Microscopic examination of the thigh muscles revealed lesions similar to those described by other workers.[3, 4, 6] These lesions were not so extensive as those occurring in young rabbits with severe nutritional muscular dystrophy, a condition cured by vitamin E.[8]

Summary. Rats grown and maintained on a highly purified vitamin E-deficient diet developed paralysis of the rear legs accompanied by tremors and incoördination of the fore legs and head. Although cures could not be obtained, the administration of a vitamin E concentrate arrested the development of these symptoms and stimulated growth.

11367 P

A Test Proposed to Measure Vitamin B_1 Saturation in Humans.

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A test designed to measure the individual patient's saturation with respect to Vitamin B_1 would have a wide clinical application. Experiments have been carried out in an attempt to develop such a procedure. The validity of such a test depends upon, among other things, the accuracy of the method of assay for the Vitamin B_1. The assay methods fall into two categories—chemical and biological. The chemical methods on the whole are specifically for pure thiamin. Among the biological methods the Schultz, Atkins and Fry technic which employs the rate of fermentation of glucose by a yeast is the most suitable for clinical investigation. This method measures not only the thiamin but the pyrimidines as well. The pyrimidines present in the urine may be considered for practical purposes as originating from the members of the B complex. The actual test in its present form employed in this laboratory is summarized as follows:

Patients were injected with 1 mg of thiamin hydrochloride intramuscularly in the fasting state. The urine was collected for a 4-hour period following the injection. The Vitamin B_1 activity of this collected urine was assayed by means of the Schultz, Atkins and Fry yeast fermentation method. Fig. 1 shows the tabulation of the

8 Mackenzie, C. G., and McCollum, E. V., *J. Nutr.*, 1940, **19**, 345.

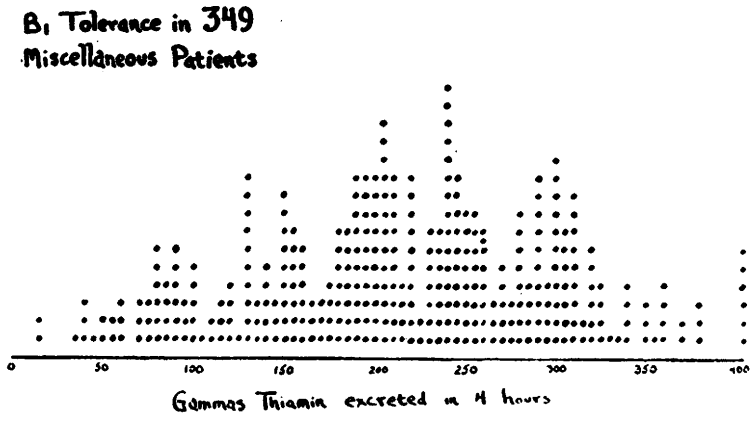

FIG. 1.

results of the test on 349 unselected patients. The distribution curve of the results indicates that an excretion of 180 gammas or more in the 4-hour period represents the average normal. Patients excreting less than 180 gammas may be considered as below average saturation.

This group of patients represents the population of hospitals and dispensaries and cannot be considered a representative cross section of the population. Fig. 2 shows the tolerance test on 35 normal, healthy students, instructors and physicians. Here it is seen that excretion values range higher. On the same figure are shown values of selected groups of patients suffering with gastro-intestinal diseases and another group in cardiac failure. The differences in range of excretion are more than significant.

Because of the known relation between carbohydrate metabolism and Vitamin B_1 a group of 132 patients with diabetes mellitus were subjected to the test. The distribution curve of the excretion values

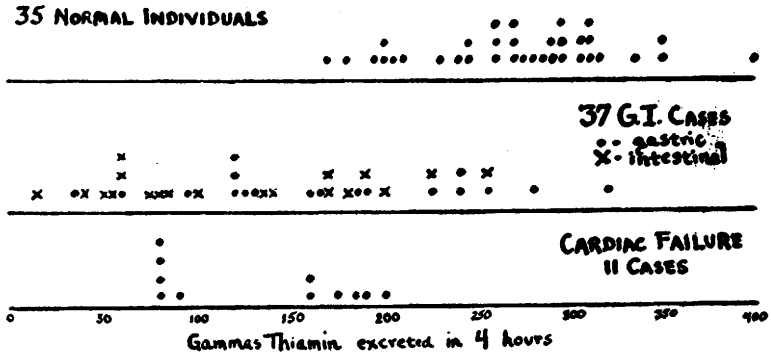

FIG. 2.

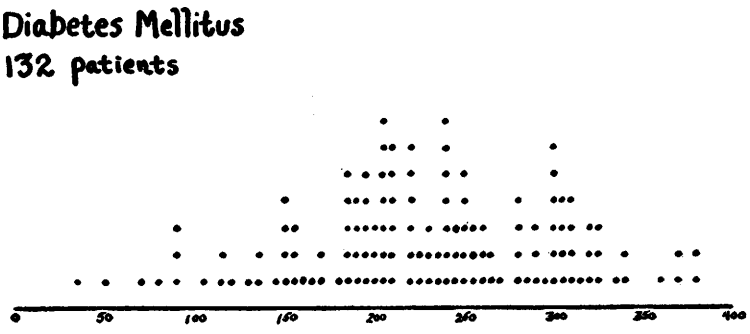

FIG. 3.

so closely parallels that of the larger unselected group of patients that one can infer no particular unsaturation of Vitamin B_1 in clinical diabetes mellitus.

11368

Menstrual Discharge of Women. I. Its Toxicity in Rats.*

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In an effort to find a factor to which the local processes resulting in menstruation might be attributable, 37 specimens of menstrual discharge, each varying from 30 to 120 cc in amount, donated by 5 normally menstruating, parous women, have been studied. They have been collected by means of soft rubber cups.† During collection each portion has been placed in the refrigerator immediately upon removal. For the most part, the experiments to be reported have been performed upon the whole specimen after pooling the various portions. For control experiments, whole venous blood, drawn during the first day of menstruation and citrated or mixed with sufficient distilled water to prevent clotting and kept in the refrigerator, has been used in similar or larger amounts.

Menstrual discharge has been found to be highly toxic to rats, their resistance being markedly affected by hormonal conditions.

* The Mrs. William Lowell Putnam Investigation of the Toxemias of Pregnancy, aided by grants from the Committee for Research in Problems of Sex, National Research Council.

† The Hy-Kup Distributors (National), Indianapolis, Indiana.