present in a few large cells, probably of endothelial type, in the scars, but the lesions seen in rabbits were not obtained. There was also some fat in the glomerular tufts. The latter observation might be considered as evidence that uranium produces a vascular lesion and that such a preëxisting lesion facilitates the absorption of anisotropic fat as argued by Knack. The deposit of fat in the aortas of these animals however was not increased.

36 (1100)

Lesions produced in rabbits by repeated intravenous injections of living colon bacilli.

By **C. H. BAILEY, M.D.** (by invitation).

[*From the Pathological Laboratory of Stanford University Medical School.*]

Of a series of rabbits injected intravenously with a strain of colon bacillus every 3 or 4 days over considerable periods, the 7 animals which withstood this treatment longest, namely 88, 98, 102, 113, 115, 116, and 142 days, showed pronounced lesions in the kidneys, spleen, and liver. In the kidneys there is produced a hyaline and fibrous thickening of the vascular loops of the glomeruli with the formation of hyaline bodies in the tufts and occasional adhesions between the tufts and glomerular capsules. The tubular epithelium shows more or less degeneration and many casts are present in the tubules. The interstitial connective tissue shows a beginning cellular thickening, apparently not due to the spontaneous nephritis frequently seen in rabbits.

The livers show in certain cases central necroses with hyaline degeneration of the liver cells about these areas and elsewhere. In two cases there is deposited between the rows of liver cells in the middle and peripheral portions of the lobules a homogeneous amyloid-like substance. The livers in all cases show a more or less marked cellular increase of the periportal connective tissue—the latter possibly a spontaneous lesion.

The spleens show a fibrous thickening of the reticulum of the pulp with some hyaline formation. The most striking lesion is a formation of connective tissue with much amyloid-like material about the peripheries of the Malphigian bodies, in cases almost replacing these structures.

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_2 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.