Trial for murder by poisoning with arsenic, Berkshire Lent Assizes, 1845 : Post-mortem appearences; chemical analysis; detection of the poison as sulphuret, twenty-eight days after interment / by Alfred S. Taylor.

TRIAL FOR MURDER

BY

POISONING WITH ARSENIC,

BERKSHIRE LENT ASSIZES, 1845.

POST-MORTEM APPEARANCES; CHEMICAL ANALYSIS; DETECTION OF THE POISON AS SULPHURET, TWENTY-EIGHT DAYS AFTER INTERMENT.*

BY ALFRED S. TAYLOR.

THOMAS JENNINGS was charged with the murder of his infant son, Eleazar Jennings, a child aged three years and eight months, by administering to him arsenic on the 23d of December 1844.

From the statement of the case for the prosecution, it appeared that the prisoner resided in a small cottage with his family, consisting of a wife and four young children, including Eleazar, the deceased. The only direct evidence against the prisoner was in a statement made by his niece, Maria Carter, a young girl, who had lived with him about a year, and took care of his children. She stated, that on the Monday before Christmas Day (December 23d), the prisoner, his children, and herself (the mother being absent) dined together on bacon and potatoes; that there was a salt-cellar on the table, from which all the party, except the deceased, took salt; that as soon as they began to eat their dinner the prisoner went to the pantry, and brought out, between his finger and thumb, a pinch (as the witness described it) of something white, like salt, and put it upon the edge of the plate out of which the deceased was eating his dinner.† The

* This case is drawn up partly from the brief for the prosecution, and partly from notes taken at the trial.

† A question arose at the trial respecting the weight of a pinch of arsenic. It was stated that it might be about twelve or fifteen grains. Actual weighing afterwards proved that a good pinch of the powder was equal to seventeen grains. Medical men are often asked to state the weights of particular measures of the poison in powder, as of a teaspoonful, a tablespoonful,

deceased dipped his potatoe into it, and swallowed the whole of it. In the afternoon of the same day, about half-an-hour after dinner, the deceased complained of pain in his belly; on the next day he was sick, and brought up something like water; and on Wednesday (Christmas Day) he died. It appeared further, from the examination of this witness at the inquest and trial, that the deceased said his belly was bad all the afternoon on Monday; he went once or twice to the necessary, but did not go often on Tuesday: that he was very thirsty on Tuesday, and mint-tea was given to him: that he was very sick on the Wednesday, and died about the middle of the day. As far as could be ascertained, the whole duration of the illness was about forty-eight hours. At the last moment, the prisoner went for a medical man, at the request of his wife; but before assistance arrived, the child was dead.

An inquest was held on the 27th December; and there being at that time no suspicion of poison, no inspection of the body was made, a verdict of natural death was returned, and the child was buried. About a fortnight after this occurrence, another of the prisoner's children was taken ill, and died somewhat suddenly. An inquest was held on the body of this child on the 11th of January 1845. This body was inspected, and there were marks of inflammation in the stomach and intestines. A rough analysis of the contents of the stomach was made, but no poison could be found. A verdict of natural death was returned, and the second child was buried.

Mr. Lamb, surgeon, of Newbury, who had assisted in this investigation, had a strong suspicion that arsenic was present in the case of the second child; and he forwarded to me, for examination, an ounce phial filled with a portion of the liquid contents of the stomach. On subjecting them to analysis, arsenic was clearly found to be present, although in small proportion.

Suspicion being thus once excited, it was supposed that Eleazar Jennings, the first child, had also died from poison;

&c. I have found a teaspoonful of powdered arsenic to weigh 150 grains, and a tablespoonful to weigh 530 grains. These weights are liable to vary; but the results may be taken as sufficiently correct for all medico-legal purposes.

and after the result of the analysis in the second case, the Coroner issued his order for the disinterment of the body of Eleazar. This accordingly took place on the 24th January 1845, i.e. *twenty-eight* days after interment. The prisoner was present in the churchyard, and identified the body; and on some remark being made that there was a suspicion that the children had been poisoned, he said there was no more poison in them (*i.e.* the two children), than there was in him. The stomach and intestines of the child, unopened, were placed in a clean bottle by Mr. Lamb, and brought to London. They were examined by himself and me, at Guy's Hospital, on the 25th January, and the result of the examination will be found in our evidence. This evidence is so fully given in the brief for the prosecution, that it is unnecessary to make any addition or alteration in it.

