

administration. During the 17 day period the weight was reduced from 100.2 to 86.0 kg.

Upon cessation of the administration of the diuretics the ascites returned. It is questionable how great a collateral circulation was established by operation. However, the postoperative use of novasurol and ammonium chloride was found valuable as a substitute for the customary paracentesis.

4142

Vitamin Requirements of Nursing Young (*Mus norvegicus albinus*). V. Hypoglycemia in Nursing Young Suffering from Vitamin B Deficiency.*

BARNETT SURE AND MARGARET ELIZABETH SMITH.

From the Departments of Agricultural Chemistry and Home Economics, University of Arkansas, Fayetteville.

Recently Sure, Kik and Walker¹ have reported anhydremia associated with disturbance in hematopoietic function in nursing young of the albino rat suffering from vitamin B₁ deficiency. For the past six months we have been engaged in a study of the effect of a deficiency of the vitamin B complex† of the lactating mother on the total blood sugar content of the nursing young. Although the results of our work are not yet complete, we think it of interest at this time to report on one pathological litter compared with a control litter. The mother of the control litter received our vitamin B deficient ration No. 1009² and in addition a separate administration daily of 1000 mg. of Northwestern dehydrated yeast from the time the young were 5 days old. The maternal diet of the pathological litter consisted of the same ration No. 1009 but the mother received only 300 mgm. daily of the same yeast from the day the litter was born until the 21st day of lactation. At this time the first maintenance point of the litter was encountered. After several days slight growth followed, the daily dosage of yeast to the mother was

* Research Paper No. 67, Journal Series, University of Arkansas.

¹ Sure, B., Kik, M. C., and Walker, D. J., *Proc. Am. Soc. Biol. Chem.*, 1928, lxxviii, 18.

† The term "vitamin B" is used in this paper to signify the combination of the labile-antineuritic and the stable factors associated with the vitamin B complex, both of which are necessary for growth.

² Sure, B., *J. Biol. Chem.*, 1928, lxxvi, 676.

gradually reduced to 100 mg. In order to establish prolonged maintenance, the mother was later allowed, instead of the dehydrated yeast, a daily dosage of 20 mg. of one of our less potent yeast concentrates. The pathological condition of the young was then produced on a prolonged maintenance level.

The total blood sugar of the control group showed a definite increase during the nursing period, rising from approximately 100 mg. on the 15th day of lactation to approximately 130 mg. at weaning. In the pathological group there was a decrease in blood sugar, during the prolonged maintenance period, as follows: 19, 40, 24, 20, 22 and 24% respectively of total blood sugar for each animal.

4143

On the Pathological Relations Between Cancer and Tuberculosis.

RAYMOND PEARL.

From the Institute for Biological Research of the Johns Hopkins University, and the Statistical Department of the Johns Hopkins Hospital.

For some time past we have been engaged in a biometrical and experimental investigation of the relation between cancer and tuberculosis.* In the biometrical study there was first set up, by a critically adequate procedure, a case-for-case control series of autopsied patients, each one of whom was of the same sex, age and color (race) as one of the 816 persons autopsied in the Johns Hopkins Hospital and found to have carcinoma, sarcoma, or some other form of malignant tumor. The individuals in the control series did not have cancer or any other malignant tumor. With these malignant and non-malignant series of cases it was then shown that:

1. Active tuberculous lesions were found at autopsy in only 6.6% of 816 persons having malignant growths. On the other hand such tuberculous lesions were found in 16.3% of 816 persons without malignant tumors, but of the same race, sex, and age as the former group. Active tuberculous lesions therefore occurred over twice as frequently in the controls as they did in the malignant group in the present material taken as a whole.

2. Active tuberculous lesions occur 2.2 times more frequently among the controls of the carcinomatous than among those having carcinoma; whereas active tuberculous lesions occur 3.3 times more

* The biometrical results will be published in full in the *Am. J. of Hygiene*.