martian beside us raised his tube on high and discharged it gunwise, with a heavy report that made the ground heave. The Martian towards Staines answered him. There was no flash, no smoke, simply that loaded detonation.

I was so excited by these heavy minute-guns following one another that I so far forgot my personal safety and my scalded hands as to clamber up into the hedge and stare towards Sunbury. As I did so a second report followed, and a big projectile hurtled overhead towards Hounslow. I expected at least to see smoke or fire or some such evidence of its work. But all I saw was the deep-blue sky above, with one solitary star, and the white mist spreading wide and low beneath. And there had been no crash, no answering explosion. The silence was restored; the minute lengthened to three.

"What has happened?" said the curate, standing up beside me.

"Heaven knows!" said I.

A bat flickered by and vanished. A distant tumult of shouting began and ceased. I looked again at the Martian, and saw he was now moving eastward along the river-bank, with a swift rolling motion.

Every moment I expected the fire of some hidden battery to spring upon him; but the evening calm was unbroken. The figure of the Martian grew smaller as he receded, and presently the mist and the gathering night had swallowed him up. By a common impulse we clambered higher. Towards Sunbury was a dark appearance, as though a conical hill had suddenly come into being there, hiding our view of the further country; and then, remoter across the river, over Walton, we saw another such summit. These hill-like forms grew lower and broader even as we stared.

Moved by a sudden thought, I looked northward, and there I perceived a third of these cloudy black kopjes had arisen.

Everything had suddenly become very still. Far away to the south-east, marking the quiet, we heard the Martians hooting to one another, and then the air quivered again with the distant thud of their guns. But the earthly artillery made no reply.

Now, at the time we could not understand these things; but later I was to learn the meaning of these ominous kopjes that gathered in the twilight. Each of the Martians, standing in the great crescent I have described, had discharged at some unknown signal, by means of the gun-like tube he carried, a huge canister over whatever hill, copse,

cluster of houses, or other possible cover for guns, chanced to be in front of him. Some fired only one of these, some two, as in the case of the one we had seen; the one at Ripley is said to have discharged no fewer than five at that time. These canisters smashed on striking the ground—they did not explode—and incontinently disengaged an enormous volume of a heavy inky vapour, coiling and pouring upwards in a huge and ebony cumulus cloud, a gaseous hill that sank and spread itself slowly over the surrounding country. And the touch of that vapour, the inhaling of its pungent wisps, was death to all that breathes.

It was heavy, this vapour, heavier than the densest smoke, so that, after the first tumultuous uprush and outflow of its impact, it sank down through the air and poured over the ground in a manner rather liquid than gaseous, abandoning the hills, and streaming into the valleys and ditches and water-courses, even as I have heard the carbonic acid gas that pours from volcanic clefts is wont to do. And where it came upon water some chemical action occurred, and the surface would be instantly covered with a powdery scum that sank slowly and made way for more. The scum was absolutely insoluble, and it is a strange thing, seeing the instant effect of the gas, that one could drink the water from which it had been strained without hurt. The vapour did not diffuse as a true gas would do. It hung together in banks, flowing sluggishly down the slope of the land and driving reluctantly before the wind, and very slowly it combined with the mist and moisture of the air, and sank to the earth in the form of dust. Save that an unknown element giving a group of four lines in the blue of the spectrum is concerned, we are still entirely ignorant of the nature of this substance.

Once the tumultuous upheaval of its dispersion was over, the black smoke clung so closely to the ground, even before its precipitation, that, fifty feet up in the air, on the roofs and upper stories of high houses and on great trees, there was a chance of escaping its poison altogether, as was proved even that night at Street Cobham and Ditton.

THE man who escaped at the former place tells a wonderful story of the strangeness of its coiling flow, and how he looked down from the church spire and saw the houses of the village rising like ghosts out of its inky nothingness. For a day and a half he remained there, weary, starving, and sun-scorched, the earth under the blue sky and against the prospect of the distant hills a velvet black expanse, with red roofs, green trees, and, later, black-veiled shrubs and gates, barns, outhouses, and walls, rising here and there into the sunlight.

But that was at Street Cobham where the black vapour was allowed to remain until it sank of its own accord into the ground. As a rule, the Martians, when it had served its purpose, cleared the air of it again by wading into it and directing a jet of steam upon it.

That they did with the vapour-banks near us, as we saw in the starlight from the window of a deserted house at Upper Halliford, whither we had returned. From there we could see the searchlights on Richmond Hill and Kingston Hill going to and fro, and about eleven the window rattled and we heard the sound of the huge siege guns that had been put in position there. These continued intermittently for the space of a quarter of an hour, sending chance shots at the invisible Martians at Hampton and Ditton, and then the pale beams of the electric light vanished, and were replaced by a bright red glow.

Then the fourth cylinder fell—a brilliant green meteor—as I learnt afterwards, in Bushey Park. Before the guns on the Richmond and Kingston line of hills began, there was a fitful cannonade far away in the south-west, due, I believe, to guns being fired haphazard before the black vapour could overwhelm the gunners.

So, setting about it as methodically as men might smoke out a wasps' nest, the Martians spread this strange stifling vapour over the Londonward country. The horns of the crescent slowly spread apart, until at last they formed a line from Hanwell to Coombe and Malden. All night through their destructive tubes advanced. Never once, after the Martian at St. George's Hill was brought down, did they give the artillery the ghost of a chance against them. Wherever there was a possibility of guns being laid for them unseen, a fresh canister of the black vapour was discharged, and where the guns were openly displayed the Heat-Ray was brought to bear.

By midnight the blazing trees along the slopes of Richmond Park, and the glare of Kingston Hill, threw their light upon a network of black smoke, blotting out the whole Valley of the Thames, and extending as far as the eye could reach. And through this two Martians slowly waded, and turned their hissing steam-jets this way and that.

The Martians were sparing of the Heat-Ray that night, either because they had but a limited supply of material for its production, or because they did not wish to destroy the country, but only to crush and overawe the opposition they had aroused. In the latter aim they certainly succeeded. Sunday night was the end of the organized opposition to their movements. After that no body of men could stand against them, so hopeless was the enterprise. Even the crews of the torpedo boats and destroyers that had brought their quick-firers up the Thames refused to stop, mutinied, and went down again. The only offensive operation men ventured upon after that night was the preparation of mines and pit-falls, and even in that men's energies were frantic and spasmodic.

One has to imagine the fate of those batteries towards Esher, waiting so tensely in the twilight, as well as one may. Survivors there were none. One may picture the orderly expectation, the officers alert and watchful, the gunners ready, the ammunition piled to hand, the limber gunners with their horses and wagons, the groups of civilian spectators standing as near as they were permitted, the evening stillness; the ambulances and hospital tents, with the burnt and wounded from Weybridge; then the dull resonance of the shots the Martians fired and the clumsy projectile whirling

over the trees and houses, and smashing amidst the neighboring fields.

One may picture, too, the sudden shifting of the attention, the swiftly spreading coils and hallyings of that blackness advancing headlong, towering heavenward, turning the twilight to a palpable darkness, a strange and horrible antagonist of vapour striding upon its victims, men and horses near it seen dimly, running, shrieking, falling headlong, shouts of dismay, the guns suddenly abandoned, men choking and writhing on the ground, and the swift broadening out of the opaque cone of smoke. And then, night and extinction—nothing but a silent mass of impenetrable vapour hiding its dead.

Before dawn the black vapour was pouring through the streets of Richmond, and the disintegrating organism of government was, with a last expiring effort, rousing the population of London to the necessity of flight.

END OF PART I

What Do You Know?

READERS of AMAZING STORIES have frequently commented upon the fact that there is more actual knowledge to be gained through reading its pages than from many a textbook. Moreover, most of the stories are written in a popular vein, making it possible for any one to grasp important facts.

The questions which we give below are all answered on the pages as listed at the end of the questions. Please see if you can answer the questions first without looking for the answer, and see how well you check up on your general knowledge.

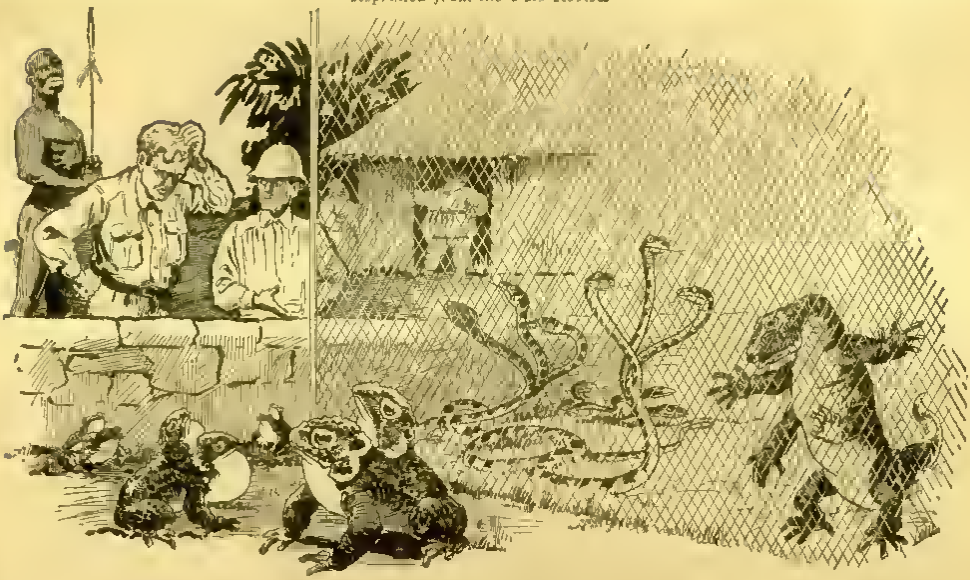
If you wish to see a questionnaire of this kind every month, do not fail to mark your reply on the voting coupon which you will find elsewhere. If there is sufficient demand for the questionnaire we will publish one every month.

1. How far is Mars from the Sun? (page 423).
2. Is Mars supposed to be older than the Earth? (page 423)
3. What is the closest we ever get to Mars? (page 423).
4. Would you weigh more or less upon the surface of Mars than on Earth? (page 431).
5. What is the Spectrogram of a star? (page 461)
6. What does the astronomer mean by good or bad "seeing"? (page 461)
7. What power does an astronomer use under good conditions for planetary work? (page 461).
8. What is factorial calculation? (page 464).
9. What is the duodecimal system of notation? (page 464).
10. When is a planet in opposition and when is it nearest to the earth? (page 467).
11. What do you know about the mountains of Mars? page 468).
12. What do you know about a possible application of relativity to age? (page 479).
13. Is there such a thing as old age biologically considered? (page 479).
14. Is an automatic dishwasher and dryer a possibility? (page 493).
15. What should be done to a flesh wound as soon as possible? (page 499)
16. What are haemostats? (pages 499 and 501).
17. When severed arteries and veins are tied up with gut in surgical practice what becomes of the gut? (page 499).
18. What is the atom? (page 503).
19. Is the atom smaller than the molecule? (page 503).
20. What is the atom made of? What are its parts? (page 503).
21. What do the outer circulatory electrons of the atoms do? (page 503).
22. How big is an electron compared to the hydrogen atom? (page 504)
23. Can the image of stars be gotten upon the photographic plate when the stars are too far away to be seen? (page 504).
24. What is the speed of light? (page 504)
25. How could you separate crystalline molecules from colloids? (page 504).
26. Taking organic poisons as colloids, how would you keep them from entering the circulatory system in the case of a flesh wound or amputation? (page 504)
27. What is strychnine, and what does it come from? (page 510)
28. What valuable metal is present in sea-water? (page 489).
29. What is the volume of the ocean? (page 492).
30. What must you remember in a parachute descent? (page 474).

The TISSUE-CULTURE KING

By Julian Huxley

Reprinted from the Yale Review



"I thought I would see whether art could not improve upon nature, and set myself to recall experimental embryology . . . I utilize the plasticity of the earliest stages to give double-headed and cyclopean monsters . . . But my specialities are three-headed snakes, and toads with an extra heaven-pointing head." Harcombe called it "Home of the Living Fetishes."

THAT a darkest Africa story could contain a wondrous assortment of science and adventure all rolled into one, you would scarcely believe possible, yet that is exactly what Julian Huxley, grandson of Thomas Henry Huxley famous English scientist, and himself Professor of Zoology in King's College, London, gives us here. While so far science does not countenance telepathy, no real thought transference having ever been proved, that does not mean to say that it never will be achieved. AMAZING STORIES' *sister magazine,* SCIENCE AND INVENTION, *has a standing prize of* $1,000 *for an actual proof of telepathy, which so far has never been claimed. Just the same, maybe* 10,000 *years hence the human race may have progressed far enough to make telepathy a reality.*

WE had been for three days engaged in crossing a swamp. At last we were out on dry ground, winding up a gentle slope. Near the top the brush grew thicker. The look of a rampart grew as we approached; it had the air of having been deliberately planted by men. We did not wish to have to hack our way through the spiky barricade, so turned to the right along the front of the green wall. After three or four hundred yards we came on a clearing which led into the bush, narrowing down to what seemad a regular passage or trackway. This made us a little suspicious. However, I thought we had better make all the progress we could, and so ordered the caravan to turn into the opening, myself taking second place behind the guide.

Suddenly the tracker stopped with a guttural exclamation. I looked, and there was one of the great African toads, hopping with a certain ponderosity across the path. But it had a second head growing upwards from its shoulders! I had never seen anything like this before, and wanted to secure such a remarkable monstrosity for our collections; but as I moved forward, the creature took a couple of hops into the shelter of the prickly scrub.

We pushed on, and I became convinced that the gap we were following was artificial. After a little, a droning sound came to our ears, which we very soon set down as that of a human voice. The party was halted, and I crept forward with the guide. Peeping through the last screen of brush we looked down into a hollow and were immeasurably startled at what we saw there. The voice proceeded from an enormous negro man at least eight feet high, the biggest man I had ever seen outside a circus. was squatting, from time to time prostrating the forepart of his body, and reciting some prayer or incantation. The object of his devotion was before him on the ground; it was a small flat piece of glass held on a little carved ebony stand. By his side was a huge spear, together with a painted basket with a lid.

After a minute or so, the giant bowed down in silence, then took up the ebony-and-glass object and placed it in the basket. Then to my utter amazement he drew out a two-headed toad like the first I had seen, but in a cage of woven grass, placed it

on the ground, and proceeded to more genuflection and ritual murmurings. As soon as this was over, the toad was replaced, and the squatting giant tranquilly regarded the landscape.

Beyond the hollow or dell lay an undulating country, with clumps of bush. A sound in the middle distance attracted attention; glimpses of color moved through the scrub; and a party of three or four dozen men were seen approaching, most of them as gigantic as our first acquaintance. All marched in order, armed with great spears, and wearing colored loin straps with a sort of sporran, it seemed, in front. They were preceded by an intelligent-looking negro of ordinary stature armed with a club, and accompanied by two figures more remarkable than the giants. They were under-sized, almost dwarfish, with huge heads, and enormously fat and brawny both in face and body. They wore bright yellow cloaks over their black shoulders.

At sight of them, our giant rose and stood stiffly by the side of his basket. The party approached and halted. Some order was given, a giant stepped out from the ranks towards ours, picked up the basket, handed it stiffly to the newcomer, and fell into place in the little company. We were clearly witnessing some regular routine of relieving guard, and I was racking my brains to think what the whole thing might signify—guards, giants, dwarfs, toads—when to my dismay I heard an exclamation at my shoulder.

It was one of those damned porters, a confounded fellow who always liked to show his independence. Bored with waiting, I suppose, he had self-importantly crept up to see what it was all about, and the sudden sight of the company of giants had been too much for his nerves. I made a signal to lie quiet, but it was too late. The exclamation had been heard; the leader gave a quick command, and the giants rushed up and out in two groups to surround us.

Violence and resistance were clearly out of the question. With my heart in my mouth, but with as much dignity as I could muster, I jumped up and threw out my empty hands, at the same time telling the tracker not to shoot. A dozen spears seemed towering over me, but none were launched; the leader ran up the slope and gave a command. Two giants came up and put my hands through their arms. The tracker and the porter were herded in front at the spear point. The other porters now discovered there was something amiss, and began to shout and run away, with half the spearmen after them. We three were gently but firmly marched down and across the hollow.

I understood nothing of the language, and called to my tracker to try his hand. It turned out that there was some dialect of which he had a little understanding, and we could learn nothing save the fact that we were being taken to some superior authority.

For two days we were marched through pleasant park-like country, with villages at intervals. Every now and then some new monstrosity in the shape of a dwarf or an incredibly fat woman or a two-headed animal would be visible, until I thought I had stumbled on the original source of supply of circus freaks.

The country at last began to slope gently down to a pleasant river-valley; and presently we neared the capital. It turned out to be a really large town for Africa, its mud walls of strangely impressive architectural form, with their heavy, slabby buttresses, and giants standing guard upon them. Seeing us approach, they shouted, and a crowd poured out of the nearest gate. My God, what a crowd! I was getting used to giants by this time, but here was a regular Barnum and Bailey show; more semi-dwarfs; others like them but more so—one could not tell whether the creatures were precociously mature children or horribly stunted adults; others portentously fat, with arms like sooty legs of mutton, and rolls and volutes of fat crisping out of their steatopygous posteriors; still others precociously senile and wizened, others hateful and imbecile in looks. Of course, there were plenty of ordinary negroes too, but enough of the extraordinary to make one feel pretty queer. Soon after we got inside, I suddenly noted something else which appeared inexplicable—a telephone wire, with perfectly good insulators, running across from tree to tree. A telephone—in an unknown African town. I gave it up.

BUT another surprise was in store for me. I saw a figure pass across from one large building to another—a figure unmistakably that of a white man. In the first place, it was wearing white ducks and sun helmet; in the second, it had a pale face.

He turned at the sound of our cavalcade and stood looking a moment; then walked towards us.

"Hallo!" I shouted. "Do you speak English?"

"Yes," he answered, "but keep quiet a moment," and began talking quickly to our leaders, who treated him with the greatest deference. He dropped back to me and spoke rapidly: "You are to be taken into the council hall to be examined: but I will see to it that no harm comes to you. This is a forbidden land to strangers, and you must be prepared to be held up for a time. You will be sent down to see me in the temple buildings as soon as the formalities are over, and I'll explain things. They want a bit of explaining," he added with a dry laugh. "By the way, my name is Hascombe, lately research worker at Middlesex Hospital, now religious adviser to His Majesty King Mgobe." He laughed again and pushed ahead. He was an interesting figure—perhaps fifty years old, spare body, thin face, with a small beard, and rather sunken, hazel eyes. As for his expression, he looked cynical, but also as if he were interested in life.

By this time we were at the entrance to the hall. Our giants formed up outside, with my men behind them, and only I and the leader passed in. The examination was purely formal, and remarkable chiefly for the ritual and solemnity which characterized all the actions of the couple of dozen fine-looking men in long robes who were our examiners. My men were herded off to some compound. I was escorted down to a little hut, furnished with some attempt at European style, where I found Hascombe.

As soon as we were alone I was after him with my questions. "Now you can tell me. Where are we? What is the meaning of all this circus busi-

ness and this menagerie of monstrosities? And how do you come here?" He cut me short. "It's a long story, so let me save time by telling it my own way."

I am not going to tell it as he told it; but will try to give a more connected account, the result of many later talks with him, and of my own observations.

Hascombe had been a medical student of great promise; and after his degree had launched out into research. He had first started on parasitic protozoa, but had given that up in favor of tissue culture; from these he had gone off to cancer research, and from that to a study of developmental physiology. Later a big Commission on sleeping sickness had been organized, and Hascombe, restless and eager for travel, had pulled wires and got himself appointed as one of the scientific staff sent to Africa. He was much impressed with the view that wild game acted as a reservoir for the *Trypanosoma gambiense*. When he learned of the extensive migrations of game, he saw here an important possible means of spreading the disease and asked leave to go up country to investigate the whole problem. When the Commission as a whole had finished its work, he was allowed to stay in Africa with one other white man and a company of porters to see what he could discover. His white companion was a laboratory technician, a taciturn non-commissioned officer of science called Aggers.

There is no object in telling of their experiences here. Suffice it that they lost their way and fell into the hands of this same tribe. That was fifteen years ago: and Aggers was now long dead—as the result of a wound inflicted when he was caught, after a couple of years, trying to escape.

On their capture, they too had been examined in the council chamber, and Hascombe (who had interested himself in a dilettante way in anthropology as in most other subjects of scientific inquiry) was much impressed by what he described as the exceedingly religious atmosphere. Everything was done with an elaboration of ceremony; the chief seemed more priest than king, and performed various rites at intervals, and priests were busy at some sort of altar the whole time. Among other things, he noticed that one of their rites was connected with blood. First the chief and then the councillors were in turn requisitioned for a drop of vital fluid pricked from their finger-tips, and the mixture, held in a little vessel, was slowly evaporated over a flame.

Some of Hascombe's men spoke a dialect not unlike that of their captors, and one was acting as interpreter. Things did not look too favorable. The country was a "holy place," it seemed, and the tribe a "holy race." Other Africans who trespassed there, if not killed, were enslaved, but for the most part they let well alone, and did not trespass. White men they had heard of, but never seen till now, and the debate was what to do—to kill, let go, or enslave? To let them go was contrary to all their principles: the holy place would be defiled if the news of it were spread abroad. To enslave them—yes; but what were they good for? and the Council seemed to feel an instinctive dislike for these other-colored creatures. Hascombe had an idea. He turned to the interpreter. "Say this: 'You revere the Blood. So do we white men; but we do more—we can render visible the blood's hidden nature and reality, and with permission I will show this great magic.'" He beckoned to the bearer who carried his precious microscope, set it up, drew a drop of blood from the tip of his finger with his knife, and mounted it on a slide under a coverslip. The bigwigs were obviously interested. They whispered to each other. At length, "Show us," commanded the chief.

HASCOMBE demonstrated his preparation with greater interest than he had ever done to first-year medical students in the old days. He explained that the blood was composed of little people of various sorts, each with their own lives, and that to spy upon them thus gave us new powers over them. The elders were more or less impressed. At any rate the sight of these thousands of corpuscles where they could see nothing before made them think, made them realize that the white man had power which might make him a desirable servant.

They would not ask to see their own blood for fear that the sight would put them into the power of those who saw it. But they had blood drawn from a slave. Hascombe asked too for a bird, and was able to create a certain interest by showing how different were the little people of its blood.

"Tell them," he said to the interpreter, "that I have many other powers and magics which I will show them if they will give me time."

The long and short of it was that he and his party were spared—He said he knew then what one felt when the magistrate said: "remanded for a week."

He had been attracted by one of the elder statesmen of the tribe—a tall, powerful-looking man of middle-age; and was agreeably surprised when this man came round next day to see him. Hascombe later nicknamed him the Prince-Bishop, for his combination of the qualities of the statesman and the ecclesiastic: his real name was Bugala. He was as anxious to discover more about Hascombe's mysterious powers and resources as Hascombe was to learn what he could of the people into whose hands he had fallen, and they met almost every evening and talked far into the night.

Bugala's inquiries were as little prompted as Hascombe's by a purely academic curiosity. Impressed himself by the microscope, and still more by the effect which it had had on his colleagues, he was anxious to find out whether by utilizing the powers of the white man he could not secure his own advancement. At length, they struck a bargain. Bugala would see to it that no harm befell Hascombe. But Hascombe must put his resources and powers at the disposal of the Council; and Bugala would take good care to arrange matters so that he himself benefited. So far as Hascombe could make out, Bugala imagined a radical change in the national religion, a sort of reformation based on Hascombe's conjuring tricks; and that he would emerge as the High Priest of this changed system.

Hascombe had a sense of humor, and it was tickled. It seemed pretty clear that they could not escape, at least for the present. That being so, why not take the opportunity of doing a little research

work at state expense—an opportunity which he and his like were always clamoring for at home? His thoughts began to run away with him. He would find out all he could of the rites and superstitions of the tribe. He would, by the aid of his knowledge and his scientific skill, exalt the details of these rites, the expression of those superstitions, the whole physical side of their religiosity, on to a new level which should to them appear truly miraculous.

It would not be worth my troubling to tell all the negotiations, the false starts, the misunderstandings. In the end he secured what he wanted—a building which could be used as a laboratory; an unlimited supply of slaves for the lower and priests for the higher duties of laboratory assistants, and the promise that when his scientific stores were exhausted they would do their best to secure others from the coast—a promise which was scrupulously kept, so that he never went short for lack of what money could buy.

He next applied himself diligently to a study of their religion and found that it was built round various main motifs. Of these, the central one was the belief in the divinity and tremendous importance of the Priest-King. The second was a form of ancestor-worship. The third was an animal cult, in particular of the more grotesque species of the African fauna. The fourth was sex, *con variazioni.* Hascombe reflected on these facts. Tissue culture; experimental embryology; endocrine treatment; artificial parthenogenesis. He laughed and said to himself: "Well, at least I can try, and it ought to be amusing."

THAT was how it all started. Pehaps the best way of giving some idea of how it had developed will be for me to tell my own impressions when Hascombe took me round his laboratories. One whole quarter of the town was devoted entirely to religion—it struck me as excessive, but Hascombe reminded me that Tibet spends one-fifth of its revenues on melted butter to burn before its shrines. Facing the main square was the chief temple, built impressively enough of solid mud. On either side were the apartments where dwelt the servants of the gods and administrators of the sacred rites. Behind were Hascombe's laboratories, some built of mud, others, under his later guidance, of wood. They were guarded night and day by patrols of giants, and were arranged in a series of quadrangles. Within one quadrangle was a pool which served as an aquarium; in another, aviaries and great hen-houses; in yet another, cages with various animals; in the fourth a little botanic garden. Behind were stables with dozens of cattle and sheep, and a sort of experimental ward for human beings.

He took me into the nearest of the buildings. "This," he said, "is known to the people as the Factory (it is difficult to give the exact sense of the word, but it literally means producing-place), the Factory of Kingship or Majesty, and the Wellspring of Ancestral Immortality." I looked round, and saw platoons of buxom and shining African women, becomingly but unusually dressed in tight-fitting white dresses and caps, and wearing rubber gloves. Microscopes were much in evidence, as also various receptacles from which steam was emerging. The back of the room was screened off by a wooden screen in which were a series of glass doors; and these doors opened into partitions, each labelled with a name in that unknown tongue, and each containing a number of objects like the one I had seen taken out of the basket by the giant before we were captured. Pipes surrounded this chamber, and appeared to be distributing heat from a fire in one corner.

"Factory of Majesty!" I exclaimed. "Wellspring of Immortality! What the dickens do you mean?"

"If you prefer a more prosaic name," said Hascombe, "I should call this the Institute of Religious Tissue Culture." My mind went back to a day in 1918 when I had been taken by a biological friend in New York to see the famous Rockefeller Institute; and at the word tissue culture I saw again before me Dr. Alexis Carrell and troops of white-garbed American girls making cultures, sterilizing, microscopizing, incubating and the rest of it. The Hascombe Institute was, it is true, not so well equipped, but it had an even larger, if differently colored, personnel.

Hascombe began his explanations. "As you probably know, Frazer's 'Golden Bough'* introduced us to the idea of a sacred priest-king, and showed how fundamental it was in primitive societies. The welfare of the tribe is regarded as inextricably bound up with that of the King, and extraordinary precautions are taken to preserve him from harm. In this kingdom, in the old days, the King was hardly allowed to set his foot to the ground in case he should lose divinity; his cut hair and nail-parings were entrusted to one of the most important officials of state, whose duty it was to bury them secretly, in case some enemy should compass the King's illness or death by using them in black magic rites. If anyone of base blood trod on the King's shadow, he paid the penalty with his life. Each year a slave was made mock-king for a week, allowed to enjoy all the king's privileges, and was decapitated at the close of his brief glory; and by this means it was supposed that the illnesses and misfortunes that might befall the King were vicariously got rid of.

"I first of all rigged up my apparatus, and with the aid of Aggers, succeeded in getting good cultures, first of chick tissues and later, by the aid of embryo-extract, of various adult mammalian tissues. I then went to Bugala, and told him that I could increase the safety, if not of the King as an individual, at least of the life which was in him, and that I presumed that this would be equally satisfactory from a theological point of view. I pointed out that if he chose to be made guardian of the King's subsidiary lives, he would be in a much more important position than the chamberlain or the burier of the sacred nail-parings, and might make the post the most influential in the realm.

"Eventually I was allowed (under threats of death if anything untoward occurred) to remove small portions of His Majesty's subcutaneous connective tissue under a local anaesthetic. In the presence of the assembled nobility I put fragments of this into

*A very elaborate treatise on a division of Roman mythology, especially on the cult of Diana.

culture medium, and showed it them under the microscope. The cultures were then put away in the incubator, under a guard—relieved every eight hours—of half a dozen warriors. After three days, to my joy they had all taken and showed abundant growth. I could see that the Council was impressed, and reeled off a magnificent speech, pointing out that this growth constituted an actual increase in the quantity of the divine principle inherent in royalty; and, what was more, that I could increase it indefinitely. With that I cut each of my cultures into eight, and sub-cultured all the pieces. They were again put under guard, and again examined after three days. Not all of them had taken this time, and there were some murmurings and angry looks, on the ground that I had killed some of the King; but I pointed out that the King was still the King, that his little wound had completely healed, and that any successful cultures represented so much extra sacredness and protection to the state. I must say that they were very reasonable, and had good theological acumen, for they at once took the hint.

"I pointed out to Bugala, and he persuaded the rest without much difficulty, that they could now disregard some of the older implications of the doctrines of kingship. The most important new idea which I was able to introduce was *mass-production*. Our aim was to multiply the King's tissues indefinitely, to ensure that some of their protecting power should reside everywhere in the country. Thus by concentrating upon quantity, we could afford to remove some of the restrictions upon the King's mode of life. This was of course agreeable to the King; and also to Bugala, who saw himself wielding undreamt-of power. One might have supposed that such an innovation would have met with great resistance simply on account of its being an innovation; but I must admit that these people compared very favorably with the average business men in their lack of prejudice.

"Having thus settled the principle, I had many debates with Bugala as to the best methods for enlisting the mass of the population in our scheme. What an opportunity for scientific advertising! But, unfortunately, the population could not read. However, war propaganda worked very well in more or less illiterate countries—why not here?"

HASCOMBE organized a series of public lectures in the capital, at which he demonstrated his regal tissues to the multitude, who were bidden to the place by royal heralds. An impressive platform group was always supplied from the ranks of the nobles. The lecturer explained how important it was for the community to become possessed of greater and greater stores of the sacred tissues. Unfortunately, the preparation was laborious and expensive, and it behooved them all to lend a hand. It had accordingly been arranged that to everyone subscribing a cow or buffalo, or its equivalent—three goats, pigs, or sheep—a portion of the royal anatomy should be given, handsomely mounted in an ebony holder. Sub-culturing would be done at certain hours and days, and it would be obligatory to send the cultures for renewal. If through any negligence the tissue died, no renewal would be made. The subscription entitled the receiver to sub-culturing rights for a year, but was of course renewable. By this means not only would the totality of the King be much increased, to the benefit of all, but each cultureholder would possess an actual part of His Majesty, and would have the infinite joy and privilege of aiding by his own efforts the multiplication of divinity.

Then they could also serve their country by dedicating a daughter to the state. These young women would be housed and fed by the state, and taught the technique of the sacred culture. Candidates would be selected according to general fitness, but would of course, in addition, be required to attain distinction in an examination on the principles of religion. They would be appointed for a probationary period of six months. After this they would receive a permanent status, with the title of Sisters of the Sacred Tissue. From this, with age, experience, and merit, they could expect promotion to the rank of mothers, grandmothers, great grandmothers, and grand ancestresses of the same. The merit and benefit they would receive from their close contact with the source of all benefits would overflow on to their families.

The scheme worked like wildfire. Pigs, goats, cattle, buffaloes, and negro maidens poured in. Next year the scheme was extended to the whole country, a peripatetic laboratory making the rounds weekly.

By the close of the third year there was hardly a family in the country which did not possess at least one sacred culture. To be without one would have been like being without one's trousers—or at least without one's hat*—on Fifth Avenue. Thus did Bugala effect a reformation in the national religion, enthrone himself as the most important personage in the country, and entrench applied science and Hascombe firmly in the organization of the state.

Encouraged by his success, Hascombe soon set out to capture the ancestry-worship branch of the religion as well. A public proclamation was made pointing out how much more satisfactory it would be if worship could be made not merely to the charred bones of one's forbears, but to bits of them still actually living and growing. All who were desirous of profiting by the enterprise of Bugala's Department of State should therefore bring their older relatives to the laboratory at certain specified hours, and fragments would be painlessly extracted for culture.

This, too, proved very attractive to the average citizen. Occasionally, it is true, grandfathers or aged mothers arrived in a state of indignation and protest. However, this did not matter, since, according to the law, once children were twenty-five years of age, they were not only assigned the duty of worshipping their ancestors, alive or dead, but were also given complete control over them, in order that all rites might be duly performed to the greater safety of the commonweal. Further, the ancestors soon found that the operation itself was trifling, and, what was more, that once accomplished, it had the most desirable results. For their descendants preferred to concentrate at once upon the culture

*This was written before the year 1927.

which they would continue to worship after the old folks were gone, and so left their parents and grandparents much freer than before from the irksome restrictions which in all ages have beset the officially holy.

Thus, by almost every hearth in the kingdom, instead of the old-fashioned rows of red jars containing the incinerated remains of one or other of the family forbears, the new generation saw growing up a collection of family slides. Each would be taken out and reverently examined at the hour of prayer. "Grandpapa is not growing well this week," you would perhaps hear the young black devotee say; the father of the family would pray over the speck of tissue; and if that failed, it would be taken back to the factory for rejuvenation. On the other hand, what rejoicing when a rhythm of activity stirred in the cultures! A spurt on the part of great-grandmother's tissues would bring her wrinkled old smile to mind again; and sometimes it seemed as if one particular generation were all stirred simultaneously by a pulse of growth, as if combining to bless their devout descendants.

To deal with the possibility of cultures dying out, Hascombe started a central storehouse, where duplicates of every strain were kept, and it was this repository of the national tissues which had attracted my attention at the back of the laboratory. No such collection had ever existed before, he assured me. Not a necropolis, but a histopolis, if I may coin a word: not a cemetery, but a place of eternal growth.

THE second building was devoted to endocrine products—an African Armour's—and was called by the people the "Factory of Ministers to the Shrines."

"Here," he said, "you will not find much new. You know the craze for 'glands' that was going on at home years ago, and its results, in the shape of pluriglandular preparations, a new genre of patent medicines, and a popular literature that threatened to outdo the Freudians, and explain human beings entirely on the basis of glandular make-up, without reference to the mind at all.

"I had only to apply my knowledge in a comparatively simple manner. The first thing was to show Bugala how, by repeated injections of pre-pituitary, I could make an ordinary baby grow up into a giant. This pleased him, and he introduced the idea of a sacred bodyguard, all of really gigantic stature, quite overshadowing Frederick's Grenadiers.

"I did, however, extend knowledge in several directions. I took advantage of the fact that their religion holds in reverence monstrous and imbecile forms of human beings. That is, of course, a common phenomenon in many countries, where half-wits are supposed to be inspired, and dwarfs the object of superstitious awe. So I went to work to create various new types. By employing a particular extract of adrenal cortex, I produced children who would have been a match for the Infant Hercules, and, indeed, looked rather like a cross between him and a brewer's drayman By injecting the same extract into adolescent girls I was able to provide them with the most copious mustaches, after which they found ready employment as prophetesses.

"Tampering with the post-pituitary gave remarkable cases of obesity. This, together with the passion of the men for fatness in their women, Bugala took advantage of, and I believe made quite a fortune by selling as concubines female slaves treated in this way. Finally, by another pituitary treatment, I at last mastered the secret of true dwarfism, in which perfect proportions are retained.

"Of these productions, the dwarfs are retained as acolytes in the temple; a band of the obese young ladies form a sort of Society of Vestal Virgins, with special religious duties, which, as the embodiment of the national ideal of beauty, they are supposed to discharge with peculiarly propitious effect; and the giants form our Regular Army.

"The Obese Virgins have set me a problem which I confess I have not yet solved. Like all races who set great store by sexual enjoyment, these people have a correspondingly exaggerated reverence for virginity. It therefore occurred to me that if I could apply Jacques Loeb's great discovery of artificial parthenogenesis to man, or, to be precise, to these young ladies, I should be able to grow a race of vestals, self-reproducing yet ever virgin, to whom in concentrated form should attach that reverence of which I have just spoken. You see, I must always remember that it is no good proposing any line of work that will not benefit the national religion. I suppose state-aided research would have much the same kinds of difficulties in a really democratic state. Well this, as I say, has so far beaten me. I have taken the matter a step further than Bataillon with his fatherless frogs, and have induced parthenogenesis in the eggs of reptiles and birds; but so far I have failed with mammals. However, I've not given up yet!"

Then we passed to the next laboratory, which was full of the most incredible animal monstrosities. "This laboratory is the most amusing," said Hascombe. "Its official title is 'Home of the Living Fetishes.' Here again I have simply taken a prevalent trait of the populace, and used it as a peg on which to hang research. I told you that they always had a fancy for the grotesque in animals, and used the most bizarre forms, in the shape of little clay or ivory statuettes, for fetishes.

"I thought I would see whether art could not improve upon nature, and set myself to recall my experimental embryology. I use only the simplest methods. I utilize the plasticity of the earliest stages to give double-headed and cyclopean monsters. That was, of course, done years ago in newts by Spemann and fish by Stockard; and I have merely applied the mass-production methods of Mr. Ford to their results. But my specialties are three-headed snakes, and toads with an extra heaven-pointing head. The former are a little difficult, but there is a great demand for them, and they fetch a good price. The frogs are easier: I simply apply Harrison's methods to embryo tadpoles."

He then showed me into the last building. Unlike the others, this contained no signs of research in progress, but was empty. It was draped with black hangings, and lit only from the top. In the centre were rows of ebony benches, and in front of them a glittering golden ball on a stand.

"Here I am beginning my work on reinforced telepathy," he told me. "Some day you must come and see what it's all about, for it really is interesting."

You may imagine that I was pretty well flabbergasted by this catalogue of miracles. Every day I got a talk with Hascombe, and gradually the talks became recognized events of our daily routine One day I asked if he had given up hope of escaping. He showed a queer hesitation in replying. Eventually he said, "To tell you the truth, my dear Jones, I have really hardly thought of it these last few years. It seemed so impossible at first that I deliberately put it out of my head and turned with more and more energy, I might almost say fury, to my work. And now, upon my soul, I am not quite sure whether I want to escape or not."

"Not *want* to!" I exclaimed; "surely you can't mean that!"

"I am not so sure," he rejoined. "What I most want is to get ahead with this work of mine. Why, man, you don't realize what a chance I've got! And it is all growing so fast—I can see every kind of possibility ahead"; and he broke off into silence

However, although I was interested enough in his past achievements, I did not feel willing to sacrifice my future to his perverted intellectual ambitions. But he would not leave his work.

THE experiments which most excited his imagination were those he was conducting into mass telepathy. He had received his medical training at a time when abnormal psychology was still very unfashionable in England, but had luckily been thrown in contact with a young doctor who was a keen student of hypnotism, through whom he had been introduced to some of the great pioneers, like Bramwell and Wingfield. As a result, he had become a passable hypnotist himself, with a fair knowledge of the literature.

