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Mating Behavior Induced in Hypophysectomized Female Rats by Injected Estrogen.*

JOSEPHINE BALL. (Introduced by R. K. Burns, Jr.)

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Five hypophysectomized female rats were given subcutaneous injections of 250 I.U. Progynon-B Schering[†] (estradiol benzoate) on 5 successive days beginning one week after operation. All of them accepted vigorously aggressive males after a latent period of 2 to 3 days. This is only a low degree of sexual excitability¹ but no higher degrees have been elicited in this laboratory with estrogen alone in castrated females of this strain of rats.²

Examination of the sella with a binocular microscope revealed no residual tissue fragments in 3 of these animals. In one of the others there was a little unidentified material in this space and in the fifth animal a remnant of the pituitary gland judged to be posterior lobe was found. The records of the 2 latter were discarded.

In at least 3 of these rats, then, heat behavior had been induced in the absence of anterior lobe tissue. These positive cases render untenable the hypothesis that estrogens may produce heat behavior only indirectly by their effect on the pituitary as previously suggested³ on the basis of 3 negative cases. Because of the deleterious effect of hypophysectomy on the organism a negative response may be non-specific, whereas a positive response is conclusive. Furthermore, Astwood and Dempsey,⁴ have confirmed the above findings, adding many more cases as well as further data to this preliminary study of the interrelations of the hormones producing sex behavior.

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¹ Ball, J., *Comp. Psychol. Monog.*, 1937, **14**, 1.

² Ball, J., *J. Comp. Psychol.*, 1939, **28**, 273.

³ Ball, J., *PROC. SOC. EXP. BIOL. AND MED.*, 1936, **35**, 416.

⁴ Astwood, E. B., and Dempsey, E. W., personal communication.