

61 (993)

The innervation of the gall-bladder.By **CHARLES C. LIEB** and **JOHN E. McWHORTER.**

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There are at present two theories as to the innervation of the gall-bladder. One is that supported by Doyon, who claims that the motor fibers pass through the splanchnics; the other theory, which is defended by Dale and Bainbridge, assumes that the motor fibers are derived from the vagi and that the splanchnics carry inhibitory impulses to the gall-bladder.

It seemed that this problem could be definitely solved by a study of the isolated gall-bladder. Although it is impossible in such an experiment to excite the nerves directly by the electric current, the same end result may be brought about by the employment of drugs.

The effects of those drugs which stimulate the para-sympathetic system may be regarded as analogous to the effects following electrical excitation of the vagus. Epinephrine produces the same effect as electrical stimulation of the splanchnic nerves.

The experiments have demonstrated without question that both physostigmine and pilocarpine stimulate the gall-bladder to contract; that atropine promptly removes the action of pilocarpine or physostigmine; that epinephrine, which has a specific action upon the myoneural junctions of the true sympathetic system, produces relaxation of the gall-bladder.

The conclusions that have been arrived at are, therefore, that the gall-bladder receives its motor impulses by way of the vagi and its inhibitory impulses through the splanchnics.

The effects of some other drugs have been incidentally examined. The nitrites and bile salts depress the smooth muscle of the gall-bladder. The excitants of smooth muscle, as represented by strophanthin and barium chloride, produce stimulation of the gall-bladder.