experiments of Langley[1] which indicated that the result produced by impulses traveling in a nerve depends on where the fibers end and not upon any specific differences in the impulses themselves.

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Blood Pressure and Intestinal Motor Response to Splanchnic Stimulation after Nicotine.

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Small intravenous doses of nicotine (1 to 5 mg. per kilo) depress the activity of the intestine, and abolish the effect of electrical stimulation of the vagus on the gut of the dog and cat.[1, 2, 3] On the other hand, larger doses of nicotine (15 to 60 mg. per kilo) produce a stimulation of the intestine, and cause a return of the stimulatory effect of vagus faradization on the intestine.[2, 3] These latter effects of nicotine are not due to an action on the splanchnic ganglia, or on the adrenal glands, for these effects are retained after the extirpation of both the ganglia and the adrenal glands.[3]

In this report the effects of intravenous injections of nicotine are extended to the activity of the splanchnic nerve in the cat. The animal is pithed and prepared as in the previous communication.[3]

The motility of the intestine was studied by a technic different from that reported in a previous communication.[3] The abdominal wall is opened and the intestines are flooded with warm mineral oil. This minimizes distension due to loss of carbon dioxide.[4] Two superficial stitches are then taken into the muscularis of the intestine, about 1.5 cm. apart, and firmly tied. To each of the strings is now attached one of the levers of the Cushny myocardiograph. The free arm of the instrument is then connected with the writing lever. If the activity of the circular coat is to be recorded, the stitches are taken in the same transverse plane; if the longitudinal coat is being studied, the stitches are in the same longitudinal plane.

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[1] Langley, J. N., *J. Physiol.*, 1898, **23**, 240.

[1] Bayliss, W., and Starling, E., *J. Physiol.*, 1899, **24**, 99.

[2] Thomas, J. E., and Kuntz, A., *Am. J. Physiol.*, 1926, **76**, 598.

[3] Mulinos, M. G., PROC. SOC. EXP. BIOL. AND MED., 1927, **25**, 49.

[4] Henderson, Y., *Am. J. Physiol.*, 1909, **23**, 345.

When the splanchnic nerve is to be stimulated, a Sherrington guarded electrode is put on the right nerve retroperitoneally. The adrenals are ligatured or removed also retroperitoneally, in order not to tear the peritoneum. The left vagus nerve was put into a guarded electrode in the neck.

Results. (a) Vagus Stimulation. The results obtained with this technic confirmed those previously reported.[3] Apparently because of the lesser injury to the intestine, the nicotine abolished the motility of the gut and lowered its tonus only temporarily, and not permanently, as previously reported.[3] It was further determined that the effects of vagus stimulation on the circulation and slowing of the heart are quickly and permanently abolished even by small doses of nicotine (1 to 5 mg. per kilo).

(b) Electrical stimulation of the splanchnic nerve raises the blood pressure and depresses the intestine, even in the absence of the adrenal glands. Immediately following the intravenous injection of 5 mg. per kilo of nicotine, there is a temporary loss of splanchnic activity, both on the gut and on the blood pressure. Further injections of nicotine progressively lose their power to abolish the effect of splanchnic stimulation on the gut and blood pressure. The nicotine itself soon loses its power to raise the blood pressure. Doses of over 15 to 60 mg. per kilo cause a lowering of the blood pressure at a time when splanchnic stimulation produces a rise in blood pressure and a depression of the intestine as great as before any nicotine was administered. The results are the same, if the adrenal glands are ligated or removed prior to the administration of the nicotine.

At a time when the autonomic ganglia are saturated with nicotine, as shown by their lack of response to further dosage, conduction through the ganglia from the pre-ganglionic to the post-ganglionic path is as efficient as ever. Certain ganglia in the body (only those of Auerbach's plexus and of the splanchnic area have so far been studied) may be saturated with nicotine, in the sense that these structures are no longer stimulated by subsequent doses of nicotine; yet can they conduct impulses apparently as well as ever.