testis might include a reduction of its endocrine component, which could possibly be the cause of the increased hypophyseal activity. Facts are not in favor of this interpretation. The interstitial cells appear normal in quality and quantity and the fact that the seminal vesicles and the prostates of our irradiated male are rather above the normal size clearly indicates that the endocrine system remained unimpaired by the amount of X-rays administered. We conclude, therefore, that the lack of spermatogenetic activity alone is responsible for the increase in hypophyseal activity in the X-ray sterilized male rat.

6201

Biological Assay of Pregnandiol.

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Through the kindness of Dr. A. Butenandt of Göttingen who supplied us with 500 mg. of crystalline Pregnandiol[1] obtained from pregnancy urine, we were able to subject the substance to physiological tests. Pregnandiol, of which from 0.1 to 0.2 gm. can be obtained from 100 liters of human pregnancy urine, is, according to Butenandt, a saturated di-secondary alcohol of the formula $C_{21}H_{24}(OH)_2$ containing 4 hydrated rings in the molecule.

The tests performed were as follows:

a. Injected (in oil) into castrated mice up to the dosage of 10 mg. it shows no female sex hormone effects (as already determined by Butenandt).[1]

b. Injected into immature rats up to the dose of 30 mg. it produces no ovarian changes characteristic of the prepituitary hormone.

c. Injected for 5 days into castrated rabbits primed for 5 days with female sex hormone, it produces no progestin (corpus luteum) effect on the uterus with a total dosage of 150 mg.

d. Injected into the virgin immature castrated guinea pig primed with female sex hormone up to a dosage of 100 mg., it fails to cause relaxation.

e. Injected into the castrate mouse brought to estrus by means of female sex hormone, it shows no mucifying effect on the vaginal epithelium.

[1] Butenandt, A., *Berichte d. deut. chem. Gesellschaft*, 1930, **63**, 659; 1931, **64**, 2529. Marrian, G. F., *Biochem. J.*, 1929, **23**, 1090.

It therefore appears that Pregnandiol is physiologically inert as far as the female sexual tract is concerned.

6202

Influence of Sex Hormones on the Occurrence of Tissue Macrophages in the Rabbit's Uterus.*

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It has been shown[1] that during pregnancy there is a great increase in the number of mononuclear phagocytic cells in the wall of the rabbit's uterus. This report is of an attempt to determine the extent to which this phenomenon might be attributed to hormonal factors, and is based on results obtained with over 70 female rabbits. In all instances the macrophages were demonstrated by intravital staining. Each animal was given intravenously from 20 to 25 cc. per kilo body weight, of a 1% aqueous solution of Trypan Blue, over a period of 3 days. They were sacrificed on the fourth day, and paraffin sections of the uteri were made using alum carmine as the counterstain.

It was found that (1) in the uterus of the normal unmated rabbit small numbers of faintly-staining macrophages are generally present, while they are completely absent in the atrophic uterus of spayed animals, and (2) the induction of progestational proliferation in the rabbit's uterus by the intravenous injection of urine from pregnant women or of estrin-free ovary-stimulating extracts made from blood of pregnant patients, does not generally cause an increase in the number of macrophages. This, however, was demonstrated in a few instances.

The effect of various hormonal conditions on the response of the uterus to trauma was then determined. The injury was produced by the method of Long and Evans[2] for the experimental production of placentomata, namely by the introduction of a silk ligature

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[1] Fluhmann, C. F., *Am. J. Obstet. and Gynec.*, 1928, **15**, 783.

[2] Long, J. A., and Evans, H. M., The Oestrous Cycle in the Rat, Mem. Univ. California, 1922.