

The Invisible Ray

Arthur B. Reeve

Table of Contents

<u>The Invisible Ray</u>	1
<u>Arthur B. Reeve</u>	1

The Invisible Ray

Arthur B. Reeve

This page copyright © 2001 Blackmask Online.

<http://www.blackmask.com>

"I won't deny that I had some expectation from the old man myself."

Kennedy's client was speaking in a low, full-chested vibrating voice, with some emotion, so low that I had entered the room without being aware that any one was there until it was too late to retreat.

"As his physician for over twelve years," the man pursued, "I certainly had been led to hope to be remembered in his will. But, Professor Kennedy, I can't put it too strongly when I say that there is no selfish motive in my coming to you about the case. There is something wrong depend on it."

Craig had glanced up at me and, as I hesitated, I could see in an instant that the speaker was a practitioner of a type that is rapidly passing away, an old-fashioned family doctor.

Dr. Burnham, I should like to have you know Mr. Jameson," introduced Craig. " You can talk before him as you have to me alone. We always work together."

I shook hands with the visitor.

"The doctor has succeeded in interesting me greatly in a case which has some unique features," Kennedy explained. "It has to do with Stephen Haswell, the eccentric old millionaire of Brooklyn. Have you ever heard of him?"

"Yes, indeed," I replied, recalling an occasional article which had appeared in the newspapers about a dirty old house in that part of the Heights in Brooklyn whence all that is fashionable had not yet taken flight, a house of mystery, yet not more mysterious than its owner in his secretive comings and goings in the affairs of men a generation beyond his time. Further than the facts he was reputed to be very wealthy and led, in the heart of a great city, what was nearly like the life of a hermit as possible, I knew little or nothing. "What has he been doing now?" I asked.

"About a week ago," repeated the doctor, in answer to a nod of encouragement from Kennedy, "I was summoned in the middle of the night to attend Mr. Haswell who, as I have been telling Professor Kennedy, was a patient of mine for over twelve years. He had been suddenly stricken with total blindness. Since then he appears to be failing fast, that is, he appeared to be the last time I saw him a few days ago, after I had been superseded by a younger man. It is a curious case and I have thought about it a great deal. But I didn't like to speak to the authorities; there wasn't enough to warrant that, and I should have been laughed out of court for my pains. The more I have thought about it, however, the more I have felt it my duty to say something to somebody, and so, having heard of Professor Kennedy, I decided to consult him. The fact of the matter is, I very much fear that there are circumstances which will bear sharp looking into, perhaps a scheme to get control of the old man's fortune.

The doctor paused, and Craig inclined his head, as much as to signify his approbation of the delicate position in which Burnham stood in the case. Before the doctor could proceed further, Kennedy handed me a letter which had been lying before him on the table. It had evidently been torn into small pieces and then carefully pasted together.

The Invisible Ray

The superscription gave a small town in Ohio and a date about a fortnight previous.

Dear Father [it read]: I hope you will pardon me for writing, but I cannot let the occasion of your seventy-fifth birthday pass without a word of affection and congratulation. I am alive and well Time has dealt leniently with me in that respect, if not in money matters. I do not say this in the hope of reconciling you to me. I know that is impossible after all these cruel years. But I do wish that I could see you again. Remember that I am your only child and even if you still think that I have been a foolish one, please let me come to see you once before it is too late. We are constantly travelling from place to place, but shall be here for a few days. Your loving daughter,
Grace Haswell Martin

"Some fourteen or fifteen years ago," explained the doctor as I looked up from reading the note, "Mr. Haswell's only daughter eloped with a man named Martin. He had been engaged to paint a portrait of the late Mrs. Haswell from a photograph. It was the first time that Grace Haswell had been able to find expression for the artistic yearning which had always been repressed by the cold, practical sense of her father. She remembered her mother perfectly since the sad bereavement of her girlhood and naturally she watched and helped the artist eagerly. The result was a portrait which might well have been painted from the subject herself rather than from a cold photograph.

"Haswell saw the growing intimacy of his daughter and the artist. His bent of mind was solely toward money and material things, and he at once conceived a bitter and unreasoning hatred for Martin who, he believed, had 'schemed' to capture his daughter and an easy living. Art was as foreign to his nature as possible. Nevertheless they went ahead and married and, well, it resulted in the old man disinheriting the girl. The young couple disappeared bravely to make their way by their chosen profession and, as far as I know, have never been heard from since until now. Haswell made a new will and I have understood that practically all of his fortune is to be devoted to founding the technology department in a projected university of Brooklyn."

"You have never seen this Miss Martin or her husband?" asked Kennedy.

"No, never. But in some way she must have learned that I had some influence with her father, for she wrote to me not long ago, enclosing a note and asking me to intercede for her. I did so. I took the letter to him as diplomatically as I could. The old man flew into a rage, refused even to look at the letter, tore it into bits, and ordered me never to mention the subject again. That is her note, which I saved. However, it is the sequel about which I wish your help."

The physician folded up the patched letter carefully before he continued. "Mr. Haswell, as you perhaps know, has for many years been a prominent figure in various curious speculations, or rather in loaning money to many curious speculators. It is not necessary to go into the different schemes which he has helped to finance. Even though most of them have been unknown to the public they have certainly given him such a reputation that he is much sought after by inventors.