In the early days of his captivity he became interested in the sacred dances which took place every night of full moon, and were regarded as propitiations of the celestial powers. The dancers all belong to a special sect. After a series of exciting figures, symbolizing various activities of the chase, war, and love, the leader conducts his band to a ceremonial bench. He then begins to make passes at them; and what impressed Hascombe was this, that a few seconds sufficed for them to fall back in deep hypnosis against the ebony rail. It recalled, he said, the most startling cases of collective hypnosis recorded by the French scientists. The leader next passed from one end of the bench to the other, whispering a brief sentence into each ear. He then, according to immemorial rite, approached the Priest-King, and, after having exclaimed aloud "Lord of Majesty, command what thou wilt for thy dancers to perform," the King would thereupon command some action which had previously been kept secret. The command was often to fetch some object and deposit at the moon-shrine; or to fight the enemies of the state; or (and this was what the company most liked) to be some animal, or bird. Whatever the command, the hypnotized men would obey it, for the leader's whispered words had been an order to hear and carry out only what the King said; and the strangest scenes would be witnessed as they ran, completely oblivious of all in their path, in search of the gourds or sheep they had been called on to procure, or lunged in a symbolic way at invisible enemies, or threw themselves on all fours and roared as lions, or galloped as zebras, or danced as cranes. The command executed, they stood like stocks or stones, until their leader, running from one to the other, touched each with a finger and shouted "Wake." They woke, and limp, but conscious of having been the vessels of the unknown spirit, danced back to their special hut or clubhouse.

This susceptibility to hypnotic suggestion struck Hascombe, and he obtained permission to test the performers more closely. He soon established that the people were, as a race, extremely prone to dissociation, and could be made to lapse into deep hypnosis with great ease, but a hypnosis in which the subconscious, though completely cut off from the waking self, comprised portions of the personality not retained in the hypnotic selves of Europeans. Like most who have fluttered round the psychological candle, he had been interested in the notion of telepathy; and now, with this supply of hypnotic subjects under his hands, began some real investigation of the problem.

By picking his subjects, he was soon able to demonstrate the existence of telepathy, by making suggestions to one hypnotized man who transferred them without physical intermediation to another at a distance. Later—and this was the culmination of his work—he found that when he made a suggestion to several subjects at once, the telepathic effect was much stronger than if he had done it to one at a time—the hypnotized minds were reinforcing each other. "I'm after the super-consciousness," Hascombe said, "and I've already got the rudiments of it."

I must confess that I got almost as excited as Hascombe over the possibilities thus opened up. It certainly seemed as if he were right in principle. If all the subjects were in practically the same psychological state, extraordinary reinforcing effects were observed. At first the attainment of this similarity of condition was very difficult; gradually, however, we discovered that it was possible to tune hypnotic subjects to the same pitch, if I may use the metaphor, and then the fun really began.

First of all we found that with increasing reinforcement, we could get telepathy conducted to greater and greater distances, until finally we could transmit commands from the capital to the national boundary, nearly a hundred miles. We next found that it was not necessary for the subject to be in hypnosis to receive the telepathic command. Almost everybody, but especially those of equable temperament, could thus be influenced. Most extraordinary of all, however, were what we at first christened "near effects," since their transmission to a distance was not found possible until later. If, after Hascombe had suggested some simple command to a largish group of hypnotized subjects, he or I went right up among them, we would experience the most extraordinary sensation, as of some superhuman personality repeating the command in a menacing

and overwhelming way and, whereas with one part of ourselves we felt that we must carry out the command, with another we felt, if I may say so, as if we were only a part of the command, or of something much bigger than ourselves which was commanding. And this, Hascombe claimed, was the first real beginning of the super-consciousness.

Bugala, of course, had to be considered. Hascombe, with the old Tibetan prayer-wheel at the back of his mind, suggested that eventually he would be able to induce hypnosis in the whole population, and then transmit a prayer. This would ensure that the daily prayer, for instance, was really said by the whole population, and, what is more, simultaneously, which would undoubtedly much enhance its efficacy. And it would make it possible in times of calamity or battle to keep the whole praying force of the nation at work for long spells together.

BUGALA was deeply interested. He saw himself, through this mental machinery, planting such ideas as he wished in the brain-cases of his people. He saw himself willing an order; and the whole population rousing itself out of trance to execute it. He dreamt dreams before which those of the proprietor of a newspaper syndicate, even those of a director of propaganda in wartime, would be pale and timid. Naturally, he wished to receive personal instruction in the methods himself; and, equally naturally, we could not refuse him, though I must say that I often felt a little uneasy as to what he might choose to do if he ever decided to override Hascombe and to start experimenting on his own. This, combined with my constant longing to get away from the place, led me to cast about again for means of escape. Then it occurred to me that this very method about which I had such gloomy presentiments, might itself be made the key to our prison.

So one day, after getting Hascombe worked up about the loss to humanity it would be to let this great discovery die with him in Africa, I set to in earnest. "My dear Hascombe," I said, " you must get home out of this. What is there to prevent you saying to Bugala that your experiments are nearly crowned with success, but that for certain tests you must have a much greater number of subjects at your disposal? You can then get a battery of two hundred men, and after you have tuned them, the reinforcement will be so great that you will have at your disposal a mental force big enough to affect the whole population. Then, of course, one fine day we should raise the potential of our mind-battery to the highest possible level, and send out through it a general hypnotic influence. The whole country, men, women, and children, would sink into stupor. Next we should give our experimental squad the suggestion to broadcast 'sleep for a week.' The telepathic message would be relayed to each of the thousands of minds waiting receptively for it, and would take root in them, until the whole nation became a single super-consciousness, conscious only of the one thought 'sleep' which we had thrown into it."

The reader will perhaps ask how we ourselves expected to escape from the clutches of the super-consciousness we had created. Well, we had discovered that metal was relatively impervious to the telepathic effect, and had prepared for ourselves a sort of tin pulpit, behind which we could stand while conducting experiments. This, combined with caps of metal foil, enormously reduced the effects on ourselves. We had not informed Bugala of this property of metal.

Hascombe was silent. At length he spoke. "I like the idea, he said; "I like to think that if I ever do get back to England and to scientific recognition, my discovery will have given me the means of escape."

From that moment we worked assiduously to perfect our method and our plans. After about five months everything seemed propitious. We had provisions packed away, and compasses. I had been allowed to keep my rifle, on promise that I would never discharge it. We had made friends with some of the men who went trading to the coast, and had got from them all the information we could about the route, without arousing their suspicions.

At last, the night arrived. We assembled our men as if for an ordinary practice, and after hypnosis had been induced, started to tune them. At this moment Bugala came in, unannounced. This was what we had been afraid of; but there had been no means of preventing it. "What shall we do?" I whispered to Hascombe, in English. "Go right ahead and be damned to it," was his answer; "we can put him to sleep with the rest."

So we welcomed him, and gave him a seat as near as possible to the tightly-packed ranks of the performers. At length the preparations were finished. Hascombe went into the pulpit and said, "Attention to the words which are to be suggested." There was a slight stiffening of the bodies. "Sleep!" said Hascombe. "*Sleep* is the command: command all in this land to sleep unbrokenly." Bugala leapt up with an exclamation; but the induction had already begun.

We with our metal coverings were immune. But Bugala was struck by the full force of the mental current. He sank back on his chair, helpless. For a few minutes his extraordinary will resisted the suggestion. Although he could not move, his angry eyes were open. But at length he succumbed, and he too slept.

We lost no time in starting, and made good progress through the silent country. The people were sitting about like wax figures. Women sat asleep by their milk-pails, the cow by this time far away. Fat-bellied naked children slept at their games. The houses were full of sleepers sleeping upright round their food, recalling Wordsworth's famous "party in a parlor."

So we went on, feeling pretty queer and scarcely believing in this morphic state into which we had plunged a nation. Finally the frontier was reached, where with extreme elation, we passed an immobile and gigantic frontier guard. A few miles further we had a good solid meal, and a doze. Our kit was rather heavy, and we decided to jettison some superfluous weight, in the shape of some food, specimens, and our metal headgear, or mind-protectors, which at this distance, and with the hypnosis wearing a little thin, were, we thought, no longer necessary.

About nightfall on the third day, Hascombe suddenly stopped and turned his head.

"What's the matter?" I said, "Have you seen a lion?" His reply was completely unexpected. "No. I was just wondering whether really I ought not to go back again."

"Go back again," I cried. "What in the name of God Almighty do you want to do that for?"

"It suddenly struck me that I ought to," he said, "about five minutes ago. And really, when one comes to think of it, I don't suppose I shall ever get such a chance at research again. What's more, this is a dangerous journey to the coast, and I don't expect we shall get through alive."

I was thoroughly upset and put out, and told him so. And suddenly, for a few moments, I felt I must go back too. It was like that old friend of our boyhood, the voice of conscience.

"Yes, to be sure, we ought to go back," I thought with fervor. But suddenly checking myself as the thought came under the play of reason—"*Why* should we go back?" All sorts of reasons were proffered, as it were by unseen hands reaching up out of the hidden parts of me.

AND then I realized what had happened. Bugala had waked up; he had wiped out the suggestion we had given to the super-consciousness, and in its place put in another. I could see him thinking it out, the cunning devil (one must give him credit for brains!), and hear him, after making his passes, whisper to the nation in prescribed form his new suggestion: "Will to return!" "Return!" For most of the inhabitants the command would have no meaning, for they would have been already at home. Doubtless some young men out on the hills, or truant children, or girls run off in secret to meet their lovers, were even now returning, stiffly and in somnambulistic trance, to their homes. It was only for them that the new command of the super-consciousness had any meaning—and for us.

I am putting it in a long and discursive way; at the moment I simply *saw* what had happened in a flash. I told Hascombe, I showed him it *must* be so, that nothing else would account for the sudden change, I begged and implored him to use his reason, to stick to his decision and to come on. How I regretted that, in our desire to discard all useless weight, we had left behind our metal telepathy-proof head coverings!

But Hascombe would not, or could not, see my point. I suppose he was much more imbued with all the feelings and spirit of the country, and so more susceptible. However that may be, he was immovable. He must go back; he knew it; he saw it clearly; it was his sacred duty; and much other similar rubbish. All this time the suggestion was attacking me too; and finally I felt that if I did not put more distance between me and that unisonic battery of will, I should succumb as well as he.

"Hascombe," I said, "I am going on. For God's sake, come with me." And I shouldered my pack, and set off. He was shaken, I saw, and came a few steps after me. But finally he turned, and, in spite of my frequent pauses and shouts to him to follow made off in the direction we had come. I can assure you that it was with a gloomy soul that I continued my solitary way. I shall not bore you with my adventures. Suffice it to say that at last I got to a white outpost, weak with fatigue and poor food and fever.

I kept very quiet about my adventures, only giving out that our expedition had lost its way and that my men had run away or been killed by the local tribes. At last I reached England. But I was a broken man, and a profound gloom had invaded my mind at the thought of Hascombe and the way he had been caught in his own net. I never found out what happened to him, and I do not suppose that I am likely to find out now. You may ask why I did not try to organize a rescue expedition; or why, at least, I did not bring Hascombe's discoveries before the Royal Society or the Metaphysical Institute. I can only repeat that I was a broken man. I did not expect to be believed; I was not at all sure that I could repeat our results, even on the same human material, much less with men of another race; I dreaded ridicule; and finally I was tormented by doubts as to whether the knowledge of mass-telepathy would not be a curse rather than a blessing to mankind.

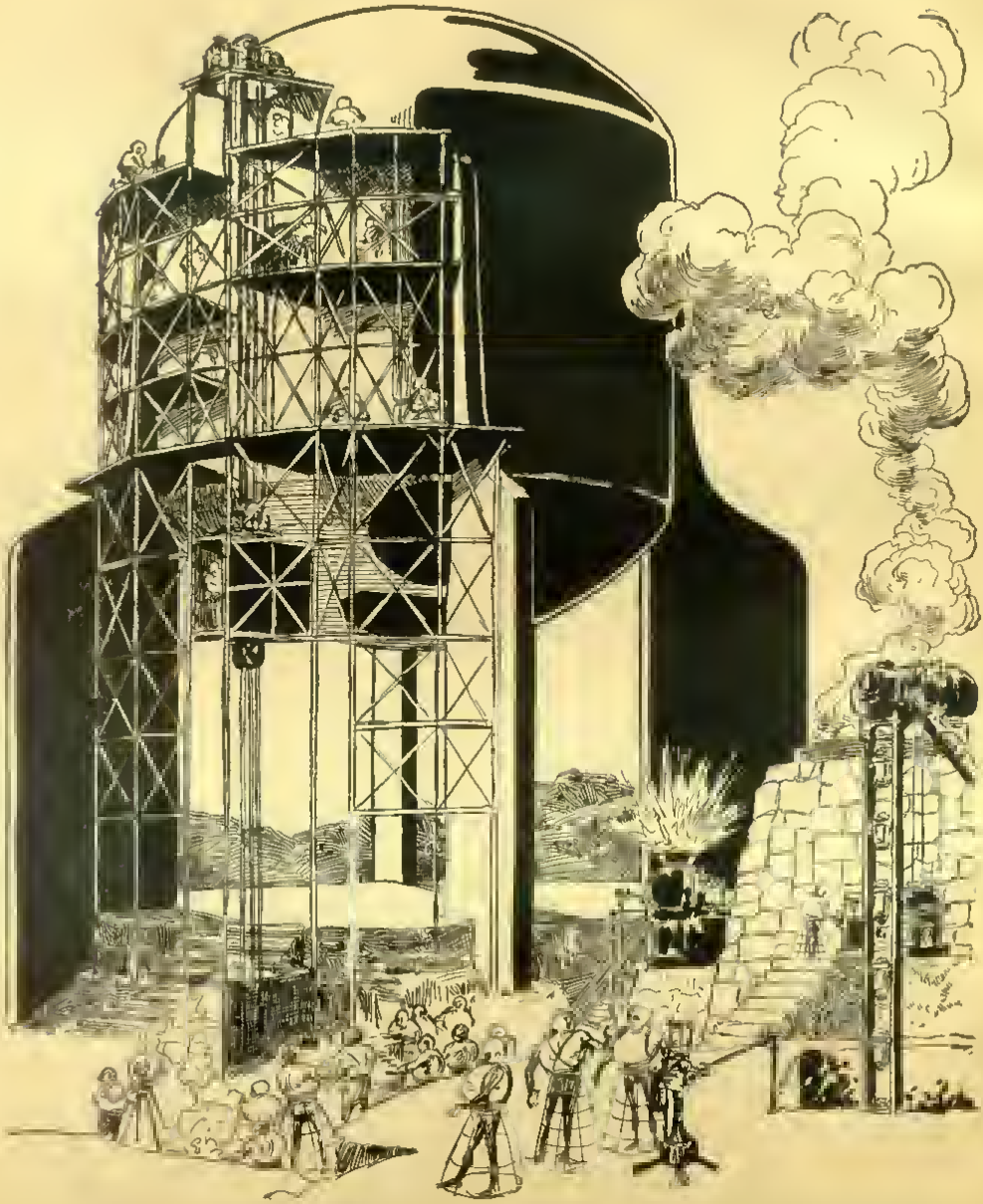
However, I am an oldish man now and, what is more, old for my years. I want to get the story off my chest. Besides, old men like sermonizing and you must forgive, gentle reader, the sermonical turn which I now feel I must take. The question I want to raise is this: Dr. Hascombe attained to an unsurpassed power in a number of the applications of science—but *to what end did all this power serve?* It is the merest cant and twaddle to go on asserting, as most of our press and people continue to do, that increase of scientific knowledge and power must in itself be good. I commend to the great public the obvious moral of my story and ask them to think what they propose to do with the power which is gradually being accumulated for them by the labors of those who labor because they like power, or because they want to find the truth about how things work.

THE END.

The RETREAT TO MARS

By Cecil B. White

(Author of "The Lost Continent")



. . . This second party succeeded in founding a colony on the high plateau region, where they built their gigantic monument to Mars. . . . Their bodies were skilfully braced by a metal framework, which somewhat relieved the strain to which they were subjected; their average height was about nine feet; their lungs, which were developed to accommodate the rarer atmosphere of Mars, were enclosed by a barrel-like chest, but their limbs were pitifully thin.

CHAPTER I

THE sun had dipped below the western hills, leaving a gorgeous mass of color in its wake. I stood there as the twilight arch swept up from the east, watching the shadows creep over land and sea while the faint evening clouds overhead turned blood-red under the last glancing rays of the sun.

Many times had I watched the setting of the sun and the evening shadows, while the mosquito-hawks hovered overhead with their plaintive cries, or plunged whirring downward upon their prey. Never twice the same that picture held me, until the city lights sprang into being in the distance and the flashing lights of the sentinels of the coast pierced through the gloaming.

As I turned away to begin my night's work the crunch of footsteps on the gravel path broke the stillness of the evening. An elderly, bearded man approached. He had come up the trail and I had not noticed him until he was nearly upon me.

Visitors to my little observatory are not uncommon. A few, those who show interest more than curiosity, are allowed to look through the instrument, on the rare occasions when it is not engaged in photographic or spectrographic work.

"Mr. Arnold?" queried my visitor as he approached. "I hope that I am not intruding. I tried to get you on the 'phone today, but was unsuccessful, and having been told that I would find you here, I took the liberty of coming to see you."

"I am just about to open up for the night" said I, "and if you don't mind my carrying on with my work—"

"Not at all, not at all," he replied, "I can talk to you just as well—that is, if I will not be in your way?"

Having been assured that he would not trouble me, he followed me into the observatory and watched while I opened the shutters that covered the aperture of the dome.

This done and my right-ascension circle set I turned the telescope on the first star of my evening's program.

When I had started the exposure, and entered up the necessary data in the observing book, I turned to him.

"You must pardon me, my dear sir, if I appear to be rude or inhospitable, but I am anxious to obtain a spectrogram* (1) of this star before it gets too far west for observing" I explained. "All I have to do now is to keep the star's image on the slit of the spectroscope.

"I noticed that you were engaged in spectrographic work," he remarked. "How long will your exposure be?"

From his remark I gathered that he knew something of the work in hand, so I answered, "About forty-five minutes with this seeing*(2). It's a fifth magnitude star that I am working on. Would you care to take a look at it?"

He climbed up the observing ladder and stood beside me while I explained things to him. When I had finished he turned to me, half smilingly, and said:

"Is this seeing anything like it was last November when you made your remarkable observations of the planet Mars?"

"Apparently you have been reading my papers," I said. "No, conditions are not nearly as favorable now as they were at the time that other work was done. If I were to live a thousand years I doubt if I should ever see other nights to equal those four."

"Yes, I did read those papers of yours," he replied. "They are the cause of my presence here this evening. I am Hargraves, of the Smithsonian Institute."

I took his proffered hand. Hargraves was a well-known archæologist, though I must confess that I should not have known of him except by chance. On glancing through "Science Abstracts" a few weeks previously, I happened on an abstract of a paper of his which aroused my curiosity, and I had looked up the original, which had proved highly interesting.

I admitted as much to him. He laughed. "We work in different spheres, as a rule" he said, "but this time I am stepping into yours. That was a great fight you had with Krüssen and his associates over Schiaparelli's "canali"

"Wasn't it," said I. "The trouble with those chaps is that they do not know what *good* seeing is really like. They have, perhaps forty or fifty clear nights a year, none of which begin to compare with our good nights. Then, because they have a fifty-four inch refractor*(3) against my twenty-four inch, they think that they are much better able to see fine detail than I am. Let me tell you, Doctor Hargraves, those four nights were perfect, absolutely perfect. I was able to use my highest power*(4) of four thousand and there was not the slightest tremor in the image. Had my driving-clock been perfect, I could have photographed everything I saw."

"I know," my companion replied. "Every detail of your drawings was correct. You may wonder how I—an archæologist—know anything about the planet Mars, but I have a big surprise in store for you."

I looked at him in amazement.

If you are interested in Martian stories, here is one that will prove an eye-opener. The author of this story, himself a well-known astronomer and scientist, propounds an entirely new and interesting theory about the origin of mankind in this world, and sets forth excellent arguments for his contention. The idea is so unique and the story so well written that you are almost convinced that somehow or other the whole thing must be real. There are so many new ideas and new possible inventions contained in this story that we are certain it will secure a niche all by itself in your memory.

*(1) Spectrogram. A photograph of the spectrum

*(2) Seeing. The quality of the observing conditions. For first-class seeing the atmosphere must be very steady and the sky clear. Such seeing is, unfortunately, extremely rare.

*(3) The size of a telescope is denoted by the diameter of the lens, or, in the case of a reflector, of the mirror.

*(4) The powers usually used under good conditions for planetary work are from 300 to 800 times.

"I don't wonder you are surprised," he continued. "I have made some discoveries that I think no one ever dreamed of. As you are probably aware, I have only recently returned from Africa after a six years' absence."

I nodded, for in the paper I have already mentioned, Hargraves announced that he had made some startling discoveries in Africa as to the origin of mankind, . . . discoveries which overthrew previous theories about the origin of man, but the exact nature of his find was not to be made public until such time, when the records he had found hidden away in a remote corner of "Darkest Africa" were fully deciphered.

"Some years ago," he continued, "I became convinced that the rise of mankind took place, not in Asia where it is generally supposed to have occurred, but in Africa.

"This belief thrust itself upon me as I was writing a book which I never published; a book which was to have traced the migration of mankind from the place of its origin, over this globe of ours. I amassed a tremendous amount of data which led, when I came to piece it together, to Central Africa, and not to Asia as I had confidently expected.

"I searched again and again for an error which I thought must exist in my work, but the trail inevitably led to the same conclusion: Central Africa was the 'Garden of Eden' of mankind.

"As you are aware, this was contrary to all earlier evidence, so I did not care to propound my theories without further corroboration. On consulting with the heads of my department, laying the evidence before them, it was decided to organize an expedition to see if any fresh data was available on the ground itself.

"The expedition, a small one as such things go, was organized and led by myself. It was successful, but the results are not yet ready for publication. To you, however, I would like to show what we have found, the understanding being, of course, that it shall not be divulged until my work is finished. Could you come and see me at my hotel? I will probably be in town for a week, anyway."

"Why not come and spend tomorrow evening with me?" I asked.

So we arranged it.

Having finished the spectrogram, I showed my companion what I could of my equipment and turned the telescope upon a few of the show objects in the heavens, which delighted him immensely. After this I saw him safely started down the trail, equipped with a flashlight to light his way to the road, where his taxi awaited him.

Throughout the night I could not keep from wondering what Hargraves had found in Africa that could be connected with the planet Mars The dawn found me without a conjecture and I turned in to dream wild dreams of Hargraves and Africa.

CHAPTER II

THE following evening found us comfortably settled in my den. I was eager to hear his story.

"I am not going to prolong my story with the details of the hardships of our journey" Hargraves began. "It is the usual stuff one reads in books of travel. Famine, thirst and fever played their usual rôles, with the result that my two white companions were out of the game before two years had passed. One died, and the other had to be escorted back to the coast, where he subsequently recovered.

"With a handful of native bearers, I pressed on with the search, following every clue and rumor, only to be disappointed time and time again. We moved slowly and laboriously through unexplored Central Africa, ever seeking traces of man's handiwork other than that of the natives.

"I was laid up in camp with an attack of fever when another rumor was brought by a native who had heard of our quest. This time it was substantiated by evidence in the form of a curiously shaped piece of metal. This was, in form, somewhat like a shoehorn and pointed in two places with an ingenious form of ball-and-socket joint. On examining it closely I saw that there had been two other pieces attached to the central portion, which had evidently been snapped off. Where the metal showed its broken surface it was bright and crystalline in appearance, so that I judged the break was of recent date. At first I thought that the natives who had found it had cleaned it up, for the surface was bright and shiny.

"Lying there in my blankets, I questioned the messenger through my interpreter, but I was assured that it was just as it had been found some years before. The metal of which it was made was unknown to me. It looked like steel, with a lustrous surface, but it weighed no more than an equal amount of aluminum. Later tests showed that it had much greater strength than steel and that it was extremely hard; even a file would leave no mark upon it.

"From what I could gather it had been picked up in a valley lying some ten or eleven days' journey to the northwest of us, when several members of his tribe had ventured in on a hunting expedition.

"I say 'ventured in' because the whole of the area in question is looked upon by the local tribes as the abode of the dead, and it was only when starvation threatened, and hunger overcame their fears, that they dared to penetrate this forbidden valley.

"Impatiently I waited until I was well enough to travel, then we set out with the messenger as a guide. Gradually the character of the country changed until the swampy, fever infested jungle gave way to a rolling park-like country.

"Our way led steadily upwards until on the ninth day we were moving over a verdant plateau which was alive with small game. My little pocket aneroid barometer showed us that we were about four-thousand five hundred feet above sea level. That evening we camped at the foot of a low range of hills and our guide assured me that on the morrow we should enter the forbidden valley.

"True to his promise, the following noon found us at the entrance to a little valley bounded by low hills, through which flowed a considerable stream. The hills on either side were gloriously green, betokening a generous supply of moisture, the park-like character of the valley being enhanced by occasional groups of a species of oak tree, and here

and there patches of a flowering shrub whose scent filled the valley with a delicious odor. The bark of this bush, I learned, was used by the natives in lieu of tobacco, and it was not half bad as a substitute, I can assure you, especially after one had been many months without the comfort of 'Lady Nicotine.'

"It was with the greatest difficulty that I persuaded our guide to remain with us, and then only after I had presented him with a charm in the shape of a ring, which I had to assure him would ward off all danger, did he consent to enter the valley with us.

"Late that afternoon, we arrived near the spot where our guide had found this metal object. We made camp at once and I set out to survey the valley.

"About a quarter of a mile from the camp the floor of the valley narrowed, bounded on the one side by a steep cliff and the other by a ridge which ran out at right angles from the southern slope. This formation immediately aroused my curiosity, for I thought that there must be some outcrop of rock here, which kept the flood-waters of the stream from removing it. Besides, I was anxious to learn something of the geological formations of this district.

"Attended by my guide, I walked down the valley towards this formation. Sure enough there was an outcrop of rock on the north side, a hard limestone formation whose foot was lapped by the waters of the stream. Wading through the shallow water, we crossed over to the south bank.

"Where the waters had removed the surface soil I saw what at first I took to be a rib of rock reaching into the stream. On closer inspection I saw that this was, not rock, but metal. It was worn and scored by the waters of ages, but on scraping away the soil above the flood level I exposed clean cut edges. A rib of the metal ran back into the hillside.

"WITH a sharp stake I probed the soft, loamy soil and was able to trace the direction of this rib up the hillside for a distance of perhaps thirty feet, where the covering became too deep for my probe to penetrate. Marking the spot where I could last feel it, I skirted the east and west sides of the mound with the hope of finding another clue, but I could see nothing.

"The tropical night shut down with its usual suddenness during my investigations, so we wended our way back to camp, where the light of a fire danced and flickered in the evening air. How I wished for a battery for my flashlight. The batteries, however, had perished long ago in the steaming jungle air, and I had to wait until morning with this discovery before me."

"I know how you felt," I interrupted. "I experienced the same feeling last night."

Hargraves smiled and continued.

"That evening I set the boys to work to construct rude digging implements from the scrub oak of the hillside. Crude they were, indeed, but they would serve my purpose in that light soil.

"Long before daylight, the camp was astir, and by the time the sun rose the morning meal was over and we were on our way to the mysterious mound. Setting the boys to work at intervals along a continuation of the line I had already traced out, the metal rib was soon located higher up the hillside, covered by some four feet of earth.

"I now saw that it might save time to have a couple of natives working directly on top of the mound, so transferring two of them, I directed them to clear away the top soil, while the others continued to trace the rib up the hillside.

"Two hours passed when a shout from the top told me they had made some discovery. When I arrived there they were clearing away the dry soil from what appeared to be a flat metal surface. Calling up the other boys we were soon at work removing the earth from the rounded top of the hillock.

"Little by little the metal surface was laid bare, showing it to be, not flat, but rounded with the exposed slope falling towards the stream. Late that afternoon we had come to the southern edge of the spherical surface. Here a smooth wall dropped away at an angle of sixty-five degrees with the vertical, as my clinometer showed. Something else was also revealed. We laid bare another metal rib which lay in a line with the first one.

"Again night cut short our work and tired out from exertions with my primitive shovel, I fell asleep directly after supper, to wake and find the eastern sky reddening under the rays of the rising sun.

"Working down the convex slope we gradually laid bare the surface until one of the boys revealed a crack in the hitherto unbroken surface. As the soil was rapidly removed we exposed a circular plate set flush in the metal. Near the periphery and diametrically opposite each other were two holes which we rapidly cleaned out, showing them to be let in the plate at an angle of perhaps thirty degrees.

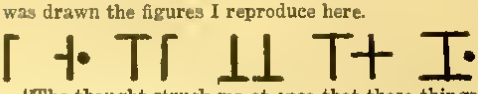
"With the aid of the boys I tried to lift this cover, or whatever it might be, but it seemed to be as solid as the rest. A close scrutiny of the edge, which was a little ragged in one place, made me think it might be threaded. With this in mind I placed two stout sticks in the holes and attempted to turn it, but with no success until it occurred to me to try the opposite direction. Throwing my weight on the lever with one of the boys doing the same on the other side I essayed to turn the plate once more. Suddenly we were both sprawling on our hands and knees. The plate had turned.

"Unmindful of my bruises, I jumped to the plate, and gradually we unscrewed it, the plate, with each turn, rising higher and higher from the surface in which it was set. When it stood fully eighteen inches high we came to the end of the screw and by our combined efforts swung the heavy disc of metal aside. Subsequent measures showed it to be twenty-eight inches in diameter and twenty thick.

"We had uncovered a hole some two feet deep, at the bottom of which was another plate. Arranged in the form of a square of twelve on a side were one hundred and forty-four equally spaced circular holes, each one about half-an-inch in diameter, and on the plate lay six metal objects. I picked these up and examined them one by one.

They were similar in shape and size and were in the form of a rod of circular cross section, six inches long with a cross piece on top giving them the form of a capital letter T. Each of these were slotted across at various points, but no two in exactly the same manner, and on them were engraved strange characters. Here is a sketch of them."

Hargraves handed me a piece of paper on which was drawn the figures I reproduce here.



"The thought struck me at once that these things might be keys to unlock whatever lay before me, so I tried one in a hole where it fitted snugly. Now, I asked myself, into which hole did each key fit. There were one-hundred and forty-four holes and six keys, so there were evidently 144!/138! (1) ways in which these six keys could be arranged, using all of them. Out of more than eight trillion ways of doing a thing with only one of them correct, the chances are somewhat against one's hitting the right combination by chance!"

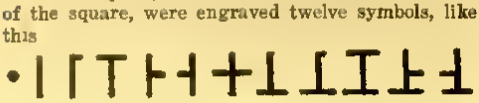
"You might hit it once in a million years," I laughed, "if you could keep on trying that long."

"Well," he continued, "I saw that there must be some solution to my problem, so I looked for a clue and found it. One of the corner holes was marked

while the one diagonally opposite looked like this."

He drew these figures as he spoke.

"On the plate, above what I took to be the top of the square, were engraved twelve symbols, like this



"After copying these down in my note-book, I sat down to think it over. From the occurrence of twelves, both in the number of holes and the number of symbols, it might be possible, I thought, that the duodecimal* system was used by those who had made this thing. Following up this thought I saw that the symbols were, in order, zero to eleven according to our notation, hence the first of these keys was number two and the others 60, 38, 91, 42 and 108 respectively.

"Hurriedly I placed the keys in their corresponding holes and as I did so I felt the wards of the lock mechanism engage with the slots. Turning the keys as far as they would go I was now able to lift the plate with the aid of the boys, using the keys as handles.

"It was thinner than the former one, being about a foot or so thick, and as we lifted it I noticed that a number of radial bars on the underside had slid back into their sockets.

"YOU can imagine my feelings as I peered down and saw no other obstacle in my way. Sacrificing one of my few precious matches I leaned as far as I could over the hole. The match burned bright and clear; evidently the air inside was pure. Just below me I could see what appeared to be a platform. Taking a stout stick, long enough to reach it, I tested it carefully. It seemed quite strong and firm, so taking a chance, I lowered myself into the hole and my feet just touched as I hung from the edge with my hands.

"I could see by the light that filtered in from overhead that I was standing on a metal grating. It was not level, but tilted downwards to the north. As I had suspected, this construction, whatever it might be, had fallen over from the vertical and lay at an angle on the hillside.

"Ordering one of the natives to fetch torches, I stooped and peered around. I could dimly see that I stood on the top of a curved stairway leading down into the darkness. Grasping the heavy handrail with which it was protected I cautiously descended. I noticed that the steps were abnormally high as I went down. Later I was to know the reason. A few steps down and I came to another platform, which I could make out in the faint light as circular, surrounding a 'well.'

"Striking another match, I examined the wall behind me. In its surface I saw another set of holes similar to those in the plate we had removed. My match flickered out and, not wanting to waste any more of my precious store of them I climbed the steps and wriggled out into the daylight to await the arrival of the torches.

"Presently the boy I had sent arrived with a goodly load of dry, resinous sticks that would burn well and brightly. I lit one, and calling to him to follow me, I again lowered myself into the hole, remembering to take the keys with me. Stepping carefully for fear of falling on the sloping surface, I walked around the gallery examining the place. It was about twenty feet in diameter with a five-foot gallery from which led a second flight of steps. There were four sets of key holes in the wall about five feet above the floor.

"The second gallery was exactly like the first and I did not stop, but went on down the last flight of steps. This was evidently the bottom of the cylinder and, like the other two stories, its walls held the now familiar key plates.

"Going to the one on the lower side I examined it closely. Above the square of holes were twelve sets of symbols arranged in pairs, the first members of these pairs corresponding to the numbers on the keys. Evidently the keys did not correspond to the same holes as above, so, inserting them in their corresponding new numbers, I turned them as I had done before.

"Immediately, a section of the wall swung inward and there was a sudden rush of air which nearly extinguished the torch. The air pressure had been much less inside the chamber which now lay open before me, than outside, and the door was apparently airtight. No wonder I could see no sign of the joint in my first cursory examination of the walls.

"Before me, stacked around the sides, were a

(1) 144! - 138! Factorial 144 divided by factorial 138 is $144 \times 143 \times 142 \times 141 \times 140 \times 139 = 8{,}020{,}000{,}000{,}000$ + $3! = 3 \times 2 \times 1$; $4! = 4 \times 3 \times 2 \times 1$; etc

*Counting by twelves instead of tens as we are accustomed to do, hence the numbers ten and eleven will have separate symbols

large number of box-shaped objects, held in place by bars reaching from floor to roof of the chamber, each box bearing a number. Removing one of the retaining bars, which fitted into sockets, I pulled down the top box of the tier.

"On the front of this box was a lever-like handle, this I turned, and as I did so there came the hissing sound of air entering a vacuum. Turning the handle further—it was quite stiff—the air rushed in with a final sigh and the lid of the box raised sufficiently for me to put my fingers under it and throw it back.

"The lever had operated an eccentric which had forced the lid up against the pressure of the outside air. The lid was tongued, and fitted into a corresponding groove in the upper edge of the box, and the groove was filled with a waxy substance which had made the joint air tight. I noticed afterwards that each box had a filled hole through which the air had evidently been exhausted.

"Carefully packed in a substance that looked like fine steel wool were a number of broad oblong cases, about the size of a standard volume of the 'Encyclopedia Britannica,' the topmost of which I removed. It was of the same metallic substance that I had encountered all along, and on its edge was a little knob set in a recess. This I pressed and a cover flew back.

"It was a volume, and such a volume as the eyes of living man never saw before. There before me was the most startling illustration I had ever looked upon. Instead of the usual lifeless flat things we are used to, there lay a picture in three dimensions. The illustration depicted an animal or reptile—I don't know which it was—and it stood out there in the torch light like a live thing. I ran my fingers lightly over the surface to assure myself that it was not a model, or in relief, but it was as flat as a table top. The colors were marvelous; they had life and brightness in them which enhanced the natural look about the thing.

"At the foot of the case in which the picture lay was a tiny lever-like arrangement. I pressed this over and as I did so there was a tiny whirring sound followed by a click, and the picture flicked out of sight, and was replaced by another.

"One-half the page—if I may call them pages—was occupied by this new illustration, the other half being filled with characters, evidently writing of some kind. Page after page flicked by at my touch, the majority bearing those wonderfully executed illustrations in three dimensions.

"BOX after box was opened, and each was found filled with these strange volumes. I carefully replaced those I had removed and closed the lids of the boxes, replacing them in their tiers.

"Where was I going to start in this place? I felt like a child surrounded by novel toys, not knowing which to examine first. Then it occurred to me that everything was arranged in a methodical manner—the numbering of the cases and the volumes showed this. Looking on the door of this cell I saw something I had overlooked before. It was numbered ten, according to our notation. Number one must be on the first landing.

"The air was becoming thick and suffocating with the oily smoke of the torches, but I made my way to the first cell and opened it in its turn. Being warned this time, I had the boy stand back with the torch so that it would not be blown out. The pressure here was much lower than in the other cell. I was nearly overthrown by the sudden gust of air that drove in before me as the door swung back.

"This chamber was similar to the one below, and in the topmost row of boxes I saw number one in a corner. I removed this case and, as the air was becoming unbearable, I took it out into the sunlight to examine it.

"It contained what I may liken to a child's primer, profusely illustrated. The first volume was filled with pictures of common objects, each with a few symbols at the sides. Trees, rivers, lakes and mountains; birds, beasts and reptiles, the majority of which were unknown to me, were illustrated. The second volume contained composite pictures—simple actions of human-like creatures and so on. I saw at once that it would be quite easy for a man of average intelligence to learn this unknown language with the aid of this wonderful primer. To one who was accustomed to deciphering old writings, as I was, the task would be ridiculously easy.

"The setting of the sun drove me back to camp, but not before I had replaced and locked the place, taking the keys with me.

"By the light of the fire I studied my trophies that night. It might interest you to know just how the 'lessons' were arranged. Take for example the verb 'to walk.' In one set of pictures a being was shown in the foreground, approaching a hill. The second showed him, bent forward, walking up the hill, while a third showed him at the top. The characters were exactly the same in each case, but over the first was an inverted V; over the second, nothing; and over the third a V. The tenses were all indicated by a symbol above the verb. The degrees of adjectives were similarly indicated, hence it simplified the written language exceedingly.

"I sat and studied well into the night until weariness compelled me to cease, but at dawn I was awake and at it again. Throughout the day I worked, having given instructions to the boys to continue their work of removing the earth from around the cylinder.

"Every moment the system of writing became clearer, until late in the afternoon I came to a lone sentence set out in large characters. A rough translation of it would be:

"'WE GREET YOU. CONTINUE, WE HAVE MUCH IN STORE FOR YOU.'

"Here was a direct message, and a message that made my heart leap. If I had worked hard up to this point, I worked feverishly now. Who, I wondered, were 'WE'?

"The following day another message was translated. It read:

'THE PEOPLE OF ANOTHER WORLD GREET YOU.'

"I checked my translation again and again, but I had made no mistake. That was the meaning of the sentence.

"As the days slipped by I came across more of these interpolated sentences, all encouraging me to go on. This personal touch made me feel as though

there were some beings anxious for my advancement so that they could communicate with me.

"The days grew into weeks before I had mastered the language sufficiently for the purpose of those who wrote it. In the meantime the natives had progressed with their task but slowly, due to the poor implements with which they had to work. They worked slowly but honestly, so I did not press them, for I could see I had months of work ahead of me before I even scratched the surface of the wonderful store of knowledge that lay before me.

"We were truly in a Garden of Eden, for game and fish abounded, while edible fruits and berries served to keep down sickness, which would surely have followed a meat diet. In this way I was able to conserve our none too plentiful supply of provisions. The head boy was an excellent shot, so our ammunition was not wasted as it would have been had we depended upon my powers with a rifle. The climate was almost perfect.

"Eventually I arrived at the end of my primary course and came, at the end of the last volume, to a message which read—'First read volume one, case three. A complete catalogue of the contents of the library will also be found in this case.'

"This volume was soon secured, and without hesitation I plunged into it. It was written in a fairly simple style, and with the aid of an excellent dictionary I found in the same case, I was able to read right through. I read it in four days, hardly stopping to eat or sleep, nearly ruining my eyesight with the strain. After that I slackened up a bit and did manual work at intervals in order to get some exercise. I will outline the contents of this volume to you.

