provided the recipients have not been thyroidectomized.[1] On the other hand, as many as 200 (about 1600 mg.) adult male rat hypophyses implanted into intact rats produced no adrenal enlargement whatsoever; however, 350 whole glands administered to one rat did induce adrenal hypertrophy. Preliminary work indicates that adrenalectomy greatly increases the interrenotropic capacity of rat pituitaries, which, as we have just seen, is normally very low compared with the thyrotropic content.

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Sex Comparison of Gonadotropic Content of Anterior Hypophyses from Rats Before and After Puberty.

MORVYTH MC QUEEN-WILLIAMS. (Introduced by Herbert M. Evans.)

From the Anatomical Laboratory, University of California.

One hundred and eleven immature female rats (Table I) were each implanted intramuscularly with 2 to 10 (usually 7) anterior pituitaries from male or female rats of 5 main age groups. In parentheses will be given the average ovarian weight induced by each group when implants of 7 hypophyses were made.

18-23 *days:* Female rat pituitaries are very potent (73 mg.), while the level of gonadotropic hormone is much lower in male hypophyses (27 mg.).

27-30 *days:* Female glands still show a high hormonal content (88 mg.). A prepubertal rise in gonad-stimulating capacity has taken place in the male pituitaries (73 mg.).

35-38 *days:* A sudden prepubertal drop in the amount of hormone has occurred in both male (29 mg.) and female (32 mg.) hypophyses. Note that although the pituitaries are heavier, they have lost two-thirds of their potency in the period of one week.

42-44 *days:* Male remains the same, but female pituitary potency has decreased. More than half the female rats in this group had just matured.

Over 4 *months:* Adult female hypophyses cause but slight ovarian enlargement (25 mg.) and rarely corpora in the immature recipients, whereas male pituitaries induce ovaries 3½ times as heavy (84 mg.), which is in accord with the work of Evans and Simpson.

[1] McQueen-Williams, M., PROC. SOC. EXP. BIOL. AND MED., 1934, **32**, 296.

TABLE I.
Age and Sex Differences in Gonadotropic Potency of Rat (Long-Evans) Pituitaries.

	Donors (never injected or mated)		Rat Pituitaries implanted into each recipient		Recipients (24-day ♀ rats)	
Age (days)	Sex	Aver. wt. 2 Gonads (mg.)	Total wt. (mg.)	No.	Aver. wt. 2 Ovaries (mg.)	No.
18-21	♀	9.9	18.5	7	74	7
22-23	♀	15.3	19.5	7	71	4
27-28	♀	16.1	22.2	7	90	7
27-29	♀	—	23.0	9	83	1
28	♀	—	16.0	6	73	1
28-29	♀	18.6	22.8	7	84	4
33-35	♀	—	18.0	6	21	1
36-37	♀	21.5	30.5	7	32	4
42-44	♀	29.7	36.4	7	25	7
4-10 mos.	♀	58.4	80.1	7	25	4
7 "	♀	—	—	6	27	12
7 "	♀	—	—	5	21	3
21-23	♂	221.0	17.1	7	27	6
23	♂	—	—	5	23	4
28-30	♂	504.0	23.1	7	73	6
31	♂	—	—	8	90	3
35-38	♂	627.4	32.7	7	29	6
44	♂	—	—	5	23	3
44	♂	—	—	10	54	1
4-6 mos.	♂	3000.0	64.8	7	84	7
7 "	♂	—	—	2	33	20

Swezy[1] has already mentioned my finding of the prepubertal fall, which led me to a series of further experiments on hypophysectomized rats. She also reported that, according to my experiments, hypophyses from male rats 1-13 days old produced no appreciable effect on the gonads or seminal vesicles of hypophysectomized male rats, but that by day 21 the male pituitary had attained a high potency, somewhat greater than that of the adult male hypophysis, per unit of weight, when tested on hypophysectomized rats. The present communication indicates that at 28-31 days the male pituitary reaches its *highest potency*, at least when tested on immature female rats. 18-28 day female hypophyses are equal to the male at its highest. After the prepubertal drop, the female pituitary steadily declines in its capacity to induce large ovaries in immature recipients, but the male later regains most of its former potency.

[1] Swezy, O., *Endocrinol.*, 1934, **18**, 619.