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1. Effect of Placental Extract on Mammary Glands of Male Guinea Pigs.*

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Although considerable work has been centered upon the influence of placental hormone upon secondary sexual characters in the female, particularly the rabbit and the guinea pig, little attention has been directed toward its possible effects upon those of the male. Hermann[1] states briefly that he induced development of the mammary glands in the young male rabbit, through injection of the "active substance" of corpus luteum and of placenta, even to the extent of producing milk secretion, and he concludes that this activating substance is of powerful influence in the formation of specific sex characters. No evidence is offered, however, in support of his statements, nor are any particulars of the experiments given. Fellner[2] reports in somewhat more detail 2 cases of a similar nature in young rabbits, in which a slight degree of hypertrophy was induced but, unlike Herrmann, he was unable to produce a secretion of milk.

In connection with some work with the placental hormone, 4 adult guinea pigs were castrated and injected twice daily with ½ cc. doses of human placental extract (furnished through the courtesy of Parke Davis & Co., Detroit, under the trade name of "Estrogen"): the total daily dosage amounting to 20-25 rat units. Three control castrates were given equal amounts of normal saline.

After 8 days of extract injection, a swelling of the mammary regions became noticeable; the nipples increased in size and the surrounding areolar areas assumed a turgescent appearance. This hypertrophy continued steadily over a period of some 3 weeks, after which time continued injections produced no further effect. The hypertrophied glands, together with controls, were removed, photographed *in toto*, and sections were made of nipples and of glandular tissue. In the injected animals the nipples displayed a marked hypertrophy, evidenced particularly by the epithelium and by a thickening of the stratum corneum, there being an increase to approximately 3 times that of the controls. The glandular structures, extremely small and scanty in the untreated male, increased in proportion through a decided growth and branching of ducts, through growth of the alveoli, and through widening of the lumina. This

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held true also for the lobules, although there appeared to be no increase in their actual number. There was evidence of active secretion as indicated by the presence of colostrum corpuscles and what appears to be milk.

[1] Herrmann, E., *Monatsschr. f. Geburtsh. u. Gynak.*, 1915, xli. 1.
[2] Fellner, O., *Arch. f. Gynak.*, 1913, c, 641.

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Effect of Bilateral Nephrectomy Upon the Acid-Base Equilibrium of Dogs.*

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For several years the senior writer and his students have been studying the effect of bilateral adrenal extirpation in cats and dogs and reached the conclusion that one of the train of causes resulting in death from adrenal ablation is acid intoxication.[1, 2, 3, 4] As a result of our experiments the hypothesis was advanced that the adrenal cortex secretes a hormone which in some manner assists in maintaining the normal functioning of the kidney. We were interested in the fact that the type of acidosis which appears during adrenal insufficiency is similar to that occurring in uremia. As a further means of testing the idea whether or not the kidney is involved in adrenal insufficiency the present writers undertook to make a careful comparison of the symptoms and blood findings occurring in adrenal insufficiency with those which follow kidney extirpation.

Large, well nourished dogs were employed for the kidney work —the average weight being 18-20 kilos. The right kidney was extirpated and after a 7 to 10 day interval the left kidney was removed. Animals so operated generally remain normal for several days before untoward symptoms develop. The unilaterally nephrectomized dogs were bled for CO_2 capacity, CO_2 content, pH, phosphorus, sulfur, chlorides, sugar and urea. Later when symptoms of renal insufficiency appeared the animals were bled at various times.

The first symptoms noted were anorexia and lassitude, the animals appearing normal otherwise. Later they vomited considerably, refused all food and had to be fed daily 200-400 cc. of milk by stomach tube. Weakness of the hind limbs appeared, drowsiness

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