CHAPTER III

"'HUNDREDS of thousands of years before this story opens, intelligent life had dawned upon one of our nearest neighbors in space, the planet Mars; in much the same manner as we have supposed it to do on this Earth of ours, so that at the time this narrative was written civilization had reached a very high plane. The records show that they had reached what we might call the ideal state. Every being was intelligent enough to work under what I might call a system of social democracy.

" 'Every member of the planet's teeming millions was an integral part of a smoothly working system in which no parasites existed, for when one, by some atavistic freak, did turn up who attempted to "throw a monkey-wrench into the machinery" he was simply exterminated.

" 'Throughout the ages, while this system was slowly being built up, the race had been carefully developed by intelligent selection in mating and every undesirable feature had been slowly eliminated. The result was that at the time this narrative opens every man and woman on the planet was both mentally and physically perfect.

" 'As time went on it became apparent that the life of the planet would be shortened by the loss of air and water vapor. The gravitation on the surface of Mars being much less than on the Earth, nearly one-half as great, the gases of its atmosphere would more readily escape. The Kinetic Theory of Gases shows that a velocity of seven miles a second is readily obtained by the faster moving molecules of water vapor. This is the critical speed for escape from the Earth's attraction. How much more readily will the water vapor escape from a planet like Mars.

" 'Some scheme had to be developed then, in order to reduce this rapid escape of the planet's vital fluid, if life on the planet was to be possible in future ages.

" 'Martian engineers set to work, after due deliberation, to construct gigantic underground reservoire lined with an impervious material. After nearly a thousand years' labor the work was finished and the waters of the lakes and seas were impounded in these vast underground storage basins.

" 'To conserve the precious liquid still further, that which was deposited as snow in the polar regions was carefully trapped as the summer sun melted it. Huge subterranean aqueducts led it back equator-wards, assisted by enormous pumping plants. These conduits were tapped at intervals by lateral lines in order to supply water to irrigate the fast drying surface, and at the time the record was written, the construction of an intricate system of conduits and pumping stations was well under way.' "

"Just as the late Professor Lowell hypothecated," I exclaimed, to which Hargraves added:

"And those oases, as Lowell called them, were the locations of the pumping stations, the intensely cultivated area around them causing them to show up as black dots on the planet's surface, as your observations showed.

"The prominent blue-green markings on our neighbor in space are of a heavier soil and are the old sea beds. The lighter sandy soils were abandoned, because of the large quantity of water necessary to make them fertile, save along the lines of the canals. But to continue—

" 'With their highly developed instruments the Martians had ascertained that their neighboring planet, the Earth, was well suited to support life. Indeed it seemed a veritable land of promise to them, with its vast oceans and verdant continents. Encouraged by the thought of the possibilities this new world held for them, researches were instituted which resulted in a machine which would travel through interplanetary space The method of propulsion was similar to that of the "Goddard Rocket"; gases formed by the combination of certain solid chemicals, escaping through specially shaped nozzles attached to the after part of the machine propelled it in exactly the same manner as our skyrockets are shot aloft.

" 'Wing-shaped members supported it in the air until its velocity was high enough for it to leave the atmosphere, while a second series of nozzles in the bow of the craft retarded it when a landing had to be made.

" 'A company of daring pioneers left one eventful day to commence the first interplanetary navigation our solar system has known, and after months of an uneventful journey, landed safely on the Earth. An unforeseen disaster overtook this adventurous company, however. Under the greater gravitational force to which they were subjected here, their rela-

tively frail bodies broke down. Prolapse of their inner organs caused many to die in agony within a month of their landing, so the project was abandoned and the survivors returned to their native planet.

"'Undaunted by this failure they set to work to develop a race capable of withstanding the new conditions. After a lapse of nearly four hundred years a new expedition set forth. This second party was more successful than the first, and succeeded in founding a colony on the high plateau region where the cylinder was found. Their bodies were skillfully braced by a metal framework which relieved, to some extent, the strain to which they were subjected.

"'These first intelligent inhabitants of the Earth were giants compared with us. Their average height was about nine feet; their lungs, which were developed to accommodate the rarer atmosphere of Mars, were enclosed by a barrel-like chest, but their limbs were pitifully thin, though much better adapted to their new environment than those of their predecessors.

"'As time went on children were born into this new world and new arrivals came across the gulf every two years when Mars was in opposition*. Then came another catastrophe. As the children born here grew, it was noticed that their intelligence was inferior to that of their parents. Bodily they were smaller and sturdier, but their mentality when they reached the adult stage was only equivalent to that of a Martian child half their age.

"'Immigration stopped while this new phase was anxiously watched. Everything within the Martians' power was done to check this effect, but without avail. Things went from bad to worse as the second generation was born, for these were still farther from the high mental standard of their forefathers. Instead of highly intelligent beings, the race was rapidly reverting to the primitive state.

"'The fourth generation was but a grotesque caricature of the original stock, and were already forming into bands of nomadic savages, leaving the center of their community to wander at large over the face of the Earth

"'Everything within the power of the Martians having failed to alleviate these conditions, the projected plan was abandoned. Before leaving this planet forever, to return to their own sphere, it was decided to build a monument to their endeavors, so that as time went on and intelligence again returned to this planet, a record of their attempt, and data of the most useful kind, would be available to those who found it.

"'Two other cylinders, similar in every respect to the one I found, were constructed of a tough noncorrosive metal which would withstand the destructive forces of the elements throughout the ages until intelligence again appeared. This period has been much longer than was anticipated by the builders, I can see from what I have read. The three monuments were placed where observation had showed cataclysms of nature, such as flood or earthquake, would be at a minimum. One where I found it, another somewhere on a continent over which the Atlantic now rolls, and the last in the continent which we know as Australia. This latter may yet be found. The cylinders were sealed in the manner I have described so that none but intelligent beings could gain access to them. They were so constructed that should they break they would do so midway between the dividing partitions of the cells, thus leaving each cell intact until someone should arrive who could solve the riddle of the system of numerals and make keys to fit the locks.

"'This planet and all their works were then abandoned. Practically all other traces of their sojourn have now vanished into dust, though here and there I found remains of their supporting harness, for which they had used this remarkable metal, which is, I believe, akin to aluminum.'"

*Opposition A planet is in opposition nearest to the earth when the Sun, Earth and the planet are in the same straight line with the Earth and the planet on the same side of the Sun.

CHAPTER IV

"BY the time my cursory survey of the contents of the library was completed, the natives had succeeded in clearing away the mass of earth around the cylinder, so that I was better able to understand its construction and what had happened to it throughout the ages.

"The walls of the object were approximately six feet thick with the top and bottom of convex form, better to withstand any great pressure to which it might be subjected. The whole structure was of one seamless piece, unbroken save where the manhole gave access to its interior. Four massive, equally spaced spokes, or ribs, radiated out from the cylinder, the object of these being to prevent the cylinder rolling over as the soil subsided. The cylinder was approximately forty feet high and sixty in diameter. The arrangement of the interior I have already described to you.

"Originally the structure had rested on the surface of a hard limestone formation, but the gradual weathering of this had caused it to sink downwards into the little valley which now exists there.

"Having completed my examination of the cylinder and satisfied myself that there was nothing more to be learned until other volumes were translated, I carefully sealed and locked the entrance, after selecting a few of what I deemed the most important records to take away with me. The keys I sewed into a canvas belt which I strapped about my waist and, packing the remaining trophies very carefully, we retraced our steps to the coast.

"Eight months after leaving the valley I was once more in Washington where I laid my discoveries before the departmental heads. It was decided to keep the thing secret until an expedition could go to Africa and return with the remainder of the library. I expect that we shall be hearing from them in a few months' time, if all goes well.

"Among the volumes I brought out with me was this one," Hargraves said, reaching for the package he had brought with him.

Unwrapping it, he handed me a lustrous metal box such as he had described. I took it and pressed the spring at the side. The cover, which I may liken to the front board of our books, flew back.

There before me, apparently floating in space, was the representation of a sphere. So real was the

three-dimensional aspect of the thing that I could not resist passing my fingers over its surface to assure myself that it really was in one plane It was an illustration of the planet of mystery—Mars. At the poles glistened twin polar caps, the northern one surrounded by a hazy outline while the southern was belted with a liquid-blue band. It was evidently the fall of the year in the planet's northern hemisphere.

I recognized some of the principal features—Utopia, the Syrtis Major and the Pseboas Lucus* (1)—though there were other blue-green markings with which I was not familiar The desert areas, I saw at once, were much smaller than they are today and only a few canals were shown.

I stopped to examine the "page" on which it was depicted. Like the case, it was of metal, and appeared to pass over a roller, like the film of a camera. Afterwards I learned that it was on an endless belt arrangement, passing over a series of small rollers which kept the metal sheet from coming into contact with itself. Had this precaution not been taken there was a danger of the sheets cohering and being irreparably ruined.

Pressing the little lever-like arrangement at the lower end of the case as my companion directed, the picture flicked out of sight revealing another view of the planet. A series of such views gave details of every portion of the planet's surface and then I came to a different type of picture

It was an illustration showing a gigantic engineering undertaking. A low range of hills formed the background and down their slope ran a great scar. At the foot was a vast building under construction, and leading from it to the foreground was an immense excavation at the bottom of which were what I took to be excavating machines, whose apparent size was enhanced by the diminutive, human-like figures I could see here and there among them.

Translating the legend below, Hargraves informed me that this illustrated one of the canals under construction and that the building at the foot of the hill housed the pumping mechanism which was to raise the water to its new level. This particular piece of work was at what we call the northern point of the Trivium Charontis* (2).

Page after page flicked before me on the pressing of the lever. Great engineering works, maps and plans of districts and cities, and last of all views of the cities themselves. These latter illustrations are well worth describing. Unlike our canyon like streets the ways received sunlight in abundance, for the buildings were pyramidal in form, each story being smaller than the one below, with a broad open space running around it. A reddish stone seemed to be used in their construction, with a trimming of dull green, well suiting the style of architecture, which had a Babylonian cast about it. Fancy carving or ornamentations were wholly absent.

A number of torpedo-shaped objects were evidently moving through the air above the ways between these massive piles, a host of others were "parked" on the broad galleries of the buildings, over which were what I supposed to be long windows which lighted their interiors.

This, Hargraves told me, was the metropolis of the planet, and these were the executive offices from which the affairs of this far off world were directed. A symbol mounted on a staff at the top of each building marked the department to which it belonged. A flaming Sun, crossed parallel lines, a square and compass, and a cluster of fruits were among some of those I saw. I will leave it to the reader's imagination to solve the meanings of these symbols.

Another view showed the stages from which great aerial liners left for distant cities, or to which they came to discharge their living cargo. A few were resting upon their cradles, taking aboard freight and passengers, or discharging the products of distant districts into conveyors which took it rapidly underground. All heavy traffic was carried underground in the cities, I was informed, and came to the surface only at its destination.

"To think that this was taking place half-a-million years ago," I said to my companion. "I wonder what it is like there now."

"Some day we may learn," he replied. "They may have progressed but little and may be passively waiting until our intelligence is high enough to make it worth their while to communicate with us. Think of the difference in intelligence which must exist between us! Perhaps as much as between mankind and the apes. We would not think of establishing communication with monkeys, would we? Then we must not expect to hear from our neighbors until we begin to approach their standard of intelligence."

It was late that night when my visitor left, very kindly leaving the volume behind for my further perusal and with a promise to aid me by interpreting the accompanying text. Without his aid I would not have been able to make much of it, and would perhaps have come to many erroneous conclusions.

The following days, with Hargraves' assistance, I studied it thoroughly, comparing the maps with my own drawings and checking up much of my observational data.

I have written down this story so that time would not cause me to forget the finer details. Some day I may publish it, if I can obtain permission.

Postscript—Since penning the above the remainder of the library has arrived in America, and my friend informs me that I am quite at liberty to publish this (which he has read). At present Hargraves, with a large staff of assistants, is engaged in the translation of the records, but it will be a long time before such a colossal work can be published. The expense will be enormous. The world has waited half-a-million years for this discovery, so I suppose we can be patient for a few more years until the story is given to us.

THE END

*(1) The reader is recommended to read "The Planet Mars," "Mars and its Canals," and "Mars as the Abode of Life,"—three volumes written by the late Professor Percival Lowell, who observed Mars systematically for twenty years, mostly at Flagstaff, Arizona, where the atmospheric conditions are, perhaps, better than those to be found at any other observatory These books are well written, mostly in non-technical language—The Author

*(2) Observations have shown that there are no great elevations on the surface of Mars—nothing that approaches mountainous size.

ELECTRO-EPISODED in A.D. 2025

By E. D Skinner

Inserting a needle-point barely beyond and to the left of the higher of the two mountain peaks, he took a delicate copper wire and connected this with "Local." Throwing the clutch back into "Local" the faint outline of the mountain disappeared, and a vivid picture of the "Parker Pees" replaced it. . . .

IF Lieutenant-Colonel Algernon Sidney St. Johnstone, N.Y.N.G., had been in a normal condition, he would certainly have been aware of a peculiar buzzing sensation in the region of his upper left-hand vest pocket; but unfortunately it so happened that his actual physical state was most emphatically sub-normal. Still he could hardly avoid the suspicion that something out of the ordinary had disturbed him; and, with blinking eyes, he searched the apartment for possible inordinate things.

The first to attract his attention was a neatly folded copy of the eleven o'clock edition of the *Hourly Bulletin*, bearing the date: "Tuesday, January 7, 2025"; which, with its "up-to-the-minute" Wall street market quotations, lay unread upon the desk before him. This he swept to the floor with an impatient sweep of his arm!

Next his left hand instinctively sought, with practiced precision, a black bottle on a side-desk close by. Holding the bottle to the light, his eyes told him that it was empty. Tipping it upside-down above his wide-open mouth, his tongue repeated the information with emphasis. Dejectedly keeping the bottle before him, he glared in an insane fury at two green labels—one the trade mark of a by-gone century, and the other a "Bottled in Bond" stamp dated: "July 1, 1916"—which his wisdom told him were both forgeries.

Then, as the topographical details of his "den" became clearer to his blurred vision, his eyes picked out the recumbent form of his correctly attired and correctly featured valet slumbering peacefully and audibly in a Morris chair in the far corner—and this under the very nose of his master! Instantly the bottle was hurled at the valet's head!—and the latter promptly proved his trained efficiency in the art of sleeping "with one eye open," by automatically and unnecessarily dodging.

Finally Algernon's superheated emotions found vent in speech. Glaring savagely at his valet, he said:

"Shay you varlet!—"

He paused and chuckled for a moment at the

HUMOR, we have been told by some of our critics, can never amount to much in scientifiction. If we may let a secret out of the bag, the Editor has been on a rampage, lately, to find a scientifiction story in which there really could be a subtle humor without weakening the narrative. Well, we believe we have found it in this tale, which not only has all of the above-mentioned qualifications, but a fine O. Henry ending thrown in for good measure. Only when you have read it for the second time will you appreciate it to its fullest extent.

humor of the "pun"—then he repeated loudly:

"Shay you varlet, wake up! Lishen t'me. You gesh bishy on 'pbone, tell thash booshlegger hosh thief o' mine 'f 'ee shends me more shtuff like thish, I shee nash'nal head booshlegger's trust 'nd gesh him fired. Tbash schtuff kill 'mule! You tell'sh him t' shave money 'ee shpends on labels 'n buy shumpin' fit f' schen'lemen's schtomach. Thasb schtuff kill 'mule!"

The valet fixed one eye on his master, the other being blackened and fully closed, and answered promptly and precisely:

"Yes, sir! As you say, sir! But, begging your pardon, sir, the gentleman sent word yesterday that you should not drink any of that, as it was dangerous. He said, begging your pardon, sir, that the goods they make for the common people bad been sent you by mistake. He apologized most profusely."

Algernon turned on his valet in a fury.

"'N you lesh me kill m'self wish thash schtuff?" he cried. "Thash schtuff kill 'mule."

"Begging your pardon, sir," replied the valet, "I did object to the best of my ability. But you resisted most violently, blackening my eye and knocking me unconscious into this chair, so that I only recovered just as you spoke a moment ago. That poison must have temporarily deranged your intellect, sir."

"Thash it! S'poison d'ranged in'lect. Thash schtuff kill 'mule. S'too bad! Here, s'take thish." And Algernon took a bill from his pocket and tossed it at his valet.

For a moment he sat quietly as if in a profound study, and then another idea struck him.

"Shay you schrimp! Whash shtaring t'me like owl for?" he said, addressing the valet. "Gesh bishy on 'phone, tell booshlegger-dog shend me 'nozzer case quick. S'tell him I got awfu' thirst."

"Yes, sir! As you say, sir," replied the valet with alacrity. "But, begging your pardon, sir, the gentleman did promise to send another case yesterday; and, begging your pardon, sir, I believe he would have done so, if the federal officers had not raided him and put him in jail."

For a moment Algernon stared at his valet in a speechless rage that partly sobered him. Then the words came in a torrent of choice but incoherent invective.

"Whazzat!" he cried. "Thosh—curs gesh my booshlegger! I gesh them quick!"

He paused a second for breath, eyeing his valet the while with maudlin profundity, and then he continued:

"Shay you monkey-face' weptile, whash shtaring me for?" he exploded. "Gesh bishy! Gesh bisby on 'phone. Use p'vate code. Tell nash-nal schief t' call hish dogs of my booshlegger a' once. Tell him I get his scalp shure. Tell him thisb Alg'non Shid'ey Shaint Shons'one. Y'un'erstan'? Alg'non Shid'ey Shain' Shons'one!"

With a "Yes, sir! At once, sir! As you say, sir!" the valet obeyed promptly, and was soon buried in his master's private code-book; while Algernon, now considerably sobered by his rage, became fully conscious of the peculiar buzzing sensation in the region of his upper left-hand vest pocket—and of the fact that this buzzing indicated beyond a doubt that his fiancee, Esmeralda Clementine Jones-Bronson, desired to communicate with him.

Well versed as he was in the art of "managing" the "female-of-the-species" in the infinite variety of moods to which she is addicted, a quizzical smile played for a moment around his lips as he realized that his inadvertent delay in answering his Esmeralda's "call," had accidentally turned out a masterstroke. She had "ridden her high horse" in the recent row, had flaunted a daring defiance of his most earnest wishes in his very face, and had finished by throwing her engagement-ring contemptuously at his feet! Presumably she was contrite now, and ready for a reconciliation. But he well knew that, if he would not be bullied through life by his future wife, he must maintain the upper hand throughout the engagement period; and—his delay in answering would have a chastening effect!

THE row had started when he presented Esmeralda, as a birthday present, with one of two specially-designed miniature radio receiving-and-broadcasting sets. His own carried the equipment in a small gold case in his vest pocket; while the wiring, the antenna, and the steel frame which held the head-phone in place with microphone pendant before the mouth, was coiled and folded in a tiny golden receptacle on the outside of the pocket. The steel wiring was "Electro re-tempered" by a new process, which increased its tensile strength one hundred fold; while the copper was first tempered by the re-discovered process which for centuries had been a "lost art," and then "Electro re-tempered" the same as the steel. So that, while of gossamer-like delicacy in appearance, the whole apparatus was in fact much stronger than the old styles. Both sets were permanently adjusted to the delicately-complicated, alternating "E.V.R.-X.Y.Z." wavelength, which the makers believed proof against duplication, and which they guaranteed against static within a radius of 10,000 miles under any possible conditions. The cover of the outer receptacle of his own set was in shape a gold shield, with a "spread-eagle" engraved rampant upon a South Sea Island golden-sunset field on its face. This was liable to be mistaken, by its appearance, for a decoration of European royalty; and Esmeralda had agreed with him that it was quite nifty.

But hers was contained in the back of a "verithin" wrist watch, and that was where the trouble started. She wanted a lavalliere as a decoration for her bosom! And, growing sarcastic towards the last, he had admitted that that portion of her anatomy did need some kind of covering; but he had denied the efficacy of the "lavalliere" idea for that special purpose. He had contended that both the décolletté in the front and the "open-back" features of her gowns, should stop at the "lines of curvature." He had even launched into a general tirade against a number of her recent costumes, and had called them "picture-frame" conceptions; because "they performed a similar function," in that "they merely furnished the setting for emphasizing the details of the things revealed."

That, as he had believed, had settled their argument! But two days before this, she had appeared

adorned with the best that Wertheimer, the Paris arbiter of the world's fashions, could devise in the way of a realization of his "picture-frame" sarcasm; and the row that resulted had, this time, been hectic on both sides—with her scoring the final "point" by throwing her engagement ring at his feet.

Then, through the great "Electro-visional" dial attached to his general radio outfit, he had watched her "take off" from the roof in her runabout monoplane, had noted the reckless speed with which she drove it through the air, had chuckled when an aerial speed-cop took her license number and "tagged" her by shooting the citation into the rear of her machine, had seen her land on her own roof and, a moment later, had watched her "take off" again in her large touring biplane and rapidly grow into a tiny speck in the western sky. Evidently his Esmeralda was a high-strung thoroughbred, who meant business when her dander was up!

For a brief moment Algernon made a profound effort to solve the problem as to just how long he should keep her waiting before he answered her "call." The nice adjustment of *time* to the particular individuality of the person concerned under the correlated circumstances enumerated, was a matter of supreme importance! Then, suddenly, the idea occurred that she might have met with an accident. Instantly he acted!

Touching a spring on the golden radio-receptacle on his vest pocket, he caught the released framework in his hand, slipped the catch that allowed it to snap into shape, and quickly adjusted it to his face. Then, choosing his words carefully and sparingly, he spoke into the pendant microphone with an attempted precision to conceal his thick tongue, asking:

"This you, Esm'alda?"

"Yes, this is me!" she snapped back promptly. "Who did you suppose it was? Have you been giving away any more of these 'special' radio sets to any other female? If I catch you playing any tricks on me with any other huzzy, I'll make you wish that you had never been born! If—"

Patiently, and speaking more clearly than before, Algernon stopped the flow of words by interjecting another query.

"Want an'thin' p'ticular?" he asked.

"Yes! I want help quick—right this minute," she answered. "My leg is broken and I can't move, and there is a nasty big tiger on the ledge right over my head just ready to spring on me and eat me up! I was flying west in my big 'plane, and I was out of our district where everybody knows me and papa has them all 'fixed,' and I was away out here where nobody knows me, and one of those beastly 'Purity League' sleuths caught me powdering my nose, and he chased me, and I 'stepped on the gas' and hit the two-hundred-miles-an-hour clip, and I thought of that new 'Electric Spark-screen Broadcaster' you had attached to the 'plane, and I turned that loose, and then I circled behind the screen, and that brute must have chased me into the ocean, for I ran straight into this mountain before I could see where I was going, and I fell a thousand feet or more, and I broke my leg so I can't move, and that horrid tiger—"

Algernon's stoppage of the verbal torrent was decidedly impatient this time.

"Shay lis'en," he broke in. "If you don't tell where at, I can't find you. Tell in code."

"Ain't I telling you just as fast as I can?" she retorted. "I've been talking just as fast as I could make my tongue go ever since you finally answered me, and you took an awful long time in answering, and I can't tell you where I am at if you don't let me talk, and I think you are a brute, and I believe you are still drunk, and here is the location in code: '693-1-41: 396-1-141: 356-1-22: 690-2 142: and be sure you put it down on paper right away so you don't forget, and—"

But Algernon had "hung up."

By now he was sober enough to realize that he was not sober enough for the task in hand, so he quickly snapped the bracelets of an "Electric Regenerator around his wrists, set the regulator at "2 seconds," lapsed into unconsciousness—and awoke at the end of that time an entirely different man, as the result of the equivalent of two nights' natural sleep.

HIS first move on awakening, was to reach for a button in the desk before him marked "Package Transporter"; but he paused with the movement half completed, as a look of pain distorted his face. For a moment he clasped both hands across his forehead, moaning, in helpless misery: "My God! What a headache!"

His helplessness, however, was only temporary. Turning to a silver urn behind him, which bore the golden-inlaid legend: "Pasteurized Water," he pressed what appeared to be a part of a carved figure in the mahogeny base and a secret drawer shot out revealing a number of coffee cups, spoons and a box of tablets labeled: "Equivalent—2 Spoons Sugar and 1 Jigger Cream." Dropping one of these tablets and a spoon into a cup, he set it down on his desk. Next he took a diminutive collapsible microscope, with a lens of flexible glass, out of his pocket; and, with its aid, picked out an all-but-invisible needle-point concealed in the filigree ornamentation of the faucet of the urn. This he pressed with his finger nail. Then he pushed a button in the faucet labeled "Hot," and filled the coffee cup as he mumbled jubilantly to himself: "Some trick this! You get your 'pasteurized water' according to government regulations all right, but—oh! You naughty little needle." He eyed the dubious looking mixture that flowed into the cup for a suspicious moment, tasted it hopefully—and then, livid with rage, spat the stuff out and hurled the cup across the room.

Speechless for a moment, he controlled himself with an effort; and then, with desperate haste, unlocked a private drawer in his desk and opened it half-way to a visible line. Pulling a cord hanging over his head, which started an electric fan going—and which, in this precise connection, also caused a slight orifice in the panel of the drawer to unfold, revealing an assortment of crystalline-white and brownish-looking pills—he selected one of the white pills, placed it in his mouth and crunched it between his teeth to get quick action, in spite of his vigilant valet's "Begging your pardon, sir," protest.

"Can't help it, John," he said. "This is a real emergency and I simply have got to have something. On the face of things, it looks like the narcotics are the only genuine stuff left to us by the 'Bootlegger-Smuggler-Prohibitionist Combine'."

The look of pain that had distorted his features quickly disappeared, and in its place there came the comforting jubilance of an anticipated pleasure. Turning to a combination-lock to the cash drawer of his desk; he set the knob at "0," turned it forward to "20," back to "15," forward again to "2," back to "1," again forward to "3," back a full revolution again to "3" and lastly forward to the final "15." Then he applied a firm, steady pressure to the knob, and a circular segment of the floor upon which the desk stood, and whose scarcely discernable outline blended so perfectly with the inlaid floral scroll design of the floor as to appear an integral part of it, revolved half-around, disclosing a considerable compartment filled with sealed tins of tobacco, and a varied assortment of pipes. Filling a "briar" from a half-empty tin, he adjusted the patent "Smoke Consumer," pushed a button in the desk which caused the room to be sprayed with an atomized disinfectant which deodorized the fumes and prevented external detection of the felonious act, "lit up," and took long, deep draughts at the pipe. The serene content of an anticipated joy realized, stole over his face; and, discreetly to himself, he murmured defiantly: "The skunks caught me napping with their 'Anti-coffee law all right, but I was 'Johnnie-on-the-spot' when they prohibited tobacco, and I prepared myself for life."

Then, with clear-headed precision, he proceeded to business.

Instructing his valet to make careful notations on a tablet to avoid mistakes, he dictated:

"As soon as you are through with that booze-prohibition officer, prepare a message in code for this white-livered rat who sold me this trick (pointing to the urn). Tell him to take back this synthetic 'Coffee Extract' he stung me with, and credit its cost on my account. I won't pay for it. Tell him to send me at once one gallon *genuine* centuple extract of Mocha coffee, if he has it—and be sure to emphasize the *'genuine.'* If he hasn't the Mocha, tell him to get it as soon as possible; and, in the meantime, he shall send me one gill of any *genuine* (emphasize that *'genuine'*) coffee extract that he has. If he claims that he can't get the *genuine* through—as he probably will, for the crook is without doubt trying to 'bull the market'—tell him that I know positively that he is in with the opium-smuggling gang, that I know he can get the *genuine* coffee through just as they get *genuine* dope through, if he wants to; and that I will set the federal officers after him, and see to it that he gets life, if he is gay with me. Get the fact into the numskull's head, if you can, that he is dealing with Algernon Sidney St. Johnstone and not with one of the common people!"

With the dictation completed, Algernon suddenly became conscious of the fact that his system was demanding sustenance after his prolonged fast—in plain words, that he was vulgarly hungry—and so, having no time to partake of a regulation repast in the regulation manner, he pulled a gold case from his pocket, extracted a couple of tablets stamped: "Equivalent—One Full Meal," and hastily swallowed them.

Refreshed and invigorated by the nourishment so seriously needed, he proceeded to quick, effective action.

Pressing a button in his desk marked: "P.T.", an apparently ornamental filigree upon the ceiling dropped and snapped into the form of a suspended package transporter. Pushing a button on the receiver of the transporter numbered: "7826," a book, stamped with that number, promptly slid into his hand. The book proved to be a Laird and Lee's "Common School Edition" of "Webster's New Standard Dictionary" of the copyright date of "1912." He had chosen this as his and Esmeralda's private code-book, because he believed that the two copies possessed by them were all that remained in existence.

Slipping the book into his "Lightning Code-de-cipherer," he touched the numbered keys of its keyboard in the numerical combination given him by Esmeralda in her message, and the delicate wire arms quickly turned the pages and picked out for him the words: "Parker," "pass," "mount," and "McKinley." Remembering the "tiger" she had spoken of, he was puzzled for a moment by the manifest absurdity of looking for such an animal in the eternal snows of the Alaskan mountains!—and then he thought of the "Electro-visional" dial.

Turning to a globe contained in a complicated mechanism behind him, he picked two fine needle-points out of a holder, pressed one through its gelatine surface at "Mt. McKinley" and the other into "New York City." Giving the globe a single revolution, the indicator of the "Lightning Air-line Distance Calculator" promptly registered "3668 miles, 264 feet, 00 inches." Throwing the clutch of his "Electro-visional" into the "3670 mile" circuit, he picked out, with the aid of his microscope, the faint outline of the twin heads of "Denali and his Wife" barely within the "W.N.W." sector of the white circle that appeared on the dial. Inserting a needle-point barely beyond and to the left of the higher of the two mountain peaks, he took a delicate copper wire and connected this with "Local." Throwing the clutch back into "Local," the faint outline of the mountain disappeared, and a vivid picture of "Parker Pass" replaced it. But, even with his microscope, he could find nothing of his Esmeralda! Finally, in the lower end, he picked out a faint blurr of fine lines—flashing, disappearing, and flashing again—and, remembering that she had her "Electric Spark-screen Broadcaster" working at the time of her mishap, he reasoned that the thing was probably operating even yet, and that, therefore, he had at last definitely located his beloved.

FOR a moment the incongruous "tiger" tormented him, but he figured that she, in her evident excitement, had probably distorted or incorrectly expressed a glimpse at a mountain goat, or something of that sort.

Having successfully solved the problem of his Esmeralda's whereabouts, his next move was to apply to the "National Aerial-control Bureau" in Washington for a special permit, with "right-of-way," for an "Electric-flash" transit to Mt. McKinley, Alaska, between the 20,000 and 22,000 feet

strata, with return privilege "under his own power," starting "three minutes from moment of application." He also demanded photographed copies of permit and necessary orders.

"Permit, etc., scarcely needed at that altitude, especially as only one other 'Electric-flash' machine yet in existence; and that—," the clerk attempted to expostulate.

But Algernon peremptorily shut off the sluggish clerk's remonstrances.

"Cut advice-stunt about what I need," he broke in, "and get busy with what I want, or I'll call the chief. Do you realize whom you are dealing with? Now get busy, and SNAP TO IT!"

And, seeing in his "Electro-visional" that the magic of his name had produced instant "snapping-to-it" activities on the part of the clerk, he connected up his "Radio Electro-photographing" camera, and turned his attention to the last necessary detail to be arranged before his departure.

Slipping the plug of his "Radiophone" into the "E V.R." wavelength socket, he snapped the framework of its head phone and microphone combination over his face, and called softly: "Charlie Grant there?"

"Yep! This is Charlie speaking," his broker's voice replied, with terse economy of words.

Recognizing the voice, Algernon's next question was to the point.

"Anything doing on 'change?" he asked.

"Quiet as a 'chink' funeral now—just over flurry," his broker answered. "Two weeks ago rumor broadcast President sore about inefficiency of old Jim Macdonald—chief 'National Law-enforcement Bureau'—and 'National Bootlegger Consolidated' dropped ten points. Two days later Jim resigned, and N.B.C. lost twenty points. Next day President appointed Wheeler Wayne (who has never taken a drink in his life, where anybody could catch him at it), and 'N.B.C.' hit the skids for fifty points. Wayne's first move was to order your local bootlegger, Lippincott, raided and jailed, and the bottom fell clear out of 'N.B.C.' For nearly a whole day the Pit was stormed by a mob of the faint-hearted in a panic, begging anybody and everybody to take their 'Bootlegger' stock off their hands for anything they would give. I had inside tip that officers only found one quart in Lippincott's possession, so I did the charitable act (in your name) by relieving them of ten millions. Would have plunged deeper but afraid of complicating other deals. Two days later old Jim Macdonald and Bill Jenkins (head National Bootlegger Trust) settled squabble about Jim's demand for more dough; and the 'evidence' against Lippincott' was 'lost,' he was turned loose, and 'N.B.C.' floated back to normal. With care can unload and clean up about two millions, or can hang on—just as you say."

Turning to one side Algernon slipped a sheet of paper into, and switched the connection into what looked like a complicated development of the original typewriter; and then replied to his broker.

"You did fine, Charlie," he said. "Don't forget that you double your regular percentage when I am 'off the reservation'." Then, after a momentary hesitation to consider, he continued: "Tell bookkeeper to read statement into private radiophone at once, as I already have 'Radioelectrodictaphonotypograph' connected. Unload 'Bootlegger' stock as soon as you can without sacrificing profits that you are sure of, as I don't want my name publicly mixed in the business. And now listen, Charlie! I'm going away for a bit—probably for only a day or so, if nothing unforeseen happens. If you want me, call on regular 'E.V.R.,' but use 'long distance.' If you think it best to look for me, come over here and use my 'Electro-visional.' Will probably be in neighborhood of Mt. McKinlay in 3670-mile circuit and 'W.N.W.' sector. Good-bye!"

As Algernon ceased speaking, the silvery "ting" of a little bell on his "Radio Electro-photographing" camera notified him of the receipt of the photographed copies of his government permit and the correlating orders issued; while the discontinuance of the rapid "tick-tick" of his "Radioelectrodictaphonotypograph" told him that his broker's bookkeeper had completed his statement. From the former he extracted two slips of paper, and found them correct. But he studied the sheet of paper that he took from the latter for a moment, in a perplexed confusion at the phonetic simplicity of the spelling of the words. Then, reflecting that this mathematically-exact translation of oral sound would eventually assist in the elimination of the orthographic absurdities which always had burdened a language that is too complex at its best, he shoved this into an inside pocket along with the other two; and, pressing a button in the side-wall which opened a small door leading into a "one-person" sized compartment in a perpendicular pneumatic tube, he stepped within, and was shot to the roof.

Going to the largest of the hangars that dotted the roof, he pushed a button—and the door flew open, and a glistening "Electro re-tempered" copper monstrosity trundled out on a truck. The best that could be said for its shape was that it looked like a gigantic beer bottle. Stepping to the mouth of the "bottle," he pressed a button, and the stopper flew out with a loud report. Entering the narrow passage-way through the "neck," he switched on the electric lights and found himself in a spacious, tempered-glass compartment "blown-into" the framework in such a way as to practically surround itself with a vacuum space, and with the few necessary contacts elaborately insulated. A yank at a lever started an "Oxygen Supply" apparatus (already set at "One Person") going, and a touched button caused the "stopper" to fly back into place with another loud report.

From a mahogany wardrobe he took a bear-skin fur suit which was lined with finely-woven copper-wire cloth. Stepping into this, he set the "Interior Heat Regulator" at 65° Fahrenheit, adjusted the connection with the concealed storage battery, and pushed the spring which caused the suit to "snap-to" and fasten.

A shifted lever on a large keyboard set the "Interior Temperature Regulator" of the compartment going at a "65°" adjustment, another started the "Electro-visional," a third connected a small dynamo with the "Atomic-energy Reservoir" and started it supplying the comparatively trifling electrical needs, a fourth completed a similar direct connection with the rest of the mechanism and a

fifth released an electron of atomic-energy from the basic atom into the "Atomic-energy Reservoir" to maintain the parity of the supply.

Seating himself in an upholstered chair, he prepared for quick and decisive action. With one hand he pulled down the "Helicopter" lever, and, through the "Electro-visional," saw a huge, "Electro re-tempered" steel solid corkscrew-like device with a "screw" fifty feet deep in the groove, shoot into the air. Setting its regulator at "Half-speed," he touched a button and began to ascend slowly. When the "Altitude Indicator" registered "1000 Feet," he turned "full speed" into the helicopter-device and finished with a rush. At "20,000 Feet" he shut the helicopter down to "Maintenance of Altitude" speed, pulled a lever which released a huge propeller from its underneath pocket, and set it going at full speed "In Reverse," yanked the lever back at "21,500 Feet," and came to a full stop at "22,000 Feet" with the underneath propeller roaring noisily but harmlessly in its enclosed pocket.

Turning to the "Electro-visional" dial, he threw the clutch into the "3670 Mile" circuit, picked out the faint outline of the higher peak of Mt. McKinley, and stuck a needle-point into it. This he connected, by means of a delicate copper wire, with "Local"—which he knew was permanently connected in a similar manner with the gigantic dynamo at Niagara Falls—set the regulator of his "Electric-flash" at ".017 Seconds," pushed a button which shut off the helicopter, yanked back the lever which collapsed it into its overhead pocket; and, as he heard the heavy copper plates bang shut over all, he closed his eyes and touched the final button.

Then, in spite of all precautions, he was nearly blinded by the vivid lightning that enveloped the entire machine; and, notwithstanding the intricate system of "Shock Absorbers," he thought for a moment that he had been yanked in two as he was shot through space at the rate of 186,000 miles per second. And then, as if it was a reflex of the original yank, came the answering "tug" of the rear propeller as it automatically shot out of its pocket going full speed "In Reverse."

Opening his eyes with nerves taut for the crucial moment, he reached for the "Plane-wing" lever with one hand, and glanced at the "Speedometer" for the indication of the moment when it would be safe, and necessary, that he throw-out his biplane-wings of "Electro re-tempered" steel with a "spread" of one hundred and fifty feet.

Then, suddenly, the dual peaks of Mt. McKinley appeared directly in front of his "Electro-visional"; and, throwing caution to the winds, he yanked-down the "Plane-wing" lever, and heard the rattle and bang of the adjustments, and saw that the apparatus was withstanding a severer test than it was guaranteed for.

And then, even as he looked, the higher peak of the mountain appeared directly underneath; and, with instinctive recklessness, he gave the "Steering-lever" a yank which turned the machine "on-its' tail" at a sharp right-angle—missing a spill by a fraction of a hair—jerked another lever which tipped it into a practically-perpendicular "nose-dive," snapped that lever back again and righted himself, shoved-down the helicopter lever and touched the button which shot that corkscrew-like device aloft going at "Maintenance-of-Altitude" speed, yanked back the lever of the rear propeller which brought that instrument rattling back into its pocket where it roared in a harmless fury—and, with a jolt, came to a full stop; while beads of perspiration broke out on his forehead at his narrow escape, though a triumphant smile played about his lips as he thought of the sensation he would create in the next "Aerial Olympic," and his brain registered the mental note for future reference that it was his rear propeller going full speed "in reverse," that had held him and saved a spill on that acute, right-angle turn.

A GLANCE at his 'Electro-visional' showed that he was parallel with, and but a few feet away from, the top of the cliff above Parker Pass; and the first thing he saw was Esmeralda's biplane with its nose buried in a cake of ice. But its "Spark-screen Broadcaster" was humming merrily, and its rear "spot-light" revealed the details below, behind the "screen," in vivid detail.

Directly below the wrecked biplane, he quickly discovered his beloved Esmeralda standing waist-deep in the snow, with one arm raised as if to repel an expected attack, and still clad in the "picture-frame" costume which had caused their row. A glimpse at his "Exterior Temperature" indicator which registered "60° below zero," caused a fleeting fear of dire results from her bare-skinned exposure; but a reflection on the proven ability of the "female of the species" for facing wintry blasts in scanty attire, quickly chased his fears away, and he turned his attention to the direction indicated by her upraised, protesting arm.

