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"Castration Cells" in Anterior Hypophysis of Spayed Rat Following Prolonged Administration of Estrin.*

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The occurrence of a characteristic cell in the anterior lobe of the hypophysis of spayed animals has been recognized since the pioneer work of Fichera in 1904, and 2 important biological phenomena have recently been demonstrated accompanying this histological change. It has been found that implants of the anterior lobe of castrated rats are much more potent in inducing precocious maturity than those from normal animals,[1, 2] possibly due to a storage of the hormone by the castration cells.[2] It has also been found that the blood[3] and urine[4] of women after bilateral oophorectomy contains large amounts of an ovary-stimulating substance as determined by the Ascheim-Zondek test.

Since it has also been suggested that estrin (ovarian follicular hormone) has the power of inhibiting the ovary-stimulating action of the anterior hypophysis (Siegmund[5]; Mahnert[6]; Dahlberg and Akesson[7]; Meyer, Leonard, Hisaw and Martin[8]), it seemed of importance to determine if the constant administration of large amounts of estrin to spayed rats would influence the formation of the castration cells.

Two series of animals have been studied. (1) Seven adult female rats were spayed, and sacrificed 90 days later. During this time 4 of them were given subcutaneous injections of 5 rat units of estrin (Amniotin-Squibb) every third or fourth day, so that 3 received a total of 135 and one of 180 units. (2) Five adult fe-

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1 Engle, E. T., *Am. J. Physiol.*, 1929, **88**, 101.

2 Evans, H. M., and Simpson, M. E., *Am. J. Physiol.*, 1929, **89**, 371.

3 Fluhmann, C. F., *J. Am. Med. Assn.*, 1929, **93**, 672; *Am. J. Obstet. and Gynec.*, 1930, **20**, 1.

4 Zondek, B., *Klin. Wchnschr.*, 1930, **9**, 393.

5 Siegmund, H., *Zentrlbl. f. Gynaek.*, 1928, **52**, 1189.

6 Mahnert, A., *Zentrlbl. f. Gynaek.*, 1928, **52**, 1754.

7 Dahlberg, G., and Akesson, S., *Acta Obstet. Scand.*, 1930, **10**, 63.

8 Meyer, R. K., Leonard, S. L., Hisaw, F. L., and Martin, S. J., PROC. SOC. EXP. BIOL. AND MED., 1930, **27**, 702.

male rats, littermates, 166 days old, were spayed. Three were given subcutaneous injections of 5 to 10 rat units of estrin (Amniotin-Squibb) every second day until each had received a total of 215, 220, and 225 rat units respectively. They were sacrificed 77 days after castration.

In each instance serial sections of the anterior lobe were studied, and it was found that there was no demonstrable difference in the character or number of "castration cells" between the control and experimental animals. It would seem, therefore, that the absence of estrin stimulation in castrates is not *per se* the factor concerned in the formation of castration cells.