

terstitial gland is an unfavorable factor as far as the occurrence of ovulation is concerned. If after inoculation of anterior pituitary glands ovulation does take place, the typical changes in the ovaries consisting in an almost complete degeneration of all except the smallest follicles and in the marked proliferation of the vaginal epithelium were in a number of cases more or less inhibited.

The anterior pituitary of the guinea pig is very inactive also in its effect on the thyroid of the guinea pig. In this case again 44.5 mg. of guinea pig anterior pituitary is not more and is perhaps even less active than 3 mg. rat and 12 mg. rabbit anterior pituitary. In 4 out of 5 cases in which we inoculated 12 mg. rat anterior pituitary the hypertrophy of the thyroid gland of the guinea pig was very much more pronounced than the hypertrophy produced by similar weights of guinea pig or even of rabbit anterior pituitaries. This relative ineffectiveness of guinea pig anterior pituitary is perhaps related to the relatively low average size of the acinus cells of the thyroid gland or to the absence of interstitial gland in the ovary of the guinea pig. On the other hand, the thyroid gland of the guinea pig seems to be functionally very active to judge from the relatively large amount of organic iodine found in the blood of normal animals of this species (Closs, Loeb and MacKay²).

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Effect of Adrenal Cortex Extract on Maxillary Sinusitis in the Rabbit.

W. F. WENNER.

From the Department of Oto-Laryngology, Oscar Johnson Institute, Washington University.

Several investigators^{1, 2, 3} have demonstrated that adrenalectomized animals showed a decreased resistance to infection and bacterial toxins. Blanchard⁴ found that the opsonic power of the serum of adrenalectomized cats is greatly decreased. Phagocytic activity

² Closs, Karl, Loeb, Leo, and MacKay, Eaton, *PROC. SOC. EXP. BIOL. AND MED.*, 1931, **29**, 170.

¹ Oppenheim and Loeser, *Compt. Rendu. Soc. Biol.*, 1903, **55**, 332.

² Jaffe and Marine, *PROC. SOC. EXP. BIOL. AND MED.*, 1923, **21**, 64.

³ Scott, *J. Exp. Med.*, 1924, **39**, 457.

⁴ Blanchard, *Physiol. Zool.*, 1931, **4**, 302.

is reduced approximately 50% during the later stages of adrenal insufficiency. Sufficient work has been presented to show clearly the effectiveness of adrenal cortex extract in protecting against bacterial intoxication. Scott and Bradford⁵ and Hartman and Scott⁶ showed that adrenal cortex extract decreased the susceptibility of adrenalectomized rats to killed bacteria. Whitehead and Smith⁷ indicate that cortical extract exerts some power in increasing the resistance of the human body to bacterial intoxication. Experiments reported here show that this extract causes infection of the maxillary sinus of rabbits to subside.

A series of 19 rabbits were given maxillary sinus irrigations with 0.5% solution of sodium alizarin sulphonate every 48 hours for 10 days.⁸ Sinusitis, as evidenced by purulent nasal discharge, developed within 10 days following the last irrigation. Three intramuscular injections of adrenal cortex extract made by Dr. R. L. Zwemer⁹ were given over a period of one week. The dosage used was 0.5 cc. per kilo body weight. The maxillary sinuses examined grossly and histologically at this time showed no evidence of infection. In the control rabbits which received the same number of irrigations but no cortex extract, the sinuses were filled with pus and the mucous membrane was infiltrated with leucocytes. Both total and differential white blood cell counts made on normal and experimental rabbits at the same hour of the day varied from day to day. Taking this day to day variation into consideration, adrenal cortex extract produced no change in the total or differential count. Hemoglobin fell from an average of 11 gm. to about 8 gm. per 100 cc. of blood (Newcomer method). CO₂ content and pH of blood plasma increased except in those rabbits having initial high pH and CO₂. These findings on the increase in plasma CO₂ following intramuscular injections of adrenal cortex extract agree with those reported by Zwemer.¹⁰

I wish to thank Dr. R. L. Zwemer for the generous supply of adrenal cortex extract used in these experiments.

⁵ Scott and Bradford, *PROC. SOC. EXP. BIOL. AND MED.*, 1931, **28**, 428.

⁶ Hartman and Scott, *PROC. SOC. EXP. BIOL. AND MED.*, 1931, **28**, 478.

⁷ Whitehead and Smith, *PROC. SOC. EXP. BIOL. AND MED.*, 1932, **20**, 672.

⁸ Wenner, *J. Lab. and Clin. Med.*, 1931, **16**, 341.

⁹ Zwemer, Agate and Schroeder, *PROC. SOC. EXP. BIOL. AND MED.*, 1931, **28**, 721.

¹⁰ Zwemer, *Endocrin.*, 1931, **15**, 382.