

That these unexpected findings are not due to some error is evident from the fact that distribution of blood groups among 104 Indians belonging to a number of tribes other than Blackfeet or Blood and secured by the use of the same typing sera was found to correspond with that reported by other investigators—that is 83.6% group O; 11.5% group A; 2% group B and 2.9% group A.B.

It does not seem unlikely that the Blackfeet and Blood tribes were at one time a pure group A people and that racial crossing and admixtures with other tribes has modified the blood group distribution among them.

These results suggest the necessity for reconsidering the origin of the American Indian.

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Vitamin G Potency of Purified Liver Preparations.

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Commercial liver extracts which have been used extensively in the treatment of pernicious anemia are known to be rich in vitamin G (B₂, anti-pellagric factor).¹ It was thought of interest, therefore, to determine whether vitamin G is present in a purified preparation of the P.A. factor.

Purification of Lilly liver extract 343 was carried out by methods described² by one of us (W.), the material used being a regenerated amorphous barium derivative precipitated from alcohol, 200-250 mg. of which gave a maximal reticulocyte response when injected into a pernicious anemia patient. Three preparations (A, B and C) of this material were used, about 1 gm. each was obtained from 400 gm. of the Lilly Extract.

Vitamin G deficiency was induced in young rats (21 days old) of the Wistar strain according to the technique previously described.³

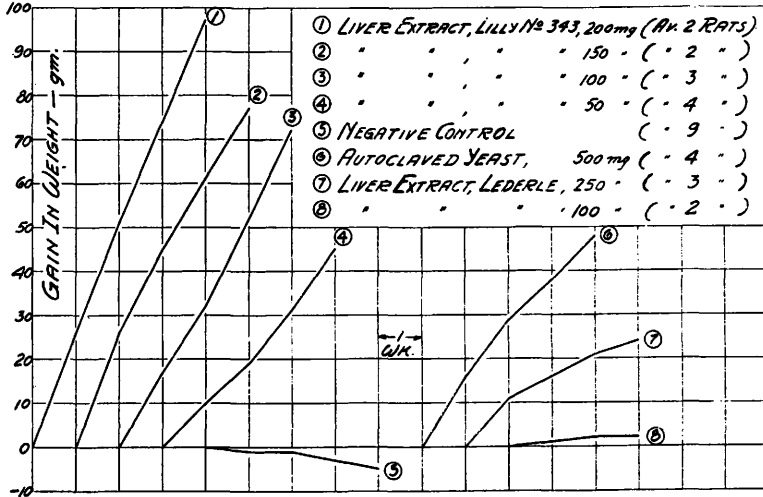
A total of 55 animals were employed for the experiments. The

¹ Guha, B. C., *Biochem. J.*, 1931, **25**, 945.

² West, R., and Howe, M., *J. Clin. Inv.*, 1930, **9**, 1.

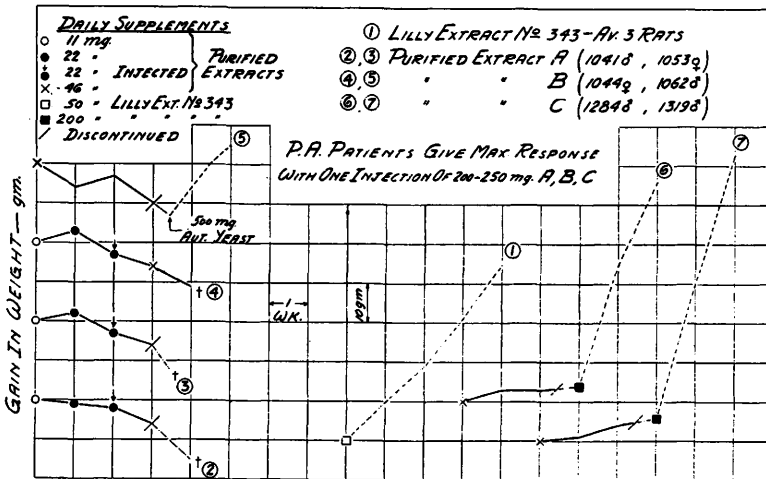
³ Stucky, C. J., and Brand, E., *Proc. Soc. Exp. Biol. and Med.*, 1933, **30**, 1404.

depletion period usually lasted 3 to 4 weeks. The liver preparations were then administered as supplements to the basal G-deficient ration. The following groups of rats were employed: (1) animals which received various quantities of the liver preparations; (2) negative controls which received the basal G-deficient diet only; (3) positive controls which received the basal ration supplemented with



VITAMIN G POTENCY OF LIVER EXTRACTS.

FIG. 1.



VITAMIN G POTENCY OF PURIFIED LIVER EXTRACTS

FIG. 2.

500 mg. of autoclaved yeast* daily. The experimental period lasted 3 to 5 weeks, the purified P.A. factor being administered orally and parenterally.

Typical data are presented in the charts. It may be seen that while 50 mg. daily of the crude liver extract gave adequate growth, 46 mg. of the purified P.A. material orally failed to support growth, nor did parenteral administration give better results. The addition of autoclaved yeast or crude liver extract was followed by immediate weight gain. Another liver extract (Lederle) presumably adequate in the antianemic factor, contained less vitamin G.

In addition to the data depicted in the graphs, assays for the vitamin G factor were performed with various fractions obtained during the preparation of the purified P.A. factor. The results were negative, which indicated that the vitamin G potency was lost during the initial stages of the purification.

It is hoped that the possible relationship between vitamin G and antianemic material from liver may be clarified by the reported preparation of nitrogen-containing fluorescent, pigment-like substances with a high degree of vitamin G activity.⁴

Summary. Purified liver extracts (P.A. factor) prepared from the Lilly extract No. 343 and of known potency in pernicious anemia were tested on vitamin G deficient rats. The extracts failed to induce growth in such animals. These experiments indicate that a purified preparation of the P.A. factor is lacking in vitamin G as tested by the growth method.

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Properties of Heated Chick Embryo Extracts When Activated.

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The writer has found that addition of one volume rabbit plasma to 60-100 volumes chick embryo extract greatly increases the coagulative power of the extract¹; that the increase in power is due to

* The yeast was obtained through the courtesy of Mr. Leo Wallerstein of the Wallerstein Laboratories, New York, N. Y.

⁴ Kuhn, R., György, P., and Wagner-Jauregg, T., *Ber. d. chem. Gesell.*, 1933, **66**, 317.

¹ King, Joseph T., *Arch. f. Exp. Zellforsch.*, 1931, **10**, 467.