"Not long ago Haswell became interested in the work of an obscure chemist over in Brooklyn named Prescott. Prescott claims, as I understand, to be able to transmute copper into gold. Whatever you think of it offhand, you should visit his laboratory yourselves, gentlemen. I am told it is wonderful, though I have never seen it and can't explain it. I have met Prescott several times while he was trying to persuade Mr. Haswell to back him in his scheme, but he was never disposed to talk to me, for I had no money to invest. So far as I know about it the thing sounds scientific and plausible enough. I leave you to judge of that. It is only an incident in my story and I will pass over it quickly. Prescott, then, believes that the elements are merely progressive variations of an original substance or base called 'protyle,' from which everything is derived. But this fellow Prescott goes much further than any of the former theorists. He does not stop with matter. He believes that he has the secret of life also, that he can make the transition from the inorganic to the organic, from inert matter to living protoplasm, and thence from living protoplasm to mind and what we call soul, whatever that may be."

The Invisible Ray

"And here is where the weird and uncanny part of it comes in," commented Craig, turning from the doctor to call my attention particularly to what was about to follow.

"Having arrived at the point where he asserts that he can create and destroy matter, life, and mind," continued the doctor, as if himself fascinated by the idea, "Prescott very naturally does not have to go far before he also claims a control over telepathy and even a communication with the dead. He even calls the messages which he receives by a word which he has coined himself, 'telepgrams.' Thus he says he has unified the physical, the physiological, and the psychical a system of absolute scientific monism."

The doctor paused again, then resumed. "One afternoon, about a week ago, apparently, as far as I am able to piece together the story, Prescott was demonstrating his marvellous discovery of the unity of nature. Suddenly he faced Mr. Haswell.

"Shall I tell you a fact, sir, about yourself?" he asked quickly. "The truth as I see it by my wonderful invention? If it is the truth, will you believe in me? Will you put money into my invention? Will you share in becoming fabulously rich?"

"Haswell made some noncommittal answer. But Prescott seemed to look into the machine through a very thick plate-glass, with Haswell placed directly before it. He gave a cry. 'Mr. Haswell,' he exclaimed, 'I regret to tell you what I see. You have disinherited your daughter; she has passed out of your life and at the present moment you do not know where she is.' "That's true," replied the old man bitterly, 'and more than that I don't care. That's nothing new.'

"No, unfortunately, that is not all I see. Can you bear something further? I think you ought to know it. I have here a most mysterious telepgram.'

"Yes. What is it? Is she dead?"

"No, it is not about her. It is about yourself. Tonight at midnight or perhaps a little later,' repeated Prescott solemnly, 'you will lose your sight as a punishment for your action.'

"Pouf!" exclaimed the old man in a dudgeon, 'if that is all your invention can tell me, good-bye. You told me you were able to make gold. Instead, you make foolish prophecies. I'll put no money into such tomfoolery. I'm a practical man,' and with that he stamped out of the laboratory.

"Well, that night, about one o'clock, in the silence of the lonely old house, the aged caretaker, Jane, whom he had hired after he banished his daughter from his life, heard a wild shout of 'Help! Help!' Haswell, alone in his room on the second floor, was groping about in the dark.

"Jane,' he ordered, 'a light a light.'

"I have lighted the gas, Mr. Haswell,' she cried.

"A groan followed. He had himself found a match, had struck it, had even burnt his fingers with it, yet he saw nothing.

"The blow had fallen. At almost the very hour which Prescott, by means of his weird telepgram had predicted, old Haswell was stricken.

"I'm blind,' he gasped. 'Send for Dr. Burnham.'

The Invisible Ray

"I went to him immediately when the maid roused me but there was nothing I could do except prescribe perfect rest for his eyes and keeping in a dark room in the hope that his sight might be restored as suddenly and as miraculously as it had been taken away.

"The next morning, with his own hand, trembling and scrawling in his blindness, he wrote the following on a piece of paper:

"Mrs. Grace Martin. Information wanted about the present whereabouts of Mrs. Grace Martin, formerly Grace Haswell of Brooklyn.

STEPHEN HASWELL,
_____ Pierrepont St., Brooklyn

"This advertisement he caused to be placed in all the New York newspapers and to be wired to the leading Western papers. Haswell himself was a changed man after his experience. He spoke bitterly of Prescott, yet his attitude toward his daughter was completely reversed. Whether he admitted to himself a belief in the prediction of the inventor, I do not know. Certainly he scouted such an idea in telling me about it.

"A day or two after the advertisement appeared a telegram came to the old man from Indiana. It read simply: 'Dear Father: Am starting for Brooklyn to-day. Grace.'

"The upshot was that Grace Haswell Martin, or rather Grace Martin, appeared the next day, forgave and was forgiven with much weeping, although the old man still refused resolutely to be reconciled with and receive her husband. Mrs. Martin started to clean up the old house. A vacuum cleaner sucked a ton or two of dust from it. Everything was changed. Jane grumbled a great deal, but there was no doubt a great improvement. Meals were served regularly. The old man was taken care of as never before. Nothing was too good for him. Everywhere the touch of a woman was evident in the house. The change was complete. It even extended to me. Some friend had told her of an eye and ear specialist, a Dr. Scott, who was engaged. Since then, I understand, a new will has been made, much to the chagrin of the trustees of the projected school. Of course I am cut out of the new will, and that with the knowledge of the woman who once appealed to me, but it does not influence me in coming to you."

"But what has happened since to rouse suspicion?" asked Kennedy, watching the doctor furtively.

"Why, the fact is that in spite of all this added care, the old man is failing more rapidly than ever. He never goes out except attended and not much even then. The other day I happened to meet Jane on the street. The faithful old soul poured forth a long story about his growing dependence on others and ended by mentioning a curious red discoloration that seems to have broken out his face and hands. More from the way she said it than what she said I gained the impression that something was going on which should be looked into."

"Then you perhaps think that Prescott and Mrs. Martin are in some way connected in this case?" I hazarded.

