tration (1:1000 to 1:3000) 8 nerves were paralyzed, 9 slightly depressed and 2 unchanged.

Conclusions. Very dilute concentrations of cocaine HCl depress slowly conducting nerve fibres; in higher concentration, a similar depression is produced by ephedrine HCl, atropine sulfate or by nicotine base.

9082 P

Effect of Cortical Extract on Glucose Tolerance of Adrenalectomized and Hypophysectomized Rats.

HOWARD A. BALL, LEO T. SAMUELS AND H. F. SCHOTT.

From the Department of Pharmacology, University of Southern California Medical School and the Pathology Laboratory, San Diego General Hospital.

In previous work[1] we found that the ability of the hypophysectomized rat to remove excess sugar from the blood stream decreased with time after operation. This gradual decrease in ability to remove excess sugar indicated that the effect must be due to the progressive atrophy or derangement of some other organ following removal of the pituitary body. We gave our first attention to the rôle of the adrenal gland in this effect since Leloir[2] had shown a decrease in the rate of removal of glucose from the blood in adrenalectomized dogs, associated with decreased glycogen formation.

To test this possible connection the following groups of male rats were given 0.125 gm. glucose per 100 gm. body weight by injection of 50% solution into the saphenous vein:

a. Normal control animals.

b. Normal animals injected with 0.2 cc. Wilson's adrenal cortex extract per day.

c. Young adult animals adrenalectomized 6 days previously.

d. Similar adrenalectomized animals injected with 0.2 cc. extract per day for the previous 4 days.

e. Hypophysectomized animals, operated on 17 days previously.

f. Similar hypophysectomized animals injected with 0.2 cc. extract per day for the previous 6 days.

All animals were fasted for 24 hours before receiving the glucose

1 Samuels, L. T., and Ball, H. A., *Endocrin.*, in press.

2 Leloir, L. F., *Suprarrenales y Metabolismo de los Hidratos de Carbono*, Buenos Aires, 1934.

injections. Blood sugar samples were taken from the tail vein, the first few drops being discarded. Samples were taken fasting and at 10, 20, 30, 60, and 120 minutes after injection. Table I gives the average values for the various groups.

TABLE I.

Group	No. Animals	Blood Sugar in mg. per 100 cc. after injection of 125 mg. glucose/100 gm. wt. Fasting	10 min.	20 min.	30 min.	60 min.	120 min.
a. Normals	23	81±1.7	272±4.7	208±2.7	161±2.7	119±1.8	97±1.4
b. Normals, injected	6	88±2.9	269±2.2	206±4.3	157±4.8	120±3.5	97±2.1
c. Adrenalectomized	10	75±3.3	252±9.1	237±4.1	212±4.1	157±2.9	98±2.
d. Adrenalec., injected	9	78±2.7	268±9.8	213±7.8	157±5.7	110±3.3	94±2.
e. Hypophysectomized	18	68±2.7	301±8.6	271±6.5	242±9.9	173±4.3	105±2.
f. Hypoph., injected	6	58±3.0	307±9.5	258±6.8	230±12.7	205±7.0	91±5.3

The defect in ability to remove excess sugar from the blood in the hypophysectomized male rat is not relieved by cortical extract, while that observed in the adrenalectomized animal disappears. It seems then that the deficiency brought on by removal of the pituitary gland is not solely, if at all, a result of atrophy of the adrenal cortex. Since the normal rats injected with cortical extract showed no greater rate of glucose removal than the uninjected controls, the action of the cortical extract in adrenalectomized rats on the tolerance must be due to its specific action in relieving cortical insufficiency.

9083

Inability of Sheep to Develop Antihormone to the Gonadotropic Hormone from Sheep-Pituitary Glands.*

K. W. THOMPSON. (Introduced by Harvey Cushing.)

From the Laboratories of Physiology and Surgery, Yale School of Medicine.

Information concerning antihormones does not as yet indicate whether these substances are immune bodies or chalones (hormone antagonists, Sharpey-Schafer). Most observers are agreed that antihormones may be secured in serum after suitable injections of pituitary extracts into animals, as was first described by Collip and his co-workers.[1] Meanwhile, attention has been called to the pres-

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[1] Anderson, E. M., and Collip, J. B., *Lancet*, 1934, **1**, 76.