

muscle layers meet as a solid band without any apparent separation. Near the distal end of the ampulla a small funnel shaped opening leads into a short *direct* duct, terminating at the head of the bile papilla (which is formed chiefly by a thickening of the duodenal mucosa). The musculature of the dividing wall between ampulla and duodenum thins out as it approaches the papilla and eventually disappears in the substance of the latter; although the fibers in this region are arranged sphincter-wise, they are very sparse and do not give the impression of a powerful sphincter.

It thus appears that the guinea pig possesses a specialized form of bile-expelling mechanism, in which an ampulla by active contraction discharges its contents directly into the duodenum with the occurrence of each peristaltic wave; regurgitation into the common duct is prevented by the simultaneous contraction of a powerful sphincter. These observations are of interest in view of the fact that, while the gall bladder possesses some degree of contractility, the flow of bile is not at all dependent upon its powers of contraction. The anatomical arrangement described would appear to be a variation of the usual oblique course of the intra-mural portion of the common duct in most other mammals. It is possible that the ampulla, though lying practically outside the duodenal musculature, is in reality homologous with the true Ampulla of Vater.

This is a preliminary report.

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The Effect of Emotion on the Basal Metabolism.

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The experiments here reported were undertaken as part of a study on the relation of the nervous symptoms and the basal metabolism in exophthalmic goiter. There is evidence that these two may not be manifestations of the same disturbed function.¹

Twelve hospital patients in the surgical ward for various disturbances, and with varying degrees of emotional reaction were told that they would be operated on the following morning. No drugs were given. The basal metabolism had been studied and was also done the day before operation. On the morning of operation, metabolism was again taken before the patient left for the operating room. In

none of these cases was there any change in the basal metabolism, although a few showed variations in pulse and blood pressure. A second group of twelve patients with the symptoms of toxic thyroid was chosen. Basal metabolisms were done frequently during the course of preparation for operation, which preparation in this group always included the administration of Lugol's solution. A metabolism was again done on the morning before operation and on the day of operation after the patient had been told the time of operation. Again in this series no significant rise of metabolism was seen in any case, nor were there significant changes in pulse or bloodpressure.

It was realized that patients who had been thoroughly prepared for operation by iodine showed no change. Then it was decided to select a small series of carefully chosen toxic goiters who had not been so treated. The results in this group of patients were in striking contrast to those so far reported. Five individuals are in this group. In four cases the rise in metabolism was from 20 per cent to 35 per cent over the metabolism of the day before, and in one case the rise was 132 per cent. This latter patient had a reaction immediately after the metabolism resembling an acute thyroid intoxication, with a marked increase in metabolism two hours after the first test. It dropped to the original level of plus 63 per cent on the following morning. In two other individuals the metabolism also dropped within 24 hours to the original level.

Although these individuals had been told they would be operated on, their nervous reaction varied greatly, some being glad they were to be operated on, others being excited, but the marked rise in metabolism was found in all. In four of these individuals we were able to repeat the experiment after iodine therapy, and in none of the four was there any rise in the basal metabolic rate.

Conclusion: These experiments show very definitely that the average surgical patient and the iodized toxic goiter show no pre-operative rise in the basal metabolism and that individuals with toxic goiter not treated with iodine show the possibility of a dangerous rise. The significance of this is being further investigated.

This is a preliminary report.

¹ Strouse, S., and Binswanger, H. F., *J. Am. Med. Assn.*, 1927, lxxxviii, 161-164.