I had scarcely framed the question before he replied in an emphatic negative. "On the contrary, it seems to me that if they know each other at all it is with hostility. With the exception of the first stroke of blindness" here he lowered his voice earnestly "practically every misfortune that has overtaken Mr. Haswell has been since the advent of Dr. Scott. Mind, I do not wish even to breathe that Mrs. Martin has done anything except what a daughter should do. I think she has shown herself a model of forgiveness and devotion. Nevertheless, the turn of events under the new treatment has been so strange that almost it makes one believe that there might be something occult about it or wrong with the new doctor."

"Would it be possible, do you think, for us to see Mr. Haswell?" asked Kennedy, when Dr. Burnham had come to a full stop after pouring forth his suspicions. "I should like to see this Dr. Scott. But first I should like to get into

The Invisible Ray

the old house without exciting hostility."

The doctor was thoughtful. "You'll have to arrange that yourself," he answered. "Can't you think up a scheme? For instance, go to him with a proposal like the old schemes he used to finance. He is very much interested in electrical inventions. He made his money by speculation in telegraphs and telephones in the early days when they were more or less dreams. I should think a wireless system of television might at least interest him and furnish an excuse for getting in, although I am told his daughter discourages all tangible investment in the schemes that used to interest his active mind."

"An excellent idea," exclaimed Kennedy. "It is worth trying anyway. It is still early. Suppose we ride over to Brooklyn with you. You can direct us to the house and we'll try to see him."

It was still light when we mounted the high steps of the house of mystery across the bridge. Mrs. Martin, who met us in the parlour, proved to be a stunning looking woman with brown hair and beautiful dark eyes. As far as we could see the old house plainly showed the change. The furniture and ornaments were of a period long past, but everything was scrupulously neat. Hanging over the old mantel was a painting which quite evidently was that of the long since deceased Mrs. Haswell, the mother of Grace. In spite of the hideous style of dress of the period after the war, she had evidently been a very beautiful woman with large masses of light chestnut hair and blue eyes which the painter had succeeded in catching with almost life-likeness for a portrait.

It took only a few minutes for Kennedy, in his most engaging and plausible manner, to state the hypothetical reason of our call. Though it was perfectly evident from the start that Mrs. Martin would throw cold water on anything requiring an outlay of money Craig accomplished his full purpose of securing an interview with Mr. Haswell. The invalid lay propped up in bed, and as we entered he heard us and turned his sightless eye in our direction almost as if he saw.

Kennedy had hardly begun to repeat and elaborate the story which he had already told regarding his mythical friend who had at last a commercial wireless "televue," as he called it on the spur of the moment, when Jane, the aged caretaker, announced Dr. Scott. The new doctor was a youthfully dressed young man, clean-shaven, but with an undefinable air of being much older than his smooth face led one to suppose. As he had a large practice, he said, he would beg our pardon for interrupting but would not take long.

It needed no great power of observation to see that the old man placed great reliance on his new doctor and that the visit partook of a social as well as a professional nature. Although they talked low we could catch now and then a word or phrase. Dr. Scott bent down and examined the eyes of his patient casually. It was difficult to believe that they saw nothing, so bright was the blue of the iris.

"Perfect rest for the present," the doctor directed, talking more to Mrs. Martin than to the old man. "Perfect rest, and then when his health is good, we shall see what can be done with that cataract."

He was about to leave, when the old man reached up and restrained him, taking hold of the doctor's wrist tightly, as if to pull him nearer in order to whisper to him without being overheard. Kennedy was sitting in a chair near the head of the bed, some feet away, as the doctor leaned down. Haswell, still holding his wrist, pulled him closer. I could not hear what was said, though somehow I had an impression that they were talking about Prescott, for it would not have been at all strange if the old man had been greatly impressed by the alchemist.

Kennedy, I noticed, had pulled an old envelope from his pocket and was apparently engaged in jotting down some notes, glancing now and then from his writing to the doctor and to Mr. Haswell.

The doctor stood erect in a few moments and rubbed his wrist thoughtfully with the other hand, as if it hurt. At the same time he smiled on Mrs. Martin. "Your father has a good deal of strength yet, Mrs. Martin," he remarked.

The Invisible Ray

"He has a wonderful constitution. I feel sure that we can pull him out of this and that he has many, many years to live."

Mr. Haswell, who caught the words eagerly, brightened visibly, and the doctor passed out. Kennedy resumed his description of the wireless picture apparatus which was to revolutionize the newspaper, the theatre, and daily life in general. The old man did not seem enthusiastic and turned to his daughter with some remark.

"Just at present," commented the daughter with an air of finality, "the only thing my father is much interested in is a way in which to recover his sight without an operation. He has just had a rather unpleasant experience with one inventor. I think it will be some time before he cares to embark in any other such schemes."

Kennedy and I excused ourselves with appropriate remarks of disappointment. From his preoccupied manner it was impossible for me to guess whether Craig had accomplished his purpose or not.

"Let us drop in on Dr. Burnham since we are over here," he said when we had reached the corner. "I have some questions to ask him."

The former physician of Mr. Haswell lived not very far from the house we had just left. He appeared a little surprised to see us so soon, but interested in what had taken place.

"Who is this Dr. Scott?" asked Craig when we were seated in the comfortable leather chairs of the old-fashioned consulting-room.

"Really, I know no more about him than you do," replied Burnham. I thought I detected a little professional jealousy in his tone, though he went on frankly enough. "I have made inquiries and I can find out nothing except that he is supposed to be a graduate of some Western medical school and came to this city only a short time ago. He has hired a small office in a new building devoted entirely to doctors and they tell me that he is an eye and ear specialist, though I cannot see that he has any practice. Beyond that I know nothing about him."

"Your friend Prescott interests me, too," remarked Kennedy, changing the subject quickly.

