

experience in which albumin was lacking, and the diagnosis was made from microscopic or from visceral findings. For example, a man exhibited uræmic symptoms and albuminuric retinitis, though the urine was found free from albumin and casts for nearly a year. Nephritis was diagnosed from the retinal and cardio-vascular lesions, and confirmed a year later postmortem. Again, in a patient at the acme of typhoid fever, an anasarca developed for which no causal cardiac asthenia nor marasmus could be assigned. No albumin was demonstrated by various and repeated tests, yet the sediment was literally loaded for three weeks with fatty, epithelial, granular and hyaline casts, indubitable nephritis sine albuminuria. Similiar instances could be multiplied. Spurious albuminuria from pus or blood scarcely enters into consideration of our topic, since the danger of error is presumably recognized.

Casts may be found at intervals when albumin is temporarily absent, when albumin is permanently absent or late in resolving inflammatory processes after chemical tests prove the final absence of albumin. Casts should be searched for even when albumin is absent, although many are too prone to examine the sediment of non-albuminous urine with pre-determined negative results.

Our conceptions have been broadened concerning the significance of hyaline casts, now regarded as occurring in apparently normal urine. The evidence is not yet all in regarding granular and epithelial casts, but they probably always point to some degenerative inflammatory lesion.

As a cardinal diagnostic point with retinitis albuminuria and the urinary findings, we consider the cardio-vascular alterations, which, frequent in the interstitial, are at least inconstant in the parenchymatous types. Heart and arterial changes are by no means invariable, even in contracted kidney. Cardiac hypertrophy may be simple as in primary contracted kidney, or excentric as in other forms of contracted kidney. There may be dilatation without hypertrophy or indeed even atrophy, as observed in a recent case. The circulatory changes may be otherwise explained, *e.g.*, from arterio-sclerosis of different etiology.

As a broad statement, he who invariably examines the urine and heart in every instance rarely fails to diagnose nephritis. This very interdependence of heart and kidney, usually of diagnostic aid, may prove the source of clinical confusion. Thus primary cardiac disease may cause renal congestion, embolism, or even acute or chronic nephritis. Again, alcohol or syphilis may be