Arthur Lamb, is a surgeon, and resides at Newbury, Berks. On Monday, the 6th day of January, he was at the prisoner's house. The prisoner stated to him, in the presence of another witness, that he had had no arsenic in his house for two years, but that he had some in a cottage in the wood, and he had not used any since March last. That he (witness) received an order to make a post-mortem examination of the body of Eleazar Jennings, and an analysis of the contents of the stomach, and attended at the parish church at Thatcham, on the 24th January last, for that purpose. The body of Eleazar Jennings was disinterred that morning, in the presence of the constable of Thatcham. It was stated on the coffin that the child was three years and eight months old.

Witness found that decomposition had but slightly taken place in the body; that the stomach and intestines were distended with gas, and externally exhibited marks of inflammation. He removed the stomach and intestines entire, having placed a ligature on the cardiac orifice of the stomach and on the rectum, in order to prevent the contents from escaping. He took them to London the next morning, the 25th January, and proceeded, with Mr. Taylor of Guy's Hospital, to make a further examination of them, as well as an analysis of their contents. On making an examination of the stomach of the deceased, Eleazar Jennings, witness found that the internal

surface was inflamed and ulcerated. He was present when Mr. Taylor tested the contents of the stomach by various processes, and the result was, that arsenic was found by every one of the tests used.

The estimated quantity of arsenic discovered in the stomach was from five to six grains. He is of opinion that Eleazar Jennings died from the effects of arsenic. Raisins, currants, and suet, were also found in the stomach.

Alfred S. Taylor, is Lecturer on Medical Jurisprudence at Guy's Hospital. The last witness brought to him, on the 25th day of January last, the stomach and intestines of a child, and, assisted by this gentleman, he made an examination of them, and an analysis of their contents. The results of the examination were reduced to writing. The following is a copy of the notes made at the time :—

POST-MORTEM APPEARANCES.—Decomposition had but slightly advanced. The viscera were distended with air, and presented patches of a deep red colour externally: this was especially noticed in the duodenum.

The stomach. The central portion externally was of a deep green colour, an appearance which, according to the statement of Mr. Lamb, had come on since the exhumation. On opening the stomach a quantity of gas escaped, and about two drachms (two teaspoonfuls) of a reddish-coloured thick liquid was drained from it. The central portion of the mucous membrane was of a greenish-brown colour, but at the cardiac and pyloric ends it was of a deep cinnabar-red hue, especially at the cardiac extremity and along the greater curvature : at the pylorus, the mucous membrane was rather pale, so as to form a distinct boundary between that organ and the duodenum. Hard masses of a solid white substance were found scattered over the surface of the stomach, which, on examination, turned out to be lumps of suet. Besides this, there were a few currants undigested, and the skins of raisins. About an inch above the greater curvature, and near the cardiac extremity, was a long irregularly oval patch on the mucous membrane, of a deep mustard-yellow colour, about an inch in length, and less than half an inch in width. This yellow matter was closely intermixed with the

husks of raisins, and in and about the spot the mucous membrane was ulcerated. By slight friction it was readily detached in layers of a yellow colour. Streaks and small patches of the same yellow-coloured matter, were also found towards the centre of the mucous membrane on the posterior wall of the stomach.

Duodenum. The mucous membrane was of a deep red colour, and the mucous glands were considerably enlarged: there were no yellow stains to be seen. The small intestines presented patches of redness through part of their course. The *rectum* was unusually pale, and contained a lumbricus about seven inches in length.

CHEMICAL ANALYSIS.—The hard white solid matter diffused over the mucous membrane of the stomach was found to be fat, by placing it on white blotting paper, and then passing beneath the paper a heated spatula, when it was entirely melted and absorbed by the paper, forming a greasy transparent stain, and leaving no solid residue.