"Oh, he is no friend of mine," returned the doctor, fumbling in a drawer of his desk. "But I think I have one of his cards here which he gave me when we were introduced some time ago at Mr. Haswell's. I should think it would be worthwhile to see him again. Although he has no use for me because I have neither money nor influence, still you might take this card. Tell him you are from the university, that I have interested you in him, that you know a trustee with money to invest—anything you like that is plausible. When are you going to see him?"

"The first thing in the morning," replied Kennedy. "After I have seen him I shall drop in for another chat with you. Will you be here?"

The doctor promised, and we took our departure.

Prescott's laboratory, which we found the next day from the address on the card, proved to be situated in one of the streets near the waterfront under the bridge approach, where the factories and warehouses clustered thickly. It was with a great deal of anticipation of seeing something happen that we threaded our way through the maze of streets with the cobweb structure of the bridge carrying its endless succession of cars arching high over our heads. We had nearly reached the place when Kennedy paused and pulled out two pairs of glasses, those huge round tortoiseshell affairs.

"You needn't mind these, Walter," he explained. "They are only plain glass, that is, not ground. You can see through them as well as through air. We must be careful not to excite suspicion. Perhaps a disguise might have

The Invisible Ray

been better, but I think this will do. There they add at least a decade to your age. If you could see yourself you wouldn't speak to your reflection. You look as scholarly as a Chinese mandarin. Remember, let me do the talking and do just as I do."

We had now entered the shop, stumbled up the dark stairs, and presented Dr. Burnham's card along the lines which he had suggested. Prescott, surrounded by his retorts, crucibles, burettes, and condensers, received us much more graciously than I had had any reason to anticipate. He was a man in the late forties, his face covered with a thick beard, and his eyes, which seemed a little weak, were reduced some time ago at Mr. Haswell's. I should think it would be worthwhile to see him again. Although he has no use for me because I have neither money nor influence, still you might take this card. Tell him you are from the university, that I have interested you in him, that you know a trustee with money to invest—anything you like that is plausible. When are you going to see him?"

"The first thing in the morning," replied Kennedy. "After I have seen him I shall drop in for another chat with you. Will you be here?"

The doctor promised, and we took our departure.

Prescott's laboratory, which we found the next day from the address on the card, proved to be situated in one of the streets near the waterfront under the bridge approach, where the factories and warehouses clustered thickly. It was with a great deal of anticipation of seeing something happen that we threaded our way through the maze of streets with the cobweb structure of the bridge carrying its endless succession of cars arching high over our heads. We had nearly reached the place when Kennedy paused and pulled out two pairs of glasses, those huge round tortoiseshell affairs.

"You needn't mind these, Walter," he explained. "They are only plain glass, that is, not ground. You can see through them as well as through air. We must be careful not to excite suspicion. Perhaps a disguise might have been better, but I think this will do. There—they add at least a decade to your age. If you could see yourself you wouldn't speak to your reflection. You look as scholarly as a Chinese mandarin. Remember, let me do the talking and do just as I do."

We had now entered the shop, stumbled up the dark stairs, and presented Dr. Burnham's card along the lines which he had suggested. Prescott, surrounded by his retorts, crucibles, burettes, and condensers, received us much more graciously than I had had any reason to anticipate. He was a man in the late forties, his face covered with a thick beard, and his eyes, which seemed a little weak, were helped out with glasses almost as scholarly as ours.

I could not help thinking that we three bespectacled figures lacked only the flowing robes to be taken for a group of medieval alchemists set down a few centuries out of our time in the murky light of Prescott's sanctum. Yet, though he accepted us at face value, and began to talk of his strange discoveries there was none of the old familiar prating about matrix and flux, elixir, magisterium, magnum opus, the mastery and the quintessence, those alternate names for the philosopher's stone which Paracelsus, Simon Forman, Jerome Cardan, and the other mediaeval worthies indulged in. This experience was at least as up-to-date as the Curies, Becquerel, Ramsay, and the rest.

"Transmutation," remarked Prescott, "was, as you know, finally declared to be a scientific absurdity in the eighteenth century. But I may say that it is no longer so regarded. I do not ask you to believe anything until you have seen; all I ask is that you maintain the same open mind which the most progressive scientists of to-day exhibit in regard to the subject."

Kennedy had seated himself some distance from a curious piece or rather collection of apparatus over which Prescott was working. It consisted of numerous coils and tubes.

"It may seem strange to you, gentlemen," Prescott proceeded, "that a man who is able to produce gold from, say, copper should be seeking capital from other people. My best answer to that old objection is that I am not seeking capital, as such. The situation with me is simply this. Twice I have applied to the patent office for a patent on my invention. They not only refuse to grant it, but they refuse to consider the application or even to give me a chance to demonstrate my process to them. On the other hand, suppose I try this thing secretly. How can I prevent any one from learning my trade secret, leaving me, and making gold on his own account? Men will desert me as fast as I educate them. Think of the economic result of that; it would turn the world topsy-turvy. I am looking for someone who can be trusted to the last limit to join with me, furnish the influence and standing while I furnish the

The Invisible Ray

brains and the invention. Either we must get the government interested and sell the invention to it, or we must get government protection and special legislation. I am not seeking capital; I am seeking protection. First let me show you something."

He turned a switch, and a part of the collection of apparatus began to vibrate.

"You are undoubtedly acquainted with the modern theories of matter," he began, plunging into the explanation of his process. "Starting with the atom, we believe no longer that it is indivisible. Atoms are composed of thousands of ions, as they are called—really little electric charges. Again, you know that we have found that all the elements fall into groups. Each group has certain related atomic weights and properties which can be and have been predicted in advance of the discovery of missing elements in the group. I started with the reasonable assumption that the atom of one element in a group could be modified so as to become the atom of another element in the group, that one group could perhaps be transformed into another, and so on, if only I knew the force that would change the number or modify the vibrations of these ions composing the various atoms.