And then—TO AN ABSOLUTE CERTAINTY, HE DISCOVERED THE FIGURE OF A MONSTROUS ROYAL BENGAL TIGER ON THE LEDGE ABOVE HER, WHICH WAS POISED IN THE ATTITUDE FOR ITS FINAL, FATAL SPRING UPON ITS PREY!

With frantic energy he "yanked-down" the "Landing" lever of the helicopter, grabbed the parachute, pushed the button which "unstoppered" the "bottle," and jumped—making the descent in "record" time, but landing so violently that he was buried in the snow, because, in his panic, he forgot to pull the string of his parachute until he was two-thirds down.

A momentary fear of being smothered in the snow, was followed by a spasm of skilled "football" tactics in "bucking" and squirming his way out; and, floundering frantically towards his beloved, he yelled at the top of his voice:

"Esmeralda! My darling! I am here!"

With the stately grace of a real "blue-blooded" aristocrat, the royal maiden turned majestically, and froze the heart within him with a frigid glare—such as only those with four centuries of unmixed "Mayflower" blood in their veins, can hope to aspire to.

"Your presence is sufficiently perceptible," she said in measured tones, "to preclude any necessity for such boisterous conduct. In the future, when we are abroad together, it will please me greatly if you bring your manners along with you, instead of leaving them at home. Also, I would remind you

that you have been fifteen whole minutes in answering my 'call'."

And then Nature claimed its own, and, womanlike, Esmeralda fell fainting into her lover's arms, murmuring as she lost consciousness: "Algy! My darling! My savior!"

For a brief moment Algernon pressed the inanimate form of his sweetheart to his manly breast, and showered a storm of passionate kisses upon a wisp of her hair as it floated in the breeze against his nose—and then he bethought him of that poised tiger on the ledge above!

Quickly he pulled his "Electric Automatic," aimed carefully at the beast's heart, and pressed the button. A black spot showed on the spot he had aimed at, and the air became filled with the pungent odor of burned hair—but the brute above remained in an apparently statuesque unconsciousness of the assault!

Nonplussed and dumfounded, Algernon pulled out his collapsible opera glasses, adjusted them, and studied the perplexing phenomenon closely. Then at last a ray of light penetrated his brain as the memory of a forgotten incident recurred to him, and he mentally connected this incident with the enigma above. Realizing the simple truth at last, he burst into uproarious laughter and yelled at the top of his voice in unrestrained glee—until the dormant echoes of the "Great Silent North" awakened from their age-old slumbers, and an avalanche of snow was loosened from its mooring on the opposite mountain-side.

Algernon had remembered that, some six months before, a Royal Bengal tiger had escaped from "Barnum and Bailey's" circus, while it was showing at Des Moines, Iowa; and that the efforts to recapture it, had only resulted in driving it into the northern wilderness. This, then, was that tiger! Happening in the neighborhood and naturally in a famished condition, a scent of Esmeralda had reached it and had aroused its savage instincts. But, as it stole out onto the ledge for the final, fatal spring, being unused to northern temperatures, the 60° below zero gale had frozen it dead in its tracks!

And then, just as all his troubles and worries seemed to have vanished, the "whir" of an airplane engine turned his eyes upwards; and, directly overhead, he saw a "Purity League" biplane circling for a landing.

With frantic energy he shook the unconscious form that reposed in his arms, and shouted into her ear at the top of his voice:

"Esmeralda! Darling! Wake up! That 'Purity League' sleuth has found us! He is sure to be one of those 'ex-convict' crooks working on a percentage for what he can get, and, if he catches you out here in public in that costume, he will rush you into one of his 'kangaroo' courts, and 'railroad' you into jail! Wake up! Es——"

THE sharp angle of Mary Jane's bony knee-cap, adeptly from practice and forcibly by instinct, projected into my left-hand lower short-ribs, finally aroused me; and, as if it were an echo of my dream, I distinctly heard the dulcet tones of her gentle voice in my ear, shouting:

"Wake up you, John Henry! You're snoring like a horse! Haven't I told you times enough never to sleep on your back? Turn over on your right side! And you've been talking something awful in your sleep, too! Who's this 'darling Esmeralda,' anyway? If I catch her monkeying with you, I'll scratch her eyes out! None of your lies, now! There wasn't any 'Esmeralda' in that pictureplay we saw tonight, so you better not try to spring anything of that sort on me! Why don't you——"

But, peeved by my rude awakening, and not feeling well anyway, I stopped the verbal torrent by breaking in.

"If you can't be satisfied with nagging at me about nothing all day, but you must go waking me up in the middle of the night to keep it up, I'll move into the spare room, and let you sleep by yourself," I threatened. "Besides," I added, "you've got me crowded clear off onto the bedrail, and nobody could sleep like that, anyway."

Mary Jane, my wife, was contrite and very humble at once, which shows that I know how to manage her properly when I really want to.

"I didn't wake you up to nag at you, John," she said penitently, as she snuggled up to me and reached out her hand to caress me. "But that stuff of yours down in the cellar has been popping-off to beat the band for an hour, and I just know that you'll lose the whole batch if you don't tend to it right away. I told you that you were bottling it too soon, but it never does any good for me to say anything. You'll just——"

"Well, if it's going to 'pop,' it's going to and that's all there is to it," I broke in petulantly. "If you think you know so much more about it than I do, you can just make the next batch yourself and see if you can do any better. Now move over and give me enough of the bed to lie comfortably in, and give me a chance to get a little sleep."

And, as my "better-half" squirmed back to her own side of the bed, I turned over upon my right side and slept fairly well for the rest of the night.

THE END.

The ULTRA-ELIXIR of YOUTH

By A. Hyatt Verrill

Author of "The Man Who Could Vanish," "Through the Crater's Rim," etc.

"I will shrink to an infant in the clothes I have on, in the make-shift, cut-down things I am wearing. My brain is still clear and filled with the thoughts of a grown man—yes, even the scientific side of my intellect is unchanged. . . . I have sought perpetual youth and I have found it, but such a youth! Youth reduced to the nth degree.

FROM time immemorial mankind has sought for the secret of eternal youth, for some means to prevent the ravages of age. In many lands and in many ways men bavs dsvoted their lives to endeavoring to make this dream of perpetual youth a reality. They havs concocted weird mixtures or elixirs, they have wrought spells and practiced magic, they have searched in strange lands for a fabulous life-giving fountain, and they have been jeered at, ridiculed, scoffed at for their pains. Hence it will coms as a most amazing surprise to the world to learn tbat one man actually accomplishsd his purpose, and discovered the secret which had so eagerly and vainly been sought for during countless centuriss. Moreover, his discovery was mads recently—within tbe past three years in fact, whils more astonishing yet, the secret has been forever lost to the world.

Now that the man responsihle for the results can never repeat his performance, and has left no detailed explanation of the means whereby the conditions were brought about, there is no reason why an account of the whols matter should not be published.

Undoubtedly many of my rsadsrs will recollect ths excitement caused by the inexplicable disappearance of Doctor Elias Henderson, the well known and prominent biologist of McCracken College. Probably, too, it will also he remembered that, almost coincidentally with his disappearance, a number of the University studente vanished, as well as two private citizens and a physician.

As a great many more or less conflicting accounts were published in the newspapsrs o' 'he time, and as many of these were far from accurate, it may bs wsll to givs a brief resumé of the events, for, strange as it may seem, ths disappearance, which for a time supplied headline material for the press, had a very direct bearing upon the discovery of perpetual youth, or rather, I might say, the discovery had a direct bearing upon the disappearancss.

MODERN science is deeply immersed in experiments to bring forth the Elixir of Youth Glandular knowledge is progressing rapidly and the time will come, so our scientists assure us, when man can stay reasonably young for several hundred years Our author, in his deft and original manner, images a gas which will prove the Elixir of Life That his experiments exceeded his wildest expectations and proved an Ultra-Elixir and a disaster to all concerned, only makes the story more complicated and absorbing. It is a picturesque tale of the biological possibilities in the field of modern science.

The facts in the case were simple and were well astablished. Five studsnts, two private citizens, an instructor and a female doctor, together witb Doctor Henderson, completely vanished without any apparent or determinable reason. The investigations which followed, and which oddly enough were only instituted after ths disappearance of Doctor Henderson, revealed the fact that the ten missing persons had been absent from their accustomed haunts for soms days before they had heen missed. It was also established that all had heen very friendly and that they had frequently met, apparently in secret, and that the other nine had made periodical visits to Dr. Henderson's laboratory. This, however, was not strange, as it was wsll known that all, with the excsption of the two citizens—ons a merchant and the other a banker—bad been taking courses in biology from Dr. Henderson. It was tberefore assumed that the meetings refsrred to were in the nature of purely scientific affairs, although why the unscientific merchant and banker should have been present, or should have visited Dr. Henderson's laboratory, was a mystery.

Had Dr. Henderson not vanished, it is highly probable that he would havs been suspected of making away with the othsrs, but as he, too, had disappeared, any such thsory was of course discarded. It was also determined that not one of the ten had any apparent reason for vanishing; not one was in debt or involved in any scandal, and no ons could advance any reasonable theory for any person wishing to murder them, for with tbe exception of the banker and merchant, all were persons of very moderate means, while the banker and merchant were known never to carry large sums of money on thsir persons, but conducted practically all of their business by means of chsacks.

FINALLY, and making the case even more baffling, the garments of all the ten were found intact though carelessly tossed aside. The students' clothes were found in their several rooms, the garments of the merchant and banker were discovered in their private offices, the lady physician's garments were in her office, and Doctor Henderson's street clothes were found in a corner of his laboratory. No one who was questioned, and hundreds of persons were examined, could definitely swear as to when they had last seen the missing persons, and not one witness could be located who was positive as to the last person seen with any of tbe missing people. Doctor Henderson was a rather retiring, secretive man, and frequently slept on a cot in his laboratory, and as no one really knew when he had vanished, no one could remember having seen any stranger or other person with him when he was last sesn. Ths janitor of the building, after striving his best to revisualize the events of the past few weeks, stated that he was under the impression that he had seen a young man —a youth of fifteen or thereabouts, entering and leaving the doctor's laboratory on several occasions, but he could not be sure whether or not he had sver seen the sciantist in the young fellow's company. Tha servant at the home of Dr. Elvira Flagg, also was hazy in her memory, although she, too, declared that she had noticed a young man, and a girl of about the same age, who frequently entered and left tbe office; but whether in company with Dr. Flagg she was not sure. As the office hoys of both the merchant and banker also remembered seeing a youth make frequent visits to their employers ths police at once began a ssarch for a stripling answering the rather vague descriptions of the several witnesses. No trace of such a person could be found, but, to their surprise and confusion, the garments of such a young fellow were found in a closet

in Dr. Henderson's room, in the suite occupied by the merchant, and in the hotel apartments of the banker. Nothing further was discovered, and the entire affair was given up as an unsolvable mystery. During the investigation however, evidences were discovered which tended to show that several other and hitherto unsuspected crimes had been committed by the missing parties. Just what these were, the authorities have never disclosed, but according to persistent rumor they were in the nature of infantile crimes. Gossip had it that persons had been questioned who insisted that they had heard the cries of infants issuing from Dr. Henderson's laboratory, that no children had ever come forth, and that it was their belief that the scientist and his friends had sacrificed the infants in some experiments or had actually subjected them to vivisection. Hence, in the minds of many persons, the missing ten had bad good reason to disappear, being, so these worthies argued, fugitives from justice and from the wrath of the public. Indeed, rumor and gossip soon linked the names of the ten as members of some secret and horrible cult with human sacrifices and what not. And the action of the police in hushing up the matter and abandoning all efforts to solve the mystery, only confirmed these ugly rumors in the minds of many.

But like all other mysteries and scandals, the matter soon lost interest, and within a twelvemonth was practically forgotten. Thus matters stood when I received a letter from the regents of McCracken College in which I was offered the position of Professor of Biology left vacant by the disappearance of Dr. Henderson.

Ordinarily, I think, I would have declined, for I had an excellent position, and while the salary at McCracken was larger than that which I was receiving, yet it did not offer the scope in research work which I desired, and as I had a fairly good income of my own, the salary was not so important. But remembering the mystery which had surrounded the former biologist's disappearance, and having been well acquainted with Dr. Henderson when we were students together at Belmore, the offer somehow appealed to me, because for some inexplicable reason, I had a feeling that I might be able to solve the mystery.

I therefore accepted the position, and, a few weeks later, found myself in possession of Dr. Henderson's laboratory, instruments, notes and apparatus. I had in fact almost literally stepped into his shoes. I am not superstitious and am not nervous, and I have never been subject to hallucinations or to any sensations for which I cannot account upon scientific or medical grounds. But from the moment when I took charge of Dr. Henderson's work and laboratory I had the strange and wholly unaccountable feeling of being in the presence of others, of being constantly watched. At times this sensation became almost unbearable. Several times I found myself involuntarily stepping aside as if to avoid stepping upon or bumping into someone, although the room was empty, and once or twice I actually started and shivered as I seemed to feel hands touching my limbs or body. It was, of course, ridiculous. I was no believer in ghosts or spirits, and I decided that it was merely a psychological matter, a reaction of my nervous system to the atmosphere of mystery which pervaded the place. Hence, I laughed at my own sensations, called upon my superior mentality to govern my subjective nerves, and proceeded with my work, but throughout my stay in the laboratory—which was, I must confess, of short duration—I never overcame the decidedly uncomfortable feelings which I have mentioned.

My first act upon taking possession of Dr. Henderson's apparatus and laboratory was to combine a thorough search of the premises with an equally thorough housecleaning. Dr. Henderson, like so many scientific men, was unfortunately far from orderly or neat. Instruments, books, papers, apparatus, formulae and chemicals had been left in disarray, evidently having been left wherever the biologist had used them last; drawers and cupboards were piled full of a hodge-podge of odds and ends; soiled laboratory aprons, old shoes and dirty towels were tucked away here and there, and as I cleared up the place I wondered how the police could have made a thorough search of the room under the existing conditions. And it was soon evident that they had not. Among a pile of old magazines, discarded litmus paper, and other rubbish in a closet I came upon a find which, temporarily at least, completely knocked me out. This was in fact a bundle of infant's garments, rather mussed and soiled and evidently worn. For a space I sat, gazing at the tiny garments with a strange mingling of horror, dismay, amazement and wonder. Had the ugly rumors been true after all? Had my old classmate gone mad with his researches and had he actually sacrificed an innocent child on the altar of science? If not why should he have been in possession of these garments? Where were the remains of the child itself? And what had been his relations with the others who had vanished? What terrible things had occurred to cause them all to disappear? Surely, I thought, no matter what events had led up to the culminating destruction of the child, Dr. Henderson must have made notes of it somewhere. Whatever he had done had beyond doubt been done in a mistaken, a warped idea that it was in the cause of science; that the means would be justified by the end; and hence he would have been certain to have recorded his theories, or the results of his experiments. To solve the mystery I must find such notes, and, abandoning all other work, I sought diligently and feverishly for some note book, some pad or even some scrap of paper which might explain everything.

Of course, I realized, there was a possibility, even a strong chance that he had destroyed the notes or had taken them with him. The very fact that he had disappeared, together with the others who I no longer doubted had been implicated with him in the crime, proved that they realized the enormity of their deeds and hence would have destroyed any evidence or records. But the fact that the garments had been left so carelessly about caused me to think that more conclusive proofs might also have been overlooked. Moreover, Dr. Henderson, as I had discovered already, was extremely absent-minded in ordinary matters, and he also had had a habit of jotting down notes on anything and everything that came to hand. Hence, I reasoned, even if he or the

others had made away with the most important evidences, there was more than an even chance that they had overlooked or had completely forgotten stray notes which would throw light on the matter.

It was slow work, studying the almost hieroglyphic-like writing of my predecessor and examining every scrap of paper, even the margins of leaves in books and pamphlets, for what I sought. And for hours my efforts were fruitless. At last, when I had almost abandoned hope, I opened a small drawer in a littered and dust-covered desk and made a second and most surprising discovery. The drawer was filled with the strangest collection of objects which could possibly be imagined in the laboratory of a scientist. There were infants' garments, bottles of prepared foods, a nursing bottle, safety pins, a rattle, various other objects requisite to the welfare of small children, and, what seemed to me most important of all, a square, rather thick book which, immediately I opened it I discovered was a diary. Here, if anywhere, I felt, lay the solution of the mysteries. The first entry was dated over three years back, but a short perusal of the pages proved that the diary had not been kept regularly or consecutively, and that for long periods, no dates had been entered. It was, in fact, more of a journal or note book than a diary, and almost feverishly I turned the pages, glancing only at the occasional dates, and to my delight found that the last dated entry was September 14th, of the current year, only a few days before the disappearance of Dr. Henderson had been made known. Beyond question, then, there would be references to the mysterious events, and turning back the pages, I set myself to the task of reading the volume page by page.

AND as I did so I became more and more astounded at what I found, for the indisputable evidence of Dr. Henderson's writing proved that the vanished biologist, whose whole life had been devoted to science and proven facts, had believed in the wholly unscientific and preposterous dream of perpetual youth.

"I see no scientific reason why organic matter should deteriorate with age," he had written in one entry. "Age, in animals or plants, is merely the decay of certain tissues or cells brought about by various causes, most of which are unnatural, artificial or due to the abuse of nature's laws. I have talked with E. on the subject, and she agrees with me. If we admit Einstein's theory of relativity then age is merely relative—in the universal scheme of things the infant is as old as the senile centenarian or vice-versa. Biologically there is no such thing as old age. Growth, yes; the building up of tissues by cells, yes; but the healthy, normal cell of the aged plant or animal is indistinguishable from the corresponding cell of the new-born infant or the seedling plant. Scientifically endless youth or the arresting of cellular decay may be impossible, but so many known facts refute scientific possibilities that I am beginning to lose faith in scientific laws."

A little later I came upon the following: "I have cautiously sounded my class by dwelling lightly upon the matter of arresting decay and producing so-called perpetual youth. I judge several of the young men were intensely interested as, after the lecture, they remained and plied me with many questions. The subject opens up endless vistas. If the breaking down of cellular tissues were possible, death could be averted, except by accident, and practical immortality could be achieved. And what tremendous accomplishments might be achieved by a scientist, an artist, any intellectual man, if he was assured of a virile, healthy existence for hundreds of years; if for a century or more he retained the energy, the brain power, the physical and organic status of the prime of life.

"I believe this might be accomplished. E. (I had already assumed that Dr. Elvira Flagg was the E. referred to) is as greatly interested in the subject as myself. In her practice she has opportunities to study living beings in all stages of cellular decay or age, and with physical and mental powers breaking down through various causes. Her observations are as valuable to me as are my biological experiments to her. Several of my young men are also vastly interested and we often discuss the matter together. Perhaps the time has not yet arrived when man can choose the age or physical state in which he elects to remain, but some day it will be as ordinary an affair as to select one's food or method of conveyance."

For several pages after this last entry Dr. Henderson's diary omitted all reference to the subject, and I began to think that his observations had been wholly theoretical, and that he had not seriously considered the matter. But in this I was grossly mistaken, for once again the subject was the sole topic of the notes.

"I believe that we are on the way to solving the problem of arresting the deterioration of organic matter when caused by the lapse of time," he had written. "A regrettable accident has indicated the path we should follow. Several weeks ago the huge airship *Colossus* was destroyed by an explosion when passing over the village of Emerson. One of my young men who resides in the vicinity of Emerson mentioned a most curious and interesting phenomenon which has occurred where the accident took place. The health of the residents has greatly improved; several of the aged inmates of the County Home have recovered full use of their limbs and eyesight, and some ancient and dying trees have shown unusual and most astonishing growth—putting out new shoots and fresh leaves. I have visited Emerson in company with E. and have verified all these statements. Vegetation is far more luxuriant in the area about the village than elsewhere, and E. personally interviewed and examined a number of persons, and she assures me that there are indisputable proofs of marked rejuvenation. We believe that the QW gas with which the airship was inflated was the direct cause of these interesting phenomena. As workers in the laboratory where this gas is manufactured have exhibited no signs of similar effects, we can only assume that the explosion, which has so far been inexplicable, altered the gas in such a way as to produce some chemical compound which has the power to arrest the ravages of age and to cause rejuvenation in organisms. Unfortunately the composition of QW is a closely guarded secret, and the gas is not available for experimental pur-

poses. Could we only obtain a small amount of the gas we might make astounding discoveries."

I was now as deeply interested in Dr. Henderson's records as he had been in his visionary dream of perpetual youth. The destruction of the *Colossus* was still fresh in my mind; it had been a nation-wide sensation, for the explosion, the cause of which had never been found, had utterly destroyed the entire crew of the immense craft. Neither could I doubt the truth of Dr. Henderson's statements regarding the conditions which had followed the disaster. But, I reasoned, this might have been due to perfectly normal and easily explained causes which the biologist in his enthusiasm had overlooked. Was it not quite possible that the gas, or the compounds arising from its explosion, had acted as a fertilizer and had thus caused a sudden spurt of vegetable growth about Emerson? And was it not equally possible, and even reasonable, to suppose that the disaster, the excitement attendant upon it, and the shock of the explosion had caused a nervous exhilaration or had acted as a stimulant to the inhabitants, especially to the aged members of the community, which would, temporarily, give them new vigor and a false rejuvenation? Yes, unquestionably such was the case, for, I reasoned, had the effects been lasting, had there been any marked and unusual results from the explosion of the airship, the press would most certainly have gotten hold of it.

SUCH thoughts raced through my brain as I perused the succeeding pages of my predecessor's journal, until once again, I found myself fascinated by the record.

"E. has solved one of the obstacles," it began. "Among her patients is a Mr. Burke, a wealthy merchant who is under a deep obligation to her. She has mentioned her desire to secure some QW gas for an experiment of great medical and scientific value and he has assured her that through political friends he can secure some. If we obtain this I shall endeavor to reproduce on a small scale such an explosion as occurred at Emerson, subjecting aged tissues to the resultant gases. The difficulty will be to obtain the same effects. QW is theoretically non-explosive, and I am now devoting all my spare time to solving the problem of why the *Colossus* exploded. In this work I have the invaluable assistance of Montross, one of my students who has shown unusual ability in chemical research work and received his degree in that science last spring."

Evidently Dr. Henderson's problems occupied far too much of his time to permit him to make regular entries, or else nothing important enough to transcribe occurred, for the next entry in the journal was dated nearly two weeks after the foregoing, and, as was so often the case, made no reference to what had occurred in the interim.

"There is now no doubt in our minds that so-called age may be arrested," he wrote. "My experiment, 612A, has proved this. In a way, the explosion was rather disastrous, for it destroyed much valuable apparatus and quite seriously injured Montross. However, he is rapidly recovering and E. declares that the amazing rapidity with which his injured tissues are healing is due entirely to the effects of the unknown chemicals released by the breaking down of the QW gas. Evidently, too, the effects of these are incredibly rapid, for despite the fact that owing to the unexpected violence of the explosion having destroyed the apparatus designed to hold the resultant chemicals, the organisms I had in readiness have shown truly remarkable signs of rejuvenation. Indeed, E. and myself have felt the effects. We both have more vigor, greater vital force and greater clarity of thought than previously, and yet there must have been a most minute quantity of the chemicals produced by the explosion. Montross declares that now we have solved the problem of breaking down QW we can unquestionably produce the desired chemicals without resorting to such a roundabout and dangerous method.

"It is a great pity that science is so hampered by lack of funds. To secure the apparatus and chemicals required to carry on our experiments, and to perfect them, it will be necessary to secure large sums. Neither E., Montross nor myself possess sufficient money, and to solicit funds from the university or from others would be futile. We would be scoffed at if we divulged the purpose for which we require the money. I fear we will be forced to abandon further researches in this direction. What a pity, when the results might be of such incalculable benefit to mankind!"

Again there was a lapse, until under date of July 5th was the following: "Montross has paved the way for carrying on the experiments. His uncle, a Mr. Redfield, is a wealthy banker whose obsession has been a fear of becoming a helpless, decrepit old man. A few days ago he stated, in the presence of young Montross, that he would give a million if he could retain all his faculties until his death. This gave Montross an idea, and at the risk of being jeered at, he related what we had done and suggested that Redfield should finance our experiments. To his delight his uncle was intensely interested and expressed his willingness to do so on the condition that he might be a witness of our experiments. I have agreed to this, as had E. Her friend, Burke, has also been taken into our confidence, and five of my students have been enlisted in the cause. We have agreed that what we do must be kept to ourselves until we meet with success or failure, and as E. puts it, we have formed a little scientific secret society. We have no desire to let others know what we are doing or to let the press reporters get hold of the matter. Hence we meet more or less secretly or in my laboratory where we are safe from prying eyes or listening ears.

"Montross is entirely recovered and is working diligently at his chemical preparations. Burke, by the way, has been of inestimable aid, for he has managed to secure the formula for QW. Political graft after all has its advantages."

As I read on, I became more and more amazed, more and more fascinated by the revelations of this intimate journal of the missing biologist. Already much which had been mysterious had been cleared up. The bond which had linked Burke, the hard-headed merchant and political boss, Redfield the millionaire banker, Dr. Flagg the female physician, Montross the instructor in chemistry, the five students and Dr. Henderson, was explained. The rea-

son for the meetings of the ten was clear and, beyond question, all had seen fit to vanish for the same reason. I had little doubt now that even that reason would be divulged as I read on, and forgetting time, work and all else, I devoured the contents of the journal. But what I found exceeded my wildest dreams and fascinated, astounded, fairly trembling with excitement, I read the wholly incredible, yet indisputably true story of the most amazing events ever transcribed by human hands; a story which, omitting the dates and irrevelant entries, ran as follows:

"Montross has succeeded. He has separated over twenty hitherto unknown chemicals from the QW gas. Among these is an entirely new element which he has named Juvenum and which he believes holds the key to our success. Even if we fail, the discovery of this element will make him famous. Burke and Redfield are fairly crazy over the work. The latter has put his entire fortune at our disposal. E. has been untiring, and as soon as our labors are crowned with success or we are convinced of the futility of further investigations I shall make her my wife. If we succeed, the vista before us is too marvelous to realize; endless years of perpetual youth together; never to grow old, never to lose the freshness and beauty of her full womanhood, never to lose my vigor, my intellect, my enthusiasm! But we have all agreed not to keep the knowledge of our success from the world. We have argued at length on this. Burke and Redfield were at first all for retaining the secret. Burke saw a marvelous money-making opportunity in it, treating persons for fabulous sums—millionaires he stated would pay anything to retain their youth, while Redfield argued that if no one grew old the world would soon be overcrowded and dire results would follow. E., however, pointed out that even if we could prevent the ravages of time we might not and probably would not be able to prevent the ravages of diseases nor fatalities through accidents and that, youth being more impulsive and reckless than maturity, the percentage of accidents and disease would be greater, while many persons would not care to avail themselves of the treatment. Montross also pointed out that the benefits derived by scientists and other intellectuals being able to carry on indefinitely would more than offset any dangers of overpopulation, and that, unquestionably, these men with their discoveries would be able to solve any such problems which might arise. He himself, he stated, would devote his entire life to producing artificial foods, thus reducing the areas essential to growing crops and rendering more space available for industries and housing. For my own part, I declared that it would be extremely selfish to retain the secret, and that we would, I felt sure, be heartily sick of youth if we found ourselves still young while all our friends and acquaintances were aging and our associates through decades were to be yet unborn generations. We have also discussed the question of our discovery producing immortality. None of us believe this will be possible, and I do not think any of us believe it desirabe. Burke is a devout Roman Catholic; Redfield is a pillar of the Episcopal church; E. is very religious and a member of the Methodist church; Montross is an Episcopalian and while I profess no particular religion I am a firm believer in the omnipotence of the Creator and His wisdom. I believe, too, in a future existence of some sort, and neither the others nor myself would wish to forego the chances of such a state. Moreover, none of us, with the possible exception of some of my young and ultra-modern students, believe that man has the power to change the laws of Nature or to accomplish anything in opposition to the will of God. To prevent the visual ravages of time upon the system would, we all agree, be no violation of Nature's inexorable laws, whereas immortality would be in direct opposition to the entire scheme of things. To increase the span of life, and to retain the faculties of youth during that life, would be a blessing, but to live on forever would be a curse. . . .

"We have carried on very extensive tests with various organisms, both vegetable and animal. We find that, as Montross expected, the new element Juvenum is the active principle, but we have met with an unexpected obstacle. While the lower forms of life respond to the treatment and become rejuvenated, or do not age, yet they soon cease to function or die. What a calamity it would be if man, in his desire for youth, should be compelled to shorten his existence, to flit, like a butterfly, for a brief space and then die while in the possession of the youth he sought! Perhaps, after all, our lives as they are, are preferable; perhaps old age has its advantages. However, we feel that the trouble is not insurmountable, that by experimenting we can produce the desired effects without the unfortunate results. . . .

"WE have hit it! Purely by accident we—for I must give credit to my assistants, and especially to Burke who is the last man in the world one would expect to make a discovery — — purely by accident, I say, we have solved the problem. To while away the time, Burke brought a radio receiving set to the laboratory. One of the receptacles containing the organisms treated with Juvenum was close to the set, and whereas all other treated organisms died after a few days, those beside the radio set continued to live and thrive with remarkable vigor. Burke, oddly enough, was the first to notice it, and called our attention to it. Johnson, one of my students, is a radio enthusiast and possesses an intimate knowledge of the apparatus. He declared that the electro-magnetic waves, or the electrons from the tubes, must have been instrumental in producing the results, and we at once proceeded to experiment along these lines. Unquestionably Johnson was right. Organisms, both animal and vegetable, exposed to the vacuum tubes' action and treated with Juvenum become rejuvenated and thrive prodigiously, whereas others similarly treated, but kept from the tubes' influence, expire rapidly. The question now is, do the rejuvenated organisms retain their vigor and condition after a certain duration of exposure to the tubes or is the action of the radio energy essential in order for them to exist? . . .

"Perpetual youth is within our grasp! Once organisms are treated with Juvenum and subjected to the vacuum tubes' action, they retain their vigor and continue to live without aging. We now have

a number which for several weeks have remained unchanged, yet which, under normal conditions, would have died of old age long ago. We are now ready to test our methods upon higher forms of life. Tomorrow we shall treat rabbits and guinea pigs, some potted plants and some birds. Montross has an ancient toothless dog of which he is very fond, but which he must destroy very soon. He is to try the effect of our treatment upon the beast. E. has offered a parrot which has been for many years in her family and which shows evidences of extreme age. Johnson facetiously offered to steal a decrepit cab horse and bring the creature to the laboratory, while Burke declared the best subject would be our octogenarian state senator, and Redfield suggested that we try the treatment on the local trolley line. We are all so elated that such nonsense is forgivable, and we are all terribly in earnest and are under such a nerve strain that we must find an outlet for our feelings. That we are on the verge of proving the epochal discovery we have made, I am convinced, for microscopic examinations of the cells and tissues which I have prepared show undeniable proofs of marvelous rejuvenation and increased vigor and resistance. . . .

"We cannot believe our senses. Every experiment has been a tremendous success. Three days ago Montross's dog was a miserable half-blind, toothless thing and today he is frisking about like a puppy; he can see almost as well as ever and teeth are sprouting from his gums. E.'s ancient parrot is gay with the plumage of a young bird, he talks and chatters constantly, and climbs about like an acrobat. So marvelous were the results that Burke, Redfield, Johnson and several of the others insisted on taking the treatment despite my advice, for I fear there are possibilities which we did not foresee and which may not be altogether desirable. I had sought for means of retaining youth, but our discovery goes beyond that and restores youth. In all probability further researches and experiments will enable us to administer a treatment in such a manner that almost any desired condition of maturity may be attained and permanently fixed, but at present we cannot be sure how much of age will be wiped away and how much of youthfulness will be restored. Earnestly I pointed out to Burke and Redfield that it would be far from desirable or pleasant if, after taking a treatment, they should be transformed to beardless boys, irresponsible youngsters whom no one would recognize. But they were adamant. They argued that by taking a light treatment they could test out the powers of the Juvenum, that as they had made the experiments possible they should be entitled to be the first to test the effects of the discovery, and that they hadn't the slightest fear of its restoring too much of their past youth. Johnson and the others sided with them, and at last, realizing, I fear a bit selfishly, that some one had to be the first to take the test, I consented.

"But I insisted that only a very light, almost superficial, treatment should be given, and to this they consented. I have watched them carefully; E. has kept accurate records of their pulse, respiration and temperature, and we find that they already show distinct signs of slight rejuvenation. Johnson and the other young men show it the most markedly, but this is to be expected of course, as their systems are more responsive and less deterioration of cells and tissues renders the action of the treatment more rapid. . . .

"Everything is most satisfactory. Burke and Redfield look like men of forty, and declare they feel better than they have felt for years. Johnson has the fresh color and spirits of twenty, and his companions are in practically the same condition. Today, Montross took the treatment, and E. insists she will do so tomorrow. Of course, in that case, I can do no less than follow, and yet, somehow, I have a premonition that we have not yet learned all the powers or peculiarities of Juvenum, and that we have been over-hasty in submitting ourselves to the tests. . . .

"A terrible thing has happened. My worst fears have been confirmed. We have all taken the treatment and we are all in the same awful predicament.

"For several days the animals treated remained in the same state to which they had been altered by the treatment. Then, to my horror and amazement, I noticed that the dog and parrot were showing signs of growing constantly younger. The cur was acting more and more like a puppy; the parrot was losing its full plumage and was acquiring pin-feathers. I hurried to the apartments of Burke and Redfield and found both men in seclusion. Burke, who had been a stout, florid man of sixty had become unrecognizable as a young man of thirty,— slender, freckle faced and red-haired. Redfield's alteration was even worse. From the paunchy, gray-whiskered banker he had become transformed into a sallow-faced young man, and, catching a glimpse of myself in a mirror, I discovered that I, too, have lost ten years in appearance. Almost too distraught to express my fears I rushed madly to E.'s office. But instead of the woman I had expected to wed I found a beautiful girl who, outwardly at least, appeared no more than twenty years of age. She, however, did not share my fears. She was overjoyed at the recovery of her youthful beauty and she was elated at the change which had taken place in myself. In vain I tried to explain to her that if the rejuvenation process continued we would all be regarded as mere boys and girls; that already Burke and Redfield were afraid to appear before their employees.

"But she, perhaps because of her medical and anatomical knowledge, argued that my fears were groundless. We were, as I well knew, in full possession of all the knowledge and experience we had acquired during our lives. Regardless of physical appearances we were mature, experienced, and fully developed mentally, and, she added, unquestionably the banker and merchant, with their youthful frame and vigor, could accomplish far more than in their physically aged condition.

"AFTER a time I felt that perhaps she was right. But I still feared that the process of rejuvenation might continue, that no one could foretell when it would cease.

"The only thing to do was to devote all of our energies to finding a means to control the action of the Juvenum, and I summoned Montross and the

others, who had all leaped backwards for from ten to fifteen years. I explained my fears and the necessity of finding some means to check or control the action of our discovery.

"For a few days the effects of the treatment appeared to cease of their own accord, and no marked physical changes took place. Then, as if by magic, the rejuvenation process took hold once more, and in a few days Burke and Redfield had become scarcely more than youths. Johnson was a mere lad, while E. and myself, who had been the last to take the treatment and who had taken far less than the others, felt and looked like a youth and girl of eighteen. Burke and Redfield were beside themselves. They had important business to attend to, and already their absence from their offices was causing uneasiness. All seemed to look to me for a way out of their difficulties, and, without effect, I tried to make them see that they were the ones who had insisted when I had cautioned and that, moreover, I had shown my faith in submitting to the treatment.

"Realizing that no one would recognize the banker or the merchant, I suggested that they go to their offices, put their business in order, and then retire to their apartments until I had had an opportunity to carry on further tests of formulæ Montross and myself had worked out. . . .

"We are all lost. Nothing we can do will check the effect of the Juvenum. E. and myself are so changed that when, yesterday, we went to her office to secure some things she wanted, her housekeeper did not recognize us. We have all been obliged to purchase the garments of young people. And Burke and Redfield are worse off than any of the rest. Whether they received larger amounts of Juvenum than the others; whether, as I suspect, they surreptitiously treated themselves a second time, or whether the Juvenum acts more rapidly upon old persons, I do not know. But yesterday when, after repeated calls by phone, I got no reply and went to their apartments, I felt that I must be going mad. Burke had become a gawky boy of twelve and Redfield was unrecognizable as a lad of fifteen. Both were frenzied, both begged me to secure proper garments for them, and both were indescribably pitiful objects to behold—mere children with the brains, the intelligence, the knowledge, the thoughts of grown, experienced men.

"The only redeeming feature of the day was my marriage to E. We both felt that if we waited longer no minister would marry us, fearing we were under age, but our happiness we fear will be short lived We all know now what is to follow. We all know that we are past human help unless a miracle occurs. Ours is an agony almost beyond endurance. The poor rejuvenated dog which Montross, poor fellow, offered in the cause of science, has proven an object lesson to us, has brought home to us the terrible consequence of attempting to interfere with the plan of the Creator. The creature is now a toothless, purblind puppy, while the parrot is a fledgling, raucous-voiced and almost naked. Did ever human beings face a like fate? If we are to believe the evidences of our senses we are slowly, but all too rapidly, growing constantly younger. In a short time,—God knows when,—we will be squalling, helpless babies! Already Burke and Redfield are toddling about, supporting themselves by chairs and burbling unintelligible words. Surreptitiously and at night E. and I managed to kidnap them from their rooms and bring them here. They were then boys of eight. And by dint of threats, by argument and through their own agony of suspense, I have managed to gather all the others together here in my laboratory. All I say, but Montross, Johnson and two others are missing. What has become of them we do not know. Perhaps they have committed suicide, perhaps they have gone mad, perhaps they have rushed madly away seeking to escape the inexorable fate before them. . . .

"Such horror! I feel that I must go mad. Were it not for E. I would make away with myself. I know now what has become of Montross, Johnson and the others. I have found a note from Montross stating that he and Johnson had agreed to make a supreme test, to make a brave effort to avert the horrible fate to which we were doomed, to strive to check the accursed Juvenum by taking a stronger dose, in a hope, a mere chance that, like some poisons, one treatment would offset the other. What happened I know only too well. It is incredible! The thing is unthinkable, but true! The dog, two days ago, was a feeble puppy; yesterday it was a blind, newly-born, tiny thing; today it has vanished! The parrot became a fledgling, yesterday a round white egg appeared in its cage. Today the cage is empty. Nature is being reversed! With incredible speed we and all life subjected to the damnable treatment of Juvenum, are progressing backward. Beyond doubt Montross and the others have already vanished, have already passed back to the embryonic state, even to the unknown, unsolved mysterious source whence comes all life. My wife and I, of all the ten, remain as rational human beings Burke and Redfield are gurgling, cooing, helpless babies whose wants occupy all of our time And my heart is wrenched each time I look at my darling wife. No longer is she a woman, no longer a budding girl. She is a slim wisp of femininity perhaps twelve years of age, but still possessing all her womanly instincts, all her knowledge of medicine, all the thoughts, the longings, the ambitions that were hers when, seemingly ages ago, we first discussed the question of perpetual youth.

"But bravely, uncomplainingly, she has borne the ordeal which we are passing through. She has never blamed me; she is as patient, as smiling as cheerful as ever, though she knows that only a few days remain before she, too, will be a helpless infant.

"And the utter horror of it all, the most terrible part of the whole affair, is that even to the last minute, even though they crow and cry and drool like normal infants, Burke, Redfield and the others possess the intellects, the brains, the sensations of their mature years. I can see it, and I shiver with terror at the sight, for the agony of mind which is theirs is stamped upon their baby faces.

