

some proliferation of the endothelial layer. There was distinct cystic formation of the glomerular capsules in five cases, and new formation of elastic tissue around some of the glomeruli in one. There was more or less degeneration of the tubules in all, with atrophy of the epithelium and dilatation of the lumens in which were exudate and desquamated cells. The greater number of the tubules appeared normal, and the areas of degeneration which were present were more or less closely associated with the areas in which the glomeruli were most severely damaged. There were distinct areas of round-cell infiltration in every case, occurring chiefly near the larger veins at the inner margin of the cortex, but in two cases there was definite infiltration in the region of the damaged glomeruli. The greatest amount of tubular change was found associated with these areas of round-cell infiltration. In four of the cases there was no definite increase in the intertubular connective tissue, but in the other two there was definite fibrosis in the medullary rays which extended to the surface and corresponded with distinct though microscopic dimples on it. There was deposit of calcium salts in two cases.

These results would indicate that long-continued, mild intoxication with uranium nitrate will produce a beginning fibrosis in the kidneys. It would seem that the condition is progressive, and it is interesting to note that the animal which showed the greatest amount of fibrosis in the kidneys had received the greatest number of injections. The picture rather closely resembles that described by Weigert in subgroup 1 of the "chronic hemorrhagic with heart hypertrophy," and although I am unable to say that the animals' hearts were hypertrophied, I believe that the kidneys of this series may be classed under that heading.

In Series II the results obtained were just as constant and much more striking. Each injection was sufficiently strong to produce a definite subacute attack of nephritis from which the animal usually recovered. A glance at the charts, Figures 4 and 7, will give some idea of the results of each injection. In nearly all cases there was a definite albuminuria with more or less retention of the chlorids and phosphates. There was definite loss of weight after almost every injection. In two cases there was definite polyuria towards the end of the experiment, and similar comparison could not be made in two of the remaining cases because the animals had not been kept in the metabolism cages for a sufficiently long time. As stated above, I was unable to find casts in the twenty-four-hour samples of urine except on rare occasions, but in two of the four cases in which there was urine in the bladder after death, numerous granular casts were found,