The toxicity of strophanthin by the mouth can be varied at will to a considerable degree for the cat.

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On the nature of the socalled glycogenolytic fibers in the greater splanchnic nerves.

By **J. J. R. MACLEOD.**

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The hyperglycæmia which invariably results from interference with pulmonic ventilation, produced either by constriction of the air passages or by inadequacy of the respiratory movements, has led to the question whether or not the hyperglycæmia following stimulation of the great splanchnic nerves may not also be due to an asphyxial condition induced locally in the liver. Such a local asphyxia of the hepatic lobule might be the result of diminished blood supply caused by constriction of the blood vessels in Glisson's capsule, or by the diminution of portal blood supply following constriction of the splanchnic vessels.

The question, therefore, presents itself as to whether stimulation of the great splanchnic nerve causes hyperglycogenolysis because secretory nerve fibers influencing the production or activity of the glycogenolytic ferment in the liver are contained therein, or because of a local disturbance in the blood supply of the liver following stimulation of vaso-constrictor fibers.

In the following communication a preliminary report is offered of several experiments devised to throw some light on these problems.

1. All the tissues running to the hilus of the liver except the portal vein were cut between peripherally and centrally placed ligatures. As much as possible of the outer coat of the portal vein was also removed. By these three operations all the hepatic nerves running from the cœliac plexus to the liver were severed. Stimulation of the great splanchnic nerve was found to cause no increase in the sugar content of the blood although the usual marked vaso-constriction of the splanchnic vessels occurred.

2. Clamping the portal vein for periods of about a minute at

intervals of about two minutes, produces only in some cases an increase in the blood sugar.

3. Ligation of all branches of the hepatic artery running to the liver produces no change in the sugar content of the blood.

4. Stimulation of the tissues adjacent to the portal vein — after doubly ligating and cutting — causes hyperglycemia in about fifty per cent. of the cases. Such stimulation does not usually cause any change in arterial blood pressure.

As a result of these four groups of experiments it would appear that local asphyxia of the hepatic lobule consequent upon changes in blood supply is a less likely explanation of hyperglycogenolysis than is the hypothesis which assumes the presence of glycogenolytic secretory fibers in the great splanchnic nerves.

If such fibers control the production of glycogenolytic ferment by the liver, we might expect atropin to paralyze the fibers. My observations in this direction, however, show that stimulation of the N. splanchnicus in atropinized dogs causes the usual hyperglycemia. Atropin itself, however, produces a hyperglycemia which makes the observation of doubtful value.

Experiments are in progress to determine by the method of Bang, Lyungdahl and Bohm[1] whether there is an increased amount of glycogenolytic ferment in the liver after stimulation of the great splanchnic nerve.

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Prevention of syphilis in Macacus Rhesus by atoxyl.

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The drug atoxyl has been employed successfully in causing the rapid disappearance of syphilitic lesions in human beings and in preventing the development of the specific inoculation eye lesions in rabbits. Metchnikoff reported recently that the same drug would prevent the development of the specific lesion in monkeys even if administered some days after the inoculation.

[1] *Beiträge zur chemischen Physiologie und Pathologie*, 1907, ix, p. 408; x, p. 1; x, p. 312.