"I CAN scarcely bear to write. Redfield, Burke and the others have gone. Yesterday they were there, tiny, red-faced, toothless, newly-born babies, and today no trace of their presence remains. And my wife! As I write, she who was my beloved Elvira is creeping about the floor, while I, the last of the ten to succumb to the effects of our accursed experiments, sit at the desk, torn with unbearable dread, with indescribable horror at the fate which, so unconsciously, I have brought upon my wife and the others. And though I am writing this in the same hand which I used when a full grown man, although I have felt no change in my brain, yet I am but a youth, a mere stripling, a beardless boy of perhaps a dozen years. Were it not for Elvira, were it not that until her last moment I must care for her, I would follow the example of Montross and Johnson and would hasten my end by taking a double dose of Juvenum. But instead, I have destroyed everything. Every chemical, every formula, everything to do with the damnable affair has been made away with. Never shall the world know how to do what we have done if I can prevent it. Nothing shall be left that will be available for others. And as soon as Elvira has drifted backward into that unfathomable beyond whence all life comes, I shall face the most terrible fate of all. No one will be left to care for me. I shall be a helpless infant and, must, I feel sure, go through the retrocessional process to oblivion, for I long ago promised Elvira that I would not take my own life, and, I feel sure, I will not be granted the solace of starving to death, for I am convinced that this whole horrible nightmarish affair is but a reversion of life as it has been for us; that time has been turned back, as related to our own existence, that if we survived the perils of infantile mortality nothing can prevent us from retroceeding in the same manner, and that, as long as I did not starve to death while an infant, I cannot hope to succumb to starvation now that my infancy is to be repeated, even though there are no loving hands to care for me.

"And another strange thing has happened. Of late I have been aware of the presence of beings about me. They are invisible, intangible, but I feel their nearness. Are they the spirits of my companions? Can it be possible that, having gone back beyond the stage of human form at birth, they have been unable to return to embryonic form, and are still filling the atmosphere about me? . . .

"These will be my last lines. My beloved wife has gone. To the very end she seemed happy. In her baby eyes, as I tenderly, though clumsily fed her, was the look of contentment; her baby mouth smiled, and there was none of the agony which contorted the infantile countenances of Burke, Redfield and the others. This morning she faded from sight and vanished, and I feel that somewhere she is watching me and waiting for me I am more resigned to my fate now. And for the first time I have given thought to matters aside from our own affairs. What, I wonder, will the world think when it finds that ten members of its population have inexplicably vanished into thin air? No doubt there will be investigations; the police will be called in; but only to make the mystery the greater. What will they think when they find the baby clothes which have served for Burke, Redfield and even for Elvira in turn? Only I will be without the tiny garments. Long before my body is small enough for them I will be unable to dress myself. I will shrink to an infant in the clothes I have on, in the makeshift, cut-down things I am wearing, and crawling from them, a naked infant, I shall probably find them an interesting plaything. Strange, now that my fate is so near at hand, I am so calm, that I can see the humor of the situation. But my great regret is that after today I will be unable to record my sensations. Even if my mind remains mature my childish hand will be unable to hold a pen or form the letters. I am now a child of eight or ten years in appearance and physical characters, and I am forced to sit upon a pile of books in order to write. Ever since this morning I have realized I am dwindling. I have been forced to add two books to the pile. But before I am unable to do so I must make some preparations. I will place this journal among the infant's garments and other things in a drawer beyond my own reach, for otherwise, in my infantile state, I may tear and destroy the only record I can leave of the incredible events which have transpired here in my laboratory. I can write no more. My brain is still clear and filled with the thoughts of a grown man,—yes even the scientific side of my intellect is unchanged But I find the pen difficult to hold, and my childish fingers can scarcely form the characters I wish to write. And there is no more to record. I have sought perpetual youth and I have found it; but such a youth! Youth reduced to the *n*th degree, the utter youth of invisible existence, the youth of the pre-natal, inexplicable germ of life, perhaps the ———"

The journal ended in an undecipherable scrawl. Trembling, shaken, pale with the suspense of what I had read, I sat staring, and was aware for the first time that the vast laboratory was dusky with approaching night. Then, with a stifled cry, I sprang to my feet. An invisible, intangible presence seemed to be near. I could have sworn that fingers clutched my clothes. With my scalp tingling, terrified as I had never been in my life, I fled from the room which, despite common sense and reason, I felt sure was still tenanted by the missing ten. And I was even more terrified as another thought flashed across my mind. How did I know that some of the terrible element, Juvenum, might not have remained in the laboratory? How could I be sure that I had not inadvertently exposed myself to its effects? How could I be positive that I, too, might not find myself going backward, doomed eventually to pass out like a snuffed-out candle? Never again, I determined, would I enter the laboratory. I would resign the next day, I would return to my former work, and, for a space I knew, I would live in deadly fear of signs of regained youthfulness.

But fate took a hand in my plans. That night a disastrous fire swept McCracken College, the laboratory with all its contents was utterly destroyed, and to this day the true explanation of

the disappearance of Dr. Henderson and the nine others has never been published.

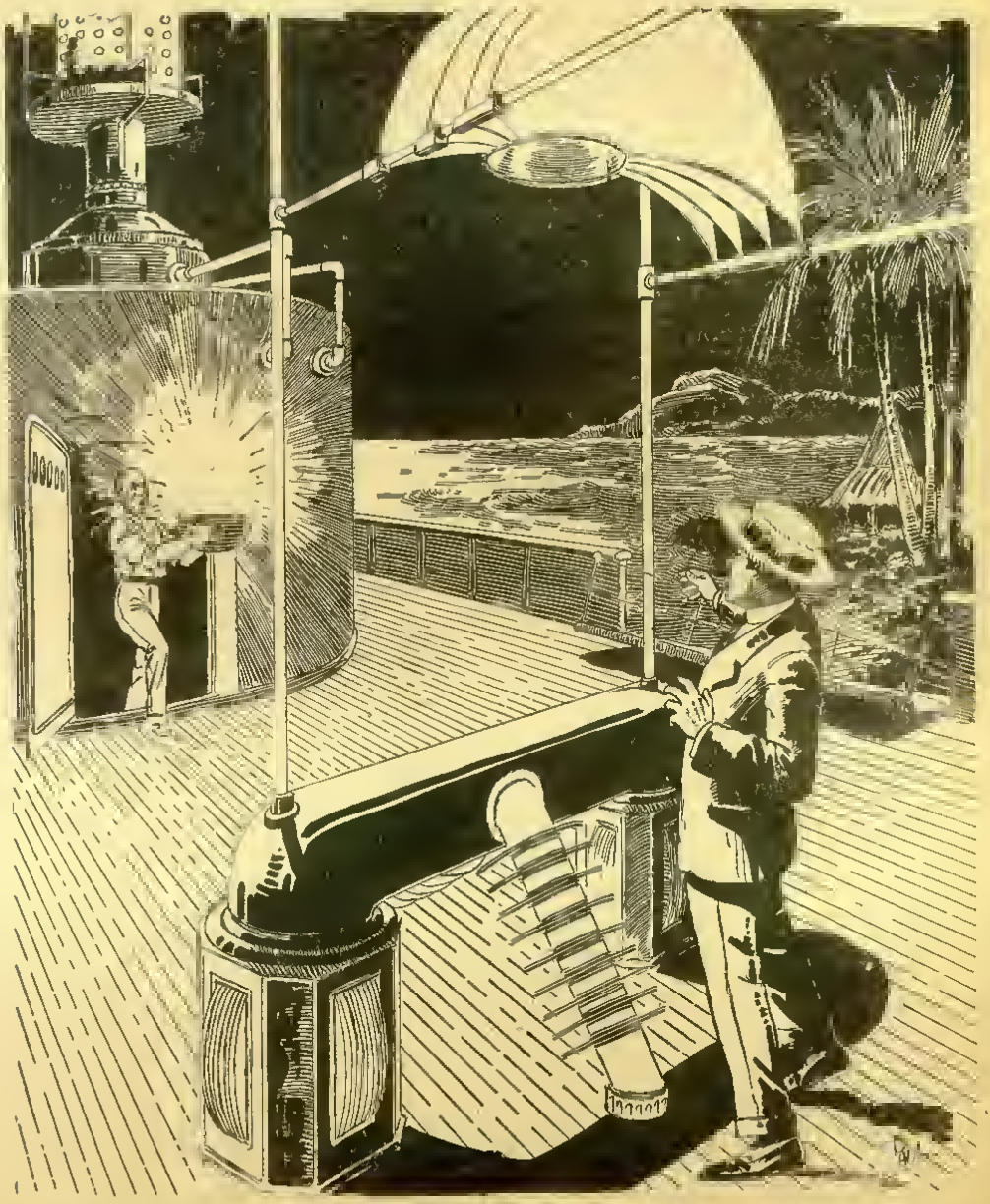
And my fears proved groundless. I grew no younger, as the months passed, and when, a year after reading Dr. Henderson's amazing journal, my wife found several gray hairs over my temples, I felt sure that all danger of my having been exposed to the perils of perpetual youth were over.

And, as Dr. Henderson's diary has burned to ashes with the rest of his possessions, and I fear that the vivid memory of its contents might grow dim if I delay longer, I have decided that the world shall know the truth.

THE END

The CHEMICAL MAGNET

By Victor Thaddeus



. . . Turning, he staggered back down the steps into the interior of the vessel, did something to the machinery, then appeared on the deck again holding a large platinum dish containing a curious salt that glowed with a pale sea-green phosphorescence. I had one glimpse of this strange substance, then Schirmanhever flung the dish into the ocean.

NOW that Schirmanhever is dead, and scientists the world over are seeking to rediscover the secret of the extraordinary chemical magnet which brought him wealth and fame, it is only fitting that I, who was his best friend, should tell to the public what little I know about his life, his marvelous invention and his terrible end.

An unhappy love affair made of the generous enthusiast a cold-blooded scientist, who subordinated every emotion to the workings of his intellect.

Schirmanhever talked little, and if he had any dreams beyond those covering the conquest of that hated world of practicality which in its greedy reaching out for material prosperity had cast a blight over his life, no one shall ever know of them.

Of all men of genius that I have known, Schirmanhever was the least secretive about his own ideas. He seemed to harbor no suspicions that his ideas might be appropriated by others for their own profit. Or perhaps the tremendous difficulties lying in the path of accomplishment made him simply scorn the ability of others to succeed, where he might fail. Then again, it may have been that he talked far less freely to others than he did to me. For that Schirmanhever did like me in his strange, impersonal way, I can have no doubt—I call myself his best friend because I know he had no other.

I first met Schirmanhever when he was living in a tumbledown cabin on a beach north of New York City. He was introduced to me in town one day by a mutual acquaintance, and something about his features—I think it must have been the brilliance of his eyes—enlisted my interest immediately. He was about thirty-five at the time, tall and thin, with dark thick hair that fell low over his forehead and straggled down his neck. He wore a shabby light-weight overcoat, and looked generally unkempt. Still, he had a striking personality. One felt his frail, undernourished body was overengined with mind. He seemed burning up with ideas, though he said little. I grew to like Schirmanhever, and after my first visit I went again as often as I could manage it without seeming to impose on his hospitality. And in the light of subsequent events those visits of mine to his cabin on that astonishing beach made especially vivid memories.

IN presenting to our readers, one, who for AMAZING STORIES *is a new author, we believe that you will soon find that he is a promising scientifiction writer. The plot in this story is unusual, and at the same time most convincing. After all, why should there be no such thing as a chemical magnet? Any good chemist will tell you that the thing is not impossible* per se, *and that sooner or later it may be a fact. In any event, here we have a really excellent story that we know you will enjoy.*

It was an astonishing beach. It represented the last small stretch of coast near the great metropolis to hold out against invasion by the summer hordes. The cabin was situated among a low ridge of sand-dunes separating the ocean from inland waters. Between the dunes and the bay ran a long narrow spit of marsh. It was because the ground here was so marshy, and would have to be drained and filled in before any building could be done, that this stretch of beach had remained undeveloped; on either side of it, two miles distant, were large shore resorts. The beach, piled high with great timbers, packing cases, cans, bottles, and other riff-raff flung up by the tides, presented an astonishingly wild and disordered appearance. At night, in both directions, a million lights traced the distant coast line; to the southwest, in clear weather, might be seen the fainter glimmer of the Coney Island boardwalk, beyond the Rockaways.

Here Schirmanhever lived the year round. Dilapidated in appearance, the cabin was quite snug inside. A chunk stove kept it warm on the coldest days, and wood cost Schirmanhever nothing, as it lay at his very doorstep on the beach in inexhaustible supplies and the dunes held back the strong sea-breezes. He bought his stores each week at a fishing station across the bay.

But on my first visit to this isolated spot I became curious to know how he solved the problem of water. It seemed had enough to have to tramp such a distance for food supplies, but how could he manage to have so much water at hand? There was a sufficient supply of water at the cabin, not only for drinking and cooking, but for washing also. I was too interested in talking to Schirmanhever, and noting the equipment of that part of the cabin curtained off from the rest which he called his laboratory, to wonder about his supply of fresh water, but no sooner was I alone on the train returning to the city than I found myself speculating about this. Did Schirmanhever have a well? I dismissed this conjecture as absurd since water from any well sunk in those sand dunes would certainly be quite undrinkable. But where did he get it? Suddenly I remembered that the same problem must have existed for the old hermit who had been the cabin's previous inhabitant. This convinced me that whatever the problem's solution might be, it could not be very mysterious.

Still I was puzzled, especially when on my next visit, I noticed that Schirmanhever, who happened to be over on the mainland laying in supplies when I arrived, was taking back nothing but provisions.

Later, in the cabin, I mentioned the water problem to him.

"Yes, water was old Martin's problem," said Schirmanhever. "He had to bring it over from the mainland, as I did at the beginning. It was the main reason he had for leaving here. Of course," he added, after a moment's pause, "I don't have that problem any more."

The last few words he said willingly, and his expression increased my interest. "How's that?" I asked. "Have you found a nearer place to get it?"

"I don't get it," he answered. "I make it."

"Oh!" I exclaimed, with a laugh at my own foolishness. "Of course! You distill it."

Schirmanhever smiled again. "No," he said, "I don't distill it. But I make it just the same."

He got up to open the chunk stove, and throw in another piece of wood. Outside a strong raw wind was blowing, rattling the sashes of one of the small windows. Even though you could not see it, you

sensed that vast expanse of nearby ocean over which the gale was driving. And I asked:

"You make it out of ocean water?"

"Yes, out of ocean water," he replied.

He said nothing more at the time. Subsequently, when through our general conversations I had got an idea of the nature of his investigations, he was less reserved. I knew then that he had delved very profoundly into the nature of chemical reactions, particularly those of solubility. He had the sort of mind that sees things always from the imaginative viewpoint, that never allows imagination to become smothered beneath technical and mathematical detail. He was able to arrive at an actual *picture* of molecular processes, and for this reason he was able to make his tremendous discoveries.

One day, drawing back the curtain of his laboratory, he picked up a beaker, filled it with water, and asked me to drop some table salt into it. When I had done so, he said:

"That wasn't much trouble, was it? But what a lot of trouble to get that salt back again—I mean by evaporation. There should be an easier way, shouldn't there?"

I replied I thought there should be. Schirmanhever now placed a clean sheet of white paper on the bench. On the paper he put a handful of sand that he had picked up outside. With the sand he mixed up several pinches of iron filings.

"Now," he asked, "do you know any easy way of getting those filings back again?"

"Well," I said, "if you had a magnet—"

"Exactly!" He produced one, and drew the filings out of the sand, scraping them off the magnet into a little separate pile. Then he looked at me. "By my process I can draw salts out of water just as easily as that magnet draws iron filings out of the sand. Let's say I've invented a chemical magnet."

He smiled to himself, and added, "That's an inaccurate way of putting it, of course, but it gives the imagination something to feed on, which is the main thing. What I *have* devised is a way of getting salts out of water without having to use any energy. No heat under boilers, no electric current. As simple as that," he snapped his fingers. "And why shouldn't it be easy? There's very little energy change when most salts are dissolved in water. In fact, what energy change there is is usually to the good—the water is cooled off a little by the addition of the salt, so that there should be energy given out, not taken in, when you get the salt back—and there is."

He glanced at one corner of his laboratory where there stood a queer closet-like arrangement with pipes leading in and out—evidently a casing around some concealed apparatus. "Want to see it work?" he asked.

I nodded. I had noticed that corner of the laboratory before, and half-guessed its significance. But this was the first time Schirmanhever had offered any information about it. Now he picked up a pailful of sea-water, and poured it into a large funnel that protruded upwards from the wooden casing. When the water had all vanished into the interior he came around to the front of the casing and turned a valve. A moment later a bucket he had placed on the floor began filling up. Schirmanhever, lifting the bucket so that the water would flow noiselessly down the side, motioned to me to listen. I heard in the interior of the apparatus a soft, continuous sound similar to that which might be made by tiny grains of something slipping down a chute. When the flow of water had stopped, the bucket being nearly full, Schirmanhever lifted a dipperful of it up to my lips—it was as fresh pure water as I have ever tasted. At the same moment he held up for my inspection a miniature bin that he had drawn out of the interior of his apparatus; its floor was covered with several inches of a whitish salt.

"Now," he said, pouring the contents of the little bin into the bucket of fresh water, "you see before you the pailful of sea-water again."

The whole process had taken so short a time—scarcely more than a couple of minutes—and its operation had been so noiseless, no sound coming from the interior of the machine except that little whispering noise made by the settling salt, that I could only stand amazed.

"You mean to say," I exclaimed, "that that water I drank"—and I looked at what remained in the dipper—"was some of the sea-water—and that that salt you showed me——"

"It was," answered Schirmanhever. "The very same sea-water. My apparatus in here," he tapped the wooden casing, "had simply divided it into its two components—the pure water and the dissolved salts."

"And it got it all out in that short time?"

Schirmanhever smiled at the incredulity in my face. Then he frowned. "Yes, it got it all out, and that's my trouble. That water you tasted was pure as rain water. But my process won't select yet. It pulls salts and suspended matter out in one lot. The hardest part of my job—that of developing selective attraction for the various chemicals in solution, in the same way you might have different magnets for iron, copper, silver, gold and so on,—is still before me. Indeed, I don't know whether I'll ever be able to solve that problem. And if I don't—" His brilliant, feverish eyes stared straight into mine, and I read in them the end of the sentence—that if he didn't, all the knowledge he had acquired thus far would die with him.

This was the thing that astounded me. Once I realized Schirmanhever's invention actually *would* extract salts from solution with such ease, it seemed to me the most marvellous scientific achievement of the century. If he stopped at this point, he had only to commercialize his process to make an immense fortune for himself. But Schirmanhever seemed to think he had accomplished nothing as yet. His whole being was wrapped up in making the process the entirely perfect thing he had dreamed it.

"There!" he would exclaim, gesturing dramatically towards the leagues of ocean, "just look at the immensity of it! A greater storehouse of minerals than you'll find in all the mines of the earth put together. All the metallic and non-metallic elements in it in some shape or form. Vast Mother Ocean, covering the greater portion of our planet,

miles deep in places, and into which, sooner or later, everything gets washed! All the metals, even one of the most precious—gold. Yes, gold in undreamed of quantities! Scarcely even a trace by analysis, but tons and tons when you have an inexhaustible reservoir to comb it out of. When the whole ocean is your mine!"

That word gold would make his eyes take on a greater brilliance. I could see he craved power, wanted it more than anything in the world. More than three years had passed now since I first met Schirmanhever, and he was working night and day to overcome that problem of selection and also to speed up his process of extraction. For, miraculously quick as this seemed to me, it was not nearly quick enough to suit Schirmanhever. He explained how, with the millions of tons of sea-water he would have to run through his apparatus in order to get appreciable amounts of the precious chemicals he wanted most, there could not, if it was to be a success, be any appreciable delay in the free flow of the current. At present, though he had greatly perfected the extraction during the past few years, the separation imposed a small but definite drag on the moving liquid. This he was seeking to eliminate.

MORE than once, during this period, I doubted Schirmanhever's sanity. Haggard and wild-eyed, his unkempt hair falling around his face, his ragged clothes flapping on his thin body, he had at times a positively sinister air. Watching him as he paced the beach, muttering to himself, and casting hungry glances seawards, I wondered if he was really in his right mind. With all that driftwood piled chaotically on the sand around him, he had the appearance of a lone survivor of some tremendous wreck, driven crazy by solitude and privation, desperately watching the horizon for a sign of smoke or sail. Years later, I was to watch him pacing in a similar manner another far-distant beach—a beach more white and dazzling than this one, the very calm of whose tropic beauty was to make more dreadful that awful scene of Schirmanhever's final disintegration. Then Schirmanhever, the man who had made his dreams come true—too true, alas!—did really go mad.

It occurred to me sometimes that this story of a chemical magnet might be only his madness. For, remember, that while I saw him put sea-water into the machine, and take fresh water and salt out, his word was my only proof that the latter were the products of the former. Though Schirmanhever did not hesitate to discuss with me, the general theories underlying his investigations, he never spoke of the details of his process. He frequently left the curtains of his laboratory undrawn, so that he could talk to me as he worked, but at these times the apparatus was always hidden from view by its wooden casing, and he was obviously only engaged in experiments of minor importance; whenever he was working on the apparatus itself, which I could tell by the sound of the casing being dragged aside, the curtains were always drawn, and tied. I began to wonder if inside that casing there really *was* any apparatus, or whether it was only a trick arrangement with which Schirmanhever's overstrained mind practised a grotesque self-deception. At last, curiosity getting the better of all sense of decency, I took advantage of a moment when he had gone down to the ocean for water, to slip into the laboratory and examine the machine.

Schirmanhever had been in the laboratory for over an hour with the curtains drawn. He had evidently had to interrupt an experiment to fetch more water, for he had left hurriedly, in his haste failing to fasten the curtains. I guessed I should find the machine exposed to view—if there was any—and I was right. The casing, hinged at the back, stood open, revealing a short, thick cylinder of metal, like a fat water boiler. Except for this cylinder, and the pipes leading in and out, the space inside the casing was absolutely empty. On the cylinder a warning, "Hands off! Danger!" was painted in large red letters.

Staring at the cylinder, I realized I hadn't learned much. Either the cylinder was empty, or within it was safely concealed all the vital mechanism of Schirmanhever's process. And the cylinder apparently had no opening through which the eye could penetrate its interior. Then I noticed something I had missed at the first glance, a small shutter at the top which evidently protected just such an observation point as I was in search of. Reckless of the red warning on the cylinder, I reached out to draw the shutter aside, at the same time stooping to put my eye to the opening.

My hand was grasped in mid-air—Schirmanhever stood beside me. He had seen me through the window and returned quietly. Instead of being angry, as I expected, he brushed aside my confusion and apologies with the mere remark:

"You wouldn't have discovered anything, and you might have killed yourself."

He closed the casing until I had left the laboratory, then drew the curtains behind me, and resumed his experiment. He seemed to understand perfectly that no motive worse than curiosity had prompted me to violate his hospitality. This incident, indeed, led him to speak more freely about his process than he had done before. He explained how, like the French 75-mm. field-piece, the secret of whose recoil mechanism is safeguarded against detection by the mechanism blowing up and destroying itself as soon as tampered with by inexpert hands, his invention would also explode if anyone but himself tried to examine it. He seemed to read my thoughts about the curious simplicity of what I had seen—only that cylinder, with the pipes leading in and out.

"You were surprised because you saw nothing complicated," he said. "You expected the astonishing and the intricate. Why weren't there any wires suggesting electricity? Well, inside that cylinder it isn't, of course, quite so simple as it is on the outside, but you'd be surprised if you knew what simple apparatus the cylinder does contain, nevertheless. Simple to your way of thinking, that is. Simple and empty in just the same way that the interior of an automobile would look simple and empty to a person of olden times who was hunting everywhere for the horse that made the automobile move. Simple and empty as an electric

wire carrying current on a million-volt circuit would seem to people who didn't know anything about electricity, who never dreamed what power was flowing silently along that little wire. My process is simple because it depends on an entirely new principle. It's a principle as different from any other in the world as, for instance, in the field of vision, the color red is different from the color blue. And that's about all I can tell you about it," he finished with a smile, "except from our previous talks you may be able to guess that it's a principle depending, not unlike electricity, upon the mysterious laws which control atomic and molecular structure."

His lips twitched as he smiled. It was one of our last talks together—before he went away. Schirmanhever had grown very thin and haggard. He was experimenting against time. For he had only a few months longer to live in the cabin. At last this stretch of beach so long neglected by development companies was to be improved. A great dredge had arrived on the bay side and was filling in the land. Surveyors were staking out the marsh into streets and lots. A line of telegraph poles sprang up. Schirmanhever watched these operations with a dark look of hate. It was the world of practicality pursuing him even into the solitude of his wild home—driving him out. He had been given notice by the development company that he could not occupy the land later than the beginning of the next summer.

"HE has lived here for six years. Has he actually accomplished anything during this period?" I used to ask myself. The men working for the development company plainly regarded him as a crazy freak, and I wondered if they weren't right. Did he really have anything to show for the labor of all these years? Or was he simply a man obsessed with an idea?

Then one day the impossible happened. When I arrived at the cabin, Schirmanhever told me he had inherited a fortune. A rich uncle—on his father's side Schirmanhever was of German descent, on his mother's Irish—had just died, and left his wealth to him. Schirmanhever told me the news without excitement. I confess I would have doubted his word, except that the arrival of a stout lawyer, puffing from the exertion of the long trudge, and with his shoes full of sand, supplied an incontrovertible proof. I thought then that Schirmanhever's troubles were over—that the loss of the cabin would be of no importance to him, as he now had the means to equip a more comfortable laboratory in a far more convenient location. But Schirmanhever stayed on in the cabin, apparently determined to wind up his investigations where he had started them. Perhaps the fact that good fortune had come his way only when he could almost do without it, made him the more bitter. His glances in the direction of that big dredge busily filling in the swamp, of those steam shovels tearing at the sand dunes, held the same personal antagonism. But one day when I visited him, he seemed calmer than ever I had seen him before. And as the launch was carrying me away, he called after me in a peculiar tone that seemed to carry with it, a strange presentiment, "Well, good-bye!"

It was the last time I was to see Schirmanhever for many months. When I next visited the island he was gone. The abandoned cabin was being torn down by workmen who speculated jokingly on the use that had been made of the fragments of apparatus and glassware left behind. The surveyors were shooting the line of a road that would pass straight through the site of the cabin. Watching it crumbling beneath the blows of sledge and hammer, I got a sudden sharp sense of loss. I walked along the beach, picking my way among the debris cast up by the sea, wondering if Schirmanhever would write, or if he had gone out of my life forever. So two years went by.

Meanwhile all my suspicions about the nonexistence of his chemical magnet, as he had called it, seemed confirmed. I watched the newspapers and scientific journals for some startling report of the great new discovery. I re-visited the island, and its progressive appearance—sidewalks were already down, and carpenters hammering on summer cottages everywhere—made the past seem a dream. I remembered that last glimpse of Schirmanhever standing on the shore growing smaller as the launch sped for the mainland, and I felt a little hurt that that casual "good-bye" had been the only warning given me of his departure. And more than once, the absurdity of his having accomplished anything momentous in that makeshift little building by the sea occurred to me, though at the same time I could not but recall that the early investigations of Steinmetz and other great scientists had been conducted in equally humble surroundings.

During this period of silence I had in my keeping one little thing to give reality to the vanished Schirmanhever and his splendid aspirations. It was a small scrap of paper, the beginning of a letter I had found in the sea grass on that morning when the cabin was being torn down. On it were the words:

"Dear Anne: At last, after all these years, I have. . . ."

The writing was Schirmanhever's, and he had evidently been unable to go any further, or else had discarded and thrown away this first attempt at a letter to the woman who had rejected his love.

It was about four years after Schirmanhever's disappearance that I suddenly found his name on everyone's lips. Almost overnight, it seemed, he had acquired international renown. The story of his marvellous chemical discoveries leaped to the front page of the newspapers. I read of the huge plants he had built both on the east and west coasts which now by some extraordinary secret process were producing in abundance almost every known chemical. The four years of delay he had apparently utilized to adapt his process to large-scale production. At any rate, the name Schirmanhever was now certainly one for the man in the street to conjure with. It was rumored he had actually found a way of transmuting sea-water into gold. It was said this Schirmanhever was on his way to becoming the richest man in the world.

The events of the next few years are history, so I shall pass over them briefly. We all remember Schirmanhever's first great industrial triumph, his

breaking up of the potash monopoly, which after the world war had reverted to the Kali-syndicate; how Schirmanhever's American plants supplied potash to the home markets at half the price of the foreign product imported from the great Strassfurt deposits; his development of those strange and stupendous floating hulks, known as the Magnet Fleet, which manufactured their cargoes of precious chemicals from ocean water on the journey between ports; how Germany's preeminence in the field of industrial chemistry waned, all that nation's achievements in building up the synthetic dye industry fading to nothing beside the colossal accomplishments of the young American scientist; the revolutionary shift of industry from land to ocean, beginning a new epoch in the history of civilization, with the radical alterations it necessitated in the whole economic life of the world; the award to Schirmanhever of the Nobel Prize and his rejection of it; the abortive attempt of the nations to combat Schirmanhever's accumulation of ocean gold by establishing an international paper currency; the sharp drop in world-wide prosperity as soon as Schirmanhever ordered production to cease at all his plants and popular opinion forcing the powers to come to terms; the passing of poverty everywhere as the hitherto untouched resources of the ocean—that ocean which covers three-fourths of the earth's surface, and has a volume of three hundred and fifteen million cubic miles—began to be exploited on a gigantic scale. And Schirmanhever's prestige and power increased until he was virtually dictator of world affairs. We were told of the many deaths resulting from attempts to discover the secret of his chemical magnet—how the Neptune, the largest vessel in the Magnet Fleet, tampered with by engineers seeking to uncover the mystery of its vital operations, blew up in dock at Hoboken, killing a hundred men and wrecking the nearby piers.

ALL this, I say, has become history. Let me come then, without further delay, to that final and fatal period of Schirmanhever's career in which I was again destined to have a share. Throughout the years of his success our meetings had been few, but we kept in touch with each other. When I had at last seen his name in the papers after that long interval of silence, I met Schirmanhever in New York City; he told me very briefly how busy he had been commercializing his process, and sketched some of his future plans. Later we met again in New York several times, also in London, Paris and Berlin. Needless to say, every minute of Schirmanhever's time during these years was priceless; his waiting rooms were thronged with financiers, scientists, and reporters requesting an interview; but I had only to give my name in order to be admitted immediately. There was a look of genuine pleasure on his face as, putting aside for the time being the enormous weight of business resting on his shoulders, he rose to greet me; with the world at his feet he seemed to regret his past obscurity, to long to be able to return to it. Once, glancing at me strangely, his eyes flashing their old excitement, he started to make some suggestion, but after a few words broke off to a mutter, "No, I'm not quite ready yet—I must wait a little longer!" Then one day I received that memorable telegram requesting me to come immediately to San Francisco. And a week later I was on Schirmanhever's yacht with him bound for that lovely little island in the Pacific which fate had decreed only one of us should ever leave alive.

Arrived at the island, an exquisite pearl of tropical beauty, with great feathery palms swaying high in the sky over a white beach terminating in a coral reef, where the surf thundered night and day, the yacht was dismissed, the captain receiving orders to proceed to Honolulu. A date, several months distant, was set for the yacht's return to the island. A comfortable bungalow, well stocked with provisions, had been built on the island, but Schirmanhever and myself were the only inhabitants. Anchored off the island was a floating laboratory, in general design like a miniature vessel of the Magnet Fleet, which Schirmanhever inspected on the first day of our arrival.

That he had come to this remote spot to push his investigations into some mysterious realm of science, which even his genius had not yet explored, was known to me by now. But the exact nature of this research he had not told me. I could only guess from his suppressed excitement during the cruise that he considered all his previous discoveries of negligible importance compared with those he was now about to attempt. Once settled on the island, he was soon spending all his hours in the floating laboratory. At the beginning I was allowed to come aboard with him, but a day came when he put a stop to my visits. It was about this time that Schirmanhever, while we sat together on the veranda of the bungalow, gave me my first cue to the problem he was working on.

After briefly recapitulating his past accomplishments—the invention of the first chemical magnet that indiscriminately drew all salts out of solution, later the perfection of the process to leave in solution the sodium chloride of little value, and only draw out the more precious potassium, iron, copper, aluminum, nickel, lead, barium, manganese, silver and gold salts, the iodine compounds, phosphates, and radioactive minerals, and these not in a mixed mass, but each chemical pulled separately out of solution by its own individual magnet, in a pure state—he came to his latest idea, that of developing a chemical magnet of *super-strength*, which would be capable of dragging out of sea-water hitherto unknown chemicals—chemicals of which the ocean held only such an infinitesimal trace that no ordinary method of analysis could detect them.

"Chemicals," said Schirmanhever, "which may be tremendously more powerful and mysterious than the radioactive minerals, and which may be possessed of amazingly new and vital properties, which may, who knows, have actually led to the origin of——"

He broke off. At the time I did not grasp the true meaning of what he said. I only had a vague but distinct sense of danger. Perhaps it was the warmth of the tropic night, and Schirmanhever's glowing eyes close to mine, the black outlines against the starlit sky of those tall palms rem-

iniscent of days when the whole of the earth was a vast fecund jungle.

"Won't there be a risk in such experiments?" I asked. "If such chemicals do exist, and you collect them in any quantity, mayn't they have a frightful effect on the human body?"

"Very likely," answered Schirmanhever, but the excitement in his voice proved how little he cared. He added, "There's always a risk in the Unknown."

From now on he grew pale with a dreadful pallor. He lost his appetite. He had trembling fits that made me fear he had caught some tropical fever. I saw him emerge at intervals from the interior of the floating laboratory waving his arms before him as though to push back an insufferable heat. He paced the white beach, muttering to himself, and gesticulating. One day he shouted:

"I've found it at last—the Secret of Life! I've got the thing that first brought Life into existence! I've got it there, *out there!*" He pointed to the floating laboratory. "*That* much of it!" He cupped his hands. "And before I'm through I'll have *this* much of it!" He threw out his arms in a wild gesture that seemed to embrace the entire horizon.

A thrill of horror shot through me. Suddenly I realized the truth of why Schirmanhever was wasting away—remembered my casual suggestion of that night, forgotten next morning. Something deadlier than poison was devouring him. I seized his arm, tried to prevent him from going out to the boat again. Schirmanhever fought himself loose, and the expression in his eyes as he leaped away told me he was mad, utterly mad.

THE next week was a nightmare. Schirmanhever, with the cunning of madness, slept on the boat now, fearing I would detain him if he returned to the bungalow. But he came on shore stealthily and in the moonlight I saw him several times pacing the beach, tottering along in a queer way like a drunken man. At last I could stand it no longer. I resolved, even at risk of my own life, to make a trip to the floating laboratory, find out what he was doing there, and bring him forcibly back to shore.

I set out one evening in the dusk. As I put foot on the deck of the boat, Schirmanhever emerged from a hatchway. He was gasping, his eyes were maniacal, but at sight of me he seemed to pull himself together. With a convulsive effort he put his hands to his head, and in that instant I believe he realized he was dying. Turning, he staggered back down the steps into the interior of the vessel, did something to the machinery, then appeared on deck again holding a large platinum dish containing a curious salt that glowed with a pale sea-green phosphorescence. I had one glimpse of this strange substance, then Schirmanhever had flung the dish into the ocean, which swallowed it with a slight hiss. In one final moment of sanity Schirmanhever grasped my hand, cried hoarsely, "Go! Don't wait a minute! Get back to the shore right away, because this"—his nerveless fingers slipped away from mine, to indicate the boat we were standing on—"won't be here more than a few seconds." Then he collapsed on the deck, dead.

An uncontrollable panic seized me in the face of that prostrate body, that dreadful, ominous silence by which I was surrounded, and springing back into the skiff, I rowed madly for shore. Scarcely was my foot on land than there was a roar behind me, and the floating laboratory split apart into burning fragments, which an instant later was swallowed by the water. After more than a month of frightful solitude, the yacht returned and carried me back to America. Subsequent development are known to all—how, one by one, Schirmanhever's plants ceased to function, as though in the chemical magnets there were some vital element, corresponding to an electric battery, which needed renewal after a certain number of years, and the secret of restoring this energy had been known only to him. Frantic endeavors are still being made to rediscover Schirmanhever's secrets, in order once again to infuse vitality into that great ocean industry which now lies idle. And—most interesting of all to me are the many speculations indulged in by scientists upon the nature of those mysterious elements which caused Schirmanhever's terrible end, until today it is generally recognized that Schirmanhever actually did manage to extract from the ocean water in an appreciable quantity—it was that greenish phosphorescent substance in the platinum dish, undoubtedly—certain rare but exceedingly complex and powerful chemicals which, millions of years ago, when the earth was all ocean, first brought life into being.

THE END.

HICKS' INVENTIONS with a KICK

By Henry Hugh Simmons

The Automatic Apartment

Author of "Hicks' Self-Serving Dining Table."

The foot-clamp swung over, lovingly taking hold of the professor's throat and gently but firmly holding down his head . . . . The entire company stood assembled around where the professor was having the shine of his life. Smith tried helpfully to pull the professor out by the legs, while another tried to manipulate the switchboard.

TEN minutes ago I had been on the point of throwing Hicks down the stairs, and here I was walking down the street with him, talking—or rather he was doing the talking. He always does,—he is the most talented talker on this side of the Atlantic. He's got that personal magnetism or something and he can just handle you like a kid. He can handle me that way, that's sure. When you remember that episode of the Automatic Dining Table, maybe you will agree with me that I had plenty of cause for wanting to do mayhem to Hicks. When I thought how the confounded thing started to buck, and we were bombarded with every hot and cold food from mockturtle soup to Limburger cheese and soused in every kind of liquid from iced tea to red hot tomato sauce, with my clothes ruined, not to speak of my injured dignity, I could have . . . Well, no matter. Here I was walking by Hicks' side and listening to his conversation, bound for his home to inspect another one of his automatic inventions. I was even offering him one of my best cigars!

"The reason I came to see you first," Hicks was saying, "is because I know you are capable of judging a thing objectively. Few people can. Not one of that group that was

HERE is the second series of "Hicks' Inventions with a Kick," the first having appeared in our April, 1927 issue. While this story is written in a light vein, it should be remembered that many devices of this kind are apt to turn out realities sometime in the future

Some years ago, the Editor of this publication, during a friendly gathering ventured the opinion that he could wash the dishes and dry them without even getting his hands wet, whereupon the company proceeded to the kitchen and the Editor, by attaching a plain rubber hose to the hot water faucet, washed the dishes simply by playing a stream of hot water on them, after which they were lifted out and put in a tray, where the heat dried them

At the time, this caused a great deal of merriment, yet a device of this kind is now actually on the market, and is being sold at about $5.00, which proves that even the most ridiculous invention may turn out to be practical

with us the night of that . . er . . unfortunate little trouble with the Automatic Dining Table can do so. They simply washed their hands of that invention and of me. Yet the dining table is being put on the market now. We have a company organized and will soon have our factory equipped. Accidents will happen with any invention when it is being tried out. Think what the automobile was like twenty years ago! But I can't convince that crowd, and unfortunately they are my best friends,—or at least they were once."

So Hicks' talk went on, and by the time we had arrived at his house I had promised him to straighten everything out for him with his relatives and friends and to persuade them all to come and inspect his new invention, though I had not as yet seen it myself. Perhaps that will give you some idea of Hicks' powers of conversation. But here we were at his house, a three-story affair of many rooms. We climbed the stairs and presently we found ourselves in a living room of moderate dimensions, pleasantly decorated and neatly and elegantly furnished.

"Looks like an ordinary living room, eh?" asked Hicks.

"Like a more than ordinarily pleasant one, I should say," I replied, allowing myself to slip into one of the several overstuffed chairs.

"And yet, O'Keefe, this room is as unlike an ordinary room as a hen's egg is unlike a golf ball," said Hicks. "This is room Number One in my Fully Automatic Apartment."