Liquid contents of the Stomach.—The liquid obtained from this organ amounted to two drachms: it was of a deep red colour, turbid, and contained particles of fatty matter and mucus floating in it. It was neither acid nor alkaline. 1. When a small portion was boiled with copper and muriatic acid, the copper was only tarnished after some hours. 2. The liquid was diluted with its bulk of distilled water, acidulated with acetic acid, boiled three quarters of an hour, and filtered. The filtered liquid was nearly colourless, and sufficiently clear to allow of the direct application of the chemical tests for arsenic. (*a.*) It acquired a yellow colour when exposed to a current of sulphuretted hydrogen gas. (*b.*) It gave a light yellow precipitate with ammonio-nitrate of silver. (*c.*) It gave a light grass-green with ammonio-sulphate of copper. These re-actions clearly indicated the presence of arsenic. The effects, however, were, on the whole, so slight, as only to justify the inference that the small quantity of the liquid (ʒii) found in the stomach contained faint traces of that poison.

Solid contents of the stomach.—The yellow-coloured matter was carefully removed by an ivory spatula from the mucous

membrane of the stomach, and allowed to dry spontaneously by imbibition on several folds of white blotting paper.

When the deposit was examined with a glass there were observed white-looking crystalline particles, like sand, intermixed with the yellow substance.

1. A small portion of this was boiled with copper and pure muriatic acid, when an iron-grey deposit, indicative of arsenic, immediately appeared on the metal. Several slips of fine copper gauze were then successively placed in the liquid, and a considerable quantity of the iron-grey deposit was thus obtained. On drying the copper, and gently heating it in a small reduction tube, a white crystalline sublimate was produced, bearing all the physical characters of arsenious acid.

2. Another portion of the yellow substance was now mixed with incinerated acetate of soda, well dried; and, on heating the mixture in a reduction tube, a distinct and well-formed crystalline ring of metallic arsenic was immediately procured. The part of the glass containing the ring was filed off and broken, and the fragments were then heated gently in a wide tube, when a white crystalline crust, apparently of arsenious acid, was immediately obtained. On dissolving this in a few drops of water, and adding the ammonio-nitrate of silver and the ammonio-sulphate of copper, a rich lemon-yellow precipitate was obtained in the former case, and a bright grass-green in the latter. Sulphuretted hydrogen also gave, with another portion, a golden-yellow precipitate.

These results, thus corroborating and confirming each other, proved beyond all doubt that the deposit in the mucous membrane of the stomach was a compound of arsenic. The poison had been obtained in the metallic state by Reinsch's process, and by reduction with soda flux. The metal had been reconverted to arsenious acid, and this, dissolved in water, had given the usual re-actions with the two liquid and the gaseous tests.*

* The reader will perceive that Marsh's process was not employed. This was considered unnecessary, because the existence of the poison was so clearly established by the other processes and tests. By avoiding the unnecessary multiplication of proofs, the objections taken to chemical evidence in cross-exami-

Opinion.—From all the above-mentioned results, the following conclusions were drawn:—

1. That arsenic was present in the stomach of this child, and the total quantity might be estimated at from five to six grains.

2. That it had been introduced into the stomach as white arsenic, but had become partially changed to sulphuret or orpiment, by the decomposition of the body.

3. From the deeply-reddened state of the mucous membrane of the stomach and duodenum, and from the fact of the poison being incorporated with the ulcerated membrane of the stomach, there is no doubt that the arsenic so found was taken during life, and was really the cause of death.

4. From the fact that the husks of raisins, currants, and suet were closely intermixed with the poison, it is not improbable that the arsenic was taken with plum-pudding.

In conclusion, I may remark that the quantity of arsenic which would probably suffice to kill a child of this age would be about two or three grains, and, under favourable circumstances, perhaps even less.

Notwithstanding that the deceased was not seen during life, the post-mortem appearances in the stomach, which were unusually well marked, and the result of the chemical analysis, left no doubt in the minds of Mr. Lamb and myself that arsenic was the cause of death: hence there was but little room for cross-examination on this head.

It may, however, be as well to mention, that the points on

examination are of course considerably reduced. It should be remembered, that, in evidence founded on chemical analysis, "*whatever does not strengthen, weakens.*" It cannot be said of such evidence, "*superflua non nocent,*" because the cross-examination is sure to be directed to the fallacies of superfluous tests, just as it is always directed to the irrelevant details of a post-mortem examination.

