

# SHOULD MRS. MAYBRICK HAVE BEEN CONVICTED OF MURDER?

Read the Evidence as It Was Given at the Trial and Decide.

Enough Arsenic Was Found in the House to Kill a Regiment.

## Principal Characters in the Maybrick Case

James Maybrick, dissolute, brutal, eccentric husband.

Mrs. Maybrick, fair, slight, wealthy in her own right, loathing her middle-aged husband, who had won her girlish love.

Alfred Brierley, handsome young Englishman, who consoled Mrs. Maybrick for husband's coldness.

Judge Sir Fitzjames Stephen, before whom Mrs. Maybrick was tried on the charge of murder and who died shortly afterward in madhouse.

Lord Charles Russell, counsel for Mrs. Maybrick, who died suddenly while striving to win a pardon for her.

Baroness de Roques, Mrs. Maybrick's mother, who has spent a fortune seeking her daughter's release.



Justice Stephen—Lord Chas. Russell—



Justice Stephen—Lord Chas. Russell—



Mrs. Maybrick



Mr. Maybrick

better, but if, before he gets better, he goes on repeating the dose before there is complete recovery, then in the course of time he will die. Another word on the subject: It is not a cumulative poison when taken in these small doses. It does not collect in the system in the same way as, for instance, lead does; on the contrary, it rapidly passes away, and it is the arsenic which passes away, and this makes it one of the most dangerous of poisons, inasmuch as in small doses it produces symptoms which, unless they are taken together, may not be recognized as being peculiar to arsenic, and, producing these effects, death results. It is especially the case when taken in a liquid form in small doses, but after a dose has been administered for a day or two, except in the liver, you do not find extensive traces of arsenic. That may be taken shortly as a popular knowledge of the subject, and it is necessary that I should explain it."

**Confusion After Death.**

James Maybrick died on May 11, 1888, at 8:30 o'clock in the evening. In the meantime, a letter written by her to her lover, Alfred Brierley, had been intercepted and one from him to her found in her possession. They left no doubt of her infidelity in the minds of Mr. Brierley and Edwin Maybrick, her husband's brothers.

She was virtually a prisoner in her own house. The theory of the crown was the fatal dose of arsenic had been administered on or about May 3. On the point Mrs. Cadwallader, a parlor maid testified:

"On Sunday morning, 28th April, Mr. Maybrick said he had taken an overdose of London medicine, and it was the same as I had taken in on the Friday, the 26th; some medicine had come by post and I myself had taken it."

"There is no mistake about this?"

"No."

"Your master told you this?"

"Yes; he asked me if the medicine had come on Friday morning, the 26th. The next day was Saturday, the 27th, the Wirral races, and the conversation took place on Sunday, the 28th. The medicine came on Friday morning at 8:30 o'clock; it was in a box. I knew it was in a bottle; I could tell by the shape of it. It was a small box made of pasteboard, as it was called in Dr. Fuller, but I did not hear the name. Mr. Maybrick was expecting his medicine from London; I am quite sure he did not tell me where it was to come from. He told me he had been up to London and was expecting medicine a day or two before it came. It ought to have been here a day or two before it actually arrived."

No evidence was given at the trial about this bottle, or as to what it contained; but evidence was given that Dr. Fuller had not sent it.

**Dr. Fuller's Evidence.**

Dr. Fuller's evidence was given by Michael Maybrick, I went to his chambers, Wellington Mansions, Regent's Park, on Sunday, the 14th of April, for the purpose of examining his brother, James Maybrick. I saw him and made an examination of him, and heard what he had to say. He complained of pains in his head and of numbness, and said he was apprehensive of being paralyzed. He had lost some sensation and felt numb. The examination lasted an hour. I found there was nothing the matter with him.

