be instrumental in the removal from the blood of substances present there in excess. In the experiments I wish to communicate here, I selected, therefore, the bladder for the study of this problem since the mucous lining of this organ is practically the only membrane which possesses no glands. The rabbit was the experimental animal used.

After performing a double nephrectomy and tying a cannula in the bladder, seven to ten grams of dextrose per kilogram were injected intravenously in from twenty to fifty minutes, washing the bladder several times during and after the injection. The washings were then analyzed. The results are briefly as follows. In nine experiments either no sugar or else indeterminable amounts were found, and in four experiments only six to eleven milligrams, *i. e.*, 0.05 to 0.08 per cent. of the amount injected. In addition, in some of the experiments uranine, the sodium salt of fluoresceïn, was dissolved in the injection fluid. In the experiments in which twenty milligrams were introduced, no trace of uranine, a very diffusible dye, could be detected in the washings of the bladder. In four experiments 100 milligrams were introduced; in two there was not a trace and in the other two there was a barely perceptible trace.

The conclusion may therefore be drawn that the mucosa of the bladder is practically impermeable for diffusible substances present in the blood in great excess, even in the absence of the kidneys, the chief organs of elimination of the body.

25 (721)

Pancreatic transplantations in the spleen.

By **JOSEPH H. PRATT**, of Boston, and **FRED T. MURPHY**, of St. Louis.

[*From the Laboratory of the Theory and Practice of Physic, Harvard University.*]

The influence of pancreatic transplants in the spleen on the prevention of diabetes was studied. The spleen was selected because it has been shown that transplanted bits of tissue are especially well nourished in the pulp of this organ. In nine animals, bits of the pancreas of various size were buried in the

pulp of the spleen. The method used by Payr in transplanting thyroid tissue was followed. In four animals (2 dogs and 2 cats) pancreatic cells were demonstrable in the spleen. The interval between the operation and the death of the animal varied from 18 hours to 13 days. In five animals (all dogs) no pancreatic remains were found. Autolysis was rapid. In one experiment all the pancreatic cells had disappeared 21 hours after the transplantation. The bit of tissue found 13 days after the transplant measured only 1 mm. by 0.1 mm. It consisted of normal appearing acini surrounded by connective tissue. No islands of Langerhans were demonstrable.

In one dog a large pancreatic graft was placed in the spleen with the blood supply preserved by means of a mesenteric stalk. Three weeks later the original blood supply was cut off and all the pancreatic tissue except the graft extirpated. Diabetes did not develop, but the tolerance for glucose fell within a few weeks to a low point. At the autopsy 187 days after the second operation a large abscess was found in the lower part of the spleen. Projecting into the spleen from the wall of the abscess was a cone-shaped mass of fibrous tissue. In this were the remains of the pancreatic transplant measuring less than 1 cm. in length. The pancreatic tissue consisted of acini separated by connective tissue. In some of the cells, masses of zymogen granules were present. These were no demonstrable islands of Langerhans. This experiment proves that pancreatic tissue implanted in the spleen and separated from its original vascular and nervous connections can live and functionate for months.

26 (722)

The production of reversed cardiac mechanism in the dog.

By ALFRED E. COHN.

[*From the Hospital of the Rockefeller Institute for Medical Research, New York.*]

In a series of experiments, which were published with Kessel and Mason,[1] on the excised perfused hearts of dogs, we were able to show that "excision of the sinus node results in an immedate

[1] *Heart*, June 15, 1912, iii, 311.