I may also observe that arsenic was subsequently detected in the tissue of the liver of the deceased, into which it had been obviously absorbed. The liver was cut up in slices, dried and boiled with one part of pure muriatic acid and eight of water (Reinsch's process). After two hours the solution was filtered, and arsenical deposits were obtained on copper gauze. These yielded octohedral crystals of arsenious acid by sublimation, and on dissolving the crystals in water the liquid tests gave the characteristic re-actions for arsenic.

which the counsel for the defence dwelt were—1. The power of judging from post-mortem appearances so long after death; but it was stated that arsenic had, in this respect, remarkably antiseptic properties. That evidence of this kind, however, might not rest solely on description, an accurate drawing of the stomach, as it appeared at the time of the analysis, was made by Mr. Hurst, of Guy's Hospital, and some precipitated sesquisulphuret of arsenic mixed with gum was employed to give the correct appearance of the yellow patch found near the greater curvature. 2. It was a question why this child should not have died sooner, had its death been caused by arsenic: to which it was replied, that the period at which death took place from arsenic was subject to great variation according to circumstances: that some persons died within a few hours, while others lingered for several days: that, in short, no definite rule could be laid down on this point. 3. Whether arsenic was not a natural or *normal* constituent of the human body, and whether this was not the opinion of the celebrated toxicologist, Orfila? It was stated in answer, that such an opinion was not held by chemists who had experimented on the subject, and that Orfila had himself been obliged to abandon it, as his experiments performed before the Institute, in 1841, had entirely failed in demonstrating its existence in the healthy human body. The fact that a question of this kind was put, shews how long an error in medical jurisprudence may continue to find circulation among lawyers after it has been rejected by the medical profession. The question, however, was here entirely misplaced, because the arsenic was found in a *solid layer*, lying on the surface of the mucous membrane of the stomach, and was not extracted by solution, incineration, or carbonization. The fallacy involved in the question was immediately displayed to the jury, by the learned Judge asking, whether it was medically possible that any person could spontaneously generate within his stomach *five grains* of solid arsenic! 4. The last question turned upon the validity of the tests for the poison—Whether there was not some kind of objection to every known test for arsenic, although the same objection might not apply to all the tests? This was an ingenious question. The reply given was, that no

single substance, nor any mixture of substances, was known in chemistry which would give all the re-actions for arsenic that had been obtained in this case.

The evidence chiefly bearing against the prisoner, as the person who administered the poison rested, as it has already been stated, with his niece. Before poison was discovered in the body of the deceased, the prisoner denied that he had had any arsenic in his possession for two years. After the discovery, he confessed that he had had some arsenic for destroying vermin, but had given it away. It was proved in evidence that a short time before Christmas he had given away a quantity of a white powder (some of the arsenic) to a neighbour, in the presence of his niece. She saw him poke it out of a bottle with a stick, and he then threw the stick in the fire. She did not see whence he took the bottle, or what he did with it. The prisoner admitted, in his voluntary statement, that he kept the bottle on the top shelf of the dresser in the pantry adjoining the room in which they had their meals; and it was from this room that he was seen to come by the niece with a pinch of white powder between his finger and thumb, which he placed on the plate of the deceased as if it were salt. He said he cautioned the witness Carter not to touch the bottle, which she denied. The fact that arsenic was there at the time the deceased was taken ill was made evident by the testimony of several witnesses. The prisoner made several contradictory statements with the view to save himself by incriminating Maria Carter — alleging that she had poisoned the children.

Two bottles of white powder were produced by witnesses at the trial, to whom the prisoner had given them after the death of his children. One of these bottles was pronounced by the witness Carter to be similar to the one out of which she had seen the prisoner take the white powder to give to a neighbour.

It was then necessary to determine the nature of the contents of each bottle, and for this purpose an analysis was required to be made during the trial. Each was found to contain white arsenic in fine powder, unmixed with any other ingredient, and the quantity in the two bottles, could not have been less than five ounces. Another bottle of a brown

powder was also traced to the possession of the prisoner: this was proved to be nux vomica, which he had been in the habit of using for poisoning crows.

In the defence it was urged that the symptoms observed might have depended on the worm found in the rectum; that the prisoner could have had no motive for poisoning his children; and that it was more likely, if the deceased had been poisoned, that the arsenic was administered by Carter the niece. The Jury, however, were satisfied with the evidence, and the prisoner was convicted, and subsequently executed.