**Magnified His Ills.**

"I told him there was very little the matter with him, but that he was suffering with indigestion, and that I was perfectly certain there was no fear of paralysis—the symptoms were those that might be attributed to indigestion. When I did him this he seemed more cheerful. I did him a prescription for him—these two prescriptions. I prescribed on the 14th for him. The one is an aperient, and the other a tonic, with liver pills. On the following Saturday, the 20th, the deceased came to my house; I examined him again and found him better. The dyspeptic symptoms of which he complained had partially disappeared. He was a man who seemed inclined to exaggerate his symptoms. He seemed a nervous man. The cause of the numbness of which he complained was functional disturbance of the nerves, I suppose; certain disturbances of the nerves produce numbness. It is almost impossible to say what is the cause of constant disturbances in the nerves."

There was little doubt that James Maybrick was addicted to the intemperance use of arsenic and other poisons, for the purpose of stimulating jaded nerves. One of the objects of the defense was that Maybrick had died from the effects of an overdose of strychnine, administered by himself. Here is the evidence of Morden Rigg, a Liverpool cotton merchant:

**Statement of Morden Rigg.**

"I knew James Maybrick well. I was at Norfolk, Va., for several cotton seasons extending before and after his marriage, when Mr. Maybrick was there. He lived there before his marriage, in 1881, with Nicholas Maine Benson, first at a hotel, afterward in a house in York Street, taken furnished from a Mrs. Sewell. I knew Dr. Ward, of Norfolk. Maybrick saw a good deal of him as a personal friend, and also as a medical adviser. Dr. Ward is dead. I think he died in 1886. I did not know much intimately of Maybrick's habits when there; I mean in reference to his alleged habit of taking all sorts of medicines. He went to Norfolk certainly for two

seasons after his marriage; the first, to my knowledge, with his wife, and I met them there frequently. R. Leigh Worsley (Worsley, Shepherd & Co.), Mr. Shepherd (same firm), and W. H. Zeigler were in Norfolk at the same time as Maybrick, as well as Bateson.

"I have known him well the last three or four years in England. My general impression of him, derived from his conversation, was that he was a man with a tendency to talk about his ailments, or fancied ailments, and to take various supposed specifics for them. We stayed with the Maybricks at Grassendale, and also on one occasion for two nights at Battlegreen, and they stayed with us at Bamboorough. I never had any reason to think that there was any domestic unhappiness between them."

"On the day before the Wirral races he inquired whether my wife and I were going, and, if so, whether Mrs. Rigg and Mrs. Maybrick had made any arrangements to go with me to the races. He seemed to wish that his wife might have an opportunity of going. Eventually I excused myself, saying the weather was uncertain, and if we went at all it would only be in a cab.

"I saw him on the course, and he asked me if I had sent any message to his wife about going. I replied that I had not, as it was understood that I would not do so. He said he was glad, as she was not well enough that day.

"He turned round to my wife's carriage and told her he had taken an overdose of strychnine that morning and that his limbs were quite rigid. She is prepared to testify to this if necessary. And there was other evidence to the like effect. For instance, Dr. Dupdale testified:

"I am a physician practicing in Liverpool. On the 19th December last year the late James Maybrick consulted me; he said he had been complaining about three months. He was suffering from attacks of pain from side to side of the head, and creeping all over the head, preceded by pain on right side of head and a dull headache. He was never free from pain except in the early morning and possibly in the afternoon. After smoking much and taking too much wine, he became numb down the left leg and hands, and liable to an eruption on the skin. These were the symptoms of which he complained. I saw him on the 16th and 23d and 26th November; on the 5th and 19th December, and on the 7th March in the present year.

"He said he had been better during the interval, but never more than two days free from headache, although it was not so bad, and a little creeping sensation; he had no aggravation after eating. The tongue was a little furred and there was still pain and numbness in the left leg and hands, but not so much. I had some conversation with him about his habits. I asked him what medicines he had been taking. He said, nitro-hydrochloric acid, strychnine, and hydrate of potash and several others. He mentioned their names as if he understood them, and he did understand them, without having them written on a prescription. I should say he was hypochondriacal. I have given a pretty full account of his condition and remedies which I entered in my diary. He did not make any mention of arsenic, although he seemed to be in great terror of the drugs he was taking."

