to a similar cause? If so, can we call the mode of death syncope, or shall we attribute the contracted condition of the heart to the want of blood-supply? These are interesting questions, and I do not presume to offer an opinion. Dr. Campbell Brown gave as his opinion at the trial, that the man Higgins had been taking arsenic for several days before death. His reason was that he found six times as much arsenic in a given weight of spleen as in an equal weight of liver. This condition would indicate relatively large hepatic elimination, and this elimination would involve the element of time. I gave a similar opinion, and the pathological reason that I assigned was the uniform distribution of the inflammatory patches throughout the intestinal canal. On this point, see Dr. Harley's note (*Lancet*, November 23rd, 1861, p. 499). Messrs. Lowndes and Davies declined to give an opinion on the point with regard to any of the cases. I shall only make a few remarks regarding the exhumed bodies. The absence of any indication of kidney-congestion, or of marked inflammation of duodenum, contrasts strongly with the condition in the case of Higgins, and resembles the "Atlee Family" case. The nature of this yellow pigment is a matter of much interest, and the profession is indebted to Dr. Campbell Brown and Mr. Davies for the trouble they have taken. It appears strange that a biliary pigment should be absent from the duodenum and upper part of the jejunum, and present in the remaining portion of the bowel. Possibly the pigmentary matter is a product of the intestinal juices and the hepatic secretion; and, as we know the glandular structures vary in the different parts of the tube, we may account for the pigmentary distribution in the two bodies. Further, as arsenic is stored up in the hepatic cells and the intestinal glandular structures, we can readily understand an alteration in the character of their respective secretions, and thus account for the pigment being present in cases of arsenical poisoning. It evidently requires a considerable time to produce these chemical changes, for the pigment is not present until the body has been buried for a considerable period. Possibly an atmosphere developed by putrefactive changes may determine the combination which results in the formation of the yellow pigment.

ON THE YELLOW PIGMENT FOUND IN THE INTESTINES IN CASES OF ARSENICAL POISONING.

By J. CAMPBELL BROWN, D.Sc., AND
EDWARD DAVIES, F.C.S.

It has frequently been recorded that a yellow colour has been obtained in the stomach and intestines of persons who have died from arsenical poisoning, after long interment. It is not always stated to what this yellow colour is due; but it has sometimes been attributed to the formation of sulphide of arsenic. Thus, in Taylor on *Poisons*, the following passages occur. "White arsenic slowly becomes changed to yellow sulphide by the evolution of sulphuretted hydrogen in the decomposition of the stomach or of its contents. It then forms a deep yellow stain through the coats, and appears on the external surface." "In Mrs. Smith's case, the sulphide of arsenic was discovered in the stomach fourteen months after interment." "In the case of the Cheshams, the coats of the stomach were in both instances deeply dyed with large patches of yellow sulphide nineteen months after interment." "In some cases, the coats of the stomach and intestines, the liver, diaphragm, and even the bones of the spinal column, may be thus deeply stained of a yellow colour."

In *Reports of Trials for Murder by Poisoning*, by Lathom Browne, and Stewart, the following passage occurs. "In bodies long buried, the arsenic is often converted into sulphide by putrefaction, and then appears as a yellow coating."

No proof has ever been adduced, so far as we are aware, that the yellow substance is really sulphide of arsenic. We have recently had an opportunity of examining a yellow substance found in the circumstances referred to, in two bodies exhumed in January last, and think it desirable to place our observations on record.

One of the bodies was that of a young man, aged 22, which had lain in the grave upwards of three years. It was in a state of good preservation, the stomach, intestines, and viscera having decreased in size without losing their usual form and appearance. From the whole of the abdominal viscera, three and a quarter grains of arsenic were extracted. The whole of the small intestines were coated internally with a bright yellow pigment resembling mustard, as were also the greater part of the mesenteric vessels. The colour was visible through the walls of the intestines. It reminded one of orpiment, and in some places of realgar. It was not present near the gall-duct.

The other body was that of a girl, aged 10 years, which had been in the grave more than thirteen months. The viscera were in a good

state of preservation, although contracted. From the abdominal viscera one grain of arsenic was extracted. The bright yellow pigment was distinctly present in the intestines and mesentery, although the quantity was not so great as in the previous case.

In another body, which had not been buried, no yellow pigment was found, although there was more than a grain of arsenic in the viscera.

In a fourth body, which had been in the grave less than a year, but in which the quantity of arsenic was probably not more than half a grain, the yellow pigment was perceptible, but the quantity was very small.

We collected a considerable quantity of the yellow pigment, weighing in the moist state between twenty and thirty grains. It was carefully tested for arsenic, and was found to contain no appreciable quantity of arsenic. It certainly was not sulphide of arsenic. Nitric acid produced a play of indistinct colours similar to those produced in bile by nitric acid.

We found that the yellow pigment was readily soluble in chloroform, forming a bright and clear yellow solution; less soluble in alcohol; slightly soluble in strong ammonia, reprecipitated by hydrochloric acid; and insoluble in water. The chloroform-solution left on evaporation a deep yellow residue. This yellow residue was reddened by strong hydrochloric acid, while nascent hydrogen from zinc and hydrochloric acid discharged the colour and dissolved the residue. Nitric acid converted it into a purple, then red, then brown substance. Sulphuric acid gave a temporary violet colour, quickly becoming brown. Sulphuric acid and pure sugar gave the violet purple tint characteristic of Pettenkofer's test.

THE TREATMENT OF GONORRHOEA BY OPEN WIRE BOUGIES.

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GONORRHOEA is a specific catarrh of the mucous lining of the urethra—a condition in which there is rapid inflammatory cell-proliferation, and exudation of fluid from the mucous surface. These catarrhal changes necessarily begin at the anterior extremity of the urethra, and travel backwards. The fossa navicularis suffers early and severely, and backwards along the course of the passage, another part that is severely affected is the sinus of the bulb. These two parts are wider than the parts of the canal immediately behind each, and so small portions of fluid are apt to lodge more persistently there than in other parts of the canal.

In the local treatment of this affection, it is obviously very desirable to keep separate the inflamed mucous surfaces. The condition is in many respects analogous to a moist eczema intertrigo, where cure is indefinitely postponed unless the surfaces are, by suitable dressing, maintained apart. The injections in gonorrhoea that have been most successful are those that have best fulfilled this indication of treatment, and lately Mr. Cheyne's medicated bougies of cacao-butter have given further aid in this direction. To carry out more effectually the keeping separate the secreting surfaces, I have had made open wire bougies. These are of two forms.

The first form (Fig. 1) is for the effective administration of injection.

Fig. 1.

The part *a* is a short length of catheter-tube, to which are soldered the wires of the open bougie, part *b*, and to the part *a* is also attached a short piece of India-rubber tube *c*. This instrument being introduced until the part *a* is well within the meatus of the urethra, the solution to be injected is introduced by a syringe, and, when quite full, the India-rubber tube *c* is compressed by a spring clip, to prevent the escape of the fluid. Within from twenty to thirty minutes, the injection will be almost wholly absorbed by the urethral walls, and then the instrument may be withdrawn. By this means, the injection is applied to, and kept applied to, any part of the urethra that may require it until entirely absorbed. By the ordinary method at present in use, the contact is at best but very brief; and, as the part of the passage that is most in need of treatment is usually the most irritable, the injection is, by the instantaneous reflex contraction of that part, at once driven from it into other portions of the canal.

The second form (Fig. 2) is an open wire arrangement throughout, and is constantly worn by the patient, so that the discharge may drain