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the urine. Multiple injections in various types of tubules were performed and in all instances, save one, the dye turned yellow indicating an acid reaction. It was not possible to subsequently macerate the kidney and isolate the injected tubule in order to definitely localize the site of puncture. Nevertheless, the majority of the punctures can be assumed to have been in the proximal tubule, for this is readily identified *in vivo* by its large diameter. These results confirm the earlier findings of Kempton (This Journal page 34, 1940)

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The Electrolyte Metabolism of the Swimbladder and Gastric Mucosa

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In 1922, J. S. Haldane proposed that gas was secreted into the swimbladder as a result of acidification of the blood bathing the gas gland epithelium. The resultant changes of pH, P_{O_2} and PCO_2 were thought to be sequestered from the general circulation by counter-current exchange in the "rete mirabile". Even though this has been the only credible explanation for gas secretion, no evidence had been provided either *in vitro* or *in vivo*. The isolated gas gland epithelium of the pollack was found to selectively secrete hydrogen ion into the solution bathing its serosal surface. This paves the way for identifying the acid secreted and clarifying the enigmatic role of carbonic anhydrase. ("The Teleostean Swimbladder", Nature, in press.)

In recent years considerable emphasis has been placed upon the association between the transepithelial electrical potential difference and the secretion of acid by the gastric mucosa. The isolated gastric mucosa of elasmobranchs, dogfish and skate, was found to secrete acid but without generating a significant potential difference. The marine and freshwater teleostean (pollack, tomcod, longhorn sculpin, winter flounder, eel and catfish) gastric mucosae generated a potential difference of more than 15 mV and is thus similar to the amphibian and mammalian stomach. The elasmobranch and teleostean gastric mucosae are histologically similar. ("The Electrophysiology of the Elasmobranch Stomach", submitted to Science, December, 1958.)

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