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Diurnal Variation in Blood Sugar Level of the Rat.

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It has been the custom in this laboratory to begin all blood sugar experiments on the rat at 9:00 A. M. This procedure has been adopted because it has never been shown whether or not the blood sugar level of the rat varies or remains constant throughout the day. Scott[1] has shown that "when other conditions are maintained as constant as is practicable, the blood sugar in the rabbit is independent of the time of day, at least during the ordinary working hours." It is the purpose of this paper to show the relative blood sugar levels of rats throughout the day.

A total of 200 observations were made on 192 normal-fed rats. The animals were fed *ad libitum* to the time of removal from their cages for bleeding. Approximately 50 observations were made at each of the following hours: 9:00 A. M., 12:00 noon, 3:00 P. M., and 6:00 P. M. The Somogyi micro-method,[2] a modification of the Shaffer-Hartmann method,[3] was used.

The entire experiment was completed in 7 days thus reducing the probability of interference of environmental changes or of changes in the conditions of the animals. This is reflected in the constancy of the results as shown by the very small deviations. These results justify the conclusion that the blood sugar level of the rat is independent of the time of day, at least during the ordinary working hours.

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[1] Scott, E. L., *Arch. Int. Med.*, 1929, **43**, 393.

[2] Somogyi, M., *J. Biol. Chem.*, 1926, **70**, 599.

[3] Shaffer and Hartmann, *J. Biol. Chem.*, 1920, **45**, 349.