

bladder immediately afterwards showed the typical low cholic acid ratio (No. 8C). In acute cholecystitis the percentage of cholic acid was always much lower in the gall bladder bile (No. 8E) than in the duodenal drainage "A" bile (No. 8F, Table).

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Effect of Light on Reproductive Cycle of *Peromyscus leucopus noveboracensis*.

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Bissonnette¹ apparently eliminated exercise as a causative factor in advancing the breeding season of his starlings, showing that such an advance was due to the effect of the added light acting on the birds more directly. The same investigator^{2, 3} has reported that artificial light added to normal light has a similar effect on the ferret. These mammals showed gametogenesis, active development of reproductive organs, libido, and oestrus several weeks in advance of the controls.

A similar study is under way on the white-footed mouse, *Peromyscus leucopus noveboracensis* (Fischer). Credit is due Dr. Alvalyn E. Woodward for her advice on the conduct of this study.

Animals, trapped locally during the winter of 1934-35, were used, along with their mature offspring. Two groups were kept in a large basement room. Room conditions of natural light, heat, humidity, and ventilation were the same for both groups. The mice were kept in wire cages, usually in pairs. The diet was that of Dice.⁴

Group A, consisting of 35 animals, was given about 13 hours daily illumination from a General Electric Sunlamp Type S-1, 6 feet from nearest cages, starting September 23, 1935. The light was gradually increased up to 18 hours daily by December 26. Group B, the control group, consisting of 28 animals, was treated with an electric radiant heater to compensate for the heating effect of the lamp on Group A.

¹ Bissonnette, T. H., *J. Exp. Zool.*, 1931, **58**, 281.

² Bissonnette, T. H., *Proc. Roy. Soc., B.*, 1932, **110**, 322.

³ Bissonnette, T. H. *Biol. Bull.*, 1935, **68**, 300.

⁴ Dice, L. R., *J. Mammal.*, 1934, **15**, 160.

The criteria for establishing the sexual season were descended or enlarged testes and open vagina. The testes are too small to palpate and the vagina is completely closed during anoestrus. The percentages of individuals of each group in sexual season at the indicated dates are plotted on the accompanying graph.

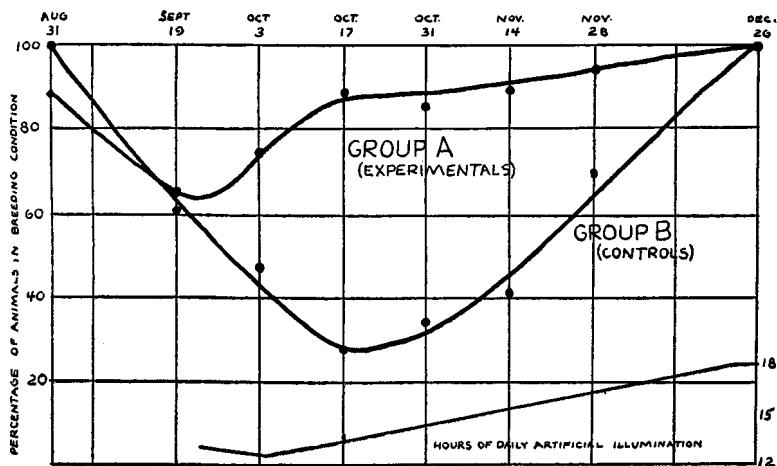


FIG. 1.

Graph showing the percentage of mice of each group in sexual season at the indicated dates, and hours of daily artificial illumination on Group A.

Group A was about 6 to 8 weeks ahead of the control group in advancing into the sexual season. During the course of the experiment, 4 pairs of mice in Group A delivered 5 litters while there were no deliveries in the control group. It would seem from these results that there is some relationship between light and the reproductive cycle of the form studied. Food consumption and body activity apparently increase, while weights decrease slightly as the sexual season comes on. Average body weights of the 2 groups were very nearly equal.

This experiment is being repeated with lower and better controlled temperatures, with distinction between intensity and duration of light, with more frequent examination of the animals, with consideration to food consumption, body weight, and activity of the individuals, and with histological studies.