

Pflueger method¹ used by Cori and Cori in their studies on "The Fate of Sugar in the Animal Body."² In the case of normal animals and those animals whose livers contained appreciable amounts of glycogen, the Folin-Wu method³ of determining apparent sugars was used. In cases where the livers contained very small amounts of glycogen we substituted the Folin micro-ferricyanide method.⁴ The glycogen content of the livers was expressed in terms of glucose, *i. e.*, total reducing sugars.

It was found that the glycogen content of the livers of the nurslings on maternal stock diet No. 1,⁵ which is the control ration, varied from 1300 to 1600 mg. of glucose per 100 gm. of liver. On the other hand, the glycogen content of the livers of the polynuritic nursing young⁶ showed a range of 20 to 110 mg. of glucose per 100 gm. of liver. Expressed per 100 gm. of body weight, the glycogen content of the control animals showed a range of 45 to 56 mg. of glucose; whereas, the pathological group showed a range of 0.8 to 6.2 mg. of glucose. The marked decrease in the glycogen content of the liver is the most pronounced chemical change we have found to date in nursing young suffering from uncomplicated vitamin B deficiency.

5011

Vitamin Requirements of Nursing Young. X. Effect of a Deficiency of Vitamin B Complex and Vitamin B on Histological Changes in Liver of Nursing Young of Albino Rat.*

BARNETT SURE, DOROTHY J. WALKER AND HARVEY S. THATCHER.

From the Laboratory of Agricultural Chemistry, University of Arkansas, Fayetteville, and the Laboratory of Medical Pathology, University of Arkansas, Little Rock.

A total of 303 animals were employed for this work, 156 on control diets, 67 on a maternal diet deficient in the vitamin B complex,¹

¹ Pflueger, E., in Abderhalden, E., *Handbuch der biochemischen arbeitsmethoden*, Berlin and Vienna, 1910, ii, 1070.

² Cori, C. F., and Cori, G. T., *J. Biol. Chem.*, 1926, lxx, 557.

³ Folin, O., and Wu, H., *J. Biol. Chem.*, 1920, xli, 367.

⁴ Folin, O., *J. Biol. Chem.*, 1928, lxxxi, 231.

⁵ Sure, B., *J. Biol. Chem.*, 1926, lxix, 65.

⁶ Sure, B., and Smith, M. E., *J. Nutr.*, 1929, i, 537.

* Research paper No. 144, Journal Series, University of Arkansas.

¹ Sure, B., *J. Nutr.*, 1928, i, 139.

and 80 on a maternal diet deficient in vitamin B.² The fixatives used were Bouins and formalin. A number of tissues were stained with Delafield's hematoxylin and eosin while others were stained with iron alum hematoxylin and eosin. Frozen sections were also made of a representative number of the livers and stained with Sudan III.

Compared with the controls, the majority of the nursing young whose mothers received a diet deficient in the vitamin B complex showed fatty metamorphosis of the liver, as indicated by marked vacuolation. The fact that there was an actual increase in the weights of the livers of such pathological nurslings as well as considerable increase in the weight of liver in proportion to the body weight of such nursing young, suggests that the pathological condition encountered is fatty infiltration rather than fatty degeneration. On the other hand, the nursing young suffering from uncomplicated vitamin B deficiency showed no demonstrable fatty metamorphosis in the liver.

5012

Experimental Production of Deciduomata in the Rat by an Extract of the Corpus Luteum.

W. O. NELSON AND J. J. PFIFFNER. (Introduced by E. Ponder.)

From New York University and the Biological Laboratory, Cold Spring Harbor.

That Loeb's hypothesis concerning the production of deciduomata in experimental animals is correct has become increasingly apparent. He concluded following his work upon guinea pigs¹ that this reaction depends upon the continued presence of the hormone of the corpus luteum. Frank² showed that this phenomenon can be induced in lactating rats by the stimulation of the uterine endometrium at the proper time following parturition. Long and Evans³ confirmed and extended his findings. In their work pseudo-pregnant as well as lactating animals were employed. They also introduced a convenient and non-traumatic method of uterine stimulation, *viz.*, the insertion of silk threads through the lumen of the

² Sure, B., and Smith, M. E., *J. Nutr.*, 1929, i, 537.

¹ Loeb, L., *J. Am. Med. Assn.*, 1909, liii, 1471.

² Frank, R. T., *Surg. Gyn. and Obst.*, 1911, xiii, 36.

³ Long, J. A., and Evans, H. E., *Memoirs of Univ. of Calif.*, 1922, vi, 84.