

and, therefore, to its presence in mixed urines. It is very difficult to separate the hormone from the phenolphthalein.

Estrin appears to be a phenol or an alcohol forming easily soluble salts with strong alkalis.

Aqueous solutions of estrin appear to be slightly less active (as measured on castrated rats) than solutions in oil of equal strength. This might be due to a more rapid elimination of the aqueous extract.

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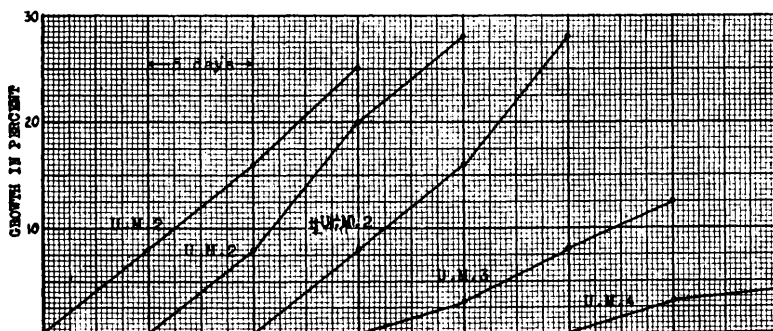
The Male Hormone. II.

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In a previous communication¹ we reported that the male urine contains appreciable quantities of the male hormone, as evidenced by the increased size of comb in castrated cocks.

In the course of the work we noticed that the male hormone (testiculin) shows chemical properties similar to those of estrin. For example, testiculin, like estrin, can be extracted from urine by means of chloroform. The urine to be used is adjusted to a pH of 4.0-4.5 and continuously extracted with chloroform for 6 hours. The separated chloroform layer is evaporated and the residue dissolved in an appropriate amount of olive oil.



Action of the daily injection of chloroform extracts (representing 100 cc. urine) on groups of six castrated cocks.

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¹ Funk and Harrow, *PROC. SOC. EXP. BIOL. AND MED.*, 1929, xxvi, 325.

Using urinary extracts, we find that the comb growth is proportional to the amount of hormone present (see chart). We have selected as our cock unit that amount of testiculin which, when injected daily into each of 6 castrated cocks, will give an average increase in comb of 10 mm. in 10 days. Such a cock unit is found in about 75 cc. of an active urine.

The administration of chloroform extracts has permitted the use of more concentrated preparations, without the toxic effects of the urine. Changes in size of comb, in turgor and color are plainly noticeable after a few days of treatment.

As a preliminary to the study of the functional test of gland activity, samples of mixed urines were extracted with chloroform, the residues dissolved in oil and each sample injected into six well-castrated cocks.

Urine sample U.M.2, was obtained from men in the prime of life. The curves show how uniform is the effect of this extract on 3 different groups of animals. U.M.3 represents the urine from men of various ages, and U.M.4 from men between 50-70 years of age. The variation in hormone content is quite evident.

It remains to be seen whether the differences observed can be of service in diagnosis.

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Experimental Treatment of Cardiac Arrhythmias.

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(Introduced by Israel S. Kleiner.)

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Since weakening of the heart muscle leads to incomplete emptying and progressive dilatation, which in turn results in impaired conduction, arrhythmias, and auricular fibrillation, it is conceivable that these conditions would be improved by increasing the force of the heart and slowing its rate by digitalis, or by relieving its load.

In order to accomplish the latter we have bled 5-10 cc. per kg. or changed the distribution of the blood in the active circulation by snake venom (*Lachesis lanceolatus*), histamine, peptone and nitrates.* These drugs were injected into the femoral vein of cats pre-

* We used 47 animals, of which 10 were controls. 34 gave positive and 3 negative results, because of dosage. In many experiments the procedure was repeated.