

week of the relapse the fever ranged from 100° to 105° ; pulse 100 to 140, markedly dicrotic. The spleen was enlarged, and there was great illiac tenderness; vomiting was incessant for forty-eight hours. Towards the end of this week hemorrhage set in, small in quantity at first, but subsequently becoming very profuse. There was considerable abdominal distention. During the following week there was vomiting, retention of urine, and a slight diarrhoea, which lasted forty-eight hours. A profuse rose rash was observed over the chest. The tympanitis, hemorrhage and other grave symptoms subsided towards the end of the week. From the end of the third week the patient progressed favorably. The total period of the pyrexia for the relapse was thirty days. Dr. S. could not explain the coincidence of jaundice, furthermore than the patient had had fever and ague five years ago, and since then, his skin had at times been discolored, but not of the decided tint observed in this illness.

Dr. MacDonnell considered this case an interesting one. That many cases of abortive typhoid were put down as febricula, he had no doubt. Jaundice in typhoid fever was not rare, though not often seen here. He mentioned a case of a patient in the hospital, who developed jaundice after a relapse of typhoid fever.

A Method for the Quantitative Estimation of Acetone in Urine.—Dr. Ruttan, in referring to the various methods of detecting acetone in urine, said he had no hesitation in recommending Leben's iodoform test as superior to all others both in the delicacy of the reaction and in the ease with which the test could be applied.

If much acetone be present it can, with little experience, be detected by applying the test directly to the filtered urine. This method is rendered more delicate by first precipitating the earthy phosphates by caustic soda or potash, and then applying the test. The test consists in adding to the urine a few drops of a strong solution of iodine in potassium iodide, and then adding an alkali (caustic soda, etc.) until the solution is just decolorized. A yellow opacity with precipitation of iodoform occurs if acetone be present. Nothing else that occurs in urine, except acetone, is able to give this precipitate of iodoform without warming.

When but minute traces (less than 0.05 per cent.) are present, the urine should first be made acid with sulphuric acid and distilled. When half the urine has been distilled, all the acetone has been found to be in the distillate.

He then demonstrated the application of a piece of apparatus he had constructed to use in connection with his method of determining the quantity of acetone in urine. This method depends on the fact that with the same quantity of iodine and alkali, variations in the quantity of iodoform produced in Leben's test are caused by a proportionate increase or diminution of the

acetone. He used 5 c.c. of a standard strength of iodine, 10 c.c. of similar strength of caustic potash, and 1 c.c. of the distillate of the urine to be tested. The iodoform produced is dissolved up by shaking the mixture in a sort of separating flask with pure ether, then the aqueous mixture below is run out, and the etherial solution measured in the flask as it is graduated from the tap up. Half the etherized solution is run out on a weighed watch glass and allowed to evaporate at ordinary temperature. The iodoform left is weighed, and the quantity so obtained multiplied by 0.55 will equal the acetone in 1 c.c. of the urine.

In a chemical laboratory from forty to fifty estimations could be made in a day, and the percentage of acetone determined to the third place of decimals with perfect accuracy.

Acetonuria.—Dr. Ruttan and Dr. Wyatt Johnston read a paper upon a fatal case of cerebral apoplexy, in which sugar and acetone had been detected in the urine.

The patient, a man aged sixty-seven, had been under the care of Dr. R. L. MacDonnell, who had been his medical attendant for the last seven years, and had repeatedly examined the urine during that time, always with negative results. The fatal illness had set in suddenly with an apoplectic seizure. Coma had set in immediately, and had lasted for twenty-four hours. The urine was found at the time of the seizure to contain 1.7 per cent. of sugar, which had increased next day to 2.4, and then had disappeared entirely. Acetone to the amount of 0.31 to 0.37 per cent. was found associated with the sugar, and the quantity had persisted for five days after the sugar had disappeared.

The patient had partially recovered consciousness, and had complained of severe occipital pain. Death had occurred suddenly and unexpectedly on the twelfth day of the illness. The condition had been regarded as one of diabetic coma, but at the autopsy an extensive cerebral hemorrhage was present, involving the whole of the base of the brain, but most extensive over the medulla. Dr. MacDonnell concluded from this instance that in every case where there is sugar in the urine it was not necessarily a case of diabetes.

Dr. Mills said that the present case appeared to him like one that was being gradually poisoned from some retained substance in the body, which was unknown to us, and deranged metabolism generally.

Dr. Johnston stated that in view of the post mortem, poisoning by acetonuria could not be regarded as being the cause of any of the symptoms. The hemorrhage had produced both the coma and the acetonuria. The blood obtained at the autopsy was free from acetone. The death was probably due to a recurrence of the hemorrhage.