**The Flypaper Theory.**

The theory of the crown was that Mrs. Maybrick had obtained the arsenic it was contended she administered to her husband in the form of flypapers, which she soaked in water and thus secured the poison.

Mrs. Maybrick purchased these flypapers from two chemists' shops, where she was well known. One of them (Wokes) was at the corner of the road in which Battlegreen is situated; the other (Hansons) is a few hundred yards further on, and is the nearest postoffice.

"Wokes' evidence was:

"Mrs. Maybrick called upon me about the 24th of April and purchased a dozen flypapers; she made the remark at the time that the flies were beginning to get troublesome in the kitchen. I sent my boy with the flypapers to the house. The parcel was rolled up with the ends open."

Hansons' evidence was:

"On the 26th of April Mrs. Maybrick

came to my shop for a lotion and purchased two dozen flypapers; she took them with her. She brought a paper with the ingredients of a lotion written down; it was not a doctor's prescription. She had that made up, and while waiting, I suppose, seeing the flypapers on the counter, she asked for some. The ingredients of the lotion she ordered were tincture of benzoin and elder flower; it was a cosmetic. It is quite common for arsenic to be an ingredient of cosmetics, and the mixture of benzoin and elder flowers is a lotion in which arsenic would very likely be used."

Mrs. Cadwallader's (the parlor maid) evidence was:

"I remember the parcel of flypapers coming. I put it on the hall table; it was rolled up in paper and open at both ends. Mr. Maybrick saw them. I saw him pick them up and look at them. I remember the domino hall to which Mr. Edwin Maybrick escorted Mrs. Maybrick on the 30th of April."

Bessie Brierley's (the nursemaid) evidence was:

"I remember some flypapers in one of the rooms about 12 o'clock one day. They were in a small sponge basin in my master and mistress's bedroom. I did not see how many flypapers there were, but I called the attention of Alice Yapp to them. They were cities of the matter to Mrs. Maybrick. I found some traces of the flypapers afterwards in the sloppan next morning. Mrs. Maybrick was in the room on the occasion when Alice Yapp's (the children's nurse) evidence was:

"Bessie Brierley told me something in the nursery which caused me to go into Mrs. Maybrick's bedroom. I saw the washbasin covered with a towel, and I took the towel off. There was another towel on a plate, and I lifted the plate and saw a basin containing some flypapers. They were in the basin, and there was a small quantity of louse. I never saw the flypapers again, and do not know the contents of them. It was about 5 o'clock in the afternoon."

**For Use as Cosmetic.**

On the other hand, Mrs. Maybrick said she was using the arsenic thus secured in the compounding of a cosmetic preparation. In her statement to the jury she said:

"The fly papers were bought with the intention of using them as a cosmetic. Before my marriage and since, for many years, I have been in the habit of using a face wash prescribed for me by Dr. Griggs (7 of Brooklyn). It consisted principally of arsenic, tincture of benzoin, elder flower water, and other ingredients. The prescription I lost or mislaid last April, and as at the time I was suffering from a slight eruption of the face I thought I should like to make a substitute for myself. I was anxious to get rid of this eruption before I went to a ball on the 30th of that month. When I was in Germany many of my young friends there I had seen use a solution derived from fly papers, elder water, and lavender mixed into a face mixture."

There was enough arsenic found in the Maybrick house to kill a regiment, but no evidence that any of it had been prepared, with the exception of the flypapers, by Mrs. Maybrick. It makes a remarkable showing.

**An Array of Poisons.**

The various packages were twice analyzed to ascertain the amount of arsenic and the following table shows the results announced at the inquest and trial respectively:

**Police List:**

Package of "Arsenic for Cats" with handkerchief, inquest, about 100 grains; trial, 62.2 grains.

Bottle of arsenic and charcoal, inquest, 10 grains; trial, 12 to 15 grains.

Bottle of saturated solution, inquest,

2 or at any rate 1 grain; trial, amount not stated.

Bottle of solid white arsenic, inquest, 15 to 20 grains; trial, 10 to 12 grains.

