(the adrenal secretion exciting the thyroid, the pituitary, the pancreas, etc.); these hormones were shown by Starling to reach the distant structures they influenced, through the intermediary of the blood.

While certain hormones influence various organs, others affect only one organ or a system of them. Bayliss and Starling termed "secretin" a hormone formed in the duodenal mucous membrane under the influence of hydrochloric acid from the stomach. Carried by the circulation to the intestinal mucosa, the pancreas, and the liver, it activates the production of the secretions produced by these organs. As I suggested in 1907 (see vol. ii, p. 861), this hormone presents several properties of adrenal extractives.

Another hormone has been obtained from the gastric mucosa by Zuelzer, Dohrn, and Marxer[170] which has been found to enhance peristalsis. It being impossible to obtain it in sufficient quantities from the stomach, it was sought elsewhere, and was found in ample quantities in the spleen—that junkshop in which red corpuscles (which, as I suggested in 1903, are the common carriers of the adrenal principle) are broken up along with other cells. This splenic hormone specifically stimulates intestinal peristalsis to a degree so remarkable that the intestinal movements in the experimental animal may be shown cinematographically ten to fifteen minutes after an intravenous injection.

This hormone (available as *hormonal* in the trade) has been found of considerable value in chronic constipation, intravenous injections (20 c.c.—5 drachms—in children and 40 c.c.—10 drachms—in adults). In intestinal paralyses following abdominal operations or volvulus it has also given satisfactory results in some cases. Henle's[171] favorable results did not seem to be lasting. In intestinal occlusion care is necessary lest the violent peristalsis provoked aggravate any intestinal lesion that may be present. The observations of Saar[172] and Unger[173] suggest, however, that the peristaltic action promoted by the hormone is not violent. The untoward effects reported by various clinicians, however, emphasize the need of great care in the use of this agent.

[170] Zuelzer, Dohrn, and Marxer: Berl. klin. Woch., Nu. 46, 1908.
[171] Henle: 50th German Congress of Surgery, April, 1911.
[172] Saar: Medizin. Klinik, Nu. 2, 1910.
[173] Unger: Berliner med. Woch., Nu. 11, 1911.

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