4671

On the Non-Ubiquitous Occurrence of Secretin.

G. E. DREWYER AND A. C. IVY.

From the Department of Physiology and Pharmacology, Northwestern University Medical School.

After Bayliss and Starling found that extracts of the upper intestinal mucosa on intravenous injection would cause the pancreas to secrete, numerous investigators have reported that such an active principle was present in various animal and plant tissues. Such an active principle has been reported to be present in Witte's peptone, stomach and colon mucosa, muscle tissue, brain, thyroid, liver, parathyroids, pineal gland, mammary gland, spinach, nettle, and hydrolized egg-white. All these extracts contain a blood pressure reducing substance; and since histamine increases pancreatic secretion, it may be that the augmentation of pancreatic secretion caused by these various tissue extracts may be due to vaso-dilation and not to a specific substance or secretin.

Having at hand the method of Weaver, Luckhardt and Koch[1] which yields secretin from the upper intestinal mucosa of dogs, hogs, sheep, cattle and man free of vaso-depressor substances, we decided to apply this method to various body tissues and to spinach. The tissues were collected from freshly killed animals, and were cut into small pieces, and 0.4% HCl was added in the proportion of 2000 cc. per kilo of tissue. The acid was allowed to remain in contact with the tissue for ½ to 1 hour, with frequent stirring. The acid extract was then strained off through gauze, and immediately saturated with NaCl (30 gm. per 100 cc.), as soon as the salt was dissolved the precipitate was filtered off, the filtrate being called B. The precipitate was then taken up in water and the insoluble residue filtered off and discarded. The soluble portion was called A. The extract A was used for injection. The extracts from the various tissues, brain, bone, liver, lung, kidney, pancreas, thyroid, stomach, intestine, colon, muscle, heart and spinach were injected in doses varying from 5 to 50 cc. No increase in the secretion of the pancreas was noted with any of these tissues except the extract of intestine and stomach. All extracts were vaso-dilatin free. Controls were run on the pancreas of each dog to see if the pancreas was active to secretin stimulation, by injections of a known solution of

[1] Weaver, M. M., Luckhardt, A. B., and Koch, F. C., *J. Am. Med. Assn.*, 1926, lxxxvii, 640.

secretin. This procedure was again repeated at the termination of the experiment to see if there was any variation to the original dose. Two sets of extracts were made and 6 dogs were run, with similar results in every case. Further, if we injected the salt filtrate B into the animal, there occurred a fall in blood pressure, varying according to the dose and the tissue used, from 25 to 100 mm. of Hg. In all such cases the pancreas was slightly stimulated, the amount of secretion produced depending on the degree of fall in blood pressure and its duration.

These results show that the secretion caused by various tissue extracts other than gastric and intestinal mucosa is due to the presence of vaso-depressor substances and not to the specific substance called secretin. About 10 times as much secretin can be extracted from the intestinal mucosa of the first 6 feet of the intestine as from the mucosa of the pyloric antrum. Before an extract can be said to contain secretin, it must be at least shown that it is free of vaso-depressor action.

4672

The Intravenous Administration of Irradiated Ergosterol.*

C. I. REED AND E. A. THACKER.

From the Department of Physiology, University of Illinois College of Medicine, Chicago.

This investigation was begun in the hope that the intravenous administration of ergosterol might throw some light on the mechanism of its action, if it could be shown to be effective by this method. Normal dogs of 10 to 12 kilos weight were selected and confined to a stock diet of ground beef heart and Puppy Meal, 3:1. Ten animals have now been studied. Routine determinations of calcium and inorganic phosphorus were made. Figure 1 shows the results on one animal, which is fairly typical of the series. After a short period of preliminary observation, injections were begun of ergosterol in corn oil. This oil alone, in amounts up to 15 cc. does not produce any of the observed effects. In the illustrative case. approximately 20 mg. were administered daily during 2 weeks. The

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