

Washington, D.C., for samples of many of the aldohexose sugars used as reference standards.

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### Effect of Prolonged Administration of Reserpine on the Endocrine Glands of the Rat

It has been shown that reserpine influences the anterior<sup>1</sup> and the posterior<sup>2</sup> lobes of the hypophysis, the thyroid gland<sup>3</sup>, the adrenal medulla<sup>4</sup> and cortex<sup>5</sup>, and the endocrine cells of the gonads<sup>4</sup>. In most of the work on this subject, the short-term effects have been investigated. Therefore, we undertook a study in which the effect of prolonged administration was examined.

Young male rats were injected subcutaneously with 0.04 mgm. of reserpine daily for 2 months. The controls were given the same volume of physiological saline. The animals were killed 9 days after the last injection. Table 1 shows the effect of reserpine on the body-weight and on the size of various organs. Reserpine caused a pronounced retardation of growth, which was statistically highly significant ( $P < 0.0001$ ). The mean kidney-weight of the reserpine rats was significantly lower ( $P < 0.02$ ) than that of the controls. No other significant differences were observed. The lower kidney-weight in the reserpine group is probably essentially due to the retarded growth.

Hypophyses were examined histologically for the cell types in the anterior lobe, using a periodic acid-Schiff trichrome stain, and the posterior lobe for the amount of neurosecretory substance, using Gomori's chrom-haematoxylin stain. The thyroids were studied qualitatively for the relative amount of epithelium and colloid, and for the height of the epithelial cells. Distribution of lipids in the adrenal cortex was examined in sudan-stained sections. Adreno-medullary catechol amines were studied with the aid of the

Table 1

Variable	Reserpine rats (9)		Saline controls (9)	
	Mean	S.D.	Mean	S.D.
Initial body-weight (gm.)	111.1	16.2	95.6	16.7
Final body-weight (gm.)	122.2	24.2	156.1	27.8
Gain in weight (gm.)	11.1	13.6	60.6	15.1
Adrenal weight (mgm.)	12.3	1.0	11.4	1.8
Medullary volume (arbitrary units)	10.1	1.5	9.5	1.4
Thyroid weight (mgm.)	17.6	3.6	16.2	2.2
Testis weight (gm.)	2.19	0.52	2.45	0.16
Kidney weight (gm.)	1.18	0.23	1.45	0.22

Table 2

	Much	Little	Total
Reserpine Controls	0 6	9 3	9 9
Total	6	12	18

chromaffin reaction and formol-induced fluorescence, as well as by quantitative determinations of adrenaline and noradrenaline content. In none of these respects were significant differences found between the reserpine group and the control group.

The histological structure of the testis was studied in haematoxylin-eosin-stained sections. Normal spermatogenesis was found in all animals, but there seemed to be a tendency towards smaller amounts of interstitial cells in the testis of the reserpine-treated rats. To study this subject more carefully, the testis slides of the control group and those of the reserpine group were mixed. They were then examined in random order for the amount of interstitial cells, using two categories, 'much' or 'little', for the evaluation. The result is illustrated in Table 2, which shows that, even after the precautions taken to avoid subjective bias, all rats of the reserpine group fell into the 'little' group for interstitial cells, whereas six of the nine rats of the controls came into the 'much' group. The probability of such an event occurring by mere chance was calculated using the exact treatment, as described by Fisher<sup>6</sup>. It was thus revealed that the observed difference is statistically significant ( $P < 0.005$ ).

The observations indicate that doses of reserpine sufficient to cause a pronounced arrest of growth have little effect on most endocrine organs 9 days after the discontinued treatment. Failure to confirm earlier reported changes caused by reserpine (see refs. 1-5) is probably explained by the relatively long recovery time, which allowed for the restitution of the normal state. It is the more noteworthy that regressive changes in the interstitial cells of the testis, earlier reported by Tuchmann-Duplessis<sup>1</sup> in reserpine-treated rats, were still persistent.

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### Assessment of Mineral Content in Water-mounted Sections of Dental Enamel

RECENTLY, a new technique for identifying areas of reduced mineral content in ground sections of dental enamel by their light-scattering properties when examined in distilled water, was published<sup>1</sup>. It was shown that when viewed by transmitted