5390

Effect of Estrin Injections on the Growth Curve of Young Rats.

JACK SPENCER, R. G. GUSTAVSON, F. E. D'AMOUR.

From the Research Laboratories of the University of Denver.

Moore and Price[1] injected male and female sex hormones into normal and castrate rats. They concluded that gonadal hormones suppress the functions of the hypophysis in the production of gonad stimulating secretions. Working with the female sex hormone, we wished to learn whether or not this inhibition of the hypophysis extended also to the growth-promoting factor produced by this gland. We therefore injected a very pure and carefully assayed preparation into young rats, and studied their growth curves.

The hormone preparation was obtained from pregnancy urine according to the method previously described,[2] except that no effort was made to obtain crystalline material. It was assayed according to the Coward and Burn method, as repeated by us,[2] and the rat unit found to be 5 gamma. Three litters of young rats, 24 in all, were divided so that equal numbers from each litter would be used in the control and experimental groups. Each group included 12 animals, 6 males and 6 females. The experiment was started immediately after the animals were weaned. The experimental group received 40 units of hormone dissolved in 0.2 cc. of olive oil every other day, the control group the same amount of olive oil only. The animals were weighed every week and their growth plotted.

Results: A small but, we believe, significant difference in the growth rates of the 2 groups was observed. The growth rates were consistent, in no case did any injected animal grow as rapidly as any control animal. The injected group gained 1051 gm. or 211.0%. The non-injected group gained 1348 gm. or 262.3%.

It was observed that the testes of the injected animals appeared much smaller than those of the control group, therefore all animals were autopsied and the sex glands weighed. The results are striking and again uniformly consistent, in every case the ratio of testes (or ovary) weight to body weight is very much smaller in the injected group. The average weight of the ovaries of injected animals is 43% of the normals and the average weight of testes of injected animals only 29% of the normal.

[1] Moore, C. R., and Price, D., PROC. SOC. EXP. BIOL. AND MED., 1930, **28**, 38.

[2] D'Amour, F. E., and Gustavson, R. G., *J. Pharm. and Exp. Therap.*, 1930, **40**, 473.

Examination of the ovaries revealed mature follicles and corpora lutea in the case of the normal animals while those of the injected animals were pale and showed no signs of maturity. No histological studies were made.

5391

Use of Organic Acids for the Differentiation of Salmonella pullorum and Salmonella gallinarum.

W. L. MALLMANN.

From the Department of Bacteriology, Agricultural Experiment Station, Michigan State College.

Brown, Duncan and Henry[1] demonstrated that the sodium salts of 4 organic acids, tartaric, mucic, fumaric and citric, were utilized as food by some members of the paratyphoid group, thus making it possible to separate certain members of this group through the use of this agency. The utilization of the acids as foods was measured in a liquid medium by precipitation of the residual acid by lead acetate. Using this procedure they were able to separate *Salmonella aertrycke* and *Sal. schotmülleri.* In a personal communication, Henry and Duncan[2] reported the separation of *Sal. pullorum* and *Sal. gallinarum* as follows:

Organism	1% dextrotartrate	0.5% laevotartrate
Sal. pullorum	—	+
Sal. gallinarum	+	—

Jordan and Harmon[3] demonstrated that sodium tartrate peptone medium containing phenol red separated *Sal. aertrycke* and *Sal. schotmülleri* by a color change due to difference in pH.

Using a method of procedure similar to that of Jordan and Harmon, the writer tested the sodium salts of citric, d-tartaric, fumaric and mucic acids on *Sal. pullorum* and *Sal. gallinarum* together with a few closely related organisms. Fumaric and citric acids were found unsatisfactory as the pH changes induced were very inconstant. On the other hand, the reactions obtained with d-tartaric and mucic acids were very constant. The data on the latter 2 acids are presented in Table I.

---

[1] Brown, H. C., Duncan, J. T., and Henry, T. A., *J. Hyg.*, 1924, **23**, 1.

[2] Personal communication from Dr. H. C. Brown in 1927.

[3] Jordan, E. O., and Harmon, P. H., *J. Infect. Dis.*, 1928, **42**, 258.