ent end point for the death of his animals than was used in the present experiments.

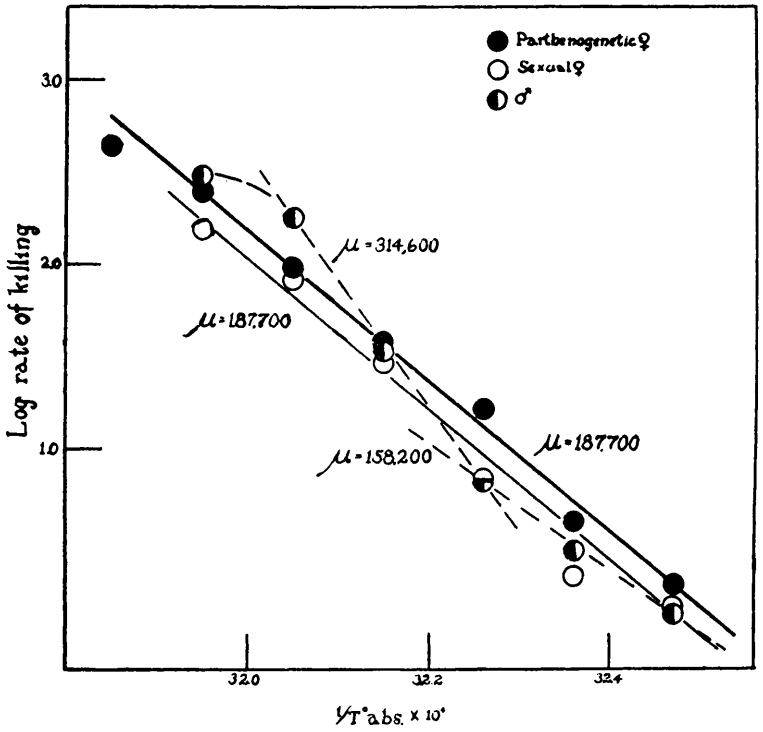

FIG. 1.

Logarithms of the rates of killing (see Table I, last column) of parthenogenetic females, sexual females, and males of *Daphnia magna* plotted against the reciprocals of the absolute temperatures. The temperatures Centigrade range from 35° to 41°. The values of the thermal increments (μ) are calculated from the equation given in the text.

4042

Nitrogen and Sulfur Metabolism of Diabetic Children.

GENEVIEVE STEARNS AND G. CLINTON KNOWLTON.
(Introduced by J. D. Boyd.)

From the Department of Pediatrics, State University of Iowa.

The excretion of nitrogen and sulfur in the urine of 36 diabetic children of from 2 to 15 years of age has been studied in an attempt to gain more information concerning the protein metabolism

of controlled diabetic children on diets high in protein. With a very few exceptions, these children were receiving approximately 2 gm. of protein per kilo body weight, the ratio of the gm. of nitrogen per gm. of sulfur in the different diets varying from 10.3 to 13.4. Data were collected during a total of 47 periods of 3 to 4 days each.

The N:S ratios of the urines approximate those of the diet rather closely (ranging from 10.9 to 16.6), with a definite tendency to be slightly higher. Children who were much underweight and were gaining rapidly showed the largest increases, while 4 rather fat, phlegmatic children showed urinary N:S ratios almost identical with those of the diets. Three adolescent girls, whose urinary N:S ratios were but slightly above the diet ratio, were kept on a lower protein diet (1 gm. per kilo) for about 3 months. At the end of this time the N balances were barely positive, but the N:S ratios of the urines were definitely increased.

These data have been interpreted as indicating a slight but definite tendency on the part of the growing child to retain a sulfur-rich protein for anabolic needs.

4043

Fat Absorption on High Fat Diets.

J. D. BOYD.

From the Department of Pediatrics, State University of Iowa.

The subjects of this study were 31 diabetic children, from 2½ to 15 years of age. Food with a caloric equivalent sufficient for full activity was provided, supplied chiefly as fat, with a potential fatty-acid: glucose weight ratio of 1½:1. In most instances, patients were aglycosuric. Three day collections were made under expert supervision, using the usual technique. In some instances the total fecal output was dried and finely ground before analysis; in others aliquot portions of the output, thoroughly mixed, were analyzed without preliminary drying. Total fat was determined according to a modification of a method suggested by Eckstein[1] as most suitable for the purpose. In general it consists of prolonged dehydration and extraction with successive quantities of absolute alcohol, followed by chloroform. The combined extracts after

[1] Eckstein, H. C., personal communication.