hormone. Furthermore we conclude that the maintenance in the blood stream of a constant and relatively high level of follicle stimulating hormone suppresses the production of luteinizing hormone by the hypophysis.

7577 P

Nervous Control of Thyroid Activity. I. Effect of Pilocarpin and Adrenalin on Metamorphic Action of Thyreoactivator.

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In the experiments reported here we have used amphibian metamorphosis (in the larvae of *Ambystoma tigrinum*) as a physiological sign of the effects of the thyroid hormone, pilocarpin and adrenalin as stimulators of the parasympathetic and sympathetic nervous system respectively, and injections of thyreoactivator from the anterior lobe of the beef hypophysis[1-4] as an activator of the thyroid function.

When pilocarpin or adrenalin alone is injected intraperitoneally, no visible effect on metamorphosis is obtained. It will be shown here that the injection of either of these drugs together with thyreoactivator increases the sensitivity of the larvae to the metamorphic action of the thyreoactivator.

In one representative experiment (CCCLVI, 1933) a number of the larvae of the tiger salamander were divided into 4 groups: Group "a", controls injected with Ringer solution; Group "b, c and d" received triweekly intraperitoneal injections of thyreoactivator extracted from approximately 30 mg. dried anterior lobe, per animal and injection; group "c" received in addition triweekly injections of 2 mg. pilocarpin-hydrochloride (Merck) per animal and injection; group "d" received in addition triweekly injections of 0.05 mg. adrenalin-chloride, 1:1000 (Parke, Davis Company), per animal and injection.

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[2] Uhlenhuth, E., and Schwartzbach, S., *Brit. J. Exp. Biol.*, 1927, **5**, 1.

[3] Uhlenhuth, E., and Schwartzbach, S., PROC. SOC. EXP. BIOL. AND MED., 1928, **26**, 149.

[4] Uhlenhuth, E., and Schwartzbach, S., PROC. SOC. EXP. BIOL. AND MED., 1928, **26**, 152.

Group "a" remained larval for the period of the experiment; Group "b" needed an average of 41 injections of thyreoactivator to metamorphose; Group "c" (pilocarpin) needed an average of 12 injections of thyreoactivator and Group "d" (adrenalin) an average of 20 injections of thyreoactivator.

Further work is in progress to show whether the sensitizing effect of pilocarpin and adrenalin is due to a stimulation of specific thyroid secretory nerves or to other effects.

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Effects of Estrin upon Gonads, Mammary Glands and Hypophysis of the Rat.*

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It is generally agreed that injections of estrin cause an atrophy of the gonads[1] and an increase in the weight of the hypophysis with a decrease in its gonad-stimulating power.[2] Wade and Doisy,[3] however, state that Theelin, in dosages up to 6.6 gamma daily, in the male does not cause an interruption of spermatogenesis, and in the female similar doses do not interfere with normal reproductive processes.

Adult normal males and females and female castrates were divided into 2 series, A and B. In Series A, 5 R.U. of estrin[4] were given daily for 3 weeks and 20 R.U. daily the fourth week. In Series B, the same dosage was given as in Series A but injections of 20 R.U. daily were continued for 4 weeks more. Each series included 3 groups with 10 rats in each group: 1, normal males, 2, normal females, and 3, ovariectomized females. An adequate number of controls was used.

Results. I. Effect of estrin on body weight. Normal males and

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[3] Wade, N. J., and Doisy, E. A., *Abst. Proc. Am. Fed. Biologists*, 1934.

[4] Estrin prepared from pregnancy urine according to the method of D'Amour, F. E., and Gustavson, R. G., *J. Pharm. and Exp. Therap.*, 1930, **40**, 4.