

granular exudate in their lumens. The collecting tubules and the loops of Henle contain casts. The glomeruli may be unchanged or may show thickening of the capsules, and there may be connective tissue change in the tufts. There is some proliferation of the intertubular connective tissue, and there may or may not be thickening of the intima of the arteries.

2. Forms which are similar to those just described, but which show in addition definite macroscopic granulations on the surface. There is greater glomerular and tubular change and much more new growth of connective tissue. Clinically this type contrasts with the chronic interstitial, in its shorter duration, the greater amount of albumen, and the presence of edema. It may be considered as a further stage in the process of which the type last described forms a part.

3. Large white kidneys which closely resemble the above type both clinically and histologically except that they are anemic and show much more fatty change.

Weigert also refers to kidneys which are atrophied and granular, with very marked degeneration of the glomeruli and tubules, with the formation of cysts and with calcium deposit, and with marked diffuse increase of the connective tissue. This group he divides into two smaller groups: (a) the small red atrophic kidney; (b) the small white atrophic kidney. The condition is characterized clinically by the long duration, the absence of edema, and the hypertrophy of the left ventricle of the heart.

In discussing the etiology of chronic nephritis he points out that a parenchymatous nephritis, i. e., one in which the parenchymatous change is the most marked but which shows also some interstitial change, can pass over into the stage of a shrunken kidney. He also believes that all new formation of connective tissue in the kidney is invariably preceded by degeneration of the tubules or glomeruli.

In 1897 Senator² made a definite division of contracted kidneys into two groups, primary and secondary. The primary sclerotic, together with the arteriosclerotic, form by far the greater number of cases of chronic nephritis, and are progressive from the beginning without any primary acute inflammation, and often without acute exacerbations. The secondary contracted kidney on the other hand, dates from some acute infection, and has an initial acute stage which may be considered as a true parenchymatous nephritis. He believes

2. Senator: Die Pathogenese der chronischen Nephritis. Berl. klin. Wehnschr., 1897, xxxiv, 820.