"And how does this room Number One in your Fully Automatic Apartment," I said in jocular tone, "differ from any other? Surely you are not trying to kid me into believing that there is anything unusual about it?"

"No, I am not trying to kid you," Hicks replied with rising dignity. "I merely state a fact when I say it is different And that difference consists in the circumstance that this room is self-cleaning, self-sweeping, self-arranging. Possibly it has escaped the notice of your astute mind," he continued in a tone slightly tinged with irony, "that there is a push button board near this door." With this he indicated a small board neatly done in scintillating glass and with a row of mother-of-pearl push buttons disposed on it. "Possibly also," Hicks went on, "you have not noticed several other peculiarities. But I will now let action show, not words," and rising, he pressed one of the buttons on the switchboard.

IMAGINE my surprise when the chair in which I sat, together with a large rocker near me and the table upon which I had just deposited my hat, suddenly began to move, and in another second had traveled half way across the room, all in the same direction, leaving a swath several yards wide lengthwise of the room free and clean of all furniture. Before I had time to recover, another surprise topped this one. At the end of the room a low grating such as commonly covers the register for hot-air systems suddenly swung open and there emerged what for a brief, startled moment I mentally put down as a fierce animal with a bushy tail, but in which a second later I recognized a suction sweeper with bag attached. This sweeper evidently had a mind of its own, besides considerable speed, because without any visible help, it hastily proceeded along the wall in a straight line and, arrived at the opposite end of the long room, moved sideways by its own width and retraced its way, keeping in a strictly straight line. Before my bewildered gaze, this mechanical animal came and went along the floor until it nearly grazed the chairs. I was just about to stutter a few words of bewilderment when the machine, arrived at its starting point, suddenly halted. There was a click and a purr, and the entire mass of furniture, now crowded to one side of the room, started to move, my chair carrying me along; and lo! in a jiffy it all was lined up along that side of the room which had just been swept.

"How does it strike you, old man?" The voice of the inventor seemed to come from afar, so dazed was I.

"Well, I'll be dashed," was all I managed to stutter as I wiped the sweat off my forehead. And again that diabolically clever, superhuman-minded carpet sweeper started on its methodical way, nor did it stop until it had completed its work and every inch in the room had been gone over. As it neared the wall, another door, similar to the one from which it had appeared, swung open, the machine entered, and with a click both doors swung shut. At once there was another movement among the furniture, and those pieces which had last moved out of the way returned to their original position, until the entire room was again neatly arranged.

The inventor struck a match and lit a cigarette while I wiped the perspiration off my face. "Well?" he inquired casually, between two puffs of his cigarette.

My voice came back to me. "Hicks," I said, "I don't know what to tell you. You have handed me the surprise of my life. When you mentioned that automatic apartment, . . ."

"Calm yourself, my boy," placidly stated Hicks. "I have just demonstrated to you the Automatic Carpet Sweeper and the Self-Arranging Furniture —just one feature of my Automatic Apartment. Tell you the secret, too—electro magnetism, heavy iron plates are attached low down under the furniture—you will note the furniture is all somewhat low. A system of electro magnets is arranged in rows under the flooring. When I push the button, the first thing that happens is that one row after another of the electro magnetic poles becomes magnetized and then demagnetized, thus moving the furniture along. The suction sweeper is furnished with power of its own, but also kept true to its path by remagnetization of row after row of the same magnetic field. But I will now show you some things which are really remarkable. Let us proceed to the kitchen." And thither he led the way, while I followed, trying to brace myself for the next surprise. We entered the kitchen, which was spacious and beautifully arranged, with cheerful colors decorating the walls and ceiling.

I looked around me. Everything was there that should be found in a well appointed kitchen. The sink was of porcelain, but I could see at once that there was more to it than just a sink. My ques-

tioning glance was interrupted by Hicks' watchful eye.

"An Automatic Dish-Washing Device, of course," he explained. "But more than that: an Automatic Dish Conveyor. Anything set down on this endless belt is immediately conveyed into the dish washer, washed, dried and carried out, and deposited at the opposite end."

He placed several cups, saucers, knives and forks and a couple of large pans on what looked like a white-enameled mat. Above the sink was a push button. He pressed it. Instantly the dishes moved at a rapid pace toward a long box-like object upon one end of the sink. A rail on the conveyor opened a trap door, through which the dishes disappeared, when the door closed. I heard the splashing of water, which continued for fully a minute. Suddenly the noise ceased, there was a click, and the array of dishes reappeared on the other side of the box, dry, clean, and shining, and stopped underneath a china-cupboard.

"I did not so far provide anything to distribute the dishes on the shelf," half apologetically said the inventor. "But for the present this will have to do."

"But, Hicks—" I said.

"WELL, let us pass on to something interesting," the inventor, seemingly ignoring my interruption, said in a tone of one bored with the trivialities of everyday existence. "As I said before, this is a Fully Automatic Apartment. That means it does its own work. You only do the attractive part of housekeeping. You do not sweep, you do not clean, you wash no dishes, brush no cobwebs, scrub no floors, polish no shoes. You propose, as it were, and the apartment disposes. In developing this invention the central idea was that drudgery has no place in the scheme of life of the modern man or woman. My hope was to be able to take that drudgery out of life,—and I believe that I may say that I have in a measure succeeded. Now . . ."

"But, Hicks—" I said, in a tone of awe.

"Now look at this ceiling, for instance," said Hicks, seemingly unaware of my astonishment. "To the casual glance it looks like any other ceiling, only with ornamental features ordinarily lacking in a kitchen ceiling. In reality the design is worked out in tiny perforations, the ceiling material being sheet metal. Above this perforated ceiling is an air space connected with a powerful suction system. Just a moderate amount of air is usually circulating through this system. But if I turn this switch"—he did and instantly a sighing noise was to be heard—"then a powerful exhaust is turned on, and cobwebs, dust, smoke and anything else in the way of dirt disappears. If I take, for instance, this handful of flour and scatter it in the air, it does not, as you seemed to fear it would, judging by the speed with which you tried to duck, settle all over you and spoil your new clothes, but" —and he pointed to the cloud of flour rapidly vanishing through the ceiling—"it simply disappears. As the ceiling is virtually only a fine mesh, there is no place for dust, dirt, or cobwebs to stay, when this tremendous suction is turned on."

While I was trying to formulate in my mind an apology for my rudeness in the morning, Hicks went on:

"Now, following out this idea, what would be the way to clean the floor? What, O'Keefe, would be the way?

"Well, what would be more natural than to have the floor also perforated, but instead of washing it, as it were, by air, to wash it with water?" queried Hicks, answering his own question. I had to admit that he had me there. "Well, anyway," he continued, "that is the way I reasoned and so you will note something which probably escaped your eye when you entered, and that is that the floor is also full of small perforations worked out in a pleasing design. This floor, too, is of metal, and below it there is a flat tank which can at will be filled with water and emptied. If I press this button the water will rise. Step on one of these mats and watch." Here he pointed out one of three or four cork mats such as are sometimes used in bathrooms, about an inch or so high. We stepped up on one, and already we saw the water rising in a thousand tiny fountains, each one about a half inch high, until the whole floor was submerged under a quarter inch of water. "We do not need to push any button again to make the water go down," Hicks continued, "but, as you see, it is now disappearing, carrying with it dirt, dust, and disease germs. The floor is now," he went on in a tone of a lecturer explaining some wonder of nature, "still wet, but by pushing this button I reverse the process you saw a minute ago, and air, and this time warm, dry air, is forced through the ceiling from above, passing through the floor below in the wake of the water of which the last is now running down the drain, which can accommodate a cubic foot of water a second, just as also the supply pipe is unusually large, permitting a flow of a cubic foot every two seconds under the normal pressure of 110 pounds per cubic inch prevailing in the water system of this town. As you will note, the floor is already dry."

I looked and saw. I was feeling a little feeble, and I remember wondering if I had not had some of somebody's homebrew that morning, for I was having a queer feeling in my head. The automatic cleaning business was too much for an ordinary man. I told Hicks so.

"I have some other features here which I wanted to show you," said Hicks, "but it is perhaps just as well that you see them when the company are assembled. You have seen enough, my boy, I think, to believe me now when I tell you that I have something out of the ordinary, something unique and something for which the world will be grateful in the years to come when by its means the drudgery of housekeeping will have been ended. Now, O'Keefe, will you arrange this thing for me with my—er, former—friends?"

That was a useless question. In the first place, I had already promised him, and besides, after what I had seen I would have arranged for the King of Iceland to come and see it. Why, it was wonderful, marvelous, big—to think of such an idea. And the way he had it figured out—pressure per square inch—cubic feet per second—you know

that kind of thing always gets me. I have a lot of respect for mathematics and engineering, though I know nothing about them. I told him I would immediately go and see those friends.

IT was the following Tuesday that they were all assembled. I still had a black eye, received when Smith, the first one I tried, threw me out of his house, hut such was my enthusiasm that I had managed to convince even him by ignoring his hrutal attack, and he was present. So was Hicks' uncle Jeremiah, looking as sour as ever, and my aunt Eulalia. There was Irvine and Mrs. Smith and there were, besides, Professor Dinker and his fiancée, Miss Peak, a prim person somewhat advanced beyond mere youth, with glasses, a pointed red nose in a pale face, and opinions of her own. And there was Hicks and myself. We had all gone through the hving room and had seen what I had described, and now we were in the kitchen and the inventor was talking—as usual.

"This is something still new to you, my dear O'Keefe," Hicks was saying. "This is the Automatic Shoe Shining Stand. By pushing this button, this trap door drops, revealing, as you will note, a foot rest such as is commonly used on shoe shiners' stands, except that this is about a foot from the floor. If now, Professor," Hicks said, waving his hand toward the man of science, "you will be kind enough to place your foot upon this rest, you will all see that first this padded arm takes hold of it, clamping, as it were, over the instep to hold the foot securely down. You will note that the machine works for exactly three minutes and then lets go. This works automatically, you know, and you will yourselves he able to watch the process without my telling you."

We watched and we saw a hook-like arm, hinged at its back end, describe a semi-circle, almost caressingly taking hold of the Professor's foot and gently but firmly holding it down. Next, two coarse brushes started to work lengthwise of the shoe, removing any dirt there was along the soles —if there was any. These brushes were fastened to a sort of small truck which ran hack and forth on a pair of rails straddling the footrest, and when they suddenly withdrew, they were followed by two black polishing brushes running the same way, with a third brush issuing from the side and polishing the top of the shoes. They moved at great speed, and they worked two or three minutes, when they suddenly slid hack, the clamp opened, and the Professor's foot, with shoe polished to mirror-shine, was released. Everybody murmured his astonishment.

"How ever do those brushes get any blacking?" asked the practical Mrs. Smith.

"A very natural question, Madam, and one which is very pertinent," responded the inventor. "The solution is as simple as it is efficient. In passing out, each brush must pass over a roll upon which blacking is distributed by another roll in very much the same way that the ink is distributed in a printing press. So that part of the invention," he added modestly, "cannot be termed my own."

"I think it's marvelous," Mrs. Smith replied. "To think of all those things that you have shown us this morning. You call this an invention—why it's dozens of inventions. Oh, wouldn't I love to live in this apartment!" she said.

"Well, now," interposed Irvine, "do you think, Hicks, that all that machinery is going to work? Isn't something apt to go wrong? That thing that held the Professor's foot down, for instance. You say it don't let go for three minutes. But something might happen and you might want to get away before then, say in three seconds. Supposing there was a fire, then what? I am still waiting to see the rest of your apartment, but off-hand this strikes me as something to be considered."

People who must take the cheer out of life are an abomination to me. I would have liked to have told Irvine so. Couldn't the fellow see how wonderful it all was? But I could have saved myself the worry, for Hicks had the answer ready.

"A natural thought, Irvine," he smiled. "When I said that the arm would not let loose under three minutes, what I meant was, of course, unless it were released before by pressing the release button right under the starting button, just as you turn an electric light off after it has been turned on. Three minutes is merely the time required for a perfect shine and to insure the best results. The time-limit device is installed but merely as an aid to the user, not as its master."

IRVINE looked a little abashed at this natural explanation. "I may as well state now," said the inventor, "that this time I have left nothing out. I built a special device which automatically operated the various mechanisms, turning them on and off, and reversing them hundreds of times a day, to insure that every part worked as it should. Also, I operated the various machines at a number of speeds. The dish washer, the sweeper, the shoe shiner, and all other devices are, in fact, still hooked up so that they can be run at up to three times their present operating speed, which was chosen by me as the ideal because the most efficient. But deeds are greater than words and, therefore, let us now, after this little sample of work of the Fully Automatic Apartment, proceed with a practical demonstration of the larger features. Let me turn on this switch."

He did, and then opened a large box containing a powdery substance. "Knowing is believing, and to make my demonstration convincing, I have here what is called fuller's earth. It is a light, dusty substance, and it could very properly be classed as dirt. I have explained the action of the ceiling to you. Let us now see what hecomes of this earth which I shall fling into the air." With this he reached into the box and scattered a handful in the air. Everybody dodged and Mrs. Smith screamed, while even the prim Miss Peak lost suddenly some of her composure as she saw the thick cloud of white dirt starting into the air. But, as if by magic, the cloud rose and instantly disappeared through the ceiling. Nobody's clothes were soiled with even a speck of dust. "How is this?" smiled the inventor, as he took handful after handful of the stuff and flung it above him, the earth each time instantly disappearing through the ceil-

ing. "The ceiling, I believe, is doing its work. Now let us try the floor. I push this switch, and what happens?"

Instantly there was a sound I did not like. You know I have a sort of an instinct for that kind of thing; I can sort of feel when something is wrong. Something seemed to work with an uncalled-for force, for there was a vibrating and gurgling I had not heard the last time. Instinctively I looked at the inventor, who had grown the color of pale cheese and was fumbling with a push button. "The wrong one," I heard him groan. "The wrong one! O, why did I leave that experimental stuff here?" And then suddenly there was action. Straight in the air, out of a thousand holes, there shot as many streams of water, which rose six or seven feet high. In an instant everybody was drenched from head to foot. All those present were so dumfounded that for a few moments nobody moved. In fact, this upside downpour was so thick that one could hardly look through it. Just then the inventor gave a mighty wrench on the switchboard and the streams ceased. But there were three inches of water on the floor.

"What in the hotel is the matter?" roared Irvine, who was the first to recover his senses. "What is the matter, Hicks? Are you trying to drown us?"

"I accidentally pushed the experimental switch, and it refused to kick off. It doesn't matter. I'll . . ." stuttered Hicks.

"What the devil do you mean, doesn't matter?" bellowed Smith. "Don't you see that you have completely ruined all our clothes? And it doesn't matter! Now of all the . . ."

"I didn't mean it that way, Smith," wailed Hicks. "I'll turn on the warm air and we will all be dry in a minute." With feverish hands he fingered the switchboard.

We had all been recovering, and as we recovered and everybody looked at himself, drenched from head to foot, there was a feeling in the air as of a dozen thunderstorms brewing and ready to break. Something would have to happen to divert those people from dwelling on their troubles, I thought, and as I thought, it did. Hicks had found the button, and there was a click.

All at once, I heard a high whine, and instantly there was an explosive puff, and the air was white. Just before I closed my eyes, I saw why it was white. It was the fuller's earth, a matter of twenty pounds or so, returning well distributed from the ceiling the same way it had come, with the same force, and every bit that had been put in. Instantly our wet clothes, for the most part dark-colored, as it was winter, from our hats down to our shoes, were as if covered with flour. The professor wiped his face and smeared a broad streak of it over his nose and mouth. It was so funny that I could not help laughing. He tried to glare at me, but was cut short by a fit of sneezing. Even in the act of laughing, I was seized, and in a moment all the others. Everybody was sneezing his head off.

"Hee, kachoo! He, kachoo! Hicks!" screamed Smith between spasms, "what, kachoo; in the hell, kachoo! are you doing; kachoo, kachoo! Turn the blooming, kachoo! thing off! I, kachoo! kachoo!" he choked and could not go on.

"I am ha-ha-ha, kachoo! turning it off; I will turn it off, I have turned it off, kachoo! kachoo!" coughed the inventor as well as he could, between sneezes. "There will be no more of it, kachoo!"

AFTER a few minutes the dust settled and the babel of sneezes ceased. Then a flood of eloquence broke loose. Everybody was telling Hicks what he thought of him. In his misery, the unhappy inventor turned and started to fool with his switchboard.

"Lead the way out, Hicks, let us go and never see you again!" roared Irvine.

"Dismiss us instantly, sir," sternly ordered the professor, who had managed to regain as much of his dignity as was possible with a face like a miller and clothes that looked as if they had been through the flour mill.

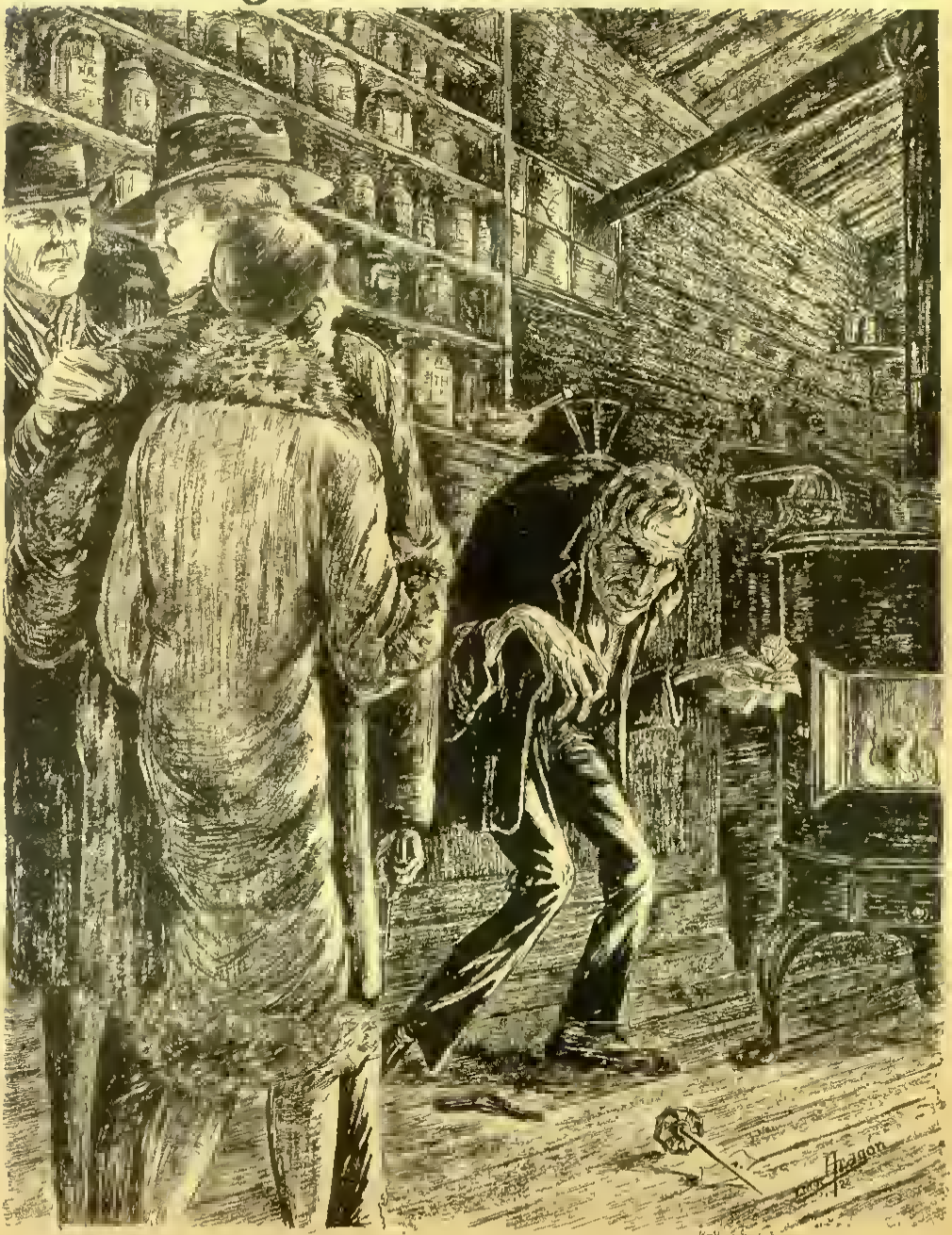
"The back way is the quickest way out," said the inventor, eager to get rid of his company. He jumped ahead toward the back door, the others following. But it was locked from the outside. "I have an electric lock on there," he muttered, as his fingers sought another switchboard,—there were switchboards everywhere on the walls, and I had been wondering how he kept them apart. I was to learn later. The shoe shining machine trap door opened out into the room at the exact moment that the professor approached with dignified step. Just then he slipped on one of the wooden mats and fell, landing on his back, with his neck on the footrest of the shoe shining machine. I gasped. Instantly, the foot clamp swung over, lovingly taking hold of the professor's throat and gently but determinedly holding down his head. Before our horrified gaze, the stiff revolving brushes appeared as if by magic and with a couple dozen swift and vigorous strokes prepared the professor's ears for what was to come. As the stiff bristles did their work, his shriek of desperation could be heard a mile. The prim Miss Peak, forgetting her dignity, came screaming to her betrothed's aid, but was unable to lift the clamp. I tried, but it was no use. The roughing brushes had by this time finished, and now appeared the polishing outfit. Immediately the professor's entire face was covered with an even coat of black, which the brushes started to rub down to an optical polish. Even with the full realization of the situation, I could not refrain from admiring the thoroughness and fantastic speed with which those brushes worked. Judging things objectively is a habit with me, you know. In a few seconds the professor's nose shone like a super-polished black knob, while other parts of his facial anatomy were taking on a wonderful shine. Ninety-five strokes a minute, the inventor had said. It seemed more like five hundred and ninety-five. By George, the high experimental speed must be turned on! That was it. I remembered. These were just some ideas that flashed through my mind—funny how the human mind will work in close situations.

The professor's struggles helped as little as his screams. "Push down your release switch, you idiot," roared Irvine. I could have kicked myself. Why didn't I at least think of that simple thing? But Hicks stood there, pale as cheese, except for the large smears of fuller's earth on his face, fum-

(*Continued on page* 512)

The SHADOW *on the* SPARK

By Edward S. Sears



. . . . As the doctor, seeing the blood on Inspector Craven's coat, began to examine him to learn the extent of his injury, the hunchback, with a quick movement, grasped a bundle of papers spiked on a file and threw them into the stove.

WHEN Dr. Milton Jarvis descended the gang plank of the liner Homeric, on his return from the International Medical Congress at Vienna, in the year 1926, he fully expected to find his most intimate friend, Jim Craighead, at the pier to meet him. He looked about him, somewhat disappointed, then disconsolately walked over to Broadway, where he stopped to buy a paper before hailing a taxi.

For more than two weeks he had not seen a paper. He was busy with the notes he had made at the Congress, which he was pledged to read shortly after his return, to the American Medical Association. Hence, it was with more than ordinary interest that he looked at the glaring headlines of the New York journals, so much more blatant than those employed by the European press.

One glance at the first page of the newspaper informed him why Jim Craighead had not met him. He shut his eyes for a moment to assure himself that he was not dreaming—that he really was home and not with the medical celebrities who had gathered at Vienna. Dismay, horror and unbelief strove alternately for mastery. It was impossible—Heaven would not permit such a crime. "Craighead inquest perfunctory" read the streamer. "Well-known banker dies of shock following operation." Craighead, it appeared, had slipped while dashing for a train. The platform was wet—the train was already in motion—he missed his footing, one leg going under the wheels. Amputation became necessary, fatal blood poisoning having set in.

The inquest had begun that very day. Very little testimony had been taken when the edition Dr. Jarvis was reading went to press. It was after two o'clock in the afternoon when he got into the taxi, and the doctor immediately resolved to hear what he might of the remainder of the testimony.

Leaning out the window of the taxi, he called: "Drive me to the Coroner's Court, please."

In a few minutes he stood in the court room just before the Coroner adjourned the Court for the day. The attending physician was on the witness stand completing his recital of the patient's treatment.

"Now, Dr. Lawson," asked Mr. Bailey, a lawyer representing an insurance company in which Craighead held a large policy, "how did you treat your patient? I understand that amputation was necessary as soon as Mr. Craighead reached the hospital."

"That is correct," replied the doctor.

"Were all the usual precautions taken?"

"Oh, yes," said Doctor Lawson, "I attended to that myself. The wound was perfectly sterilized. Then I attached the haemostats."

"What do you mean by that?" asked Mr. Bailey.

"Little clips are used to fasten the ends of the severed blood vessels. Afterward, they are replaced by gut which is tied around the blood vessel, gradually being absorbed as healing progresses," replied the doctor.

HERE is a murder detective story of a different type, which we warmly recommend to you. It again shows that circumstantial evidence may not always be 100 per cent right, and that one should not always jump to conclusions. The science part of this story is extremely ingenious and can be duplicated at any time for use in similar cases.

"And with all these precautions, the shock of the operation killed Mr. Craighead?"

"That is true," assented Dr. Lawson.

"That will be all for today," said Mr. Bailey. "Tomorrow, I will want to ask you a few questions."

The lawyers folded up their papers preparatory to leaving the court room, while the large crowd which had gathered out of curiosity to hear how one of the wealthiest bankers of the city had met his destiny, slowly filed out. Dr. Jarvis, seeing the physician of the insurance company, whom he knew well, at the table, joined him as he packed a sheaf of papers into a wallet.

"What do you make of it Fulton?" he questioned the doctor.

"So far, we have learned nothing, Jarvis," said Dr. Fulton, slowly. "I know how close you and Craighead were. You must feel terribly shocked. It seems clear that the operation killed him. There is no ground for suspicion, but we must make some kind of fight, before we pay a $300,000 policy which has been in force only six months. He left a large estate too, as you probably know."

Dr. Jarvis went home in a deep, brown study. He was shocked and horrified by the loss of his dearest friend. He could not reconcile the thought that this big, hearty person was the victim of blood poison or shock. Why, the man had always been immune. He had been proverbially tough, bubbling over with vitality. "How had he lost that immunity?" he asked himself. He recalled their last day together—the day before he had sailed for Europe. They were playing tennis at the country club.

Dr. Jarvis, trying desperately to prevent his rival from scoring the last point in a hard-fought game, swung down viciously on a high bounding ball, sending it back low over the net in what looked like a volley, impossible to handle. But Jim Craighead whipped his racquet up in a swift lawford and the ball, like a shot from a gun, sped down the side line far from the doctor's reach.

"Damn," he cried, "trimmed 8 to 6 by a man of fifty and I'm your junior by ten years. But you sure do keep in condition."

"Doc," answered Craighead, "just three months ago, when I took out life insurance policies for $300,000, the examiner said he would like to have a dozen risks in my condition. I can run a mile at a good pace and do any stunts in the gym that a kid can do."

"That's right, Doctor Jarvis," chimed in a young man of twenty-two, who, with a beautiful girl about the same age, had just run up to the club house in Craighead's sedan, "he made me go some to keep ahead of him in a long swim, though he didn't even know the crawl."

DOCTOR JARVIS recalled that picture now—the great, tawny-haired Craighead towering above his adopted son's head, his arm fondly on his shoul-

der and the youth's arm about the girl's waist. The girl, the jewel in the setting, had light hair, neither golden nor yellow, although with a touch of autumn wheat; she was delicately featured, with an expressive mouth, inclined to be serious. Now, with these two men, apparently happy and smiling, she revealed very regular, white teeth. Ross Craighead was almost as tall as his adopted father but slender; Jim was wide shouldered and robust. The girl, although tall, seemed diminutive beside these two.

If the beautiful girl and the handsome youth seemed well and full of vitality, Jim Craighead was almost insolent in his defiant heartiness. Ross was the orphaned son of Craighead's sister who had died when he was a few years old. The bond between these two was very strong—Ross was a sensitive soul, of the artistic type, against which characteristic the buoyant Craighead had waged a losing fight. The boy could not be hardened.

At college he was all for humanities, classics, science, logic, but close calculation in business seemed to have been left out of his nature. Sports had attracted him—he was good material for the teams, especially in baseball and swimming. Just as Craighead had determined that he would be hopeless in the banking and brokerage operations which he controlled, Ross had met Tessie Prettyman, who was secretary to Craighead's manager. Her efficiency was due to the fact that she took every instruction seriously and obeyed implicitly. She believed anything she was told, which was inconvenient when she was listening to a rival of the firm.

Craighead was inclined to discourage the intimacy he saw growing between the pair but when Ross began to grind earnestly at tasks Jim knew the boy loathed, he began to consider the girl less a liability than an asset. She was an orphan, that was all they knew of her history. But she was well educated, a lady in all her actions, so that Jim soon grew as fond of her as Ross. This, then, was the circle which had been broken up by a tragedy so unnecessary in Dr. Jarvis's mind as to be heartbreaking.

Like all healthy men—men who have never felt an ache or a pain, Jim was virtually a baby when some slight cut or other wound came in a tennis or other game. Once Doctor Jarvis had found him taking morphine. Jim had said, rather shamefacedly:

"It's not a habit, Milt, but I just can't stand pain. I've never had much, I guess that's the reason."

This last day he had seen Craighead, the recollection of which came to the doctor's mind over and over again, the young man had taken the front seat with Tessie, while Jim and Doctor Jarvis sat in the rear.

"Jim, old man, I'll be missing you," said the doctor, as they left him at his apartment.

"We'll be waiting at the pier when you come back, Milt, twice as famous as you are now," was Jim's reply.

That was like him. He had helped Doctor Jarvis through his early difficulties and setbacks, encouraging him and rejoicing in his successes. He was foster father and pal in one. So Doctor Jarvis was very impatient as his brain refused to accept the fact that Jim Craighead was dead.

In no way could he reconcile his sturdy friend's death with a theory that the shock of an operation would kill him. His analysis was searching. Nothing in his experience was overlooked. He was skilled in X-ray therapy as well as X-ray photography. His science was modern—the latest researches were commonplaces to him. But facts were what he needed, after all. No conclusions could be drawn from surmises. This thought drove him to the room of Inspector Craven at headquarters. They were good friends, for the doctor had often given expert testimony in trials in which the inspector was interested.

"Inspector," began Dr. Jarvis, "what do you know of this Craighead inquest?"

"Well, Doc," replied the inspector, settling his huge frame back in a capacious chair, as he wrinkled his thick brows and blew the smoke from a vile smelling pipe through his walrus moustache, "inquests are not much in our line unless there is some crime involved. This is such a clear case of a man dying from the shock of an operation that the police have no more interest in it than the public. Of course Craighead was a big man. I knew him well myself. He used to stop here to pick me up sometimes, so I got to know what an impatient chap he was. He told me that he'd sprint for a car, whenever he had to ride on a street car, like any kid of seventeen. The insurance company would grab at anything suspicious but nothing has come up. We all know the story. Craighead got too cocky in his sprinting ability, and was run over. It was mucky and rainy, so what followed was almost inevitable. Tough on the insurance companies, though. Doc Lawson seems positive that it was the shock of the operation."

"That is just why I don't feel satisfied," said Dr. Jarvis. "Lawson is an old practitioner, a good surgeon, but very apt to make up his mind what killed his patient. The more you might show him the probability of some other cause, the more stubbornly he would believe in his own theory."

"There are quite a few of us like that, Doc," smiled the inspector. "But, you knew the whole family. Is there anyone who could profit by Craighead's death?"

"Well, there is Ross, Jim's adopted son and his nephew. But he had all the money he needed—he was in the business with Jim. Then, too, Jim made no secret of the fact that his fortune was to go to Ross. So I think that Ross is out of the question, for they were devoted to each other. Ross is the idealistic type—he would be more apt to give money away than try to get it by murder."

"Who else is there?" queried the inspector, indifferently, for he could see no mystery in Craighead's death.

"Then," continued the doctor, "there is the girl to whom Ross is engaged, a perfectly innocent creature who simply adored Jim—he treated her as if she were already his daughter-in-law. She is an orphan, Tessie Prettyman."

"Tessie Prettyman!" exploded Inspector Craven, "Good Lord, Doctor Jarvis, do you know who Tessie Prettyman is?"

"No, she has no family that we know of, but she seems to be a very refined and charming little lady."

"WELL," said the inspector, bouncing from his chair, "Tessie Prettyman is a girl who has been visiting Piggy Bill Hovey down in the Tombs. Piggy Bill is held on a narcotic charge, without bail, because he was caught with a large supply of morphine, opium and heroin; the Federal boys want to find out where he gets that stuff because he can't be connected with any smuggling operations. Our men have watched the girl and she seems to know Piggy Bill very well. Some of them think she is his sweetie. But if Piggy Bill is anywhere on the horizon, I am willing to be suspicious about Craighead's death."

This revelation grated on Dr. Jarvis. He did not believe for a moment that this sweet looking girl had any criminal tendencies or was capable of playing such a dual rôle as the affianced of Ross Craighead and the "swestis" of a notorious criminal.

"Inspector," he said finally, "have you time to go up to the hospital with me? The records or the head nurse might tell us something."

"Time, time," roared Craven, "this is official business now. What we have to learn is how Piggy Bill's sweetie happens to be engaged to marry Jim Craighead's son. First thing, we'll go to the hospital, then we'll talk with this young man who seems to be infatuated with Tessie."

In the inspector's big car it was a short trip to the hospital. The records told them nothing new. It was Dr. Lawson's case, so that whatever he might have to say would be developed at the inquest. But for the fact, suddenly unveiled, that Piggy Bill was somewhere in this series of events, the inspector would have remained seated in his big chair, serenely puffing on his pipe.

"Doc," said the inspector, suddenly, "let's talk to the head nurse first, then we can look up the young man and Tessie."

"Miss Cornhill," asked the Doctor, when the head nurse appeared, "did you see Mr. Craighead when he was brought into the hospital a few days ago?"

"Of course," replied the nurse.

"How did Mr. Craighead seem to you?" he queried further.

"Doctor Jarvis," the nurse said, "Mr. Craighead was very badly hurt. He was not a patient sufferer—he stood the pain irritably and was relieved when it became necessary to etherize him. He asked the doctor to give him a hypodermic a couple of times, but the doctor refused."

"That was like Jim," murmured Doctor Jarvis.

"But," continued the nurse, "he should not have died from the operation under normal conditions. Of course his mental condition was very bad. He was a very handsome man, in fine physical condition and he moaned, time after time, "I had as lief been killed as lose my foot."

"When Mr. Craighead was taken home, Miss Cornhill," asked the doctor, "did one of your nurses accompany him?"

"No, sir," was the reply, "Mr. Craighead insisted that his son and the young man's lady friend be with him—anyone else, he was sure, would irritate him more than help."

"Thank you, very kindly, Miss Cornhill," said the Doctor, and they left the hospital.

"Well, inspector," began Doctor Jarvis, when they were seated in the car, "we didn't get very far at the hospital. If it lies between Ross and Tessie, I guess it may as well end where it is."

"See here, Doc," said the inspector, gripping Doctor Jarvis by the arm, "you've started me looking for a murder or some crime and by the eternal, you are not going to let any sentimentality about a pretty girl check our investigation until we know that there is or is not a crime."

"Inspector," replied the Doctor, with a hard glint in his eye, "as long as there is any doubt as to how Jim died, I am with you to the end. I simply meant to express my opinion that neither of those two could be involved. Let us look the situation in the face. Dr. Lawson has certified that Jim Craighead died of natural causes. That prevents any kind of action until the inquest reveals something of a suspicious nature. In fact, there would have been no inquest but for the insistence of the insurance company. Now, we must develop something that points to some unnatural factor in Jim's death before the inquest is over."

"That's true enough," replied Craven, "and we don't want to alarm anyone until we have the goods on him. You be at the inquest bright and early and keep your eyes and ears wide open. I will find out when Tessie want to see Piggy Bill last and join you later."

The inspector left Doctor Jarvis at his door, a prey to many conflicting emotions. He had started machinery going which he knew could no longer be stopped. But he did not want to leave Ross open to an insidious attack. His efforts to communicate with him, however, were unavailing. After a sleepless night the doctor refreshed himself with a plunge, a shave, and then having dressed himself in a sombre garb which fitted well with his present emotions, went to the Coroner's court. It had just opened with Dr. Lawson on the stand.

"Now Doctor," began Mr. Bailey, representing the insurance company, "you were describing, yesterday, the nature of Mr. Craighead's injuries. You mentioned fastening the haemostats yourself. Will you tell the coroner and the jury what you mean by that?"

"Why, yes," answered Dr. Lawson, "to use layman language, haemostats are little clips which are applied to the ends of all the severed blood vessels when we amputate, thus closing them so tightly that no foreign or toxic substances can find their way in."

Dr. Jarvis leaned over to the physician of the insurance company whispering, "Fulton, why doesn't your lawyer ask him how the shock of the operation or blood poison could kill him, if the haemostats were properly applied?"

Dr. Fulton communicated this message to the lawyer who immediately shot this question at Dr. Lawson.

"Dr. Lawson, if the haemostats were properly applied, how do you suppose the poisonous substances got into the wound, if the wound was sterile, as we must assume it to have been after the operation at the hospital?"

"Well, one way, which I assume to have been the true way, is that the poisons made their way through the wall cells of the blood vessels—the ar-

teries, veins and capillaries," replied Dr. Lawson.

At this reply, Dr. Jarvis shut his lips very grimly. He was making progress at last. Very opportunely, at this moment, Inspector Craven slipped into the chair next to him.

"Doc," he murmured, in a low tone, "we are on the track of something—Tessie visited Piggy Bill twice, the day before Craighead died. He's a bad egg, but we never have caught him in anything red handed except this narcotic deal. He's bad, though, bad enough for anything. Now, here's another funny thing about Piggy. He's an educated rogue, talks French and is a great student of toxicology. How does that fit in with your story now?"

"Inspector," said the doctor, "I don't know yet where we are heading, but that last remark of Doctor Lawson's shows me that Jim did not die of the causes ascribed. Now we must find out what did cause his death. With a few more facts, I think I can clear this mystery. I'm half tempted to take a hand right now."

"Wait until you have the whole story," advised the inspector. "If we have to make any arrests, we don't want to warn them in advance."

"Doctor Lawson has just made a bad break," said Dr. Jarvis, "which makes it easy to show him up, although I hate to discredit him. He really is a good surgeon, but he's not modern enough. We must get all the information we can from him before he suspects we are after anything."

He then scribbled on a piece of paper, "Ask who nursed Craighead."

In a few seconds the lawyer asked:

"Dr. Lawson, Mr. Craighead was in charge of a nurse, of course?"

"He was in good hands, Mr. Bailey," said Dr. Lawson; "it was his own wish that his son Ross and Miss Tessie Prettyman, of whom he seemed to be very fond, should be with him and administer his medicine."

"Is Miss Prettyman here?" queried the lawyer.

"She is sitting just back of you."

"That will be all for the present, thank you, doctor," concluded Mr. Bailey.

"MISS PRETTYMAN, will you take the stand?" asked the coroner.

Both Dr. Jarvis and the inspector looked keenly at the girlish figure which mounted to the witness box. She was tall, well formed, with a wealth of blond hair which surrounded a very beautiful, expressive face, now drawn with worry and late vigils.

"You nursed Mr. Craighead during his last illness, did you not, Miss Prettyman?" asked the lawyer, after the usual preliminaries were over.

"Ross and I took turns, and sometimes both of us sat with him together," said the girl. "He grew fretful when one or the other of us was away for even a minute."

"Did you give him his medicines?" continued the lawyer.

"Sometimes I did and sometimes it was Ross," said the girl in a low voice, in which a slight catch of emotion was discernible.

"Gad, Doc," snapped the inspector, "where is this young chap? If he knows anything we can sweat both him and Tessie."

"There he is, three seats over," replied Dr. Jarvis. "One look at him ought to satisfy you."

They looked at the tall, well dressed youth—about twenty-two he was—a sincere, dreamy looking chap, yet now with his lips tightly compressed, evidently resentful of the way the girl he loved was being prodded.

