even though 10 or more days had elapsed between the time of inoculation and the time the animals were sacrificed.

8692 P

Some Properties of Castle's Intrinsic Factor.

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It has long been known that the activity of pepsin is destroyed by exposure to alkali. Accordingly, fresh normal human gastric juice, collected after histamine injection, was at once brought to pH 10 with NaOH and let stand at room temperature for 30 minutes, after which it was brought to pH 6.0 with HCl. No peptic activity was detected by the hemoglobin method.[1] Using Reimann's technique,[2] 20 cc. of the juice was mixed with 20 cc. of raw liver hash, incubated at 37°C. and pH 2.5 for 2 hours, then adjusted to pH 5.0, and mixed with boiled tomato juice and fed daily for 7 days to a pernicious anemia patient with red cells at 1,300,000. The reticulocytes rose from 2.8% to a peak of 22.8% on the eighth day, the red cells reaching 2,100,000.

As pepsinogen is not destroyed under the conditions used, a preparation kindly supplied by Dr. John H. Northrop and Dr. R. M. Herriott with a specific activity of 2.3[3] and containing 6 mg. total nitrogen per cc. was tested, 4.5 cc. being injected intramuscularly in a case of pernicious anemia, the red cells being at 1,800,000. There was no rise in the reticulocytes nor red cells for the next 10 days, though the patient subsequently had a reticulocyte peak of 29.9% following the oral administration of one dose of 100 gm. boiled liver paste mixed with 100 cc. of normal gastric juice prepared as described for the first case. Boiled liver was used to rule out the effect of hepatic cellular enzymes.

Greenspon's paper[4] then appeared, suggesting that chilled alkalinized gastric juice was effective in pernicious anemia when administered orally 4 hours before meals in doses of 250 cc. daily.

[1] Anson, M. L., and Mirsky, A. E., *J. Gen. Physiol.*, 1932, **16**, 59.

[2] Reimann, F., and Weil, R., *Z. f. klin. Med.*, 1934, **126**, 568.

[3] Holter, H., and Northrop, J. H., PROC. SOC. EXP. BIOL. AND MED., 1935, **33**, 73.

[4] Greenspon, E. A., *J. A. M. A.*, 1936, **106**, 266.

Accordingly, juice was collected by Greenspon's technique, and 80 cc. of juice, incubated at 37°C. for 2 hours, and 80 cc. boiled tomato juice, adjusted to pH 7.0, were administered orally in a single dose to a pernicious anemia patient with red cells at 2,100,000. The reticulocytes were 2.5% and never rose above that level during the next 10 days, the red cells fell to 1,600,000. There was a subsequent rise of reticulocytes to 31% on adequate parenteral liver extract. Another patient with red cells at 1,900,000 received 80 gm. of boiled liver, hashed to a paste, with 80 cc. of boiled tomato juice in a single dose. Reticulocytes rose from 3.3% to a peak of 8.4 on the eighth day, with no change in the red cell level. After the reticulocytes had fallen to 3.3%, 80 gm. of boiled liver paste and 80 cc. of normal juice, collected by Greenspon's technique, were incubated at 37°C. at pH 7.0 for 2 hours, and administered with boiled tomato juice. The reticulocytes rose to 14.6% on day 7 and fell to 8.5% 3 days later when 80 gm. of boiled liver paste and 80 cc. of normal juice collected without alkali, but adjusted to pH 10 for 30 minutes and then incubated with the liver for 2 hours at pH 5.5 were given in tomato juice. The reticulocytes rose to 19.8%, the red cells to 2,100,000 six days later.

Summary. Exposure of normal human gastric juice to pH 10 for 30 minutes destroys peptic activity without materially affecting intrinsic factor. Pepsinogen containing 28 mg. N was inert when administered parenterally. Eighty cc. of normal juice collected by Greenspon's technique was inert but when added to 80 gm. of boiled liver accentuated the hematopoietic effect of the liver.

8693 P

Vasomotor Effects of Blood in Patients with Hypertension.

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Many investigators have noted increased pressor (or diminished depressor) substances in the blood of patients with hypertension.[1-4]

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1 Major, R. H., *Arch. Int. Med.*, 1927, **40**, 891.

2 Lange, F., *Klin. Wchnschr.*, 1933, **12**, 173.

3 Bohn, H., *Ztschr. f. klin. Med.*, 1933, **123**, 558.

4 Marx, H., and Hefke, K., *Klin. Wchnschr.*, 1933, **12**, 1318.