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Loss of Sensitivity to the Gonadotropic Hormone of the Hypophysis.

H. SELYE, J. B. COLLIP AND D. L. THOMSON.

From the Department of Biochemistry, McGill University, Montreal.

The continued administration of the anterior pituitary-like hormone of pregnancy urine (A.P.L.) to virgin rats leads at first to a great increase in the size of the ovaries; but after some weeks the animals appear to become insensitive and in spite of continued treatment the weight of the ovaries is found to decrease to normal or even sub-normal levels. We have previously shown¹ that such "insensitive" rats will still react to gonad-stimulating extracts prepared from the hypophysis, showing renewed increase in the weight of the ovaries with definite signs of luteinization.

Eight female rats, initially 21 days old, received implants of 1-1½ rat hypophyses daily for 68 days. At the end of this period the ovaries were found, on laparotomy, to be normal or sub-normal in size. Single ovaries removed from 2 animals weighed 24 and 9 mg. respectively; one animal was sacrificed, and its ovaries were found to weigh 8.5 mg. each. The 7 survivors were then treated with 250 units of A.P.L. daily for 13 days, the implantation of hypophyses being continued. The animals were then killed, and the ovaries were found to be greatly enlarged, each ovary weighing from 119 to 198 mg. We conclude that rats treated with pituitary implants eventually lose their sensitivity to the hypophyseal gonadotropic hormone, but remain sensitive to the anterior pituitary-like hormone of pregnancy urine. The experiment may also be considered to provide further evidence that these 2 gonad-stimulating substances are not identical.

¹ Selye, Collip and Thomson, *Proc. Soc. Exp. Biol. and Med.*, 1934, **31**, 487.