"Miss Prettyman," queried the lawyer, who as yet had not caught the drift of Dr. Jarvis's prompting, "how did Mr. Craighead die? Describe his symptoms."

"I can hardly tell you that," answered the girl without hesitation. "Ross would be down for awhile in the adjoining room, with the door open, whenever Mr. Craighead dozed off late at night. Mr. Craighead died very suddenly, for I ran in a very few seconds after Ross had cried that he was in danger. Ross, of course, saw him die but would tell me nothing about it. He said it was too awful."

"Now is the time, Doc," said the inspector, all his detective instincts aroused. "We'll see what the boy says and then, if it throws suspicion on him, we can see how deep is the affection of Piggy Bill's sweetie."

In the girl, the inspector, looking for important revelations, saw now, not a pretty girl, but the possible accomplice of Piggy Bill Hovey in some foul deed.

"Swear Ross Craighead," said the coroner, who did not know whether he was to be bored with a lot of insurance statistics or was to face a drama not yet unfolded.

The buzz of conversation in the courtroom ceased as Ross took the stand. No one knew in what direction the inquest was tending. Even to the coroner this long rehearsal of symptoms without any avowed purpose seemed unnecessarily delayed. Inspector Craven's presence puzzled him. He did not especially relish having the police oversee his conduct of an inquest. He asked rather curtly that the proceedings be hastened.

"Mr. Craighead," began the lawyer, "were you with your father in his last hours?"

"I was," answered Ross, sadly.

"Did you purchase the medicines administered to him?"

"No, sir," was the reply. "He was very querulous if I left his side. When I dozed off, he often called me just to talk. He felt the loss of his activity so much it was pitiful. Miss Prettyman, who loved him almost as much as I did, for we were always together, never minded going out for whatever he wanted, day or night."

"I should say not," muttered the inspector grimly to Doctor Jarvis.

"Now," pursued the lawyer, obedient to the doctor's prompting, "how did your father die? I do not want to deepen your pain, but we must get at some understanding of the exact cause of your father's death."

"Well," answered Ross, wearily, "he insisted on taking opiates; he knew how to take a hypodermic himself, but he took some other drug, heroin, perhaps. He was not a drug addict, but he often said that he would take anything to drown pain. It happened like a flash. I did not know that blood poison could travel so fast. The night he died he

took an opiate and seemed drowsy, so that I said I would lie down for a moment or two. He took a bottle in which was a colorless liquid and poured some of it into a glass of milk. He was half asleep then, so I went to my room while he was drinking it, for he often took a glass of milk in that fashion. I had had very little sleep for two or three days and dozed off at once with all my clothing on. I could not have slept more than a quarter of an hour when I was awakened by a crash. It was the crash of breaking glass, as I learned an instant later. I rushed into his room to see him breathing his last. He had overturned the table on which were the bottles of medicine. But what a terrible sight greeted my eyes! His hands, arms, legs twitched and shot out from second to second, then before I could even call for help he had a convulsion and died. I called Dr. Lawson. It seemed an eternity before he answered. Miss Prettyman had heard my cries and she was with me. Dr. Lawson asked if he had taken anything besides the medicine he had prescribed. I said yes, he had taken a hypodermic and some other opiate.

"The hopeless fool," he cried "I warned him against that very thing. He practically killed himself. The shock of the operation was enough at one time."

When he reached the house, he said it was too late to do anything.

"Did you look at the bottles on the floor?" asked the lawyer.

"Yes, sir," replied Ross. "They were all thrown together in a broken heap—they had been on a small table at his bedside. In his struggles, he must have overturned them. Oh, it was terrible, terrible." Here, the young man buried his head in his arms, shaking with the power of his emotions.

"Inspector," said Dr. Jarvis, "that young man was describing a death from strychnine poisoning. We must find out where that strychnine came from. Look at that girl now!"

The inspector followed his gaze to where Tessie sat. She was obviously horror stricken. A look of despair crept into her face as she followed Ross's descent from the stand. Ross was about to go to her side but at a sign from the inspector an officer took him by the arm, leading him to a chair near the inspector. His heart sank as he caught that look of despair on the girl's face.

EVERY actor in the drama was apparently in court. Dr. Jarvis had caught the inspector's fever for a man hunt. It was now a cold problem of science. He was not a judge, merely an instrument of justice. No longer was there a thought in his mind, any more than in that of the inspector, that any person should be shielded. He was going, from now on, to let the chips fall where they would.

"Inspector," he said, "the whole situation now depends on how much that girl knows. I am going to ask Mr. Bailey to put me on the stand. I see exactly how the affair was managed, but I haven't the slightest idea of who planned or executed it. Anyway, when I get through, if Ross or Tessie had any hand in it, they will talk better than if they were subjected to the third degree. I am talking of murder now; when I am through, it will be your affair to bring the guilty person to justice."

"H'm," mused the inspector a second, as if in doubt, then posted his men with orders to let no one leave the court room until he gave the signal. "There might be others," he reflected, "so why not bag them all?"

Dr. Jarvis now stepped to the table where counsel and doctors sat. After a few whispered words, Mr. Bailey rose to his feet.

"Mr. Coroner," he said, "one of our most prominent physicians, an acknowledged authority and the closest friend of the deceased, is our next witness. His testimony may clear up some of our difficulties."

The pursued rarely are ignorant that they are pursued. As the lawyer concluded his announcement. Tessie half rose to her feet, but an officer forced her back into her chair. She realized then, that she was in custody. She had indeed, divined before that the inquest had taken a threatening turn. Ross dully watched the progress of events thinking how he might shield her from persecution. Lovers are impersonal. The world is outside. To him, Jim Craighead was still alive. Suspicion did not enter his mind. It did not occur to him that he might be suspected of murder. Still less did he conceive that anyone would accuse of complicity in a murder, the girl, who to him, was the impersonation of innocence. That a net of some evil omen was weaving about them was too evident to be ignored. Its nature, however, was a mystery to him. Yet when the doctor, a man whom he knew for the devoted friend of his foster father and, as he thought, also of himself, got on the stand and began to speak in that sure, even voice, which seemed to brook no contradiction, he looked somewhat hopefully at that dynamic figure. The doctor was a tall, slender man, athletic and erect in appearance, with a firm, intellectual face.

Dr. Jarvis was sworn. He was then examined on his various degrees, his experience, his scientific and other studies. Mr. Bailey, instead of asking a series of questions, requested him to give any testimony that might throw light on the death of Jim Craighead.

"I would like you to bear patiently with what I have to say," began Dr. Jarvis, "interrupting, if you like, when I have not been sufficiently clear, for whatever questions you may care to put.

"Singularly enough, the mysterious death of the best friend I have ever known ceases to be a mystery through a remarkable scientific discovery which I must rehearse briefly. It is the relative size of the smallest bodies known to science. The structure of the atom has been analyzed. The atom is the smallest particle of matter which can exist independently. The elements which enter into the atom have no existence apart from the atom. The atom is the smallest particle of matter which can enter into the structure of the molecule. But it is not indestructible. It has been broken up into its elements. These consist of outer circulatory electrons which are negative charges of electricity and a core or nucleus composed of positively charged protons and some electrons, all in balance. These electrons are in constant motion within the atom, revolving

about the nucleus much as the planets revolve about the sun.

"Now, this discovery led to the measurements of these tiny particles. Science wanted to learn more about the relative masses of atoms and molecules. The electron is about one thousandth the volume of the hydrogen atom. Do not think this is all a pedantic discussion. You will see in a very few moments how very practical it all is.

"The atom," continued Dr. Jarvis, "is invisible under the most powerful microscope. The molecule is larger, but defies the microscope. But, having gone thus far, science had to go further. The next larger mass after the molecule, is the colloid. A colloid is a formless substance classified as a slime. It never takes a definite form like the crystalline substances. Solutions of gold can be made in the two forms—there is a colloidal gold and a crystalline gold."

A look of stupefaction was on the faces of the inspector, the coroner and all that vast throng in the courtroom. Yet a pin could have been heard, had it dropped during that tense silence. Back of these mystic words an enigma lay. That the doctor would clear it up, his easy self assurance seemed to guarantee.

"Even the colloid practically baffles the microscope. In the ordinary atmosphere, merely cloudy impressions can be obtained. How then is the presence of any of these tiny particles discovered? It is very simple, when the method is disclosed. The colloid cannot be seen, but it makes a shadow on an electric spark as it passes by. So when the presence of a colloid is suspected, its shadow on an electric spark betrays it."

"Pardon me, Doctor, for interrupting you," broke in the bewildered Mr. Bailey, "but if this discussion has any bearing on the death of Jim Craighead, I would like to know, if these particles you are talking about, are so small that they cannot be seen with the strongest microscope, how it helps you any to know they make a shadow on an electric spark. In fact, how do you know they make a shadow on an electric spark?"

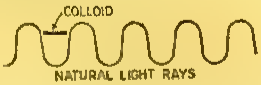
"YOU may have read at times, Mr. Bailey," replied the doctor, "announcements that astronomers had located a star known through mathematical calculations to be at some point in the heavens, which the telescope has been unable to penetrate. Well, the speed of light, which is 186,000 miles a second, helps us. A photograph of the heavens will sometimes reveal something which the eye could not see. So, a photographic plate will sometimes catch the smaller particles as well as the largest stars, too far away to be seen.

"If you consider the light as moving in waves it is easier to understand what effect light waves have on these discoveries. Artificial light travels in waves farther apart than in the case of natural light. The waves of this kind of light are so far apart that the colloid or small microbs can lie between the waves and make no impression on the eye or on the photographic plate." The doctor here took a sheet of paper and hastily made a sketch which he showed to the jurors and the coroner.

Artificial light waves:

"The waves of natural light are closer together, but still too far apart to catch much of the smallest germs, like that of cancer, or the colloid, to advantage." The doctor made another sketch.

Natural light waves:



"In natural light, under the microscope, it is at times possible to get a hazy impression which conveys little information. But it has been found possible to use the ultra-violet waves which are shorter than natural light waves in a vacuum and thus to get a photograph of particles too short to be caught in ordinary light." Here the doctor made his final drawing.

Ultra-violet waves:

"Thus a shadow thrown on a spark of an ultra-violet ray in a vacuum will be recorded on a photograph of the phenomenon. The discovery of the Becquerel Rays, the X-rays and the various rays known as "gamma," etc., were all stepping stones to our knowledge of the tiniest particles. Compared with electrons, atoms and molecules, the colloid is relatively large.

"A photograph would show the presence of a colloid without great difficulty. Now, what is the relation of the colloid to the problem we are trying to solve? During the world war, things were learned which were mothered by necessity. Surgery had to be not only quick but effective. While what is known as the shock of an operation is due to a toxic condition, it is not what is technically known as blood poison. It is definitely the shock of the operation. In the world war it was learned that the shock of the operation was due to the absorption or infiltration of certain toxic or poisonous substances which belong to the colloid family.

"It was observed that if the haemostats were removed from a wounded member, which had been amputated, the condition of shock immediately was noticeable. This led to the conclusion that the haemostats kept out something which could enter when they were removed. The inevitable conclusion which followed was that the cause of shock was something which could not pass through an animal membrane or tissue, such as the walls of the blood vessels. Experiments have shown that while crystalline molecules would pass readily enough through a parchment filter the colloids remained behind.

"So, if a wound is made perfectly sterile and haemostats are used to seal the wound hermetically, the colloid poisons are excluded and, as they could not penetrate an animal membrane, the sealing of the wound effectually prevents the condition known as shock which so often is the fatal result of an operation. The tiny colloid, first known by

its shadow on a spark, cannot enter the blood stream if the wound of amputation is sealed.

"The lessons of the world war showed that the wall cells of the blood vessels, the arteries, veins and capillaries present a compact and effective barrier to the passage of the colloidal poisons which cause death. Can you see now where we have arrived? Dr. Lawson has said that Mr. Craighead's death was due to poisons which seeped in through the wall cells of the blood vessels. But in this long and perhaps tiresome explanation I have shown this to be impossible. Jim Craighead did not die of the shock of the operation. Dr. Lawson is positive that the wound was perfectly clean, that it was impossible for infection to have entered at the point of amputation.

"If it was impossible there, it was impossible elsewhere. So, if Jim Craighead did not die of the shock, he died of something else. It was not blood poison, for it would not have acted on a man of Craighead's strength and perfect health, in so short a time. His death was due neither to blood poison nor to shock. Of what, then, did he die? Symptoms tell us clearly enough. Craighead's son describes in untechnical language, symptoms which point almost unerringly to the fact that *Craighead died of poison administered to him.* That poison, I assert was strychnine."

Had a thunderbolt destroyed the cupola on a nearby building and caused it to crash in on them, or had a boy rushed in crying that a tidal wave was rushing up Broadway, the excitement could not have been greater. The girl was crushed. Was it guilt that could be read in her terrified features? The coroner's jury, which a few minutes earlier was ready to render a verdict of death due to an operation, was now anxious to recommend the arrest of a murderer.

FOR a few seconds the atmosphere of the court room was tense—no whispers broke the silence, but eyes moved restlessly to the actors in the drama. The girl under guard, almost terror stricken, looked across beseechingly at her lover. The youth returned her gaze, nodding encouragingly. Every word spoken by the doctor had burned his soul. His steady, calm exterior encouraged the girl and she grew calmer.

This ominous silence was broken by the coroner.

"Dr. Jarvis," he said, "the fact of poisoning can readily be established by an autopsy. If it reveals, as you assert, the presence of poison, arrests must follow."

"Yes, if after the autopsy, you find the guilty one who, being warned, would flee," cried the inspector, who had followed the conclusions of Dr. Jarvis and decided upon his course of action. "While you are looking for proofs which you are certain to find, if Dr. Jarvis is not mistaken, and he does not talk like a man who is mistaken, I will take the precaution of arresting Ross Craighead, on the charge of poisoning or being an accessory to the poisoning of his father."

"What a foul lie!" cried the youth, leaping toward the inspector, with whom he would have grappled like a wild beast, had not the police interceded. After a violent struggle he was manacled so that he could threaten no more harm. The inspector was unmoved by this demonstration. He was calculating the girl must move. Either she would remain calm, as might be expected of Piggy Bill's "sweetie," or she would try to save Ross. His calculation was perfect. Ross had not yet been subdued when the girl's voice could be heard above the tumult. Terror and dismay mingled in her cry. She rose to her feet and began to speak. An officer grasped her arm to force her back into her chair, but the inspector motioned him to release her. He spoke to her across the room.

"Whatever you say, Tessie, will be used against you," he said. "Do you want to take the stand again? Perhaps you had better talk to a lawyer."

"No, no," she cried wildly, "I will tell you everything I know. I did not understand what it all meant until Dr. Jarvis had explained. Now I see it all and it is too horrible. That boy you accuse, Ross—you do not know him. He couldn't kill a rabbit. He would run his car off a bridge to keep from hitting a stray cat. He nearly wrecked us once to avoid hitting a dog. You can do anything to me if he is cleared. But I never committed murder. I can't bear suffering in others—I suffer as much as the one I see in pain. But who is going to believe me, now?"

Slowly she moved to the witness box, where she took the oath again.

"Miss Prettyman," said Mr. Bailey, "tell us all the facts you know in connection with Mr. Craighead's death. Tell us particularly where you obtained any of the drugs administered to him during the period following his operation."

"It is true," Tessie began, "that I bought all the drugs which Mr. Craighead needed. All the prescriptions were filled by the Groves pharmacy. There were two or three for digitalis and one or two for antiseptic washes. There was another prescription which I must describe. The day before Mr. Craighead died I went to the prison to see Bill Hovey."

The inspector whispered quickly to Mr. Bailey, beside whom he had taken a chair. The lawyer now saw his cue. The girl was to be sweated. In far harsher terms than the inspector used for the third degree, he shot out:

"How many times did you go to see this Bill Hovey?"

"Twice, the day before Mr. Craighead died," she answered dully.

"Bill Hovey, in the parlance of the underworld, is your 'sweetie,' is he not?" pursued the lawyer.

"You filthy cad," burst from Ross, who tried unavailingly to break his manacles.

"You'll be gagged, if you don't keep quiet," said one of his guards. But the inspector turned and motioned for silence.

"Mr. Bailey," replied the girl, with dignity and resentment, "Bill Hovey is a man who, I have learned lately, has committed many wrongs, but he is fifty-two years old and I am twenty-two. He never was my 'sweetie,' as you call him, since you are so well acquainted with the underworld; he is my stepfather."

There was a murmur of approval from the spectators, who obviously did not like the way the examination was conducted. Inspector Craven leaned toward Dr. Jarvis.

"Say, Doc," he whispered, "I'm beginning to see light. We're only getting started. How about you?"

"Did Mr. Craighead and Ross Craighead know that your stepfather was in prison?" asked Mr. Bailey.

"When Ross Craighead first asked me to dinner at their home," answered Tessie, "I knew that he was showing me serious attention After dinner, I told Mr. Craighead that I had only come so that I could talk to him more freely than was possible in the office; I told him that my stepfather was a drug addict and in prison for having drugs; that he was an educated man, but of no account, and that he always had plenty of money, although we never knew him to work Still he never was mean to us and I saw little of him after my mother died. Recently I had not seen him. The last time he saw me he told me he was not as 'flush' as be had been. All this I told Mr. Craighead, thanking him for his kindness. Then I intended to leave. But he and Ross refused to let me go at all. They said it was bad enough to have the father's sins visited on the heads of their children, without taking in the step-children, too."

PROMPTED by the Inspector, Mr. Bailey continued his questions.

"Why," he asked, "did you go to see Bill Hovey the day before Mr. Craighead died?"

"I should not have gone at all," replied Tessie, "if Mr. Craighead had not requested it. He sent me out a couple of times to a druggist with an old prescription for narcotics—morphine—and the druggist refused to fill it. He knew Dr. Lawson had forbidden it and was afraid. Then the pain got so bad that Mr. Craighead tossed about moaning all the time. His tossing only made the pain worse, so he called me early in the morning.

"'Tessie,' he said, 'do you mind going to that no account stepfather of yours? Ask him if he can tell you where to get some morphine. Those fellows always know where it is to be bad. Just say that you want to do me a good turn—that I am in great pain.'

"I asked Ross what to do. He said, 'I don't like it at all, but he never uses it unless he is suffering, so I guess it will be all right to humor him. He is always brooding over the loss of his foot, so a few hours of freedom from pain may do him good. Hs was like this when he sprained his ankle in a tennis game, two years ago. I thought he would go mad. He just drugged himself all the time to deaden the pain. The doctor said hs took enough to kill a horse. I often feared he might get the habit, but he never did.'

"So, I went to see Bill Hovsy at the prison. He seemed glad to see me and told me what an injustice had been done him. He said he felt sure he could get out if he had money enough to pay the lawyers. After he got out be intended to go off somewhere and start right again. I told him I was glad to hear it and then he said:

"'Tessie, I could fix everything up if I bad $10,000. You could get it, too, to help your father out of trouble.'

"'How could I get such a sum?' I asked.

"'Why, your rich friends, Mr. Craighead and his son, they have all kinds of money—they would give you $10,000 if you tried them out.'

"'If that is the price of asking you a favor, Bill Hovey,' I answered, 'I may as well go.'

"He changed, then—tried to sooths me—said he would do anything I wanted—asked me to forget what he had said. Then I asked him where I could get some morphine I told him how Mr. Craighead was suffering, but that I was doing this of my own accord to help him. I didn't want to tell Bill anything that might encourage him to try to get money from Mr. Craighead He asked me when I was going to be married. I said I didn't know—Mr. Craighead wanted us to wait until Ross was well on in the business, because Ross was to succeed him. He wanted him to learn the 'ropes,' from tbe beginning.

"'Tessie,' he said finally, 'I'll do this for you without any strings. I know of another drug that he can use with the morphine. It is called scopolamin and is known as a mydriatic. But it has other properties, too. Do you know anything about it?'

"'No,' I answered, 'I never studied much chemistry.'

"Bill wrote some words hastily. He said it was a prescription which I was to take to a place near Tarrytown."

The moment the girl mentioned "Tarrytown," two bard-faced men in the court room rose hastily from their seats, one moving toward tbe door, the other to a corner of the corridor where there was a telephone booth. But the inspector, who bad followed the girl's story with the utmost attention, was watching every one of the spectators in the crowded court room.

"Get those two men," he ordered, pointing to the pair, who tried to force their way along more quickly. The second man actually entered the telephone booth, frantically moving the lever to signal the operator. An officer pounced on him before the operator had answered. He struggled mightily, but handcuffs were slipped on his wrists too quickly for resistance. His companion reached the door to walk into the arms of another officer.

PANDEMONIUM now reigned in the court room Two reporters rushed to the telephone booths. The polica made no exception for the men of the press. For some minutes the confusion was too great for any voice to be heard. Finally the inspector succeeded in making himself heard, his big, booming tones dominating the uproar.

"Mr. Coroner," he began, "nothing but the necessity of preventing a crafty scoundrel from making his escape could justify my interference with your jurisdiction. I am an officer sworn to uphold the dignity of your court as well as that of any other judge or official. But I knew, if there was a grain of truth in the story that young woman on the stand was telling, the villain certainly could not be without interest in this inquest He would not dare to come himself, nor would he dare to remain ignorant of what might transpire. Some trusted agent must be present."

"Will you continue your story, Miss Pretty-

man?" asked Mr. Bailey, with more courtesy than he had yet shown the girl.

In a firmer voice, inspired with the hope that her story was gaining credence, Tessie resumed her narrative.

"Bill wrote the prescription in words I could not understand. He said it was Latin. I studied a little Latin in school, but not that kind. He called it medical Latin; besides, the writing was very cramped and would have been hard to read even in English. The last part of it I could not make out at all.

"'He's an artist,' said Bill, 'this druggist you will visit—a man of parts, though deformed, yet in his art, a creature of meticulous skill. Fussy he is, too, about his prescriptions—he will always have them very proper and formal.'

"The prescription bore no address.

"'Where must I take the prescriptions?' I asked him.

"'On 42nd Street,' he said, 'off Broadway, look for a taxicab, not one of the big companies—there is a coat of arms on the door, with a figure nine above it. Tell the driver Bill sent you with a prescription. He will take you to the place. It is a long ride, but you need have no fear.'

"I went to 42nd Street and Broadway, as Bill had told me, but I saw so many cars that I thought he had tricked me. None of the cars stood more than a few seconds. While I stood there bewildered, staring at the doors of all the taxis, one stopped opposite me. The driver motioned to me and then I noticed that the door had a coat of arms and a figure nine. The traffic was stopped for an instant. He opened the door for me to step in. The moment I was in he closed the door and drove off. At first I thought he was crazy, for he drove around the block three times, then went over to Sixth Avenue and drove almost recklessly. After that, he turned again two or three times and I recognized Broadway. We never left Broadway again until we reached Tarrytown. We passed a number of fine estates, and several towns, all new to me, for I had never been so far on that road before. But I did notice that we never turned until we had passed Tarrytown. Some distance beyond Tarrytown—it may have been a few miles—the driver took a turn to the left toward the river, until we came to quite a woods. It looked like part of some big estate that had not been well kept or from which its owner had been absent a long time. Weeds grew tall, the fences were broken and it looked quite deserted.

"A kind of wagon track led through a gate, which hung on one hinge, into the woods. The driver lifted the gate to let the car through, then closed it again behind him. Some distance from the road, well hidden in the trees, we came to a house, once a tenanted house, but now looking very dilapidated. It did not seem a likely place for a drug store—still I said nothing as my stepfather had directed.

"The car stopped and I stepped out. The driver knocked at the door twice, rather sharply. Some one peered through a dust-covered window half closed by rickety shutters. In a second or two the door opened, the driver mumbled a few words and we were ushered into a strange room by a misshapen dwarf.

"It was fitted up as a drug store—counters, shelves filled with bottles, all labeled, graduate glasses such as you see in the hospital, rolls of bandages, first aid kits and instruments. The druggist was a hunchback, who filled me with aversion. But he merely held out his hand for the prescription, turning his hand to his bottles and glasses as soon as I had given it to him. It was easy to see that he was a skilled apothecary by the way he handled everything. When he had filled the prescription he gave me a package. It contained a bottle of colorless liquid which was labelled: 'Dose—ten drops with milk or other liquid.' There was a small box, too, labelled 'morphine.' On the bottle was the word 'scopolamin.'

"THE driver was waiting outside the house for me. It seemed good to get out in the air again. Once in the taxicab, the driver backed in among the trees to turn around. He drove back along Broadway until he came to the city line. There he told me that I could return along the subway. All this mystery so puzzled me that I determined to see Bill again to learn if the prescription was properly filled. When I saw Bill Hovey I showed him the bottle. There were many bottles in his cell. He was known to be a good chemist and worked in the prison drug shop. He took this bottle and held it to the light. Then he took a sip of it. 'Seems to be all right,' he said. He wrapped up a bottle, but I know now, that he must have given me a different one. I put it in my pocket. From the prison I went straight to Mr. Craighead. Ross was with him. I said:

"'Why all this round-about way to get a little drug? It was all horrible. I wish that you would not take any more of the stuff.'

"Mr. Craighead just laughed. 'Well, little girl,' he said, 'if a man insists on buying liquor, he must go to rather ugly looking places to get it—if he must have morphine, and the doctors will not get it for him, he must go to even uglier places. But we will never try that again!'

"That night he took a hypodermic, but never touched the bottle. He kept all out of sight when Dr. Lawson came the next morning. Toward night his pain became intense again. That must have been why he used the drug the misshapen druggist had given me. If I had only known—oh, if I had only known."

Tessie gave way to uncontrollable sobbing.

When she had grown somewhat composed, Mr. Bailey asked:

"Could you read the prescription at all?"

"One word, only," replied Tessie, "Scopolamin."

"What became of the prescription?"

"There was a file," said Tessie, "with a number of other prescriptions filed upon it; the druggist put the one Bill had given me with the others."

Half dazed by the ordeal through which she had passed, Tessie walked unhindered to where Ross sat manacled. Inspector Craven himself removed the handcuffs from the boy's wrists. He drew the girl to a chair beside him.

"Mr. Coroner," said Inspector Craven, rising, "I am prepared now to make the extraordinary request which I mentioned before Miss Prettyman had

completed her testimony. There is but one way to test her story fairly. Assuming, as I do, that her story is true, she would be placed in jeopardy, if the men who tricked her were allowed to escape. It is possible to trap the druggist, who doubtless, with mind warped by affliction, is capable of aiding assassins who use poison. If the court is willing to hold this session open until I have had time to verify this extraordinary tale and capture, if possible, the author of a diabolical plot, several unexplained murders of the same sort may be solved. But in order that no warning may be given, I request you to make an order that no one leave this court room until I return."

"It is an extraordinary request, Inspector Craven," replied the coroner, "so extraordinary that I do not know if I have so much arbitrary power. Before even deciding I must ask you a question to clear up the young woman's story. Is it possible that she visited this Hovey in prison and that it was possible for him to give her writing without detection?"

"When a man like Bill Hovey is captured, Mr. Coroner," answered the inspector, "he is often given a great deal of apparent freedom in order that he may betray his confederates, and also in a narcotic case, that he may betray the hiding place of a lot of dangerous drugs. It was even contemplated to release Hovey and keep him under surveillance, but he is so slippery a character that the plan was abandoned as too risky. Two men were detailed to follow the young woman on her visit to Hovey. They were not clever enough for the job. The taxi driver went three times around the block with the officers two cars behind on his trail. The driver knew it. He drove around the block until he saw the traffic signal about to change. He dashed across the street while the officers waited until the signal was changed again. When they crossed the street the taxi they were following had disappeared. The taxi, as Miss Prettyman has related, did not return to the city that night. When she returned to the prison, the officers who were supposed to be watching her, were still looking for the taxicab, which they learned had turned into Broadway. This incident, however, will result in more stringent rules and curtailment of prisoners' privileges.

"WHAT I propose to do is this," continued Inspector Craven. "I propose to take Tessie and Doctor Jarvis with me to Tarrytown. Unless he has been warned, the druggist will be awaiting news. Two men from this room are in custody. There may be others posted here. For that reason our mission will be futile if anyone is permitted to leave."

"If I make such an order," said the coroner, "your men will have to enforce it. No matter how you travel you cannot go to Tarrytown and back under five hours."

"That is true, Mr. Coroner," said the inspector, "yet this is worthy of consideration. In the last four years there have been seven unexplained murders through poisons which cannot be obtained without a prescription. Yet no prescriptions for those poisons have been found nor has the source of them been traced. Here we have two desperate men skilled in toxicology with a supply of dangerous substances."

The coroner hesitated no longer. Rising from his chair, he pronounced his decree:

"As the presiding officer of this court I hereby enjoin and forbid any person to leave this courtroom until the return of Inspector Craven or until he has advised the Court from Tarrytown, which I require him to do the instant he has accomplished or failed to accomplish his mission."

An additional detail of officers had arrived. There were a few murmurs against this exercise of autocratic power, yet the murmurs were soft, for there was no spectator of the unexpected turn of events in the courtroom, who did not want to be present at the denouement. Some openly believed the girl was lying. Others quite vehemently espoused her cause. Obviously the hours would not be dull in the court room until the party returned.

The girl, a picture of abject despair, sat at the side of her affianced lover, uncertain of a future which only a few days before seemed rosy with the dawn of hope. Turning to her, the inspector said:

"Tessie, you must show the way to the druggist near Tarrytown. It means freedom and vindication for you and Ross if we verify your words. Doctor, if we can find that prescription, it will need more Latin than I ever knew to decipher it. Ross, I think it is coming out right—as right as it can."

To this Ross made no reply. He pressed Tessie's hand in farewell, then the trio left the courtroom, hundreds of curious eyes following them. Some women whispered as Tessie passed them:

"Good luck, dearie!"

Inspector Craven, not daring to trust himself, as he remarked to the doctor, took one of his men along as chauffeur. He feared that he would drive too fast for safety. So he said to the officer:

"Tarrytown, Beronio, at the best you can get out of her."

The automobile had a riot car siren, but it is safe to assert that no riot car ever ran like that one. There were few curves to make and with a few exceptions, the road was perfectly straight all the way.

The car could run at a speed of over sixty. It ran very nearly that the entire distance. As they raced along the highway, Tessie felt the universe slipping from her. The thought of what place in the world might be hers when this nightmare was over terrified her. The doctor read some of her thought from her expression and, trying to make her talk pointed out objects along the road—a difficult task, with the car dashing along so that telephone and telegraph posts almost resembled a picket fence. She replied in monosyllables. Finally he said:

"You mustn't worry so much, my child. What is your anxiety, now?"

"Oh," she cried, gulping to keep down a sob, "if the hunchback has taken alarm and gone away, what will become of Ross and me?"

"The shack will still be there, won't it? That will confirm part of your story," said the doctor.

These words bewildered the trembling young woman.

"You don't believe, then, that I gave him poison deliberately?" she faltered.

"I would need more proof than we have now," answered Dr. Jarvis.

To this enigmatic reply there was no response.

They were not long in reaching Tarrytown, where Inspector Craven turned to Tessie, saying:

"You had better keep your eyes open now for the place where you turned off the main road. The speedometer says 52 now; if your guess of the distance is accurate, we should run much slower."

Beronio ran the car more slowly for three miles, but Tessie did not recognize the turn. Nearing four miles, as the inspector was beginning to be assailed by doubts, she said suddenly:

"Just beyond here, I remember, is the cross road. This gateway with the two stone lions at each side, opened as we passed—a car coming out delayed us for a moment. It should be less than a city block ahead."

THE inspector felt almost cheerful when, two hundred feet farther on, another road crossed their path.

"To the left, Beronio," he ordered, "when you come to the trees take the wagon trail and go just a short distance."

Inspector Craven said these words fatuously, like a man who has learned a lesson in which he has not the slightest belief, who has been told to memorize the first fifty lines and mumbles the words like a talking doll. They were all unnerved as the final test approached. Mentally, the inspector blamed the doctor who had led him into a fool journey like this. Tessie was in a panic, fearing the escape of the dwarf. Dr. Jarvis alone seemed unconcerned. His tall figure, erect and commanding, his lips compressed in a firm, straight, uncompromising line, expressed no doubt whatever. The car stopped. Doctor Jarvis was the first to get out. Inspector Craven was at his side in an instant. Beronio opened the crazily hanging gate and ran his car into the shelter of the trees.

"How far did you go into the woods, Tessie?" asked the inspector.

"Possibly four or five blocks," replied the girl.

"Beronio, give the doctor your gun," ordered Inspector Craven. "He may need it. Lead on Tessie, but go softly."

The evening was coming on, the autumn air was cool and damp in the neglected woods, weedy, with thick undergrowth; it was difficult to think of a house of any sort there. Yet they followed the girl, breathlessly, almost treading on her heels. Five hundred yards they trudged along the winding path when Tessie stopped.

"Look," she whispered, pointing to the right.

Both men followed her glance, seeing with relief a dilapidated tenant house, to all appearances unoccupied, save for an almost imperceptible thin line of smoke which was just visible above the broken edge of the chimney. The door was closed, but would probably offer no formidable obstacle. Shutters hung crazily over the one window which opened on the front of the house. They were half closed, held by a bit of soiled ribbon.

"Doc," whispered the inspector, "I am going to slip over to the door. If anyone tries to drop out by that side window, use your gun. If any of Hovey's gang is about, they won't mince matters."

Inspector Craven was himself, now. The house was here, that was certain. Stealthily he moved toward the door. Unperceived, he gained the doorway, where he stood for a moment listening for signs of life. Finally he heard a clinking of glass, a very faint tinkling. He put his big shoulder against the door. It was bolted and resisted his first assault. He thought no longer of who might be inside and with a mighty impact, burst the door open. As he almost fell over the threshold, a shot rang out and a twinge in the left shoulder told him it was a good shot. But he fired at the flash, which was followed by a cry of pain. He had hit his enemy in the gun arm. There was light enough for Craven to see a hunchback, who stood looking wickedly at the gun which covered him. The instant the reports rang out Doctor Jarvis and Tessie had run to the door of the shanty.

"Are you hurt, inspector?" asked Jarvis.

"He winged me in the left shoulder," said Craven grimly. "If I had not stumbled when the door gave way it would have been worse, for it was well aimed for the heart. Pretty lookin' bird, ain't he? Is he the one who filled the prescription, Tessie?"

"Yes," replied the girl, while the dwarf looked at her malevolently.

A small fire burned in an open stove. As the doctor, seeing the blood on Inspector Craven's coat, began to examine him to learn the extent of his injury, the hunchback, with a quick movement, grasped a bundle of papers spiked on a file and threw them into the stove.

"The prescriptions, the prescriptions!" cried Tessie, in a panic.

FORGETTING his wound, the inspector leaped at the hunchback, felling him to the floor with a heavy blow from the butt of his revolver. He sank to the floor, motionless. Doctor Jarvis had darted to the stove from which he retrieved the sheaf of papers, little the worse from the flames except where the hot coals had singed the edges. The doctor's fingers suffered most from contact with the embers.

"Tessie," said the inspector, nursing his wounded shoulder, "run through those papers. See if you can find anything that looks like the prescription Bill Hovey gave you."

Eagerly enough, now, she lifted one sheet after another from the file. Not far from the top she came on one which she examined carefully.

"This is it," she said, holding it out for Dr. Jarvis to read. His professional instincts, however, overcame his curiosity.

"Inspector," he cried, somewhat shamefacedly, remorseful for neglect toward a wounded friend, "let us have a look at that shoulder first."

"It hurts like the devil," said Inspector Craven, "but that bird is stirring, so safety first. Take a pair of handcuffs out of my pocket and snap them on his wrists. He would blow us all up and himself, too, if he got the chance."

Dr. Jarvis secured the misshapen dwarf, clumsily enough, then looked at his wound. The dwarf's arm was bleeding. Without too great delay, for he was much more worried over the inspector than over the misshapen druggist, he bound the wound tightly to prevent further bleeding. In all this commotion, although he stirred, the man did not regain consciousness. He had been dealt a stiff blow.

The inspector was not seriously wounded. The

bullet fired by the hunchback, from a vicious little automatic .25 had gone straight through the shoulder muscles, severing the smaller blood vessels. It was a matter of a few minutes to dress the wound, but Craven was impatient to learn the truth. Had they found the prescription? If they had, his wound mattered little. If not, he was a fool. He had made a melodrama of a coroner's investigation. If without cause, he was a zany. With cause, he preserved his self-respect at least.

"Doc," he said, as soon as the bandage was drawn tight and a tourniquet applied, "see what kind of a fist Piggy Bill writes. If it's the literature the little lady says, I'll bet it against Shakespeare."

Doctor Jarvis then spread the paper Tessie had given him on the counter, while Tessie and the inspector leaned over his shoulder.

"The first paragraph calls for morphine and scopolamin," said he. "But scopolamin has no virtue in a surgical case. But wait," he added, "there is more. My God, what infamy!"

For a moment he was speechless, then began reading words incomprehensible to his hearers.

"Monsieur et cher ami:" was the salutation, then came the following words: "C'est bien drôle que le mot 'scopolamin' et le mot qui exprime l'extrait de la noix vomique ont la meme total; il serait bien dommage si l'on prendrait l'un pour l'autre."

"What does it all mean?" asked Inspector Craven.

"Well," answered the doctor, "it is not medical Latin nor any other kind of Latin. It is written in fairly good French, not at all difficult to follow. This is how it reads: 'My dear friend: it is very curious that the word "scopolamin" and the word which signifies the extract of nux vomica have the same number of letters. It would be sad if one mistook the one for the other.'

"That was why he told Tessie scopolamin would help Craighead. It happened to have the same number of letters the way he spelled it (without the 'e') as strychnine. Strychnine is an alkaloid of nux vomica. He knew Tessie was ignorant of French—the rest was easy. But I don't understand what he hoped to gain by it."

"What, a hard-boiled guy like that?" shouted the inspector. "Hell, he needed $10,000. If Tessie got married he would send for her and tell the story counting on her fear to see that he got enough to pay the lawyer who guaranteed to get him out. Why, this bunch saw Tessie paying blackmail for murder the next ten years." Then turning to the girl, he continued:

"Tessie, you have our compliments. I hope fortune will smile on you. This has been a terrible ordeal for a young girl."

"Indeed," sobbed the girl, as reaction set in, "I do not care about fortune, now. How can I live, knowing that I helped kill my benefactor, the one who was as much a father to me as my own might have been had he lived."

The doctor took the bundle of prescriptions and with a number of vials containing prohibited drugs, narcotics and toxic substances, they returned to the car, the doctor forcing the hideous looking dwarf to walk beside him. They found his name to be Timothy Clegg, from one of the prescriptions. He was bundled into the car and the return journey to the metropolis began. At Tarrytown, the inspector stopped long enough to have a couple of officers sent to guard the drug store hidden in the woods, so that no evidence might be destroyed. In the prescriptions were enough orders for deadly poisons, signed by Piggy Bill Hovey, to damn him many times over. The proof in the Craighead case was convincing.

Inspector Craven then telephoned the coroner of the success of their mission. Beronio returned to town in more leisurely fashion. When they arrived at the Coroner's Court with their prisoner and the inspector showing the evidences of a battle, the scene that followed beggared all description. Handcuffed and heavily guarded, the dwarf sullenly glared at his captors. Inspector Craven, despite his wound, took the stand. He described their journey in complete detail, verifying Tessie's story. Calls for order failed to check the applause for the girl.

DR. JARVIS followed the inspector. He identified the prescription, and gave its hideous import so vividly that the spectators shuddered. The jury took but a few minutes to render a verdict.

As the verdict was announced, a finely dressed woman murmured audibly:

"What a monstrous injustice! That young man inherits all his father's wealth, although he helped to kill him."

She was one of Jim Craighead's numerous cousins and chagrined that his big estate was beyond her reach. Ross Craighead was too far away to hear her remark, but she heard his reply breathlessly, for he rose to his feet, before the crowd, dazed by the rapid turn of events. He took hold of Tessie's arm, and stood near the coroner.

