into the uterus produced fibromyomatous tumors in 9 out of 12 guinea pigs (75%) after intervals varying from 32 to 150 days. Estrone in the same concentration did not produce tumors in 2 animals. From the findings made in 2 additional animals, it appears that androgen may have a tendency to limit the extent to which the estrogen is able to produce these tumors.

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11960 P

Androsterone Effect on Pituitary and Mammary Gland.*

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Two estrogens, estrone and estradiol benzoate,[1] and one androgen, testosterone propionate,[2] have been shown to augment the lactogen content of the rat pituitary gland. These substances are likewise capable of inducing mammary gland growth. The administration of androsterone,[3, 4] however, has produced no detectable growth of the rat mammary gland. It was, therefore, of much interest to determine the influence of androsterone on the lactogen content of the pituitary gland.

Thirty sexually mature rats were ovariectomized and paired on the basis of body weight. One of each pair was injected subcu-

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1 Reece, R. P., and Turner, C. W., *Mo. Agr. Exp. Sta. Res. Bul.*, 1937, 266.

2 Reece, R. P., and Mixner, J. P., PROC. SOC. EXP. BIOL. AND MED., 1939, **40**, 66.

3 Nelson, W. O., and Gallagher, T. F., *Science*, 1936, **84**, 230.

4 Nelson, W. O., and Merckel, C. G., PROC. SOC. EXP. BIOL. AND MED., 1937, **36**, 823.

taneously daily for 15 days with 200 γ of androsterone.† The other one of each pair received no treatment. Control and experimental animals were sacrificed on the 16th day of the experiment. Mammary glands from both groups were removed and studied as whole mounts. The pituitary glands were removed, weighed, and assayed for their lactogen content by injecting the suspended tissue intradermally over the crop glands of common pigeons. One-sixth of a control pituitary gland was injected (divided into 4 daily doses) over the right crop glands of 2 pigeons and one-sixth over the left crop glands of 2 additional pigeons. An equal amount of experimental pituitary tissue was injected over the left crop glands of the first pair of pigeons and one-sixth over the right crop glands of the second pair of pigeons.

The mean difference of the individual comparisons of the weights of the pituitary glands was not significant. The lactogen assay results revealed that 8 of the pituitaries from the injected rats contained more lactogen than did the glands from control rats, 2 were equal to, and 5 contained less lactogen. The mean difference of the lactogen content of the pituitary glands was not significant. At the time of sacrifice the mean difference of the body weights was significant, the control animals weighing more than the injected animals. The mammary glands of the control and experimental rats were similar in appearance, involutionary changes being observed in both groups of glands.

Conclusions. The daily administration of 200 γ of androsterone for 15 days into sexually mature spayed rats caused no significant change either in pituitary weight or pituitary lactogen content and produced no detectable growth of the mammary glands.

11961 P

Use of Helium for Determination of Pulmonary Capacity.

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Hydrogen has been used for the determination of the pulmonary

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