"Now for years I have been seeking that force or combination of forces that would enable me to produce this change in the elements—raising or lowering them in the scale, so to speak. I have found it. I am not going to tell you or any other man whom you may interest the secret of how it is done until I find some one I can trust as I trust myself. But I am none the less willing that you should see the results. If they are not convincing, then nothing can be."

He appeared to be debating whether to explain further, and finally resumed: "Matter thus being in reality a manifestation of force or ether in motion, it is necessary to change and control that force and motion. This assemblage of machines here is for that purpose. Now a few words as to my theory."

He took a pencil and struck a sharp blow on the table. "There you have a single blow," he said, "just one isolated noise. Now if I strike a tuning fork, you have a vibrating note. In other words, a succession of blows or wave vibrations of a certain kind affects the ear and we call it sound, just as a succession of other wave vibrations affects the retina and we have sight. If a moving picture moves slower than a certain number of pictures a minute you see the separate pictures; faster it is one moving picture.

"Now as we increase the rapidity of wave vibration and decrease the wave length we pass from sound waves to heat waves or what are known as infra-red waves, those which lie below the red in the spectrum of light. Next we come to light, which is composed of the seven colours as you know from seeing them resolved in a prism. After that are what are known as the ultra-violet rays, which lie beyond the violet of white light. We also have electric waves, the waves of the alternating current, and shorter still we find the Hertzian waves, which are used in wireless. We have only begun to know of X-rays and the alpha, beta, and gamma rays from them, of radium, radioactivity, and finally of this new force which I have discovered and call 'protodyne,' the original force.

"In short, we find in the universe Matter, Force, and Ether. Matter is simply ether in motion, is composed of corpuscles, electrically charged ions, or electrons, moving units of negative electricity about one one-thousandth part of the hydrogen atom. Matter is made up of electricity and nothing but electricity. Let us see what that leads to. You are acquainted with Mendeleeff's periodic table?"

He drew forth a huge chart on which all the eighty or so elements were arranged in eight groups or octaves and twelve series. Selecting one, he placed his finger on the letters "Au," under which was written the number, 197.2. I wondered what the mystic letters and figures meant.

"That," he explained, "is the scientific name for the element gold and the figure is its atomic weight. You will see," he added, pointing down the second vertical column on the chart, "that gold belongs to the hydrogen group—hydrogen, lithium, sodium, potassium, copper, rubidium, silver, caesium, then two blank spaces for elements yet to be discovered to science, then gold, and finally another unknown element."

Running his finger along the eleventh, horizontal series, he continued: "The gold series—not the group—reads gold, mercury, thallium, lead, bismuth, and other elements known only to myself. For the known elements, however, these groups and series are now perfectly recognised by all scientists; they are determined by the fixed weight of the atom, and there is a close approximation to regularity.

"This twelfth series is interesting. So far only radium, thorium, and uranium are generally known. We know that the radioactive elements are constantly breaking down, and one often hears uranium, for instance, called the 'parent' of radium. Radium also gives off an emanation, and among its products is helium, quite another element. Thus the transmutation of matter is well known within certain bounds to all scientists to-day like yourself,

The Invisible Ray

Professor Kennedy. It has even been rumored but never proved that copper has been transformed into lithium—both members of the hydrogen–gold group, you will observe. Copper to lithium is going backward, so to speak. It has remained for me to devise this protodyne apparatus by which I can reverse that process of decay and go forward in the table, so to put it—can change lithium and copper into gold. I can create and destroy matter by protodyne."

He had been fingering a switch as he spoke. Now he turned it on triumphantly. A curious snapping and crackling noise followed, becoming more rapid, and as it mounted in intensity I could smell a pungent odor of ozone which told of an electric discharge. On went the machine until we could feel heat radiating from it. Then came a piercing burst of greenish–blue light from a long tube which looked like a curious mercury vapour lamp.

After a few minutes of this Prescott took a small crucible of black lead. "Now we are ready to try it," he cried in great excitement. "Here I have a crucible containing some copper. Any substance in the group would do, even hydrogen if there any way I could handle the gas. I place it in the machine—so. Now if you could watch inside you would see it change; it is now rubidium, now silver, now caesium. Now it is it is a hitherto unknown element which I have named after myself, presium, now a second unknown element, cottium—ah!—there we have gold."

He drew forth the crucible, and there glowed in it a little bead or globule of molten gold.

"I could have taken lead or mercury and by varying the process done the same thing with the gold series as well as the gold group," he said, regarding the globule with obvious pride. "And I can put this gold back and bring it out copper or hydrogen, or better yet, can advance it instead of cause it to decay, and can get a radioactive element which I have named morganium— after my first name, Morgan Prescott. Morganium is a radio–active element next in the series to radium and much more active. Come closer and examine the gold."

Kennedy shook his head as if perfectly satisfied to accept the result. As for me I knew not what to think. It was all so plausible and there was the bead of gold, too, that I turned to Kennedy for enlightenment. Was he convinced? His face was inscrutable.

But as I looked I could see that Kennedy had been holding concealed in the palm of his hand a bit of what might be a mineral. From my position, I could see the bit of mineral glowing, but Prescott could not.

"Might I ask," interrupted Kennedy, "what that curious greenish or bluish light from the tube is composed of?"

Prescott eyed him keenly for an instant through his thick glasses. Craig had shifted his gaze from the bit of mineral in his own hand, but was not looking at the light. He seemed to be indifferently contemplating Prescott's hand as it rested on the switch.

"That, sir," replied Prescott slowly, "is an emanation due to this new force, protodyne, which I use. It is a manifestation of energy, sir, that may run changes not only through the whole gamut of elements, but is capable of transforming the ether itself into matter, matter into life, and life into mind. It is the outward sign of the unity of nature, the—"

"The means by which you secure the curious telegrams I have heard of?" inquired Kennedy eagerly.

