vitamin B and vitamin G preparations the weaning weights were low; whereas, on the higher levels the weights of the young at the time of weaning were much greater. The weights of the young were less and the mortality greater than those obtained by supplementing natural foods with the vitamin G preparation. This indicates that another factor or factors aside from vitamins B and G is necessary for lactation. The preparations were fed at levels of 6 to 24 times the amount required for normal growth. The animals grew and reproduced normally but failed to rear their young. The unknown substance responsible for the favorable effects on lactation is not inorganic in character.

8134 P

Blood Loss During Normal Menstruation.*

ADELAIDE P. BARER, W. M. FOWLER, AND C. W. BALDRIDGE.

From the Department of Internal Medicine, State University of Iowa, Iowa City.

During the course of iron balance studies on patients with hypochromic anemia, the amount of blood lost during menstruation was determined on several occasions. The figures obtained were surprisingly high but since no uniformity of opinion exists as to the normal menstrual loss an analysis of this was made on 50 women. The individuals selected were for the most part members of the hospital staff whose ages ranged from 19 to 43 years, who had no known menstrual disorders and whose blood hemoglobin was at least 75% of normal (10.2 gm. per 100 cc.).

Cellulo cotton pads were used in most cases although in a few instances a vaginal cup was utilized for the collection of the menstrual flow. This was analyzed for iron by a modification of the method of Reis and Chakmakjian,[1] and the result interpreted in terms of grams of hemoglobin on the assumption that this iron was derived entirely from hemoglobin.

Blood hemoglobin determinations were made on all subjects several days after the menstrual period to avoid variations that may occur because of changes in the water balance and the consequent hydremia. These values ranged from 10.200 to 13.190 gm. per 100 cc. of blood.

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1 Reis, F., and Chakmakjian, H. H., *J. Biol. Chem.*, 1931, **92**, 59.

The iron loss in these 50 individuals with supposedly normal menstrual periods varied from 3.84 to 78.4 mg. per period. This represents from 1.146 to 23.403 gm. of hemoglobin. If this is expressed in terms of cubic centimeters of blood, calculated in each instance from the patient's own hemoglobin content in grams per 100 cc., it represents a loss of 9.39 to 207.28 cc. with a mean of 36.7 cc. of blood per menstrual period. Much larger amounts of iron and hemoglobin were lost by the patients with hypochromic anemia even though they considered their menstrual periods to be entirely normal.

The loss of 78.4 mg. of iron at each menstrual period would necessitate a daily iron retention of approximately 2.8 mg. to replace that lost by menstruation alone. The results of iron balance studies, which are to be reported later, suggest that such a high iron retention is distinctly unusual with the average dietary intake of iron. This may explain the development of certain cases of idiopathic hypochromic anemia.

8135 C

Effect of Low Carbohydrate Diet on Glucose Tolerance in Spontaneous Hypoglycemia.

B. B. CLARK AND J. A. GREENE.

From the Laboratory of Pathological Chemistry and Department of Internal Medicine, State University of Iowa Medical School, Iowa City.

Since it was first pointed out by Gibson[1] that hypoglycemic symptoms not artificially produced may constitute a definite clinical entity, there has arisen considerable controversy as to the treatment of spontaneous hypoglycemia (or "hyperinsulinism"). Such views are that medical therapy is valueless and that relief of symptoms can be obtained only by surgical removal of a portion of the pancreas (or tumor of the pancreas[2]), frequent feedings of carbohydrates are indicated,[3] and that the diet should be low in carbohydrate and high in fat.[4] One investigator has suggested the use of insulin

[1] Gibson, R. B., and Larimer, R. N., *J. Am. Med. Assn.*, 1924, **82**, 468.

[2] Wilder, R. M., *International Clin.*, 1933, **2**, 1.

[3] Gammon, G. D., and Tenery, W. C., *Arch. Int. Med.*, 1931, **47**, 829.

[4] Harris, Seale, *J. Am. Med. Assn.*, 1933, **101**, 1958.