

higher than that which Feinstone, *et al.*,<sup>6</sup> have reported for a dose of 1.5 g of sulfadiazine per kg (43.5%), it was decided to determine the effect of pyridium on the toxicity of a smaller dose of sulfadiazine. Experiment 5 shows that the mortality at a dose of 1.2 g of sulfadiazine per kg was 50%. The simultaneous administration of this dose and 30 mg of pyridium per kg reduced the mortality to 10%, and when the sulfadiazine and 100 mg of pyridium per kg were given, no deaths resulted.

In contrast to the effect of pyridium on the toxicity of sulfadiazine, this substance had no effect on the toxicity of sulfanilamide, as may be seen from examination of experiments 2a, 3a, and 4a.<sup>†</sup>

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#### Increase in Weight of Gonads Following Injection of Single Male Rat Pituitary.\*†

R. P. REECE AND E. J. WEATHERBY.

*From the Department of Dairy Husbandry, New Jersey Agricultural Experiment Station, New Brunswick, N.J.*

When increases in ovarian weight of the sexually immature rat have been employed in determining the gonadotropic content of the rat pituitary it has been necessary to implant<sup>1</sup> or inject<sup>2</sup> more than

<sup>6</sup> Feinstone, W. H., Williams, R. D., Wolff, R. T., Huntington, E., and Crossley, M. L., *Bull. Johns Hopkins Hosp.*, 1940, **67**, 427.

‡ The writer is indebted to Dr. W. J. Youden of the Boyce Thompson Institute for Plant Research for a statistical analysis of these results. The alive : dead ratio of all the mice in experiments 2 to 5 should be 59:77 if the pyridium had no effect on the toxicity of the sulfadiazine. Calculation of chi square from the differences between the calculated expectations and the mortalities at the concentrations of 0, 30 and 100 mg of pyridium per kg yields a value of 22.82, "a value highly improbable if the ratio were really the same for all concentrations." An analysis of the variance showed that, if the pyridium were really without effect, the decrease in the toxicity of the sulfadiazine obtained would occur *by chance* only once in something like one hundred instances, and certainly not more often than once in fifty.

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<sup>1</sup> Evans, H. M., and Simpson, M. E., *Am. J. Physiol.*, 1929, **89**, 371.

<sup>2</sup> Hellbaum, A. A., and Greep, R. O., *Proc. Soc. Exp. Biol. and Med.*, 1938, **38**, 902.

one pituitary gland. This technic requires a large number of donor rats and therefore does not readily lend itself to the extensive study of factors influencing the gonadotropic content of the rat pituitary gland. Our observations indicate that increases in ovarian weight of sexually immature rats can be obtained by injecting a single male rat pituitary gland.

Pituitary glands were collected from 80 sexually mature male rats, and each pituitary was macerated separately by means of an agate mortar and pestle. One drop of .1 N NaOH was added and the macerated tissue taken up in 3.2 cc of distilled water. Four-tenths of one cc of this suspension was injected subcutaneously twice daily for 4 days into a 24- to 26-day-old female rat. The recipient was killed 100 hours after the first injection, and the ovaries were weighed. For controls the ovaries of fifty-seven 28- to 30-day-old non-injected rats were weighed. Body weighings were made on the first day of injection and at the time of autopsy.

Body weights of the control and experimental rats were similar on the first injection day, 47 and 46 g respectively, and at the time of autopsy, 53 and 51 g respectively. Average ovarian weight of the control animals was 13.4 mg, whereas that of the injected animals was 54.8 mg. Ninety percent of the injected animals showed at least a 50% increase in ovarian weight over that of the controls. The percentage of animals showing greater increases in ovarian weight decreased at a constant rate until only 50% showed as much as a 250% increase. Above the 250% increase in ovarian weight the percentage of rats responding decreased at an irregular rate.

Preliminary observations with the day-old White Leghorn chick indicate that its testes will respond to a single male rat pituitary gland. Sixteen pituitary glands from sexually mature rats were injected subcutaneously twice daily for 4 days into 16 one-day-old chicks. The chicks were killed on the afternoon of the day following the last injection and their testes weighed. Thirty chicks receiving no treatment served as controls. Average testicular weights of the control and of the injected chicks were 9.5 mg and 15.4 mg respectively. Fifty-six percent of the injected chicks showed at least a 50% increase in testicular weight.

*Summary.* The ovaries of 24- to 26-day-old rats and the testes of day-old White Leghorn chicks showed an increase in weight following the injection of a suspension of a single male rat pituitary gland in 8 divided doses over a 4-day period. The average increase in ovarian weight was 309% and that of the testes was 62%.