The chart shows almost a perfect agreement of the two tests. It seems that in weak positive and dubious Wasserman sera this test gives a more clear cut reaction. Thus the test combines reliability with technical simplicity.

4603

Possible Water Balance; Effects of Alkaline Anterior Pituitary Extracts.

WILLIAM G. DOWNS, JR., AND E. M. K. GEILING.

From the Division of Pathology, Yale Medical School, and Department of Pharmacology, Johns Hopkins Medical School.

In these studies an inbred strain of well-standardized mice were used as experimental animals. Feeding and environmental conditions were made as nearly identical throughout as possible. The experiments continued over a period of 8 months, and included many series of animals injected and handled under a wide variety of conditions, but with each experiment carefully controlled. In each case the group was divided into animals receiving the alkaline extract of the anterior lobe, a group receiving the ammonium sulphate extractive, and a group of controls. In some of the experiments, the controls received an alkaline liver extract, on others, normal saline, while in a few cases no injections were given the controls. In some cases the dosages were very minute and given only once a day; from this, they varied to 3 times a day and very large dosages. In some series, all of the animals received unlimited quantities of fluid—water or milk, or both; in others, the fluid intake was sharply curtailed. This series of studies reveals the following facts:

Immature animals injected with the alkaline extract, as outlined by Evans,[1] gain weight at a more rapid rate than do the ammonium sulphate extractive injected animals or the controls, provided the allowance of fluid is unlimited or large. The animals receiving the ammonium sulphate extractive gain weight slightly more rapidly than do the control animals. If the fluid intake be sharply curtailed, the animals receiving the alkaline extract do not gain weight as rapidly as do the control animals, or the ammonium sulphate animals. Under these conditions, however, the ammonium sulphate injected

[1] Evans, H. M., Harvey Lectures, 1923-24, 212.

animals gain weight more rapidly than do the controls. If, after a long-continued period of injections, when the alkaline extract injected animals have gained a great amount in weight, the fluid intake be suddenly stopped, their weights will drop to near the average weight of the control animals in a period of 24 to 48 hours. This result was so peculiar that it was deemed wise to analyze the content of the tissues of the experimental animals. For this purpose, each group was ground and thoroughly mixed separately, and was then dehydrated and ashed. It was found that the animals receiving the alkaline extract under unlimited fluid intake conditions had from 6% to 8% more water than did either the controls or the ammonium sulphate injected animals, the latter two groups of which were very close together in their analyses. It was also found that the ash content of the alkaline extract injected animals was about 3% less than the ammonium sulphate injected, or the control animals.

It is believed that these results indicate the presence of a water balance principle in the alkaline extractive of the anterior lobe of the pituitary.

4604

The Presence of Nerve Fibres in the Dentinal Tubules of Mammalian Teeth.

WILLIAM G. DOWNS, JR., AND CHARLES MAYO GOSS.
(Introduced by Raymond Hussey.)

From the Departments of Pathology and Anatomy, Yale Medical School, New Haven, Connecticut.

For these studies, a number of different forms and methods of preparation were employed. The teeth used were from human, dog, cat, and rodent. Methods utilized included supra- and intra-vital methylene blue, various modifications of the Cajal technique, and iron hematoxylin preparations, following in large part the various studies on this subject by other workers. By only one method was it possible to stain the structures in such a way as to make the evidence incontrovertible. By means of pyridine fixation, the Cajal technique of silver impregnation, and very careful grinding instead of decalcification, it was possible to so prepare the mammalian tooth as to show adequate evidence that the dentinal tubules contained definite, unmyelinated fibers. These could be traced in separate portions of the same preparation from their arborizations around the odontoblast, extending thence into the dentinal tubules, following these