

rub along the capillary walls. When this increased friction, slight though it may be, is considered in the light of the enormous areas covered by the myriads of capillaries throughout the body, a very good case is made out in favor of this physical condition being at least one factor in the determination of the degree to which the abnormal high tension may be raised.

The points of clinical interest we have so far noted are namely: Persistent high tension, arterio-capillary fibrosis, cardiac hypertrophy, an increased quantity of urine with specific gravity 1005 to 1012, albuminuria slight and evanescent and the presence of casts.

These are the comparatively constant conditions which accompany granular kidney. To fill out the history of any great number of cases many other phenomena will have to be noticed.

The eye changes most commonly observed consist of what is known as albuminuric retinitis. Two varieties are noticed, of different pathological explanation and of equally different clinical significance.

The first is inflammatory and exudative, showing patches on the retina described as woolly with indistinct borders. These are most commonly associated with parenchymatous nephritis, but do occur in granular kidney. They may be extensive and seriously interfere with sight, yet if the kidney mischief be checked there is a good chance these patches will disappear and the sight be restored remarkably well.

The second variety is not an edema, but a degeneration. The patches are white and glistening in appearance, with more sharply defined outlines. They are the result of fatty degeneration of the retina and the very finely divided fat granules, or it may be even minute cholesterine crystals replacing the once active retinal cells produce the characteristic bright fish scale appearance of these patches. These changes are degenerations due to the arterio-capillary endarteritis, and they never repair.

Retinal hemorrhages occur, but have no special appearances to distinguish them from hemorrhages due to other causes.

Blindness may be due to uremia or to cerebral hemorrhage. Intra-ocular bleeding or detached retina will produce the same result.

The skin at all times performs important functions, but during this trouble we often depend for help on the hyperactivity of the skin, so to speak. Therefore any change in the skin is always watched with anxiety. Edema may occur, and the vitality of the various layers of the epidermis be lessened there-