Tumbler with handkerchief, arsenic, inquest, 14 to 20 grains; trial, 20 to 40 grains.

Totals, inquest, 140 to 150 grains; trial, 117 to 122 grains.

Here was the evidence, in brief, adduced against this woman as to the actual administration of poison. The suggested motive was her desire to get rid of Maybrick, and so be able to marry Brierley. As to this:

**The Question of Motive.**

On Wednesday, May 8, in the early morning, when the cook was coming downstairs, Mrs. Maybrick answered her inquiries by saying that he was very much worse, and had been ill all night, and delirious. At 9:30 o'clock that morning she sent a telegram to her mother in Paris: "Jim very ill again." At 11:30 Mrs. Briggs came to the house, and she thought him in a serious condition, in serious peril; and the professional nurse, Gore, on her arrival at 2:15 p. m., found him very ill indeed, and his feet and legs very cold, and said that, in reply to a question, he told her himself he was very ill. The woman, Mrs. Briggs, Nurse Gore, and Mrs. Maybrick were right. He was, as the event showed, seriously ill.

At 3 p. m. on that day Mrs. Maybrick brought down a letter to Alice Yapp, who was on the lawn with the children, and told her to take it to the postoffice in time for the 3:45 p. m. post. Alice Yapp, instead of posting that letter, opened it, and having read it, gave it to Edwin Maybrick at 6 o'clock, when he returned to the house. In her evidence at the inquest:

The coroner—Did you tell Mrs. Maybrick that you didn't post the letter?

"No, I said nothing to her."

And in reply to another question she said:

"I intended telling Mrs. Maybrick, but I hadn't an opportunity. Her suspicions were aroused, and she communicated them to Mrs. Briggs, a neighbor of the Maybricks, who was in the room with me. Mrs. Maybrick in London. He came down the same night."

**Michael in Charge.**

When he arrived he took charge and told Mrs. Maybrick he was suspicious. Of what he did not say. In his evidence he said:

"On the 8th of May I received three telegrams, one from Mrs. Briggs, and in consequence of the contents of these messages I left London for Liverpool the same day. I was met by my brother Edwin at Edgehill, and drove with him to Battlegreen. I was told on the way about a letter written to Mr. Brierley, and it was read to me at the house. I met Mrs. Maybrick on the landing near the bedroom of my brother. I asked for the room and was shown it; I found Nurse Gore there; Mrs. Maybrick followed me into the room. I was much shocked at my brother's condition, and can hardly remember what I said then. Afterward downstairs, I told Mrs. Maybrick that I had very strong suspicions of the case. She asked me what I meant, and I replied that she ought to have called in professional nurses, and also another doctor earlier. At that time I had heard that Dr. Humphreys was in attendance, and that a nurse had been procured that day. I also learned that Dr. Carter had been called in as a consulting physician. Mrs. Maybrick said that no one had a better right than a wife to nurse her husband, and I agreed with this. I reiterated that I was not satisfied with the case, and that I would see Dr. Humphreys, which I did. I had some conversation with Nurse Gore that night. I slept at the house that night."

**The Letter of Brierley.**

Brierley's letter to Mrs. Maybrick bears no date or address or signature beyond the initials A. B., and though the writing was not identified at the trial, he, in his affidavit, says that it was written by him on May 3, and sent under cover of Bessie Knight in London. Bessie Knight is the nephew of Miss Ballew, with whom Mrs. Maybrick stayed on a visit during part of the time she was in London, namely, from March 24 to 28.

It is as follows:

"My Dear Florrie: I suppose you now have gone on a safe in writing to you. I don't quite understand what you mean in your last about explaining my line of business, but I will write to you as I was willing to meet you, although it would have been very dangerous. Most certainly your telegram of yesterday was a stunner; it looks as if the result was certain; but as yet I cannot find a round trip to the Mediterranean, which will take six or seven weeks, unless you wish me to stay in England, both you and I would be better away, as the man's memory would be doubted. I am going to try and get away in about a fortnight, and I shall be glad to see you, but I do not present dare not move, and we had perhaps not meet until late in the autumn."

