islands throughout. In the lymph node, however, lymphocytes are always present in the peripheral zone and both the lymphocyte and the reticulum regeneration parallel each other. (3) In both types of transplants, the reticulum arising from surviving reticular elements extends in finger-like projections from the periphery of the transplant; the small cell appears to arise from the reticular cells; giant cells appear by fusion of reticular cells about the central area of necrosis in the course of the regeneration.*

* In similar studies on the thyroid and spleen transplants, no giant cell reaction appeared about the central area of necrosis in the regeneration of the transplants.[2-7]

[1] Gottesman, J. Marmorston, and Gottesman, J., PROC. SOC. EXP. BIOL. AND MED., 1926, xxiv, 45.

[2] Gottesman, J. Marmorston, and Gottesman, J., unpublished studies.

[3] Manley, O. T., and Marine, David, PROC. SOC. EXP. BIOL. AND MED., 1914, xii, 202.

[4] Manley, O. T., and Marine, David, *J. Am. Med. Assoc.*, 1916, lxvii, 260.

[5] Manley, O. T., and Marine, David, *J. Exp. Med.*, 1917, xxv, 619.

[6] Marine, David, and Manley, O. T., PROC. SOC. EXP. BIOL. AND MED., 1916, xiv, 123.

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Mechanism of Gastric Secretion. The Nature of Gastric Juice of Constant Maximum Acidity.

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In a recent paper,[1] it was reported that, by a modification of the usual technic for collecting gastric juice from a dog's auxiliary stomach pouch, a fluid of constant acidity was obtained. Independently of whether the secretory stimulus was food or histamine, the pH of the pouch juice had a constant value of 0.90 ± 0.01. The difference (a decrease of 0.02 pH) between this and the value originally reported may be due to individual variation as well as to improved technic. With further modifications in the latter, the maximum acidity may be found to be even slightly higher.

Subsequent to the above report, the acid values of some representative samples were determined by titration. The micro-method employed involved titration to a definite end point with the aid of

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comparator tubes of known pH. For total acidity, phenol red at pH 7.8 was used; for free acidity, brom-phenol blue at 3.5. Also, in the case of a few of these samples, total chlorine was determined by the micro-method of Van Slyke.[2] From the data so far obtained the following may be observed:

(1) The average total acidity (.157 N) is higher than any corresponding value hitherto reported. (2) The combined acidity of "Constant pH" juice, determined as the difference between free and total acidities, is negligibly small (.003 N); *i. e.*, this fluid contains practically no protein or other buffer substances. (3) Comparison of the average values for total acidity (.157 N) and for total chlorine (.167 N) indicates a very small difference (.010 N). In fact, considering that it may be impossible to eliminate last traces of the mucus secretion and a serous transudate, this difference may also be within the limits of error of the method. These results imply, therefore, that the HCl solution elaborated by the acid-secreting cells contains very little if any of the metallic chlorides found in the blood and other tissue fluids. (4) Calculation of the freezing point for HCl solutions of .157 N and .167 N concentration, taking $\alpha = .93$, gives values of —0.56° C. and —0.60° C. respectively as limiting values for the gastric juice under consideration—assuming the absence of appreciable quantities of other substances. For mammalian blood, the value of this constant is usually given[3] as about —0.60° C,—thus suggesting the possible isotonicity of this acid secretion.

Work now under way is directed towards a determination of: (a) The actual freezing point depression of gastric juice obtained by this technic; and (b) The presence or absence in this fluid of substances other than HCl.

[1] Hollander, F., *J. Biol. Chem.*, 1927, lxxiv, p. xxiii.

[2] Van Slyke, D. D., *J. Biol. Chem.*, 1923, lviii, 523.

[3] Mathews, A. P., *Physiol. Chem.*, 1925, 564.