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Entry of Duodenal Contents into the Biliary System of the Guinea Pig.

J. AUER AND L. D. SEAGER.

From the Department of Pharmacology, St. Louis University School of Medicine.

While injecting a test-meal into the duodenum of guinea pig Higgins and Mann¹ observed that exceptionally some of the material entered into the common bile duct. Burget and Brocklehurst² report that they were not able to drive duodenal contents into the intact ampulla of the guinea pig. Neither group of authors stated the degree of pressure, although Higgins and Mann note that the pressure employed was not unusual.

In 23 out of 26 guinea pigs, we were successful in driving air or dilute India ink into the gall-bladder and biliary passages and section of the liver lobes frequently revealed air in the finer bile channels. The effective duodenal pressures ranged between 10 and 20 mm. Hg; in 2 pigs pressures of 30 and 40 mm. Hg were necessary. In 10 experiments, an intravenous injection of 0.5 to 2 cc. of epinephrin solution (1:10,000) caused generally the entry of air or dilute ink into the gall bladder and bile passages at duodenal pressure-levels that had been ineffective in the same animal before the injection of epinephrin.

The main details of procedure were as follows: The guinea pigs were chiefly males, weighing an average of 700 gm.; sodium barbital, 300 mg. per kg., subcutaneously; abdomen opened in mid-line from the ensiform cartilage to pubis; the antrum of the stomach was ligated; a cannula was tied into the duodenum and connected with a mercury manometer; a compressible bulb in the manometer-circuit permitted accurate variations in pressure.

The pressure that a normal duodenum could exert when stimulated to contraction by faradic currents or by BaCl₂ solutions was 20 mm. of Hg.

¹ Higgins, G. M., and Mann, F. C., *Am. J. Physiol.*, 1926, **78**, 344.

² Burget, G. E., and Brocklehurst, R. J., *ibid.*, 1927-28, **83**, 587.