"I am going to try and get away in about a fortnight, and I shall be glad to see you, but I do not present dare not move, and we had perhaps not meet until late in the autumn."

"I cannot answer your letter fully today, my darling, but relieve your mind of all fear of discovery now and for the future. M— has been delicious since Sunday, and I know now that he is perfectly ignorant of everything, even as to the name of the street, and also that he has not been making any inquiries whatever. The tale he told me was a pure fabrication, and only intended to frighten the truth out of me. In fact, he believes my statement, although he will not admit it. You need not, therefore, go abroad on this account. I should act as I am doing, don't leave England until I have seen you once again. You must feel that these two letters of mine were sent under circumstances which must ever excuse their injustice in your eyes. Do not be angry with me for anything I inferred there? If you wish to write to me, I will be glad to receive it. I am at present passing through my hands at present. Excuse this scrawl, my own darling, but I don't know how to write at a moment, and I do not know when I shall be able to write to you again. In haste, your devoted, FLORENCE."

In a weak Maybrick was dead. Arsenic was found in his stomach after death. It was found in the house. Here are the facts. How would you decide?

Maybrick Was an Arsenic Eater and Indulged in Other Drugs.

The Letters That Passed Between the Woman and Brierley.

## How Girlish Folly Was Sadly Expiated

Miss Florence Elizabeth Chandler, a beautiful Southern girl of fifteen, met an English cotton broker twenty-six years her senior in 1878, and fell violently in love with him.

Against the wishes of her parents she married him three years later, found him sullen, sensual, and cruel, and her love changed to as deep a hatred.

Arrested on the charge of murder, she admitted placing poison in her husband's medicine, but declared it was at his request.

Served nearly fifteen years in prison, to be released with health broken, friends estranged, children torn from her and prematurely aged with ignominy and hardships of prison life.

## Her Frantic Response.

It was to this letter that Mrs. Maybrick replied:

"Dearest: Your letter under cover to John K— came to hand just after I had written to you on Monday. I did not expect to hear from you so soon, and had delayed in giving him the necessary instructions. Since my return I have been nursing M— day and night. He is sick unto death. The doctors have a consulting room, and now all depends upon how long his strength will hold out. Both my brother-in-law are here, and we are terribly anxious."

"I cannot answer your letter fully today, my darling, but relieve your mind of all fear of discovery now and for the future. M— has been delicious since Sunday, and I know now that he is perfectly ignorant of everything, even as to the name of the street, and also that he has not been making any inquiries whatever. The tale he told me was a pure fabrication, and only intended to frighten the truth out of me. In fact, he believes my statement, although he will not admit it. You need not, therefore, go abroad on this account. I should act as I am doing, don't leave England until I have seen you once again. You must feel that these two letters of mine were sent under circumstances which must ever excuse their injustice in your eyes. Do not be angry with me for anything I inferred there? If you wish to write to me, I will be glad to receive it. I am at present passing through my hands at present. Excuse this scrawl, my own darling, but I don't know how to write at a moment, and I do not know when I shall be able to write to you again. In haste, your devoted, FLORENCE."

In a weak Maybrick was dead. Arsenic was found in his stomach after death. It was found in the house. Here are the facts. How would you decide?

**AS Florence Maybrick guilty or innocent? Would you, the reader, have convicted her had you been a member of the jury before which she was tried? The story is a cruel one—take it as you will. There was unhappiness and despair in the Maybrick home. There was guilt—the black disgrace of infidelity; there was brutality—that of a drunk-solden husband to his wife. Here are the facts and the evidence; decide as your intelligence directs:**

## The Opening Speech.

When the trial was called, the jury sworn, and the prisoner arraigned, Mr. Addison, Q. C., opened the case for the crown. This was at the Liverpool assizes of July 2, 1888, before Mr. Justice Stephen. Mr. Addison said:

"Each and every one of you know that the charge against the prisoner at the bar is that she murdered her husband by administering doses of arsenic to him."

