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Effects of Crystalline Theelol and Theelin and Extracts of Liquor Folliculi on Male Rats.

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Gould and Doisy[1] found that the subcutaneous administration of extracts of hog liquor folliculi retarded the development of the testes of young rabbits. Laqueur[2] has obtained results of a similar nature by the injection of young rats with Menformon, and Moore and Price[3] have found that oestrin produces testicular damage. Spencer, Gustavson and D'Amour[4] report that the administration of oestrin obtained from pregnancy urine retards the rate of growth and testes development of young male rats.

The isolation of theelol[5, 6, 7] led us to compare the effects of daily injections of crystalline theelin and theelol and extracts of hog liquor folliculi upon the gain in body weight and the development of the genitalia of young male rats. This report is concerned with changes of body and testes weight; a further study including microscopic findings will be presented in a later paper.

Subcutaneous injections of from 1.25 to 20 rat units (Kahnt and Doisy[8]) were made daily for 19 days in normal male rats 21 to 30 days of age. The preparations were aqueous solutions containing from 1 to 5% ethyl alcohol. Only litter mate controls were used but in a few cases one control served for 2 experimental animals. The controls were injected with a similar volume of alcohol of the same concentration. All animals were kept under the same conditions and were fed *ad libitum* upon the same adequate diet.

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[1] Gould, V. L., and Doisy, E. A., Observations (1924) not published.

[2] Borchardt, E., Dingemanse, E., deJongh, S. E., and Laqueur, E., *Zeit. f. Ges. Exp. Med.*, 1929, **68**, 86.

[3] Moore, C. R., and Price, Dorothy, PROC. SOC. EXP. BIOL. AND MED., 1930, **28**, 38.

[4] Spencer, J., Gustavson, R. G., and D'Amour, F. E., PROC. SOC. EXP. BIOL. AND MED., 1931, **28**, 500.

[5] Doisy, E. A., Thayer, S. A., Levin, L., and Curtis, J. M., PROC. SOC. EXP. BIOL. AND MED., 1930, **28**, 88.

[6] Doisy, E. A., Curtis, J. M., Levin, L., Katzman, P. A., and Thayer, S. A., PROC. SOC. EXP. BIOL. AND MED., 1930, **28**, 216.

[7] Doisy, E. A., and Thayer, S. A., *J. Biol. Chem.*, in press.

[8] Kahnt, Lydia C., and Doisy, Edward A., *Endocrinology*, 1928, **12**, 760.

Twenty-seven of the 36 experimental animals gained less in body weight than their controls. The average values are summarized in Table I.

TABLE I.

Theelol

	Rat Units Daily, 1.25			5.00		
	No. rats used	Av. gain body wt.	Relative % testes wt.	No. rats used	Av. gain body wt.	Relative % testes wt.
Controls	6	75	1.00	6	77	1.00
Experimentals	7	69	.80*	6	64	.88

Theelin

	Rat Units Daily, 5			20.00		
Controls	5	77	1.00	5	84	1.00
Experimentals	8	69	.87	7	72	.53

Liquor Folliculi

	Rat Units Daily, 5		
Controls	7	70	1.00
Experimentals	8	62	.63

* Six rats used here.

Since the testes weight is dependent in part on the body weight, the ratio of testes weight to body weight was taken and from the values of the injected and control animals the relative percentage weight was calculated, taking the control as unity. Of a total of 35 experimental animals 32 were below their controls in testes development. The average values appear in the table.