experimental and control tubes was found to be 0.3 of 1 pH unit on the fourth day. Blood agar or chocolate agar plates were used to detect bacterial contamination at the conclusion of each experiment. Three cultures out of 305 used in 2 series and one subculture were found to be contaminated.

Optimum growth after 2 days' incubation occurred between pH 5.45 and 5.55, while after 4 days it was between 5.5 and 5.8. The highest pH supporting growth after 4 days was 7.55, the lowest 4.9. Two tubes out of 6 showed no live organisms at pH 4.9 after 4 days. Subculture on the sixth day revealed that the organisms had lost their viability above pH 7.55. (These data are taken from the second of 2 series of experiments with quite parallel results.)

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Alimentary Azotemia Due to Whole Blood Absorption from the Gastrointestinal Tract.

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In the past six years numerous authors have reported an increase in blood urea nitrogen in certain cases of bleeding peptic ulcer. These include the reports of Sanguinetti,[1] Christiansen,[2] Meyler,[3] Alsted,[4] Sucic,[5] Schiff and Stevens,[6] and Stevens, Schiff, Lublin and Garber.[7] The chief theories to explain this increase were dehydration, shock, hepatorenal damage, hypochloremia, starvation and absorption of digested blood. Certain workers[2, 7] as well as Kaump and Parsons[8] believed that the last named factor (absorption of digested blood) is the most important. Our experiments tend to corroborate this conclusion.

Method. Citrated blood was given by stomach tube to 6 healthy dogs in 12 experiments (in 2 of these experiments dog blood and

1 Sanguinetti, Lucio V., *Arch. Argentinos de enfermedades de Aparato Digestivo y de la Nutrición*, 1934, **9**, 264.

2 Christiansen, Tage, *Acta Med. Scand.*, 1935, **85**, 333.

3 Meyler, L., *Acta Med. Scand.*, 1935, **87**, 313.

4 Alsted, G., *Am. J. M. Sci.*, 1936, **192**, 199.

5 Sucic, Dinko, *Klin. Wchnschr.*, 1935, **14**, 1316.

6 Schiff, L., and Stevens, R. J., *Arch. Int. Med.*, 1939, **64**, 1239.

7 Stevens, R. J., Schiff, L., Lublin, A., and Garber, E. S., *J. Clin. Invest.*, 1940, **19**, 233.

8 Kaump, D. H., and Parsons, J. C., *Am. J. Dig. Dis.*, 1940, **7**, 191.

in the remainder beef blood was used). Urea nitrogen determinations by the method of Van Slyke and Cullen were made at least 5 times daily on blood from the jugular vein of each dog. After a control period of at least 24-hours which showed relatively little fluctuation, the dogs were given varying amounts of the beef or dog's blood by stomach tube and the blood urea nitrogen curve was continued.

Results. In from about 3 to 7 hours after the administration of usually 200 cc of citrated blood by stomach tube, a definite elevation of the blood urea nitrogen occurred. A typical rise is shown in Fig. 1. Within 24 hours of the administration of blood the curve had usually returned to normal. In all instances a rise occurred and it was much greater than variations in the controls.

Comment. The clinical significance of this increase in blood urea nitrogen derives from the importance of its cause. If in a clinical case with bleeding peptic ulcer it is due to severe renal damage, its presence would tend to argue against operation. If on the other hand it is due to the mere presence of a quantity of blood in the gastrointestinal tract its occurrence would if anything favor operation. The present studies indicate that the second of these possibilities is actually the case.

Conclusions. (1) Intragastric administration of whole blood in

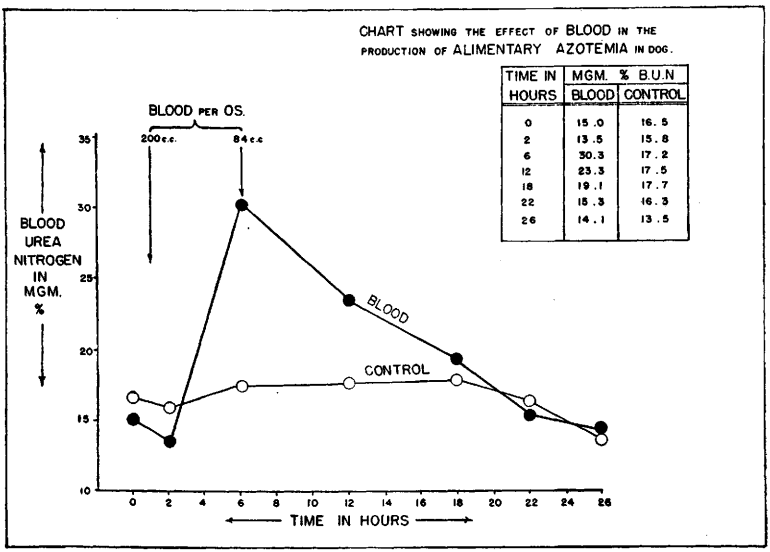

FIG. 1.

The effect of citrated whole beef blood administration by stomach tube in the production of alimentary azotemia in a normal dog. Portions of the curve for 24 hours before and after that shown displayed very little variation from the flat control level.

12 experiments on 6 dogs caused a uniform and considerable rise in the blood urea nitrogen. (2) The increase seemed due primarily to absorption of digested blood. No evidences of starvation, dehydration, anemia, hypochloremia or shock were present in these dogs to explain the phenomenon. (3) It seems logical to assume that much of the rise in blood urea nitrogen observed in clinical cases of bleeding peptic ulcer is due to the same phenomenon, the resultant azotemia being of the alimentary type.

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Influence of Sex Hormones and Desoxycorticosterone on Melanophore Differentiation in Birds.

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Recently, it was found that explants of skin ectoderm from embryos of New Hampshire Red fowl occasionally yielded black melanophores, but red ones differentiated rarely, and a majority of the cultures were entirely negative. Since an examination of regenerating feathers from the adult (in which the plumage is predominantly red) showed that there was an abundance of red melanophores, it seemed desirable to find out what factors influence the differentiation of these pigment cells. The purpose of this report is to summarize some of the results which have been obtained by using sex hormones and a hormone of the adrenal cortex.*

In these experiments, a piece of skin was removed from the dorsal midline of a 6-day chick embryo (New Hampshire Red or Rhode Island Red) and divided into bilateral halves. One of these was explanted into a clot made up of embryonic extract mixed with plasma containing the sex hormone, and a control culture was made of the other half. Crystalline hormones were shaken up in blood plasma. Sesame oil, olive oil, and hormones dissolved in them were emulsified with plasma. Concentrations of hormones ranged from 20 to 300 γ per cc.

Red melanophores differentiated in cultures treated with sex hormones within 24 to 48 hours, and were similar to those in the

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