"I will call your attention in the order in which they occur to the different events, between April 27 and May 11, because it was between those dates that occurred the serious illness that ended in the death of James Maybrick on May 11. It was on April 27 that the first illness occurred which was caused by arsenic."

I do not think I need call your attention to anything particular in their mode of living up to this time. Mr. Maybrick was a man who, so far as his friends and relatives know, was a strong, healthy man, going regularly to his office every day as a cotton merchant in Liverpool. There is no doubt that though he was a man generally spoken of as a healthy man, he was a man who complained very much of his liver and nerves. He used often to complain of being out of sorts, and from 1881, Dr. Hopper, of Rodney Street, was the medical man of the family, prescribed for him from time to time. Mr. Maybrick complained of pains in the head, and numbness in his limbs, and had a dread that it would lead to paralysis. Dr. Hopper seems to have treated him as a little 'short hipped,' as it was called in these matters, and gave him occasionally medicines such as are given to people of sedentary habits and out of sorts."

## Effects of Arsenic.

"Before I put the events which occurred between April 27 and May 11 to you, let me make a few remarks upon the general nature of arsenic and its effects. They will be spoken of by a very eminent Liverpool chemist, Mr. Davies, and by Dr. Stevenson, who is the physician to Guy's Hospital, and an eminent chemist in London, of whom, no doubt, some of you have heard. All I need tell you about arsenic just now is this: It is, as you all know, a mineral poison; it is taken sometimes as a solid powder, and sometimes in solution. A single deadly dose, that is to say, a dose which is capable of killing a man by one administration, would be a dose of at least two grains and upward; that would take away life in the course of about twelve hours. If it were dissolved, it would take a wineglassful of water to dissolve it; half an hour would elapse before any effect would be produced. The symptoms which usually accompany a dose of that kind are nausea, a sinking, and in addition to that, there usually is purging and vomiting to a very excessive degree; but the vomiting, unlike all other vomiting, is accompanied by no sort of relief whatever. There are burning pains in the throat and in the stomach, and great irritation of the stomach is apt to produce a tenderness which is discovered outside on pressure. There is also cramp of the thighs and of the stomach. There is a furred tongue, intense thirst, and from the condition of the intestines, there is tenesmus, that is to say, a great straining in those parts, and a desire to evacuate, without any relief whatever being the result. Any one of these symptoms, taken by itself, might be produced from other causes, but taken together they would indicate an irritant poison such as arsenic."

## Traces Fade Away.

"The same symptoms are what may be produced by a dose of arsenic in small doses. If you administer a dose of arsenic less than a fatal dose, of one, three-fourths of a grain, or half a grain, twice a day, the same symptoms will be produced; but in the course of twelve hours, or a couple of days, the patient will get

## The Tedious Digging of a Great Tunnel

### Burrowing Through Hard Rock in Darkness

(Robert Charlton, in Sunset Magazine.)

THE traveler on a railroad on a pleasant, sunny day sees a brakeman passing through the car, pausing as he goes to light the lamps. "Long tunnel coming," he says to himself, and awaits with languid interest the temporary extinction of the outer light.

Some moments later the train hurls itself into the engulfing blackness, and the anticipatory languid interest of the traveler is increased or diminished according as the tunnel is longer or shorter. Right there, or at any rate, as the train rushes from the blackness into the white glare of the sunlight, the interest of the average traveler in the matter ceases.

But it should not, for, had the traveler but known it, he has in that longer or shorter underground passage opened and closed the book where a story of man's combat with nature and his victory in the contest; the story of the construction of a great tunnel.

**Largest Tunnel in West.**

Visit a point some thirty-five miles northwest of Los Angeles, Cal., and you are precisely where the longest tunnel in the West has just been completed. Here the gray, rocky pile of the Santa Susana mountains looms directly in your path; you may climb over it, if you are as spry as you would like to be, or you are fond of walking, or go through it, if you are able.

