

cavities of the heart. I then carefully separated the contents of the stomach and bowels, and tested each separately for sugar with the subjoined results.

1. The alimentary matters of the stomach and small intestines had an acid reaction, and afforded no evidence of the presence of sugar.

2. The milky serum afforded by the coagulation of the chyle was also destitute of sugar.

3. The blood of the vena portæ being allowed to coagulate, the serum was slightly opalescent and alkaline; I distinctly ascertained the presence of a large quantity of sugar.

4. The blood from the heart also presented sugar, but in less abundance.

The experiment was repeated several times, and with always the same result, but without my being able to comprehend how the portal blood should contain so large a quantity of sugar, while none existed in the small intestines. Reflecting, however, that this matter must be derived from some neighboring viscus, I proceeded as follows:—Having quickly destroyed a dog which had some hours since fed on matters destitute of sugar or fecula, I opened the abdominal cavity, and placed ligatures,—1st, on the branches of the mesenteric veins, close to the small intestines; 2nd, on the splenic veins, close to the spleen; 3rd, on the pancreatic veins; 4th, on the trunk of the vena portæ as it entered the liver. I then collected blood from each of these sources, and examined it. 1. Sugar was not found in the blood of the intestines, nor in their contents. [The original states that sugar was found, but this is evidently an error of the press, as appears from the context.—*Trans.*] 2. Sugar was not present in the blood, either of the splenic or pancreatic veins. 3. The blood of the portal veins contained a large quantity of sugar, as did also the tissue of the liver itself.

It was thus made evident that the liver was the source of the saccharine matter. But it must be asked, how is it that sugar is found in the portal veins, for supposing it to be formed in the hepatic glandules, it should be carried into the general circulation by the hepatic veins, and not flow back into the portal branches. This reflux is, in my opinion, easy to be understood—for, in fact, the circulation in the porta is mainly effected by the pressure of the abdominal parietes during life; if, therefore, the pressure be removed as in opening the abdomen, there would immediately be a reflux from the absence of valves in the portal system. We have ascertained, by the above experiments, that sugar is found in the liver, and is carried into the general circulation by the blood of the hepatic veins, the reflux into the porta being accidental; but we regard this discovery to be so important, that we think it right to state the processes employed in the investigation, in order that others may confirm or confute our conclusions by following in our footsteps.

Tests for Sugar in the liver itself.

A portion of liver is to be beaten in a mortar, and then boiled in a small quantity of water, and filtered. The filtered liquid possesses all the properties of a saccharine fluid. It becomes darker on boiling with liquor potassæ, and it reduces the double tartrate of potass and copper. If yeast be added at a certain temperature, fermentation ensues; if the fluid be distilled after fermentation, alcohol may be obtained. The attempt was made to procure sugar in substance by operating on large quantities of liver, but although a fluid of syrupy consistence was obtained, crystallization did not take place. The recognition of sugar in the blood is a very simple affair; the blood is allowed to coagulate, and the serum placed in a tube furnished with a stopper; to this is added a sixteenth in bulk of the tartrate of copper and potash, and boiled, when a quantity of the salt is reduced, proportionate to that of the sugar present. By this process the smallest traces of saccharine matter may be detected. Both in this test, as well as that by fermentation, it is necessary

to operate on the serum while it is fresh, as sugar is rapidly decomposed spontaneously.

We have now traced the sugar of animals to the liver, but we have further to determine whence it is derived. Two suppositions may be entertained; either it results directly from a transformation of certain elements of the liver, or it is derived from the food. It may be said, in fact, that the animals which had been fed exclusively on animal food, or starved, might have eaten fecula or saccharine food the few days previously, and that the sugar thence derived had accumulated and been detained in the liver; and it might be added in support of this view, that the liver is known to retain arsenic and other poisons for a length of time. Without actually denying this view, the following experiments would seem to oppose it:—

1st *Exp.*—A full-grown dog was starved for eight days, and then fed abundantly on cooked meat for eleven days; after this he was destroyed. The blood contained an abundance of sugar. This experiment was repeated several times, and certainly it would appear probable, that sugar derived from food, given antecedently, would have been eliminated after a lapse of nineteen days.

2nd *Exp.*—A rabbit, after a meal of carrots, was subjected to the division of the pneumo-gastric nerves. He was found dead seventeen hours after. *No sugar was found in the blood or liver.* This experiment was repeated with similar results. In both animals the bile, which is generally alkaline, was found to have a distinctly acid reaction. This effect of division of the pneumo-gastric nerves is remarkable. As a further proof that sugar is found independently of food, I may state that I have found it in large quantity in fetal calves. From the above facts, the author draws the following conclusions:—

1. That diabetic sugar is a normal ingredient in the blood and liver of animals.

2. That the formation of sugar takes place in the liver, and independently of saccharine or feculent food.

3. That this formation of sugar commences before birth.

4. That it is allied to a state of integrity of the pneumo-gastric nerves.—*Dr. Bernard in Archives Gén. and Provincial Journal.*

MEDICAL JURISPRUDENCE.

Singular Case of Insanity.—The correspondent of the London Standard of Freedom gives an account of one of the most singular trials before the Military Tribunal which has ever occupied public attention. One Serjeant Bertrand was accused of violating the tombs of the dead. An immense auditory, embracing some of the first people in France, many of the most distinguished medical men of Europe, and several females, were collected. A more interesting, mild, and gentle being, has seldom appeared at a criminal bar.—He, without the slightest hesitation, acknowledged that, borne on by an irresistible fury, he had rushed to the cemeteries, dragged from their coffins the lately-buried bodies, beat them with tremendous violence, and tore out from the carcasses the internal portions; and, from what was stated by the physician, to whom he had still more candidly confessed his enormities, it is not unlikely that he feasted on these mutilated remains, and committed horrors at which humanity shudders. Some scientific remarks were elicited from the medical men, which led to the conviction that the man was insane; indeed, there could be but little doubt. The military law could only inflict a punishment on him, when found guilty, of a year's imprisonment.

The Standard of Freedom thus notices this horrible creature more at length: