days after castration; 26 rats, 36 days after castration; 6 rats, 27 days after castration.

To facilitate graphic presentation of the data, the weight of the gland in milligrams was divided by the weight of the rat in grams and this factor multiplied by a constant. The result was designated as F K.

There was a slight variation in the experimental group as a result of variation of the dosage. This was not marked but the tendency seemed to indicate that the increase in weight of pituitary and adrenals is not in direct proportion to the dose.

The pituitaries were increased in weight 29.7%, the adrenals 37.5%, and the thyroid 8.4% as compared with the non-injected control group.

Conclusion. Antuitrin "S" increased the weights of the pituitaries, adrenals and thyroid in castrate rats.

6972 C

Effect of Theelol on Weights of Pituitary, Adrenal and Thyroid.

GEORGE M. LEIBY. (Introduced by John C. Burch.)

From the Department of Obstetrics and Gynecology, Vanderbilt University, School of Medicine.

Theelol* and Theelin* differ in their quantitative estrogenic action, in their chemical structure and in their absorbability from the human intestine.[1, 2] The morphological changes, as evidenced by organ weights, produced by estrin in the form of Amniotin (E. R. Squibb & Co.) have been studied by Leonard, Meyer and Hisaw.[3] No such data is available for Theelol.

We present the variations in weights of the pituitary, thyroid and adrenal glands following injections of Theelol.

Eighteen sexually mature albino rats weighing between 160 to 220 gm. were oophorectomized. Twenty-two days were allowed to intervene before injections were begun. Theelol was furnished in

* We are grateful to Parke Davis & Co. for a generous supply of Theelol and Theelin.

[1] Thayer, S. A., Levin, L., and Doisy, E. A., *J. Biol. Chem.*, 1931, **91**, 655.

[2] Mazer, C., and Goldstein, L., Clinical Endocrinology of the Female. W. B. Saunders Co., Phila., 1932.

[3] Leonard, S. L., Meyer, R. K., Hisaw, F. L., *Endocrinology*, 1931, **15**, 17.

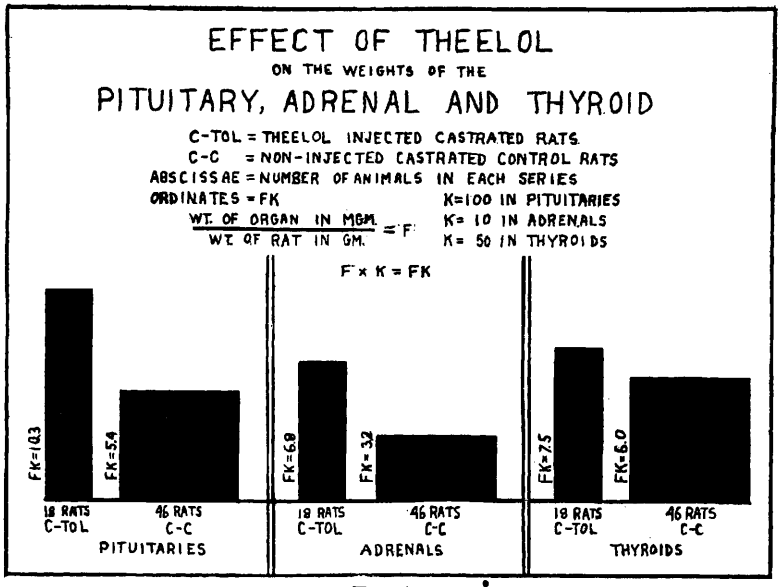

FIG. 1.

tablets containing 2 mg. of active substance, equivalent to approximately 100 rat units. Each rat received 2 tablets daily for 6 days. The tablets were dissolved in 6 cc. of sterile distilled water and injected subcutaneously.

At the end of the period of injection, *i. e.*, the 28th day after castration, the animals were sacrificed. Their glands were removed and weighed on a torsion balance.

Forty-six sexually mature animals weighing between 140 to 269 gm. were sacrificed in 3 groups: 6 rats on the 27th day after castration; 14 rats on the 28th day after castration; 26 rats on the 36th day after castration.

Because of the variation in the weights of the animals and because organ weights vary to a great degree with total animal weights, it was thought desirable to express the organ weights in terms of milligrams of gland per gram of animal weight. This factor was multiplied by an appropriate constant to facilitate plotting on a chart for the purpose of comparison. The factor multiplied by the constant is designated as F K. We believe this gives a more graphic presentation of the data. It is realized that this might give a false impression if the animals had lost a significant amount of weight during the course of the experiment. This, however, was not the case.

In the experimental series there was an increase in weight of

91% for the pituitaries, 112.5% for the adrenals, and 25% for the thyroids, when compared with the control series.

The significant histological findings of the various organs will be presented at a later date.

Conclusion. Injections of Theelol cause increase in the weights of the pituitary, adrenal and thyroid glands as compared with the controls.

6973 C

Combined Effect of Antuitrin "S" and Theelin on Weights of Pituitary, Adrenal and Thyroid in the Normal Rat.

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Urinary hebin (Antuitrin "S")* and estrin (Theelin)* are found in large amounts in the human pregnant urine.[1, 2] In studying the effect of these substances it became apparent that significant variations in organ weight occurred as a result of the injections of a mixture of the substance.

Twenty-two normal adult albino rats were injected with a mixture of 2 rat units of Antuitrin "S" and 20 rat units of Theelin daily for 9 days. A further group of 22 normal albino rats received 2 rat units of Antuitrin "S" daily for 9 days. Thirty-two non-injected normal adult albino rats were used as controls. At the end of the injection period all the animals were sacrificed and the glands weighed on a torsion balance.

The weight of the animals in the control series varied from 140 gm. to 220 gm., and the pituitaries from 6.5 mg. to 17.5 mg. In the normal animals, injected with Antuitrin "S", the body weight varied from 116 gm. to 140 gm., and the pituitary weights from 8 mg. to 12 mg. In the group injected with Antuitrin and Theelin, the body weights ranged from 120 gm. to 152 gm. and the pituitary weights from 7.5 mg. to 15 mg. The results are expressed in terms of milligrams of gland per gram of rat. This index was multiplied by an appropriate constant to facilitate graphing, and is designated as F K.

* We are grateful to Parke Davis & Co. for a generous supply.

[1] Aschheim, S., Zondek, B., *Klin. Wchnschr.*, 1928, **7**, 1401.

[2] Zondek, B., *Klin. Wchnschr.*, 1928, **7**, 1404.