"I want to say to you, Mr. Coroner, publicly," he began, "to Dr. Jarvis and to Inspector Craven, that after what has been revealed here today, it is impossible for me to take one penny from my father's estate. His will makes Dr. Jarvis executor and gives him certain powers of distribution, in case I, for any reason, do not succeed to the property. Since I, however innocently, was, with Tessie, the instrument of his death, the money would come to me stained with blood. Yet this tragedy has knitted the fate of Tessie and myself in an indissoluble way. With what we have, we leave this city tonight —we shall be married at once. Then we shall go far from this place of dreadful memories to live as best we can, what life has in store for us. If we are free, we will go at once."

"You are free," said the coroner. "All the evidence is now on record."

The crowd moved aside to let them pass. As they moved toward the door, the girl clutched with both hands, the arm of her partner in crime. Unwilling criminals!

The dwarf was never tried. He was found dead in his cell the next morning, despite the careful guard set to prevent his suicide. A small capsule in his mouth showed that he was always prepared for the possibility of capture. Piggy Bill died mysteriously before any charge was presented against him. "Suicide," remarked Inspector Craven, "as Webster once said, is confession."

A year later, Dr. Jarvis received an announcement from Sydney, Australia, telling of the birth of "Jim Craighead, Second," "a wonderful, blond boy, healthy and noisy." The doctor smiled as he recalled that his power of appointment had not been exercised.

THE END

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HICKS' INVENTIONS WITH A KICK

(By HENRY HUGH SIMMONS)

(Continued from page 497)

bling with the buttons. "It won't work," the inventor wailed. "Something has gone wrong with the system. I remember now," he added, "I had the hand release taken out—just taken out experimentally. I'll have to put it in again. . . ."

"You will have it put in again, you confounded peanut-headed dumb-bell," roared Irvine above the shrieks of the professor and the wails of the female company, "when the professor has had his face scalped and has been murdered. Go and cut the juice off, I tell you! Haven't you got enough sense?"

The entire company stood assembled around where the professor was having the shine of his life, everybody suggesting, talking, shouting. Smith tried helpfully to pull the professor out by the legs. Redoubled shrieks of agony made him desist from his Christian endeavor. I drew my watch. Only one minute was over. Would that fool never be able to cut off the juice? "I got it!" yelled Hicks, as we heard the switch of a button.

At once I felt that something was wrong, wrong—very much wrong again. I did not know what it was. Yes, I did. It was the water rising on my feet. Did I say just a while ago it was funny how the human mind acts? You know, the first thing I thought of was the professor. "Cut it out, Hicks," I roared, "you will drown him."

"I will," came back the despairing cry of the inventor. "I will, I will, I will! But I can't. There is something radically wrong here. Something must be wrong, I am sure,—I know something is wrong!" and he went into a spasm of working with the switchboard.

I TOO thought that something must be wrong. Meanwhile the water was rising at the rate of about half an inch a second. I took only a short mental calculation to see that within less than a minute it must be above the professor's mouth and there was still a minute and a half to go before the release would act. I pride myself on quick thinking in an emergency. Near the dish washing machine I had seen a piece of large rubber hose. I made a dash for it, splashing through the water, which was now half a foot deep. I got back just in time. "Take this in your mouth, professor, and quit your roaring, or you will drown," I screamed in his ears. Some instinct told him I was right and he did as he was told. In a few seconds the water was up over his face, but he was breathing through the hose.

"Get out of here, the rest of you, or there may be the devil to pay!" I ordered. "You can't do the professor any good and the water is rising. Get out!"

To her honor it must be said that the prim Miss Peak remained. "I'll stay with you to the end, dear, and hold your hand," she crooned over the rising waters—for the professor was beyond hearing. Under the water the brushes were working with undiminished speed, raising little gurgling eddies to testify to their action. The rest of the company splashed through the inundation, which was by this time a foot and a half deep, toward the front room. With difficulty, they opened the door and instantly I felt the outward rush of water, while the level fell several inches in the kitchen to start rising again soon after. All of a sudden I heard screams of terror. "Hold the hose," I ordered Miss Peak, and rushed,—or rather sloshed, toward the front room. There I beheld a sight I will never forget. The furniture had been shifted to one side, blocking the door. The water was two feet high. Irvine was standing on a table—did I tell you before that he always was a coward? Smith and his wife, my aunt and the inventor were in various attitudes of prostration in the water, and every time one tried to rise he would suddenly sit down. He would get up, make a step, and kerplunk! sit down in the water. "Something is murdering us, O'Keefe," roared Smith. "Oh, it is biting me," screamed Aunt Eulalia. For a moment I was bewildered, dumbfounded. Why didn't they stay up? Then the truth flashed upon me. That confounded Automatic Carpet Sweeper was there under the water, rushing back and forth, and it was mowing down the people as fast as they could get up. "All get up on the table!" I shrieked, "or you will be killed." Evidently they were ready for any advice, for they scrambled out over the chairs and on the table with an alacrity begotten of desperation. They could all just find room on it. Just at that moment all the furniture made a quick move as if galvanized, moving toward the opposite end of the room, and all five sat down in the lake below. Screams and curses instantly rent the air. There again was that confounded suction sweeper, no longer sucking, but running all the same along the floor, knocking the unfortunate people down as fast as they managed to rise. "Get back on the table," I bellowed, and at that moment, remembering the professor's plight, I rushed back. By this time the water was three feet deep and was getting close to the end of the hose. But thank goodness, there were only twenty seconds left until the release would work. During the stress of excitement, a life seems crowded into seconds. And did you ever notice how during a serious crisis, you will do unimportant things? Perhaps I needed a mental rest, for just then I saw the Automatic Egg Beater in front of me. It flashed through my thoughts that Hicks had said that it ran at a speed of 15000 R.P.M. It would be interesting to see that spindle go. This was my chance. I could do nothing until the release worked—why not put time to good use? All these thoughts crowded themselves into that brief moment. I bent down close to the beater to observe the way the spindle acted, and pressed the button. The egg-beater started like a gun. A lock of my hair was sucked in and wrapped around the high-speed spindle. In a hundredth part of the tick of a dollar watch my head was pulled up until my forehead rubbed it. There was a brief moment of concentrated agony, a feeling as if my head would explode, and three solid handsful of my hair, pulled out by the roots, were distributed over the surroundings. I turned off the switch. My mind was cleared and so was my forehead of every vestige of hirsute adornment, while a little stream of blood slowly trickled down over my nose.

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T. O'CONOR SLOANE, A.B., A.M., LL.D., Ph.D.
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Do you remember how the tales of pirate gold used to fire your imagination and make you want to sail the uncharted seas in search of treasure and adventure? And then you would regret that such things were no longer done. But that is a mistake. They *are* done—today and everyday—not on desert islands, but in the chemical laboratories throughout your own country. Quietly, systematically, the chemist works. His work is difficult, but more adventurous than the blood-curdling deeds of the Spanish Main. Instead of meeting an early and violent death on some forgotten shore, he gathers wealth and honor through his invaluable contributions to humanity. Alfred Nobel, the Swedish chemist who invented dynamite, made so many millions that the income alone from his bequests provides five $40,000 prizes every year for the advancement of science and peace. C. M. Hall, the chemist who discovered how to manufacture aluminum made millions through this discovery. F. G. Cottrell, who devised a valuable process for recovering the waste from flue gases, James Gayley, who showed how to save enormous losses in steel manufacture, L. H. Baekeland, who invented Bakelite—these are only a few of the men to whom fortunes have come through their chemical achievements.

What Some of Our Students Say of This Course:

I have not written since I received the big set. I can still say that it far exceeded my anticipations. Since I have been studying with your school I have been appointed chemist for the Scranton Coal Co. testing all the coal and ash by proximate analysis. The lessons are helping me wonderfully, and the interesting way in which they are written makes me well patiently for each lesson.—MORLAIS COUZENS.

I wish to express my appreciation of your present reply to my letter and to the recommendation to the General Electric Co. I intend to start the student engineering course at the works. This is somewhat along electrical lines, but the fact that I had a recommendation from a reliable school no doubt had considerable influence in helping me to secure the job.—H. VAN DENTHUYSEN

So far I've been more than pleased with your course and am still doing nicely. I hope to be your honor graduate this year.—J. M. NOLKUS, JR.

I find your course excellent and your instruction, truthfully, the clearest and best assembled I have ever taken, and yours is the fifth one I've studied.—JAMES J. KELLY.

From the time I was having Chemistry it has never been thus explained to me as it is now. I am recommending you highly to my friends, and urging them to become members of such an organization.—CHARLES BENJAMIN.

I shall always recommend your school to my friends and let them know how simple your lessons are.—C. J. AMDAHL.

I am more than pleased. You did right in from the start. I am going to get somewhere with this course. I am so glad that I found you.—A. A. CAMERON

I use your lessons constantly as I find it more thorough than most text books I can secure.—WM. M. TIBBS.

Thanking you for your lessons, which I find not only clear and concise, but wonderfully interesting. I am—ROBT. H. TRAYLOR.

I received employment in the Consolidated Gas Co. I appreciate very much the good service of the school when a recommendation was asked for.—JOB DECKER.

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A S, Aug., '27.

(*Concluded on page 514*)

I LOOKED around and saw the professor with the help of his lank fiancée getting up. He looked like a native chief of Dahomey who had taken a bath with his European clothes on. The first thing he did was to let out a vast and good old American curse involving Hicks. So I knew he was all right. I heard a sudden commotion in the front room. There was a thundering as of water downstairs. And it was. Somebody had opened the door. Something else but water was running downstairs, however—in fact, it was some body. It was Irvine and Smith. But they were not first. The inventor was ahead of them. I looked out of the window. There he was, going down the street like a streak, doing a hundred yards in exactly a couple of seconds, less than very little. Shades of all the runners of romance! He would have made them look like nothing. Smith and Irvine were doing well, but they were hopelessly outdistanced. In five seconds the inventor was out of sight.

Then I remembered that I was the one who had fixed the thing up. I began to think. Gruesome details of several recent lynchings flashed through my mind. Without stopping for my hat, I crept down the stairs. At the entrance I looked around cautiously. Then I squared my shoulders and walked away in the most dignified manner I could muster and reached home, none the worse for the experience, which is as it should have been, for it was not my fault.

THE END.

Discussions

In this department we shall discuss, every month, topics of interest to readers. The editors invite correspondence on all subjects directly or indirectly related to the stories appearing in this magazine. In case a special personal answer is required, a nominal fee of 25c to cover time and postage is required.

GENERAL CRITICISM

Editor, AMAZING STORIES:

I have read all the letters published in your magazine about the stories you print. Altogether I wish to compliment you on your choice of stories as I have enjoyed nearly all of them. I can hardly wait to finish the magazine and then I have to wait another month to repeat the same cycle. I am heartily in favor of a semi-monthly copy of your magazine and think that many others are also in favor of it. I know several readers of your magazine in this vicinity and they are all in favor of two a month. As you say, no one can please everyone, but you seem to please most of your readers according to the letters you publish. Although some of them seem to like a certain class such as strictly scientific or almost all imaginative, they all seem to like enough of them to keep on reading the magazine.

I think that many of your stories such as, "The Educated Harpoon," "The Man Higher Up," "The First Men In The Moon," etc., are very good. Either they are interesting just to read or they are interesting for the facts which are made use of. I like many of the stories of Wells but some of his are not very interesting just to read. Serviss writes good stories both to read and to get science from. I think that you ought to encourage other people to write in ways such as the latest contest and by offering a prize say every other month to the best original story by young authors who have no stories which have been published.

JOHN R. KELLY,
Rock River, Wyo.

[Such a letter as this one from the standpoint of an editor may be termed at once instructive and suggestive. We want to please our readers and those who give us their views as Mr. Kelly does, help us in our selection. We feel that the recent prize which we offered encouraged a number of writers to produce excellent stories. We considered the picture rather difficult to base a story on. To tell the truth it was purposely made so, but it produced some excellent work. We can make no promises as yet about the semi-monthly issuing of our magazine, but in hoping for it we shall feel that we are supported by many appreciated readers.—EDITOR.]

INTERPLANETARY STORIES ASKED FOR

Editor, AMAZING STORIES:

I am glad that you are putting in a story by Edgar Rice Burroughs. I have always liked his books and I hope you will publish more of them, especially the Martian books. I like stories about interplanetary space, and about the different planets. The Second Deluge is one of the best stories I have ever read. I would like to know if you have any back issues of the AMAZING STORIES from last April to August. I hope you will soon put the AMAZING STORIES magazine out twice a month. I am now getting the magazine at a store but I will soon send for it and for Science and Invention.

CLIFFORD KORNOELJE,
Chicago, Ill.

[We have sometimes feared that we were giving too many interplanetary stories but your letter tells us that we have not, and like Oliver Twist you virtually "ask for more." More are coming.—EDITOR.]

FICTION NOT TO BE CRITICIZED LIKE STATEMENTS OF FACT

Editor, AMAZING STORIES:

Upon reading the January issue of your interesting magazine, particularly the "Discussions Column," I was immediately struck by the puerility of several of the correspondents. Criticism of such authors as Verne, Poe or Wells, it seems to me, should rest with persons more versed in the literary art than these correspondents appear to be. As to the names of these great men being used as a drawing card for your magazine, I am sure that many other publications would do well to act likewise. Many of your readers, no doubt, have at some time or other perused the masterpieces of these famous men, but the test of a classic lies in its ability to be read and re-read with the same degree of pleasure. If Verne's stories are "dry and poorly written," it is strange that they have lived so long a time and been so immensely popular. The translation, however, into English cannot always convey the extent of his literary ability as does the original.

Criticism of certain scenes, as the naval battle in "Station X", may disclose an improbability in the assumed occurrence, but, in any story, flaws may nearly always be picked without it losing the charm which it holds for the reader. "Station X", "A Columbus of Space" and "The Thing from—Outside" seem to me to be among the best you have printed, although a leaning towards the grotesque might be discerned in the latter.

Back numbers of Dr. Hackensaw's Secrets and other stories from *Science and Invention*, particularly those of Ray Cummings should prove extremely popular. The authors most enjoyed here so far are Serviss, Poe, and Wells.

Yours for a semi-weekly publication,

D. B. SINCLAIR,
Winnipeg, Can.

[This interesting letter from across the border really expresses the feeling of the Editor. Like some of the other letters which we published, this is a criticism of our critics. One critic disapproves of what another critic admires. We have to strike a good average.—Editor.]

A PROPOSED TRIP AROUND THE MOON

Editor, AMAZING STORIES:

I am writing you a few lines to let you know how I feel about your AMAZING STORIES MAGAZINE. I think it is about the best book on the stand and I wish that you would publish it oftener.

I like the stories by H. G. Wells and Jules Verne and the rest of your authors are not bad.

I am sending you a clipping from the *Cleveland Press*, which might be of interest to other readers.

MIKE DUKOVICH.

[We thank you for your appreciation and for the clipping you send us. This tells of a plan to reach the vicinity of the moon by a projectile which will go around the moon passing back of it enabling the travelers to see the unknown portion of the satellite which is never shown to us and then they are to return to the earth. The puzzle is, however, how they are to make their landing. They are supposed to start at the rate of 7½ miles a second go around the moon like a little satellite and then come back to earth. But suppose he hits a lunar telegraph pole? It certainly would be bad for the pole.—EDITOR.]

CRITICISMS AND APPRECIATIONS BY AUTHORS

Editor, AMAZING STORIES:

On perusing a recent copy of AMAZING STORIES I noticed especially those two tales the type (no tongue twister intended) of which I always read with the greatest interest—those two stories of the future "On the Martian Way," and "The Thought Machine."

Both were exceedingly fine, and in the same issue I also read the "Second Deluge," the ending of which disappointed me very much. I do not intend to be bloodthirsty, but it really went against the grain to have several millions of people still alive after Cosmo Versal had made his minute selection—the science of eugenics could hardly succeed, in my opinion, with such a mixed assemblage.

Edgar Rice Burroughs' story started out fine, as all his tales do, but I am afraid that as a scientifiction story it is beaten severely by another written by the same author, entitled "The Moon Maid," which has also two sequels, "The Moon Men," and "The Red Hawk."

I am afraid that "The People of the Pit" is beaten by still another story by Mr. Merritt—"The Metal Monster," or the "Moon Pool."

And now—to science!

I was very sorry to see in the latest issue of AMAZING STORIES that "The War of the Worlds" by H. G. Wells is coming in the next issue. That story is ROTTEN! I am prejudiced against *all* of his tales, because they are generally disconnected, and he is always having one of his characters come out of his story to scratch his chin or tug his whiskers or expectorate, or something. Noting all the diversions in his stories it seems impossible to me that you should re-publish his tales. The only good one I have ever read was "The Star." You should publish "In the Near Future," by James Ivers Lawrance; a good story all around! And may I add, Mr. Gernsback, that I heartily agree with a certain person, whose letter was published in "Discussions," who said he wished that a page would appear devoted to newspaper clippings proving extraordinary facts? And oh, yes! I would suggest that you select the best interplanetary stories, best futuristic stories, etc., that have yet appeared in A. S. and bind them in book form. That would be fine and I would be proud of a set of such volumes in my "AMAZING STORIES LIBRARY." If you cannot do that why not publish annually binders to hold a certain number of AMAZING STORIES, the name "Amazing Stories" appearing on the cover in gold letters? Again thanking you for your attention.

FRED W. FISHER, JR.,
Knoxville, Tenn.

[Critical letters like the one you have written to us, we consider, not only interesting, but helpful and a real tribute to our efforts. But yet curious unfavorable criticism of Wells, is almost unique. He is today the most popular writer of scientific fiction. And do you not think that even so little a thing as rubbing the chin may operate to give the realistic touch to the scene?

As regards the publication of newspaper clippings we only wish that we had more room to carry out the ideas received from our interested readers. There is a hope we entertain and we trust that it will be realized in the future. You will note in regard to your suggestion about an annual binder, that the first AMAZING STORIES ANNUAL will be out about July 1st.—EDITOR.]

WANTED—A YOUNG MEN'S SCIENCE CLUB

Editor, AMAZING STORIES

I have been a reader of your periodical since the first issue and greatly enjoy the columns known as "Discussions" I am pleased to note what a large number of young men are interested in science

A number of young men and myself have started on the project of forming a Science Club and also laboratory It is with this in mind that we ask you to publish this letter in your column with a request that any young men interested in science and ranging from 18 to 23 years communicate with me If enough members are secured it will be possible to realize our project The purpose of this association is to get the young men together and experiment and discuss any scientific subject. It will be possible for them to experiment either as an individual or in groups, all according to their own whims It is easily seen what a wonderful thing it will be to be able to have the use of a large laboratory to work in where otherwise it is only possible to carry on small experiments because of lack of money It is necessary to mention that those wanting to join live within a reasonable distance from, or within, this city

JOHN MACKAY
176 Garfield Ave, Jersey City N J

[A club or society such as you propose will need an active president or secretary to keep it alive and active We are sure that our correspondent will hear from many of our readers We wish him the best of luck —EDITOR]

AN INTERESTING LIST OF PREFERENCES

Editor, AMAZING STORIES

When I read the letters in your "Discussions" department, I thank Heaven I wasn't born clever, for I can read *all* the stories in your very excellent, entertaining and educational magazine, and really enjoy them. Being a 50-50 mixture of Irish and French and also being of a high psychic nature I often have to close the magazine and put it away because experience has taught me that my dreams will be weird to say the very least

AMAZING STORIES is the one periodical I do look for each month and I would be honestly sorry to miss an issue

Could we have more illustrations than at present? Even if you were to make them smaller I do believe a vote on this subject would be very much in favor of smaller cuts but more of them When are you going to give us Rider Haggard's "She"? I read this many years ago

I will here you with a list of my idea of the best dozen so far (I have not read the new July issue) 1, "The Moon Pool", 2, "The Land That Time Forgot"; 3, "A Trip to the Center of the Earth", 4, "A Columbus of Space", 5, "Station X"; 6, "The Visitation", 7, "The Electronic Wall", 8, "The Island of Dr Moreau", 9 "The People of the Pit", 10, "The Second Deluge", 11, "The Green Splotches", 12, "The Time Machine"

I must thank you for one of the best magazines in circulation today

W ST HELIER HAMMOND,
Toronto Ont, Canada

[When a person states that he is thankful that he was not born clever, it usually indicates what we may call a modesty complex, for we are sure that our correspondent shows that he certainly was born clever We have Rider Haggard in mind as one of our possibilities for a reprint but what we especially appreciate is your list of the twelve stories which you have enjoyed most—EDITOR]

POE'S STORIES NOT LIKED

Editor AMAZING STORIES

I have been reading AMAZING STORIES ever since the magazine came out and I've found only two stories that I didn't like They were the ones by Poe concerning hypnotism "The Mad Planet" and "The Red Dust" I enjoyed very much I hope you have more stories about Burl and his companions

Some years ago I read parts of "The Green Splotches" and "The Land That Time Forgot" and I was certainly glad to see them again in AMAZING STORIES

I think that Burroughs has the wrong slant on the theory of evolution In "The Land That Time Forgot," he gives the impression that man sprang directly from apes while the theory as generally accepted is that man and the ape both have a common ancestor

Burroughs is one of my favorite authors and I would like to see some of his Mars books in AMAZING STORIES

I am in favor of having one issue of AMAZING STORIES contain one long novel-length story and alternate issues made up of short stories I would also like to see the magazine twice a month

Wishing AMAZING STORIES a long life and many subscribers, I remain,

WM W JOHNSON
Rouse's Point N Y

[Edgar A Poe is considered one of the world's greatest authors and we felt that we did very well in using his weird yet scientific tales upon our pages The stories about fungoid and insect life were most vivid As regards the evolution slant in Mr Burrough's story, as evolution is today an unsettled theory, a fiction author is entitled we think, to take any reasonable viewpoint which he may desire.—EDITOR]

OUR MISSION AS A READER SEES IT

Editor, AMAZING STORIES:

I am so constituted by Nature that it "goes against the grain" for me to say "Yes, sir" parrot like, to anything that any man says. Therefore, as I have voted for your prize winners in your "Prize Cover Contest" in the same order as your committee awarded them, I will explain.

In reading these stories I began, properly, at "the foot of the ladder" in order that I might gain the right perspective in climbing up—that is, if you had awarded the prizes correctly according to my notions.

"The Fate of the Poseidonia" is an exceedingly clever tale, highly interesting and well written—although I believe Mrs. Harris could re-write the first part more emphatically and make it more convincing. I enjoyed it hugely.

"The Electronic Wall" is in another class. Not only is it a more elaborate "scientifiction" more perfectly convincing in all parts, but its appeal is deeper and more inspiring. Its *motif* is a hobby of mine—of which, more, later. It completely "carried me off my feet," so that I had to stop and smoke my pipe and play a game of solitaire, before I could regain the poise to do justice to any other story, no matter what its merits.

But the component parts of "The Visitation" are even more perfectly mitred in their respective connections than are those of "The Electronic Wall," and it adheres more minutely to the details of your cover design—and it has a similar *motif*.

And it is this *motif* in these two stories, which I speak of last though they are first, that is my hobby. Is is not a strange commentary upon the genius of our race that, with mentalities capable of soaring into the skies, we should allow our lives and destinies to be guided and directed by a group of grovelling grub-worms who are devoting their undeniable talents to eternally grubbing in the muck and mire of our financial slough for all the gold they can steal "according to the rules of *the game*"? With the heights of comparative health and happiness plainly visible, is it not strange that a race with our possibilities should remain supinely fettered by the habits, customs and superstitions of our savage ancestry? It would seem that our boasted civilization is but a veneer, and that, at heart, we are still the wild beasts from which we have evoluted.

Will the presentation of scientifically possible pictures of a better life, even though they be fanciful, help to direct the vision of our race to better things? Is this the underlying *motif* behind AMAZING STORIES? If so, you are attempting the grandest "mission on earth" possible to any human being, even though he be the perfected product of your greatest and best and most scientificated imagination.

E. D. SKINNER,
Cincinnati, Ohio.

[The ideas on which AMAZING STORIES is based include what you designate as *motifs*. We wish to preach the possibilities of science, and the use of the most vivid imaginings in leading to new discoveries, and to make our readers feel that there is far more ahead of us in the way of scientific achievement than there is in the past. Nothing helps us on our way so much as such cheering letters as yours. Your view of the battle waged by mankind for gold, for money which they must leave behind them, and often on sadly short notice, is absolutely correct. We sometimes appear to be the wild beasts developed to a high degree on the side of wildness and selfishness.—EDITOR.]

APPROVAL FROM A YOUNG READER

Editor, AMAZING STORIES:

I am fifteen years old and am a subscriber for both AMAZING STORIES and SCIENCE & INVENTION. I am deeply interested in chemistry, mineralogy and exploration and have greatly enjoyed all the stories except the "Moon Hoax," which I could not get interested enough in to finish. Some of the stories I enjoyed the most were the "Mad Planet" and its sequel "Red Dust", "The Land That Time Forgot," "Beyond the Pole," "Columbus of Space" and "Station X." I like all the stories including the comical and guessame because they produce a variety of thought.

Some of the critics ought to give more instructive criticism by presenting reasonable proof along with their statements. For instance, the criticisms on the "Man Eating Plants" in "Through the Crater's Rim" unjustly call it "junk" although there are plants that are insect traps such as the "Pitcher Plant," "Venus's Fly Trap" and "Hunters Horn," which goes to show that man eating plants are not impossible. Explorers at different times have reported animal eating plants which could conceivably devour a man if he were caught at a disadvantage.

I, and many others I am sure, would like to see another story like "The Land that Time Forgot" in which a group of scientists are shipwrecked on a strange island without anything saved and are forced to put all their scientific knowledge of mineralogy and botany to practical use, also some more stories by the author of "The Visitation" and stories by old and foreign authors.

KENNETH L. MUELLER,
Mankato, Minn.

[Appreciation from our younger readers is greatly esteemed. If an author can write for the young he will be preeminently capable of writing for the old—the latter is a comparatively easy thing to do. It is hardly going too far to say that if our efforts please our younger critics, they will deserve the approval of all. The "Moon Hoax" is of historical value—it led almost a whole nation astray.—EDITOR.]

SORRY FOR TORON AND TORONA

Editor, AMAZING STORIES:

I have just finished reading the copy of AMAZING STORIES in which three of the prize winners were printed. I was very glad that I was given this opportunity, for I was one of the contestants. I had a great desire to see how others would write, if their ideas regarding the picture were so very different from mine.

I myself would have given the story, "The Visitation" first place because it is noble in conception. Somehow, the ending of the story made me think of a heathenish race searching for Christ, and finding him, represented by the Thon. I could not have done better. I was sorry for Toron and Torona and the company of one hundred that perished. If I had written that story, I think I should have let them live, at least, Toron and Torona. Yet, it seems that for some great good, there must be always some great sacrifice.

I was rather amused by one thing in the third prize story. It opens in 1895, the year in which the hero begins courting the heroine. In 1945, fifty years later, he is still after her. Must be a persistent fellow. I don't see why the woman who wrote this story didn't compress it into a few months instead of scattering it through fifty years. I believe she could have produced a greater effect by shortening the time. And in the end he lost her; that's too bad, after trying for fifty years.

The reason why I like AMAZING STORIES is that it makes me think. That is more than I can say of some of the other magazines I have read. The stories are stimulating to the imagination, furthermore, they give one an education in scientific matters without being bone-dry reading. Since I began reading this magazine, I have learned more of science than I could have gotten in a year's course from some college text book. All in all, your magazine is very worth while, and I hope for its continuation.

GUY DEFRICK,
Big Prairie, Ohio

[We read between the lines that you certainly did appreciate "The Visitation," because you were sorry for the fate of some of its characters, all of which shows that you took it to heart. You give a real tribute to the author's ability. The year 1895 was a misprint, it should have been 1944. So you see he only had one year for "scattering" his affections instead of the fifty years which the printer has given him. If our magazine, devoted as it is to science as well as to fiction, makes our readers think instead of merely giving them idle amusement, we feel that we are approaching our ideal and we highly appreciate your encouragement.—EDITOR.]

THE FOURTH DIMENSION

Editor AMAZING STORIES:

Being greatly interested in your magazine—AMAZING STORIES—I wish to take this opportunity to give my sincere appreciation of the wonderful stories that distinguish your magazine from all others

Have just finished reading "The Four-Dimensional Roller Press" and it was truly interesting, but seemed vague on certain points which I'd like to ask about as I have but a very slight knowledge of scientific matters

The space in the center of this press is supposed to be "full of an invisible extension of the rollers" If the rollers were extended—why couldn't they be seen? And since this extended part was just as solid as the rest, and one could not put a hand through the space it occupied though invisible, could this be explained as a magnetic wave or wall, rather than an extension?

The experiment on the piece of steel was understandable, but on a human being not so much so The body of man being what it is—how could a machine cause an increase in height of four inches without a corresponding decrease in strength amounting practically to helplessness? An infant's bones are soft and pliant but it takes time to mold even them, so what of those whose bones are hardened to a certain degree of rigidity? Therefore could a mature body stand the terrific pressure and kneading necessary to soften the body muscles and bones sufficiently to increase its height four inches in almost as many minutes?

The story is unusually interesting to me as in my childhood I had a dream of this type

The janitor of the school I attended and of whom I was rather afraid seemed to be caught around the chest in a common clothes wringer, and I had to turn that wringer so it would be around his waist so he would be able to breathe. The ghastly agony on that man's face is with me yet

With all apologies for the length of this letter, and wishing your magazine every success

MAS ISLA SALZANO,
Chicago, Ill.

[We find your criticism about the story of the fourth dimension very amusing and suggestive but when you get into the fourth dimension you are entering an unknown field and it seems to us that you are at liberty to assign to it all sorts of qualities. Again we would like to feel that our authors are at liberty to increase the interest of their readers and to avoid any tendency to heaviness by using a plentiful flood of fancy The fourth dimension which has acquired a mathematical standing largely from the work of Einstein, has great possibilities of fiction and would seem to allow the author a very free play of fancy The dream you relate is curiously in accord with the story.

You speak so well of our humble efforts that we cannot comment upon your letter—it is so complimentary We still live in hopes of publishing two copies a month of AMAZING STORIES, because the favorable reception by the public makes us feel that this may yet be a possibility.—EDITOR.]

MISTAKES OF AUTHORS
THE REMARKABLE DRAWING

Editor, AMAZING STORIES

I have just finished reading the second instalment of "The Moon Pool," and wish to say that of all scientifiction writers, Mr Merritt surely can keep one "up in the air," for a long time. There is always lots of mystery and excitement in his stories. I also like A Hyatt Verrill's stories very much

Concerning the criticising of certain mistakes authors make, I believe they make up for these in the rest of the story Another thing an author writing a story may see a point in an altogether different way than the one who is criticising Hardly any author will make a statement in a "Scientifiction" story without being sure it can be true then again there is nothing told in these stories that is grotesque and impossible enough as that we may say it will not come true tomorrow We cannot judge such things by scientific facts that are true today because we of today do not know all scientific possibilities and probably never will

Most of the stories that are written about planets or space represent life in some human form and as Dr Breuer asks in his letter in the June issue, Why have life so human in form? Is it because our minds refuse to judge a thing in any other way, but by itself? We seem to take life on other planets on the same standards as that which exists here Just because life on this earth is in certain forms, is that any reason why it should be the same all over? What may seem lifeless or inert on our earth could be life or something equivalent on some other planet Why not?

I enjoy the poems by Leland S Copeland and here's hoping we may have one in every issue. "The Remarkable Drawing" by J M De Aragon proved quite a surprise I think you should include more of such drawings in AMAZING STORIES

No matter how long I write this letter would be full of praise, for AMAZING STORIES fills that long felt want for scientifiction.

J RAYMOND STIMPS,
Havre Montana

[Your views of the authors' stories of the type which we published are very enlightening and show that you realize the problems which confront the editor We would like to give more poems by Mr Copeland but we cannot promise them The deAragon drawing we also feel tells an impressive story.—EDITOR.]

POSSIBILITIES AND IMPOSSIBILITIES IN FICTION

Editor, AMAZING STORIES.

The first thing I noticed on reading the three prize stories in your June issue was the lack of writing ability. The plots I felt, were excellent. "The Visitation" was fairly well written, but it is an extremely difficult task to successfully bring a story to a climax in the way that more experienced writers seem able to. In this respect I feel that "The Electronic Wall," and "The Fate of the Poseidonis" fell flat. I, however, am merely pointing this out. I, in spite of this, found these stories very interesting.

Now about the other stories so far published. In "The Mad Planet" it was pointed out that the increased carbon dioxide content of the air caused extraordinary fungus growths, and corresponding insect development. Now, it is a well known fact that fungi use the oxygen and excrete carbon dioxide as a waste, while green plants, though they do not require carbon dioxide use quantities of it in the process of photo-synthesis in excess to the carbon dioxide excreted by the cells themselves. Therefore, since green plants need more carbon dioxide than oxygen, an excess of this gas in the air would tend to stimulate green plants, and since fungi use more oxygen than carbon dioxide, an excess of carbon dioxide would tend to discourage fungus growth.

In reference to insects versus mamals in a carbon dioxide laden atmosphere—insects breathe through trache, air circulating without use of definite muscles or regular contractions, while animals breathe through lungs, with a definite set of muscles. Now, it is known, and even applied (in the case of artificial resuscitation, where carbon dioxide, when not mixed with organic impurities (as given off by the lungs) stimulates the muscles of the lungs. This would, in turn, speed up mamalian and reptilian life generally, while insects, having no lung muscles, could not be so stimulated. But I enjoyed the story greatly, and, as nothing in the world is perfect, I am eagerly looking forward to more stories by the author. I like *all* stories, but I wish to emphasize that *good authorship* is necessary to put over an idea in an interesting manner.

Also, word pictures are difficult, when of imaginary objects, to "get" More illustrations!

How soon semi-monthly?

P. S.—Just remembered criticism of "Green Splotches" stating everything living has sex. Criticism unfounded. Refer him to water plant Hydra, which reproduces both sexually and unsexually, by budding.

JOHN PIERCE,
Mason City, Iowa

[When two readers take diametrically opposite views of the merits of particular stories, what is the poor editor to do who wants to please everyone? This letter presents a great contrast to one preceding it. But we do enjoy such criticisms.—EDITOR.]

THE BELLIGERENT EDITOR

Editor, AMAZING STORIES.

Your magazine, since the first issue I had the luck to pick up, has remained my favorite above all others. Since I am continuously travelling I do not subscribe but I do haunt the news stands from the fourth of the month until it appears.

My only criticism is *not* of the stories themselves but of the editorial comment that accompanies the letters from other readers.

For example, in the June issue the letter of Mr. Ludes of San Francisco is treated as if he were criticising the magazine rather than pointing out interesting discrepancies in an otherwise excellent story. The points he mentions particularly the one concerning the selection of specimen in "The Green Splotches" occurred to me at the time I read the story. What I am trying to bring out is the fact that discussion of this nature increases interest in the articles themselves and, I consider, should be treated with a less belligerent attitude by the editors.

As for the rest I read *all* the stories published, some with more pleasure than others but I always finish the magazine from cover to cover. The "Time Machine" has always been one of my favorites as has the "War of the Worlds." The latter seems to me to offer more possibilities for a moving picture than "The Lost World" ever did. I am hoping some day to find "When the Sleeper Wakes" published as I should like to re-read it.

J. M. REGER,
St. Louis, Mo.

[We certainly did not mean to be belligerent in our notes on Mr. Ludes' letter. We do not write the stories ourselves but get the best in this line of literature. We always welcome criticism of the stories and we are sure that our authors are generally glad to get good criticism, too, even if it verges on fault finding. We particularly value such letters as yours and are glad that you have joined our company of pleased readers. We note your request for the reprint of Mr. Wells' story and it is possible we may print "The Sleeper Wakes" soon.—EDITOR.]

A BRIGHT YOUNG CRITIC

Editor, AMAZING STORIES

I have only been reading your magazine for two months, but I have become very much interested in it. I am probably one of your youngest readers, being only 14 years old. But to come to the real reason for this letter. In the story "Under the Knife," by H. G. Wells, it mentions in the 17th paragraph on page 1135 that the character of the story finds himself going through the air with neither hands nor feet but in the picture at the beginning of the story he has both hands and feet. How can you explain this?

EVERETT BERAN,
Washington, D. C.

[We feel that Mr. Wells' story is so fantastic, that our artist is quite justified in his illustration. The story says that "I *seemed* to have neither hands nor feet nor parts nor organs . . ." You see, the artist had to impersonate or represent the narrator in some form and we can conceive that in his curious and abstracted condition, so well depicted by the distinguished author, it was his own imagination that seemed to eliminate his consciousness of having a body. We are always glad to get such well thought out criticism as yours.—EDITOR.]

THE LAND THAT TIME FORGOT

Editor AMAZING STORIES

Mr. M. B. Butler of Taft, California, in his letter in the May issue of AMAZING STORIES in attempt to belittle "The Land That Time Forgot," by Edgar Rice Burroughs states that it is "almost as good as Wells' 'The Lost World.'"

Evidently Mr. Butler doesn't know much about the latter book, or he wouldn't have ascribed it to H. G. Wells when its author is Conan Doyle. Furthermore, his implication that Mr. Burroughs got his idea of "Caspak" from Doyle's uninteresting story is I am quite sure, entirely unfounded. Edgar Rice Burroughs is second to no one when it comes to originality of plot.

If I were to be stranded on the "well known" desert isle and could choose beforehand some books to ease my exile, I would unhesitatingly select a complete set of Edgar Rice Burroughs and settle down to enjoy myself for the rest of my life.

AARON L. GLASSER,
New York, N. Y.

[When our correspondent starts for the Desert Isle with his complete set of Edgar Rice Burroughs, if he notifies us, we will see that he is provided with a complete set of AMAZING STORIES also. Then his enjoyment will be complete.—EDITOR.]

HOW AMAZING STORIES IMPRESSES AND AFFECTS A READER

Editor, AMAZING STORIES

After your first six copies of AMAZING STORIES I must write my appreciation for your magazine, for I have delayed long enough.

Seeing your AMAZING STORIES advertised in its sister magazine, *Science and Invention*, I decided to buy a copy of the first issue. And I haven't missed a copy since. Your magazine is the best on the market of its kind today, I think.

But for everything there must be a reason. First I think your magazine gives as much knowledge along scientific lines as a year's course in college. It is so different from any other magazine on the market that it is a relief to buy a copy and read it. Publishing a magazine like AMAZING STORIES was the best step your company ever took in printing reading matter for the more thinking public. This magazine makes the reader get his mind off the everyday hurly-burly of life and takes him into the realms of science. Such stories as "Off on a Comet," "The Man from the Atom," "A Trip to the Center of the Earth," and "Station X" bring the reader into the more intimate secrets of nature and give him a taste of real true science.

AMAZING STORIES has a great uplifting effect on the reader. The stories in this magazine when read with concentration, seem to inspire the reader to go on and learn more of the study—science.

And to say something of the stories individually, I especially like the stories of "Off on a Comet," "The Man from the Atom," "A Trip to the Center of the Earth," "The Infinite Vision," "Station X," "The Moon Metal," and "The Malignant Entity." The other stories which were very good were the stories by Edgar Allan Poe and the stories of "The Scientific Adventures of Mr. Fosdick," "Dr. Hackensaw's Secrets" is most interesting too.

I like stories which deal in radio and later day science. "Station X" appealed to me very highly, because it dealt with my hobby, which is radio. I also like stories of chemistry and stories of astronomy.

I am very much in favor of having AMAZING STORIES published twice each month even though I didn't take time to send in my vote. It seems so long to wait a whole month for the best reading material on the market to get here. Why not make it a "twice monthly?"

Just print more stories of radio and television and print the magazine twice each month then I'll be entirely satisfied.

JOHN M. STEAN,
Hayti, Mo.

[So far it has not been practical to issue AMAZING STORIES twice a month. Certain mechanical difficulties are still in the way. However, it is possible that after the magazine has become established it will become a semi-monthly.—EDITOR.]

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