3463

## Induction of Precocious Sexual Maturity in the Mouse by Daily Pituitary Homeo and Heterotransplants.*

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*Homeotransplants.* Sexual maturity is induced in the female mouse by daily pituitary homeotransplants even more rapidly than in the rat. In the rat 8 to 10 daily transplantations are required to bring about sexual maturity at the weaning date (22nd day of life); if the transplants are commenced at about the weaning date, 4 to 6 transplantations only are necessary.[1] In the mouse 3 transplantations made on successive days induced sexual maturity whether begun at the weaning date (20th day of life) or 3 days previously. The structural and physiological changes resulting from this treatment are those characteristic of normal sexual maturity. The vaginal canal is established and contains the cells typical of oestrus, the uterus is engorged, and many large follicles and corpora are present.

In the immature male mouse, as with the male rat, the response of the genital system to the pituitary transplants is much slower than with the female. Four daily transplantations into males varying from 18 to 22 days of age give no, or only a slight increase in size of the testes, and but a small increase (about 25 per cent) in the remainder of the genital system. When the transplants are given even for 17 successive days the testes do not show the marked weight increase over the untreated control that is shown by the remainder of the genital tract, the latter being some 10 times heavier than that of the controls. Even though the testes show, as compared with the rest of the genital system, only a relatively small increase in weight from the transplantations, nevertheless it appears that the implanted pituitary affects the genital tract through the intermediary of the testes, for in their absence no growth response results in the remainder of the genital system.

*Heterotransplants.* Pituitary transplants from the rat, guinea pig and rabbit also hasten sexual maturity in the mouse. If begun in female mice at the age of 18 days, 3 daily transplants from the adult rat or guinea pig will bring about sexual maturity with the

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same structural changes as in the homeotransplants. Transplantations of the rabbit pituitary accelerates sexual maturity even more rapidly, the genital system being mature after two transplantations begun in animals 17 days old. In two such animals only 36 hours elapsed between the first transplantation and the opening of the vagina. When only one half the rabbit pituitary was transplanted, however, the usual three daily transplantations were necessary to induce sexual maturity, suggesting that the rapidity of maturing is correlated with the amount of pituitary tissue implanted.

The anterior, not the posterior, lobe of the pituitary, when transplanted, hastens sexual maturity.

*Mating.* Physiologically as well as structurally, the changes characteristic of sexual maturity are brought about in the mouse by the pituitary transplants many days before they would normally appear. This is shown by the fact that these precociously developed animals will mate. In two mice receiving rabbit pituitary transplants, the only two thus far tested, mating, as evidenced by the presence of a plug and sperm in the vagina, took place on the 19th day of life, and within 48 hours after the first pituitary transplantation had been made.

[1] Smith, P. E., PROC. SOC. EXP. BIOL. AND MED., 1926, xxiv, 131-132; *Am. J. Physiol.*, 1927, lxxix, 114-125.

3464

## The Regeneration of Rodent Peridental Membrane.*

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The work[1, 2] in which one of us (W. C. F.) has participated indicates that a certain degree of repair of peridental fibrous tissue in man may follow careful treatment of the pyorrheal pocket. Many points regarding the sequence of events in regeneration of peridental membrane, however, were left without explanation. Thus, it was decided to examine the possibilities of repair of this peridental structure in the experimental animal.

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