FAILURE OF RESERPINE TO PRODUCE CHANGES IN THE STORE OF PITUITARY GONADOTROPHINS IN THE COCKEREL

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There is some evidence that reserpine produces alteration of pituitary and testicular function in birds (Assenmacher, Tixier-Vidal & Baylé, 1961; Tixier-Vidal & Assenmacher, 1962). Hagen & Wallace (1960), working with cockerels, found that the testicular weight was reduced by half. However, very little is known about the effect of reserpine on the content of gonadotrophins in the pituitary of birds. The following experiment was conducted to investigate the total pituitary gonadotrophic potency in cockerels treated with reserpine.

The birds used were White Leghorn cockerels aged 100 days and weighing between 1.5 and 1.8 kg. They were kept on a lighting schedule of 14 hr light/10 hr dark and had free access to food and water. The reserpine (Serpasol, Ciba) was injected into the breast muscle at a dose of 250 µg/animal (about 16 µg/100 g body weight) for 25 days. Previous trials demonstrated that higher doses (400 to 500 µg/animal) caused a significant decrease in food intake. The control group received saline in equal volume. All the birds were weighed and killed by decapitation 24 hr after the last injection. The testes were weighed and the anterior pituitaries were removed and immediately placed in acetone for 60 hr. After storage in a desiccator at room temperature for a week, the pituitaries were ground and the dried powder was kept in the desiccator until ready for use. One mg of the powder was suspended in 1.0 ml of distilled water immediately before use. The total pituitary gonadotrophins were assayed by the testicular weight augmentation method, using baby cockerels, according to the method of Breneman (1945), modified by Nakajo & Imai (1956).

The results of this experiment are summarized in Table 1. They suggest that chronic administration of reserpine does not alter the content of gonadotrophins in the pituitary. Labhsetwar (1967) found a decrease in the LH pituitary stores and a significant increase in the FSH stores in female rats given prolonged treatment with reserpine, but our assay was not designed to test this differentiation.

Reserpine did not affect testicular growth in the present experiments. This finding contrasts with the results of Hagen & Wallace (1960) who found a marked reduction in testis weight after giving doses of between 1 and 4 mg/kg weekly for 10 weeks, though these authors gave doses that were higher than

TABLE 1
THE EFFECT OF RESERPINE ON BODY WEIGHT, TESTICULAR WEIGHT AND PITUITARY GONADOTROPIC POTENCY
IN COCKERELS (250 µg/DAY FOR 25 DAYS)

	Mean terminal body wt (kg) $\pm$ S.E.	Mean testicular wt (g) $\pm$ S.E.	Bioassay		Increase rate (%)	Gonadotrophic potency/mg (C.U.) *
			Mean testicular wt (mg) $\pm$ S.E.			
Control	1.835 $\pm$ 0.289 ^a (6)	10.9 $\pm$ 4.7 ^a (6)	6.8 $\pm$ 1.3(10) †	12.5 $\pm$ 2.1 ^a (11) ‡	83	2.3
Treated	1.711 $\pm$ 0.183 ^b (6)	10.0 $\pm$ 4.0 ^b (6)		11.5 $\pm$ 2.1 ^b (8) §	69	1.9

Number in parentheses indicates number of birds.

Difference between a and b not significant ($P < 0.05$).

* C.U. = Chick Unit = 35% increase-rate.

† Baby cockerels injected with distilled water.

‡ Baby cockerels injected with dried pituitary powder from control birds previously injected with saline.

§ Baby cockerels injected with dried pituitary powder from birds previously injected with reserpine.

those used in the present experiment and above the level which caused a decrease in food intake in preliminary trials. Gaunt, Renzi, Antonchak, Miller & Gilman (1954) stated that when reserpine is given in doses which produce inanition and body weight loss, it can deplete androgen secretion by indirect means.

Further investigations will be necessary to elucidate this interesting fact.

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