

[Reprinted from the *Journal of Physiology*,
Vol. XLI, No. 5, December 31, 1910.]

ON GASTRIC SENSATION. By F. R. MILLER, M.A., M.B.,
Demonstrator of Physiology, University of Toronto.

(From the *Physiological Laboratory, University of Toronto.*)

OUR knowledge concerning gastric sensitivity is derived from a small number of researches, partly experimental and partly clinical.

The experiments on animals have consisted in applying some form of stimulation to the stomach and then observing the various reactions induced by this means. The action of local emetics (CuSO_4 and tartar emetic) was studied by Openehowski¹, who found that the afferent paths for exciting vomiting in this manner are contained in the vagi.

The sensory innervation of the peritoneal surfaces of the stomach was studied by Duceeschi², who tested the effect of electrical and mechanical stimulation on the respirations and general reactions of the animals. His results led him to infer that, whilst sensory stimuli are conducted from the entire outer surface of the stomach by both the vagi and the splanchnics, those passing by the vagi are alone capable of exciting vomiting.

Head³ noted that the areas of cutaneous tenderness accompanying gastric disorders correspond with the distribution of the 7th, 8th and 9th dorsal nerves, but the work of Duceeschi has as yet alone yielded experimental evidence regarding the importance of the spinal nerves in the sensory innervation of the stomach.

Hertz, Cook, and Schlesinger⁴, in a recent study in man, observed that the lower end of the oesophagus was considerably more sensitive than the mucous membrane of the stomach. In investigating the sensitivity of the gastric mucosa it is, therefore, essential to confine the action of the emetic substances strictly to this surface. Whether or not

¹ *Arch. f. (Anat. u.) Physiol.* p. 554. 1889.

² *Arch. di Fisiol.* p. 521. 1904—5.

³ *Brain*, xvi. p. 66. 1893.

⁴ *This Journal*, xxxvii. p. 481. 1908.