of lead produced chronic lesions in the kidneys, and that simple punctures into the kidney substance were followed by new growth of connective tissue along the line of puncture which, however, did not extend out into the surrounding kidney substance.

Leopold[16] has reported the occurrence of an incipient fibrosis in the kidney of a dog which had been subjected to prolonged administration of sodium chlorid; and recently Siegel[17] has referred to a condition found in a dog thirty days after acute poisoning with uranium nitrate which he describes as a chronic parenchymatous nephritis.

EXPERIMENTAL METHOD.

The animals taken for experiment were well grown guinea-pigs which weighed between 550 and 700 gm. They were fed on carrots and hay, except when under special observation in metabolism cages, when they received a weighed amount of carrots only. A limited number were observed in metabolism cages, from which the total amount of urine was collected and daily tests made. Bacterial growth in the urine was controlled by placing a few drops of chloroform in the receiving vessels. The ordinary clinical tests of the urine were applied, and quantitative estimations of the chlorid and phosphate excretion were made, using Volhard's method for the chlorids, and the uranium nitrate method for the phosphates. The reaction was so alkaline that casts were rarely found in the twenty-four hour specimen. Autopsy was done in every case as soon after death as possible, and, in all cases where the animal was killed, chloroform was used, and the autopsy was done at once. Gross examination was made of all the organs, and histologic examination of the kidneys. Of the various fixing fluids tried, Carnoy's kidney fixative was found to give the best results, although sections fixed with this fluid could not be studied with Sudan III for the presence of fat. The blocks were embedded in paraffin, the sections cut at from four to six microns and mounted with glycerin and egg-albumen. The stains used were hematoxylin and eosin, Weigert's elastic tissue stain, Weigert's fibrin-stain (to demonstrate the hyaline change), and Van Gieson's connective tissue stain. The presence of calcium salts was demonstrated by von Kossa's silver nitrate solution.

16. Leopold: Ueber der Einwirkung von Salzen auf die Nieren (im Tierexperiment). Ztschr. f. klin. Med., 1906, lx, 490.

17. Siegel: Ein Stoffwechselversuch bei Urannephritis am Hunde. Ztschr. f. exper. Path. u. Therap., 1907, iv, 561.