Further evidence that the absorptive capacity of the gall bladder has not been impaired by operative procedures may be demonstrated in the following way. If at the end of 48 hours the inspissated bile is aspirated from the fundus of the gall bladder, and replaced with 2 cc. of 10% solution of sodium iodide, X-rays of the living animal will reveal the disappearance of the iodine shadow within 3 hours after the operation (Fig. 1).

These experiments thus confirm the observation of Sweet[2] that sodium iodide is absorbed by the mucosa of the *vesica fellea,* but even more they indicate the difficulty of maintaining that the contents of the gall bladder are resorbed *in toto* or that the primary "function of the gall bladder is to receive and return to the body the bile which is formed during the intervals between active digestion."

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Reaction of the Gall Bladder to Stimulation of Visceral Nerves.

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In a recent article[1] evidence was presented to show that both human and animal gall bladders are subject to the control of reflexes originating in the gastro-intestinal tract; that in unanesthetized cats faradic stimulation of the *pars pylorica* of the empty stomach induces contraction of that organ and reflex emptying of the gall bladder; and that faradic stimulation of any part of the alimentary tube from stomach to caecum will inhibit the contraction of a gall bladder that is emptying after a meal of egg-yolk.

Since then, employing similar methods (*i. e.,* sewing insulated electrodes to various internal surfaces) these observations have been extended to the colon and rectum of the cat (3 animals), and to the peritoneal surface of the abdominal musculature (1 animal), thereby showing that faradic stimulation of certain parts of the gut-tract or body-wall that are supplied by sacral and thoracic nerves, respectively, also induces inhibition of the emptying gall bladder.

Using a modification of this method, by means of which electrodes may be wrapped around nerve trunks and insulated from surrounding parts, it has been found possible to stimulate the nerves of the

[1] Boyden, E. A., and Birch, C. L., *Am. J. Physiol.,* xcii, 287; Birch, C. L., and Boyden, E. A., *Ibid.,* 301.

unanesthetized animal after its recovery from the operation and thereby to induce changes in the tonus of the gall bladder as revealed by X-rays of its roentgen-opaque contents. Preliminary attempts to ascertain the nerves involved in these reflex pathways have demonstrated that direct stimulation of the plexus that accompanies the left gastric artery (2 animals), or of the hepatic plexus (1 animal), induces relaxation of the contracted gall bladder.

This preliminary report is based on 14 experimental animals. In the 8 animals in which the conditions prerequisite to inhibition were established (*i. e.*, emptying of the gall bladder following ingestion of egg-yolk), faradic stimulation sufficient to cause slight pain, repeatedly and consistently stopped the flow of cystic bile.

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A Method for Obtaining a Pure Culture of Balantidium coli.

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Balantidium coli, the ciliate of the large bowel of the pig, and not infrequently reported from man, the monkey and the guinea pig, has been grown *in vitro* by Walker,[1] Barrett and Yarbrough[2] and Rees.[3] The latter investigator was able to isolate single individuals and start a pure line of the organism obtained from the guinea pig. In all of these attempts, however, the medium was contaminated by various fecal bacteria and no efforts appear to have been made to develop pure cultures, although the need for such a procedure is evident.

Opportunity to attempt the sterilizing of balantidia against fecal bacteria was presented to the writer during the summer of 1929, when all of 12 individuals of *Macacus rhesus,* which had been under observation by Dr. C. C. Bass for a non-protozoan infection, were found to be passing cysts and trophozoites of *Balantidium coli* in their stools. Rectal specimens from those individuals which gave the richest yields of trophozoites were washed and concentrated in a

[1] Walker, E. L., *Phil. J. Sci.,* (B), 1913, viii, 1.

[2] Barrett, H. P., and Yarbrough, N., *Am. J. Trop. Med.,* 1921, i, 161.

[3] Rees, C. W., *Science,* 1927, lxvi, 89.