Prescott looked at him sharply, and for a moment I thought his face seemed to change from a livid white to an apoplectic red, although it may have been only the play of the weird light. When he spoke it was with no show of even suppressed surprise.

"Yes," he answered calmly. "I see that you have heard something of them. I had a curious case a few days ago. I had hoped to interest a certain capitalist of high standing in this city. I had showed him just what I have showed you, and I think he was impressed by it. Then I thought to clinch the matter by a telegram, but for some reason or other I failed to consult the forces I control as to the wisdom of doing so. Had I, I should have known better. But I went ahead in self–confidence and enthusiasm. I told him of a daughter with whom, in his heart, he was really wishing to become reconciled but was too proud to say the word. He resented it. He started to stamp out of this room, but not before I had another telegram which told of a misfortune that was soon to overtake the old man himself. If he had given me a chance I might have saved him, at least have flashed a telegram to that daughter myself, but he gave me no chance. He was gone.

"I do not know precisely what happened after that, but in some way this man found his daughter, and to–day she is living with him. As for my hopes, I lost them from the moment when I made my initial mistake of telling him something distasteful. The daughter hates me and I hate her. I have learned that she never ceases advising the old man against all schemes for investment except those bearing moderate interest and readily realized on. Dr. Burnham—I see you know him—has been superseded by another doctor, I believe. Well, well, I am through with

The Invisible Ray

that incident. I must get assistance from other sources. The old man, I think, would have tricked me out of fruits of my discovery anyhow. Perhaps I am fortunate. Who knows?"

A knock at the door cut him short. Prescott opened it, and a messenger boy stood there. "Is Professor Kennedy here?" he inquired.

Craig motioned to the boy, signed for the message and tore it open. "It is from Dr. Burnham," he exclaimed, handing the message to me.

"Mr. Haswell is dead," I read. "Looks to me like asphyxiation by gas or some other poison. Come immediately to his house. Burnham."

"You will pardon me," broke in Craig to Prescott, who was regarding us without the slightest trace of emotion, "but Mr. Haswell, the old man to whom I know you referred, is dead, and Dr. Burnham wishes to see me immediately. It was only yesterday that I saw Mr. Haswell in pretty good health and spirits. Prescott, though there was no love lost between you, I would esteem it a great favour if you would accompany me to the house. You need not take any responsibility unless you desire."

His words were courteous enough, but Craig spoke in a tone of quiet authority which Prescott found it impossible to deny. Kennedy had already started to telephone to his own laboratory, describing a certain suitcase to one of his students and giving his directions. It was only a moment later that we were panting up the sloping street that led from the river front. In the excitement I scarcely noticed where we were going until we hurried up the steps to the Haswell house.

The aged caretaker met us at the door. She was in tears. Upstairs in the front room where we had first met the old man we found Dr. Burnham working frantically over him. It took only a minute to learn what had happened. The faithful Jane had noticed an odour of gas in the hall, had traced it to Haswell's room, had found him unconscious, and instinctively, forgetting the new Dr. Scott, had rushed forth for Dr. Burnham. Near the bed stood Grace Martin, pale but anxiously watching the efforts of the doctor to resuscitate the blue-faced man who was stretched cold and motionless on the bed.

Dr. Burnham paused in his efforts as we entered. "He is dead all right," he whispered, aside. "I have tried everything I know to bring him back, but he is beyond help."

There was still a sickening odour of illuminating gas in the room, although the windows were now all open.

Kennedy, with provoking calmness in the excitement, turned from and ignored Dr. Burnham,

"Have you summoned Dr. Scott?" he asked Mrs. Martin.

"No," she replied, surprised. "Should I have done so?"

"Yes. Send Jane immediately. Mr. Prescott, will you kindly be seated for a few moments."

Taking off his coat, Kennedy advanced to the bed where the emaciated figure lay, cold and motionless. Craig knelt down at Mr. Haswell's head and took the inert arms, raising them up until they were extended straight. Then he brought them down, folded upward at the elbow at the side. Again and again he tried this Sylvester method of inducing respiration, but with no more result than Burnham had secured. He turned the body over on its face and tried the new Schaefer method. There seemed to be not a spark of life left.

"Dr. Scott is out," reported the maid breathlessly, "but they are trying to locate him from his office, and if they do they will send him around immediately."

A ring at the doorbell caused us to think that he had been found, but it proved to be the student to whom Kennedy had telephoned at his own laboratory. He was carrying a heavy suitcase and a small tank.

Kennedy opened the suitcase hastily and disclosed a little motor, some long tubes of rubber fitting into a small rubber cap, forceps, and other paraphernalia. The student quickly attached one tube to the little tank, while Kennedy grasped the tongue of the dead man with the forceps, pulled it up off the soft palate and fitted the rubber cap snugly over his mouth and nose.

"This is the Draeger pulmomotor," he explained as he worked, "devised to resuscitate persons who have died of electric shock, but actually found to be of more value in cases of asphyxiation. Start the motor."

The pulmomotor began to pump. One could see the dead man's chest rise as it was inflated with oxygen forced by the accordion bellows from the tank through one of the tubes into the lungs. Then it fell as the oxygen and the poisonous gas were slowly sucked out through the other tube. Again and again the process was repeated, about ten times a minute.

Dr. Burnham looked on in undisguised amazement. He had long since given up all hope. The man was dead,

The Invisible Ray

medically dead, as dead as ever was any gas victim at this stage on whom all the usual methods of resuscitation had been tried and had failed.

