

The appearance of the homogeneous substance described and its distribution naturally suggest amyloid. Attempts to produce the typical staining reactions of this substance failed however, possibly owing to the fact that the material had unfortunately been fixed in Orth's fluid before the attempt was made.

## 37 (1101)

**The determination of amino nitrogen in urines containing glucose and albumin.**

By DONALD D. VAN SLYKE.

[From the Hospital of the Rockefeller Institute for Medical Research.]

*Albumin.*—For removal of the albumin, we have found Welker's aluminum hydrate method very satisfactory. For urines containing large amounts of albumin, however, it is advisable to first coagulate with heat and acetic acid; then add an equal volume of the 0.5 per cent. aluminum hydrate suspension. The amino nitrogen is determined in an aliquot part of the filtrate.

*Glucose.*—Glucose interferes in two ways with the previously described method for determining amino nitrogen in the urine. If the urea is removed by treating the urine with urease, glucose combines with some of the ammonia and forms small amounts of an amine, which makes the results for amino nitrogen come out too high.

On the other hand, if a solution of an amino acid is concentrated on the water bath with glucose, a condensation occurs, with disappearance of amino nitrogen.

Both difficulties are obviated as follows: The urine is kept acid during action of the enzyme by the addition of three or four volumes of charged CO<sub>2</sub> water. After the action of the enzyme is completed at room temperature, the glucose is removed by adding sufficient copper sulphate solution to form an insoluble compound containing five molecules of copper hydrate to one of glucose. This compound is precipitated by the addition of a slight excess of calcium hydrate. The alkaline filtrate is concentrated in a vacuum, removing the ammonia, and the free amino nitrogen determined. In case albumin is present in a diabetic urine, this treatment removes the albumin along with the glucose.