Some such problem as the foregoing confronted the engineers of the Pacific Company and its engineers but a few years ago. In the path of their progress stood the Santa Susana. Already they had done some around the obstacle, now, regardless of labor and cost, should they go through it? It was decided that they should—and all, or primarily, because a great reduction in grade, and six miles of space could be gained; that meant this much easier and quicker transportation for the people.

**Six Miles Saved.**

Over the old line the distance between Montalvo and Burbank, via Saugus, was sixty-seven miles; over the proposed line (now in operation) it would be but sixty-one miles, divided as follows: Between Montalvo and Santa Susana, thirty-four miles; Santa Susana and Chatsworth Park, eight miles; Chatsworth Park and Burbank, nineteen miles. Six miles could be saved. That six miles meant the construction of the Santa Susana tunnel.

And here perhaps begins the real interest of a story that tells how a hole was pierced through the very heart of

## Mile and a Half Long.

The hole that finally was pierced is about 750 feet or almost a mile and a half in length, and practically every foot of this distance was dug and drilled and blasted through solid rock, and the hardest of rock at that. The great labor began in July, 1900; it was completed but recently.

In an undertaking of this sort, and of this immensely gigantic, it is advisable to work from both ends at once, thereby halving the time of labor. And so, behold a miniature tent city on each side of the Santa Susana where no city had been before. They were cities of men, these two, cities wherein bold, rawboned men came and went and labored daily, and the tools were theirs; they were to no small extent cities of enterprise and modern invention.

**Electric and Air Plants.**

For instance, these tent cities contained both electric and compressed-air plants. The latter was used for a double purpose; first, to supply air for the air drills, with which all of the drilling was done, and, second, to supply fresh air to the men who toiled deep within the tunnel, by whom it was much needed. As for the electric plant, in these progressive days electricity is used for lighting tunnels as well as the outside world.

The contractors who were responsible for the successful execution of this great enterprise were Erickson & Peterson, and from the beginning they were confronted by a serious obstacle in their work on the west side of the mountain. The seams in the hard rock of the Susanas run from east to west, in working from the east the skilled workmen, who handled the tools were drilling with the seams; in working from the west they were drilling against

## Precaution Against Accident.

It might have seemed that the solidity of the rock through which a way was slowly worked was in itself a sufficient safeguard against accidents, but the contractors did not think so, and every additional precaution known to the engineering art was taken. Chief among these was the false timbering. This characterized the work from beginning to end.

A foot or two of rock beyond the heading was drilled and blasted; then the timbering was at once brought forward to this temporary end of the hole. Doubtless it was due to this and other precautions that the notable fact may be recorded that from the beginning to the end of this work there were but few accidents of a serious nature.

At last the years of labor were almost ended; the workers were weary, but faintly heard from their adjoining chambers deep beneath the gray surface of the mountain, how accurately the work had been done.

**Two Ends Meet.**

The last drill was worked; the last blast was fired; where there had been solid rock a gaping, jagged hole showed the electric lights that glimmered in the cavern beyond. Now note this fact, reported by B. Wheeler, the assistant engineer in charge:

The heading of the two holes met in a dead back; if the tunnel had been worked from one end its floor could have been no more level throughout.

"Think, if you will, what a triumph of the engineering science was this—what a tribute to the skill of the engineer. Here were two holes dug through the heart of a mountain, the labor involved enduring through more than 1700 years, and at the end of this long caving in the blackness the two holes exactly met, simply because an engineer had willed it to be so; because he had so exactly computed directions and distances that it could not be otherwise. Here, indeed, is the instance in which an engineer has scored so great a triumph."

Well, the long labor is ended, and successfully so. The last stroke of a drill has sounded, the last blast has been heard in the blackness, the two holes exactly met, simply because an engineer had willed it to be so; because he had so exactly computed directions and distances that it could not be otherwise. Here, indeed, is the instance in which an engineer has scored so great a triumph."

## Traces Fade Away.

"The same symptoms are what may be produced by a dose of arsenic in small doses. If you administer a dose of arsenic less than a fatal dose, of one, three-fourths of a grain, or half a grain, twice a day, the same symptoms will be produced; but in the course of twelve hours, or a couple of days, the patient will get