Still, minute after minute, Kennedy worked faithfully on, trying to discover some spark of life and to fan it into flame. At last, after what seemed to be a half-hour of unremitting effort, when the oxygen had long since been exhausted and only fresh air was being pumped into the lungs and out of them, there was a first faint glimmer of life in the heart and a touch of colour in the cheeks. Haswell was coming to. Another half-hour found him muttering and rambling weakly.

"The letter—the letter," he moaned, rolling his glazed eyes about. "Where is the letter? Send for Grace."

The moan was so audible that it was startling. It was like a voice from the grave. What did it all mean? Mrs. Martin was at his side in a moment.

"Father, father,—here I am—Grace. What do you want?"

The old man moved restlessly, feverishly, and pressed his trembling hand to his forehead as if trying to collect his thoughts. He was weak, but it was evident that he had been saved.

The pulmotor had been stopped. Craig threw the cap to his student to be packed up, and as he did so he remarked quietly, "I could wish that Dr. Scott had been found. There are some matters here that might interest him."

He paused and looked slowly from the rescued man lying dazed on the bed toward Mrs. Martin. It was quite apparent even to me that she did not share the desire to see Dr. Scott, at least not yet. She was flushed and trembling with emotion. Crossing the room hurriedly she flung open the door into the hall.

"I am sure," she cried, controlling herself with difficulty, and catching at a straw, as it were, "that you gentlemen, even if you have saved my father, are no friends of either his or mine. You have merely come here in response to Dr. Burnham, and he came because Jane lost her head in the excitement and forgot that Dr. Scott is now our physician."

"But Dr. Scott could not have been found in time, madame," interrupted Dr. Burnham with evident triumph.

She ignored the remark and continued to hold the door open.

"Now leave us," she implored, "you, Dr. Burnham, you, Mr. Prescott, you, Professor Kennedy, and your friend Mr. Jameson, whoever you may be."

She was now cold and calm. In the bewildering change of events we had forgotten the wan figure on the bed still gasping for the breath of life. I could not help wondering at the woman's apparent lack of gratitude, and a thought flashed over my mind. Had the affair come to a contest between various parties fighting by fair means or foul for the old man's money—Scott and Mrs. Martin perhaps against Prescott and Dr. Burnham? No one moved. We seemed to be waiting on Kennedy. Prescott and Mrs. Martin were now glaring at each implacably.

The old man moved restlessly on the bed, and over my shoulder, I could hear him gasp faintly, "Where's Grace? Send for Grace."

Mrs. Martin paid no attention, seemed not to hear, but stood facing us imperiously as if waiting for us to obey her orders and leave the house. Burnham moved toward the door, but Prescott stood his ground with a peculiar air of dalliance. Then he took my arm and started rather precipitately, I thought, to leave.

"Come, come," said somebody behind us, "enough of the dramatics."

It was Kennedy, who had been bending down, listening to the muttering of the old man.

"Look at those eyes of Mr. Haswell," he said. "What colour are they?"

We looked. They were blue.

"Down in the parlour," continued Kennedy, "you will find a portrait of the long deceased Mrs. Haswell. If you will examine that painting, you will see that her eyes are also a peculiar limpid blue. No couple with blue eyes ever had a black-eyed child. At least, if this is such a case, the Carnegie Institution investigators would be glad to hear of it, for it is contrary to all that they have discovered on the subject after years of the study of eugenics. Dark-eyed couples may have light-eyed children, but the reverse, never. What do you say to that, madame?"

"You lie," screamed the woman, rushing frantically past us. "I am his daughter. No interlopers shall separate us. Father!"

The old man moved feebly away from her.

"Send for Dr. Scott again," she demanded. "See if he cannot be found. He must be found. You are all enemies, villains."

The Invisible Ray

She addressed Kennedy, but included the whole room in her denunciation.

"Not all," broke in Kennedy remorselessly. "Yes, madame, send for Dr. Scott. Why is he not here?"

Prescott, with one hand on my arm and the other on Burnham's, was moving toward the door.

"One moment, Prescott," interrupted Kennedy, detaining him with a look. "There was something I was about to say when Dr. Burnham's urgent message prevented it. I did not take the trouble even to find out how you obtained that little globule of gold from the crucible of alleged copper. There are so many tricks by which the gold could have been 'salted' and brought forth at the right moment that it was hardly worth while. Besides, I had satisfied myself that my first suspicions were correct. See that?"

He held out the little piece of mineral I had already seen in his hand in the alchemist's laboratory.

"That is a piece of willemite. It has the property of glowing or fluorescing under a certain kind of rays which are themselves invisible to the human eye. Prescott, your story of the transmutation of the elements is very clever, but not more clever than your real story. Let us piece it together. I had already learned from Dr. Burnham how Mr. Haswell was induced by his desire for gain to visit you and how you had most mysteriously predicted his blindness. Now, there is no such thing as telepathy, at least in this case. How then was I to explain it? What would cause such a catastrophe naturally. Why, only those rays invisible to the human eye, but which make this piece of willemite glow—the ultraviolet rays."

Kennedy was speaking rapidly and was careful not to pause long enough to give Prescott an opportunity to interrupt him.

"These ultra-violet rays," he continued, "are always present in an electric arc light though not to a great degree unless the carbons have metal cores. They extend for two octaves above the violet of the spectrum and are too short to affect the eye as light, although they affect photographic plates. They are the friend of man when he uses them in moderation as Finsen did in the famous blue light treatment. But they tolerate no familiarity. To let them—particularly the shorter of the rays—enter the eye is to invite trouble. There is no warning sense of discomfort, but from six to eighteen hours after exposure to them the victim experiences violent pains in the eyes and headache. Sight may be seriously impaired, and it may take years to recover. Often prolonged exposure results in blindness, though a moderate exposure acts like a tonic. The rays may be compared in this double effect to drugs such as strychnine. Too much of them may be destructive even to life itself."

