

Minnesota Branch

University of Minnesota Medical School, May 5, 1926.

3174

The presence of vagus fibers in the splanchnic nerve of the cat.

A. T. RASMUSSEN and DONALD DUNCAN.

[*From the Department of Anatomy, University of Minnesota, Minneapolis, Minn.*]

The recent announcement by Iwama¹ that a considerable number of medullated fibers from the vagus enter the sympathetic trunk near the inferior cervical ganglion, especially on the right side, and that some of these fibers run into the abdominal viscera via the splanchnic nerves, immediately brings into question considerable visceral neurology based upon experimental stimulation of the splanchnic and the vagus in the cat, at least. According to Iwama's observations it is impossible to stimulate the right splanchnic of the cat without also stimulating some vagus fibers.

It also occurred to us that there might be enough variability in number of vagus fibers that reach the gastric regions through the splanchnic nerves of different species of animals to be a factor in the results obtained by Carlson and others² following stimulation of the peripheral end of the splanchnic, such as only inhibition of the cardia in the rabbit and either contraction or inhibition in the cat depending on the state of tonus at the time of stimulation.

The preliminary work necessary to get this question upon a quantitative basis gave results at such variance with those expected that this note is deemed advisable although only four cats and two rabbits of our series bear directly on the subject.

¹ Iwama, Y., *Folia Anatomica Japonica*, 1925, iii, 215.

² Carlson, A. J., *Am. J. Physiol.*, 1922, lxi, 14.

Section of the right vagus in the mid-cervical region of the rabbits produced no Wallerian degeneration in the thoracic sympathetic trunk and hence none in the splanchnic nerves.

In three cats (right vagus cut in two and left vagus in one) results were similarly negative. In a fourth cat, however, with right vagus cut above the anastomosis with the inferior cervical sympathetic ganglion, two degenerated medullated fibers were clearly identified in the right thoracic sympathetic trunk above the origin of the splanchnic nerve. One degenerated fiber was found in the right splanchnic and one in the right lumbar sympathetic trunk. Evidently one of the two vagus fibers coursed via the splanchnic and the other passed farther down the sympathetic trunk. Serial longitudinal sections and teased glycerol specimens agreed absolutely with each other. The glycerol specimens had never been in any fat solvent. Control material from corresponding nerves on the opposite side were run through the same reagents with the experimental specimens.

We do not believe these results are due to faulty technique, since one of us (A. T. R.) has used the Marchi method more or less continuously for over ten years and should realize its limitations. Hence we conclude that the number of medullated fibers from the vagus that course into the abdominal viscera via the splanchnic nerves in both rabbits and cats must be very small and therefore insignificant functionally.

3175

Inhibition of renal secretion following injury in the neighborhood of the colliculi.

F. H. SCOTT and M. M. LOUCKS.

[From the Physiological Laboratory, University of Minnesota, Minneapolis, Minn.]

Desiring to obtain some data on the output of certain urinary constituents in dogs during short intervals of time, we thought we could get rid of the influence of anesthetics by decerebration. However, we were greatly surprised to find that on decerebration, the flow of urine ceased, although there had been a good flow