

and bowels, occasional nausea and vomiting, habitual looseness or irregularity of the bowels, constipation and diarrhoea sometimes alternating. With this there is often turbidity of the urine, which is high-coloured, excessively acid, and deposits urates or oxalates abundantly. After a time, the urine, which had been scanty, becomes more copious, of pale colour, of low specific gravity, and is found to contain albumen, and to deposit a cloudy sediment, in which are found small hyaline and granular casts. In such cases, renal congestion and albuminuria, and ultimately structural degeneration, result from the long-continued elimination of some products of faulty digestion through the kidneys. Analogous to this is the not infrequent occurrence of albuminuria and renal degeneration as a consequence of the persistent excretion of large quantities of sugar in cases of diabetes. It appears, then, that imperfect digestion, the result of functional disorder of the stomach or the liver, may lead to over-stimulation of the kidney, resulting in albuminuria, and ultimately in serious degeneration of the gland.

We have another illustration of the influence of a primary disorder of the liver resulting in a secondary disturbance of the kidney in the appearance of renal epithelium and tube-casts, with sometimes more or less albumen in the urine, excited by the excretion of bile-products by the kidney in cases of jaundice. This fact, which was, I believe, first pointed out by me in my book on *Disease of the Kidney* (p. 108), published in 1852, I have somewhere seen referred to as a recent German discovery.

As the dyspepsia which is associated with albuminuria, is often excited or greatly aggravated by the abuse of alcoholic stimulants, so I have no doubt that excessive tobacco-smoking is an occasional, though probably a much less frequent, cause of a primary hepatic and gastric disorder, with inveterate dyspepsia, leading on, in the manner before described, to renal irritation and congestion with albuminuria, and finally in some instances, to irremediable degeneration of the kidneys.

Dr. Clifford Allbutt has directed attention (*British Medical Journal*, February, 1877) to the influence of mental anxiety in causing

granular degeneration of the kidney. I do not agree in opinion with Dr. Allbutt that "mental anxiety is one of the chief, if not the chief, cause of granular kidney"; but I believe that there is a real etiological relation between mental anxiety and some cases of albuminuria; and I have often seen, in cases of chronic renal disease, a great increase of albumen under the disturbing influence of mental emotion. In my own experience, however, saccharine diabetes has much more frequently than albuminuria been traceable to mental and emotional influences; and it has appeared to me that as, in the diabetic cases, the saccharine urine, whether in the rabbit whose medulla oblongata has been mechanically irritated by the operator's needle or in the human subject whose brain has been tortured by mental-anxiety, the primary influence of the nerve-disorder is upon the sugar-forming liver, so, in an analogous manner, the albuminuria which results from mental anxiety is a secondary result of a nervous influence acting primarily on the liver and the stomach, the so-called chylopoietic viscera. In fact, it seems to me that the albuminuria which appears to have resulted from mental and emotional influences is a form of albuminuria from dyspepsia, and the immediate cause of the renal disorder is the excretion of some abnormal products of imperfect digestion. In many of these cases, too, it is obvious that more than one etiological agency has been operative. The man or the woman depressed by mental anxiety, with a failing appetite and disturbed sleep, often seeks temporary relief from misery in an alcoholic stimulant; and so it is often found that the noxious influence of alcohol as a substitute for wholesome food has to be taken into account in explaining the albuminuria and the renal degeneration which had their starting-point in mental worry.

We now come to our second proposition, which is that the presence of albumen in the urine, although small in amount, and appearing only occasionally in the urine of persons otherwise apparently in good health, is abnormal and pathological. The main point of the practice, therefore, is to make diligent inquiry for the probable cause of this abnormal condition; and then, having ascertained it, we can instruct our