Prescott had now paused and was regarding Kennedy contemptuously. Kennedy paid no attention, but continued: "Perhaps these mysterious rays may shed some light on our minds, however. For one thing, ultra-violet light passes readily through quartz, but is cut off by ordinary glass if it is coated with chromium. Old Mr. Haswell did not wear glasses. Therefore he was subject to the rays—the more so as he is a blond, and I think it has been demonstrated by investigators that blonds are more affected by them than are brunettes.

"You have, as a part of your machine, a peculiarly shaped mercury vapour lamp of a design such as that I saw has been invented for the especial purpose of producing ultra-violet rays in large quantity. There are also in your machine induction coils for the purpose of making an impressive noise, and a small electric furnace to heat the salted gold. I don't know what other ingenious fakes you have added. The visible bluish light from the tube is designed, I suppose, to hoodwink the credulous, but the dangerous thing about it is the invisible ray that accompanies that light. Mr. Haswell sat under those invisible rays, Prescott, never knowing how deadly they might be to him, an old man.

"You knew that they would not take effect for hours, and hence you ventured the prediction that he would be stricken at about midnight. Even if it was partial or temporary, still you would be safe in your prophecy. You succeeded better than you hoped in that part of your scheme. You had already prepared the way by means of a letter sent to Haswell through Dr. Burnham. But Haswell's credulity and fear worked the wrong way. Instead of appealing to you he hated you. In his predicament he thought only of his banished daughter and turned instinctively to her for help. That made necessary a quick change of plans.

Prescott, far from losing his nerve, turned on us bitterly. "I knew you two were spies the moment I saw you," he shouted. "It seemed as if in some way I knew you for what you were, as if I knew you had seen Mr. Haswell before you came to me. You, too, would have robbed an inventor as I am sure he would. But have a care, both of you. You may be punished also by blindness for your duplicity. Who knows?"

A shudder passed over me at the horrible thought contained in his mocking laugh. Were we doomed to blindness, too? I looked at the sightless man in on the bed in alarm.

The Invisible Ray

"I knew that you would know us," retorted Kennedy. "Therefore we came provided with spectacles of Euphos glass, precisely like those you wear. No, Prescott, we are safe, though perhaps we may have some burns like those red blotches on Mr. Haswell, light burns."

Prescott had fallen back a step and Mrs. Martin was making an effort to appear stately and end the interview.

"No," continued Craig, suddenly wheeling, and startling us by the abruptness of his next exposure, "it is you and your wife here—Mrs. Prescott, not Mrs. Martin—who must have a care. Stop glaring at each other. It is no use playing at enemies longer and trying to get rid of us. You overdo it. The game is up."

Prescott made a rush at Kennedy, who seized him by the wrist and held him tightly in a grasp of steel that caused the veins on the back of his hands to stand out like whipcords.

"This a deep-laid plot," he went on calmly, still holding Prescott, while I backed up against the door and cut off his wife; "but it is not so difficult to see it after all. Your part was to destroy the eyesight of the old man, to make it necessary for him to call on his daughter. Your wife's part was to play the role of Mrs. Martin, whom he had not seen for years and could not see now. She was to persuade him, with her filial affection, to make her the beneficiary of his will, to see that his money was kept readily convertible into cash.

"Then, when the old man was at last out of the way, you two could decamp with what you could realise before the real daughter, cut off somewhere across the continent, could hear of the death of her father. It was an excellent scheme. But Haswell's plain, material newspaper advertisement was not so effective for your purposes, Prescott, as the more artistic 'telepagram,' as you call it. Although you two got in first in answering the advertisement, it finally reached the right person after all. You didn't get away quickly enough.

"You were not expecting that the real daughter would see it and turn up so soon. But she had. She lives in California. Mr. Haswell in his delirium has just told of receiving a telegram which I suppose you, Mrs. Prescott, read, destroyed, and acted upon. It hurried your plans, but you were equal to the emergency. Besides, possession is nine points in the law. You tried the gas, making it look like a suicide. Jane, in her excitement, spoiled that, and Dr. Burnham, knowing where I was, as it happened, was able to summon me immediately. Circumstances have been against you from the first, Prescott."

Craig was slowly twisting up the hand of the inventor, which he still held. With his other hand he pulled a paper from his pocket. It was an old envelope on which he had written upon the occasion of our first visit to Mr. Haswell when we had been so unceremoniously interrupted by the visit of Dr. Scott.

"I sat here yesterday by this bed," continued Craig, motioning toward the chair he had occupied, as I remembered. "Mr. Haswell was telling Dr. Scott something in an undertone. I could not hear it. But the old man grasped the doctor by the wrist to pull him closer to whisper to him. The doctor's hand was toward me and I noticed the peculiar markings of the veins.

"You perhaps are not acquainted with the fact, but the markings of the veins in the back of the hand are peculiar to each individual—as infallible, as indestructible, and ineffaceable as finger prints or the shape of the ear. It is a system invented by Professor Tamassia of the University of Padua, Italy. A superficial observer would say that the vein patterns were essentially similar, and many have said so, but Tamassia has found each to be characteristic and all subject to almost incredible diversities. There are six general classes—in this case before us, two large veins crossed by a few secondary veins forming a V with its base near the wrist.

"Already my suspicions had been aroused. I sketched the arrangement of the veins standing out on that hand. I noted the same thing just now on the same hand that manipulated the fake apparatus in the laboratory. Despite the difference in make-up Scott and Prescott are the same.

"The invisible rays of the ultra-violet light may have blinded Mr. Haswell, even to the recognition of his daughter, but you can rest assured, Prescott, the very cleverness of your scheme will penetrate the eyes of the blindfolded goddess of justice. Burnham, if you will have the kindness to summon the police, I will take all the responsibility for the arrest of these people."