The modifications of the vascular walls are produced mainly by the changes of blood pressure. No great change occurs if the blood pressure of the transplanted vessel be not modified. Segments of carotid, aorta or vena cava of one animal, transplanted in the carotid, aorta or vena cava of another animal of the same size and species, do not undergo any important anatomical modification. If blood pressure be diminished, the wall of the transplanted vessel becomes thinner. Six months after the operation, it was found that the wall of the carotid transplanted in the external jugular vein was thinner than the normal one. If blood pressure be increased, hypertrophy of the wall ensues. A segment of external jugular vein interposed between the cut ends of the carotid artery was a little dilated and its wall was as thick as the arterial wall, eight months after the operation. In other cases, there was no dilation of the lumen of the vessels. As a rule when a vein is anastomosed uniterminally to an artery, its lumen is found to be dilated, six or seven months after the operation. Nevertheless, after one year the lumen may progressively diminish in size, as was seen in a dog operated upon twenty two months ago.

It may be concluded that transplanted blood vessels adapt themselves to the pressure by thinning or thickening their walls.

106 (249)

## The dependence of gastric secretion upon the internal secretion of the salivary glands.

By **JOHN C. HEMMETER.** (Communicated by **S. J. MELTZER.**)

[*From the Physiological Laboratory of the University of Maryland.*]

The relations of the gastric secretion to the salivary glands are illustrated by the following clinical and experimental observations:

1. In four cases of Mikulicz's disease with normal conditions of the blood the stomach was found to secrete no gastric juice during the course of the disease. Mikulicz's disease consists in a benign chronic swelling of all the salivary and lacrimal glands.

2. In dogs with accessory stomachs (Pawlow) the removal of all the salivary glands abolishes permanently all gastric secretion.

3. The gastric secretion is not started in such dogs by feeding

them with food masticated and well insalivated by other normal dogs.

4. The abolished gastric secretion is temporarily resumed by peritoneal or intravenous injections of extracts made of salivary glands of normal dogs.

5. This temporary resumption takes place even if the stomach be completely isolated from the central nervous system.

These observations justify the conclusion that normal gastric secretion depends upon the internal secretion of the salivary glands.

107 (250)

## The influence of diuresis upon the toxic dose of magnesium salts.

By **S. J. MELTZER.**

[*From the Rockefeller Institute for Medical Research.*]

In the communication on the effects of subcutaneous injections of magnesium salts, John Auer and I stated that a dose of magnesium sulphate slightly larger than 1.75 gram per kilo is surely fatal for the rabbit. Lucas and I showed later that in nephrectomized animals the toxicity of the salts is greatly increased. At the April meeting I conducted an experiment demonstrating that in nephrectomized animals magnesium sulphate can become toxic even when given by mouth. These lines of experimentation have shown that the toxicity of magnesium salts depends upon the normal activity of the kidneys. I wish now to report the results of a series of experiments in which the effect of an increased renal activity was studied.

Briefly stated the results were as follows: A dose of 2 grams of magnesium sulphate per kilo is absolutely fatal for the rabbit; the animal dies of respiratory paralysis in less than an hour. All the animals recovered from the effects of such a dose, however, if an intramuscular injection of diuretin was given soon after the subcutaneous injection of the magnesium salt. Diuretin is theobromin and acts as a diuretic. The deeply narcotized animals usually urinate about fifteen or twenty minutes after its injection; by that time, at least, the bladder can be felt to be full. The largest dose