MEDICAL JURISPRUDENCE.

DETECTION OF STRYCHNIA IN THE SUBSTANCE OF A STOMACH.

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Those who have read the celebrated Palmer trial, are aware that chemists have been doubtful whether strychnia could be satisfactorily detected in the tissues. Recently I have had an opportunity of fully testing this question, and will now give that portion of the case to the public, leaving the other circumstances to be developed in a trial now pending. After separating small portions of strychnia from the contents of the stomach, by the most approved processes described in the books, I took the stomach, dissected of all the fat that could be separated, and then inverted it and washed it with hot alcohol, and from the alcoholic solution I separated a little strychnia.

I next took the stomach itself, cut it into small fragments and digested it in cream of quicklime until it was thoroughly disorganized, a boiling heat being employed. Then the whole was dried off, until it became too thick to run, and it was next placed on filtering paper and made thoroughly dry in a current of warm air, after which the whole was reduced to fine powder, and was boiled in 80 per cent. alcohol for some time and then filtered, and the matter on the filter was washed with weaker alcohol so long as anything could be dissolved out containing strychnia. The whole clear solution was then evaporated, by a steam bath, to near dryness, and a dilute solution of pure sulphuric acid was added, until slight acidity was discovered by blue litmus test paper.*

I then adopted Dr. Hayes's method of clearing the solution of oil or fatty matters, namely, by adding purified wax and boiling so as to cause the molten wax to absorb and solidify the oils. The vessel was then placed on snow and allowed to cool to the freezing temperature. By this means I obtained a solid crust, which contained all the fat now combined with the wax, and the solution below it being drawn off and filtered through Swedish paper was clear and nearly colorless. This was treated with pure bi-carbonate of soda, in excess beyond saturation, and again filtered through Swedish paper. Then pure ether was mingled with it, in the proportion of five or six times its bulk, and the whole placed in a glass tube having a cork with one long tube reaching through the whole length of the glass, and another just passing through the cork, this being my separating apparatus. In this the two liquids were thoroughly mixed by shaking, and the glass was inverted, the tubes being both closed with the thumb. After the ethereal solution had separated and risen to the surface, the heavier liquid below was drawn off by itself, and the ethereal solution was then allowed to flow out into a series of watch-glasses, from which the ether evaporated spontaneously, and beautiful feathery crystals of strychnia were obtained. These were then washed out by weak alcohol into a single watch-glass, and on evaporation of the alcohol and water under the exhausted air-pump bell over concentrated sulphuric acid, well-defined prismatic crystals of strychnia were obtained, and were examined by the microscope and compared with known strychnia crystals. The bitter taste of these crystals was observed to be identical with that of known strychnia. They also responded perfectly to all the color tests as strychnia, and produced the characteristic salts with bi-chloride of platinum, &c.

In applying the color tests, concentrated sulphuric acid (oil of vitriol) must be applied to the strychnia and observed, whether or no it produces any change of color. In pure strychnia it will not. Then add a small crystal of bi-chromate of potassa, and if the matter is strychnia, streaks of blue changing into violet, purple and red will appear, and these streaks may be renewed for hours, even if there is but a visible particle of

* This method, I understand, was first employed for the detection of strychnia in animal tissues by Dr. Green of Cambridge. (See Proceedings of Boston Soc. Nat. Hist.)