

mation. Of this variety I shall say very little here, except that when a calculus of this kind has once formed, an operation of some form is required for its removal. The constitutional calculus is of quite a different character, and is generally avoidable. All constitutional calculi have a base, the elements of which are separated from the blood. This base is most frequently uric acid, sometimes oxalate of lime, or even in a few rare cases phosphatic stone would appear also to have this form of origin. A patient who habitually passes brick dust in the urine, next notices, as I have already said, the bright crystals of uric acid. After a time sand is passed, the particles of which, as they grow larger, appear, as their common name expresses it, like gravel. As time goes on one or a number of these grains remain in the kidney or bladder, and grow larger by constant deposit on their surface from the urine that passes constantly over them. Thus arises a stone, the composition of which will be found to be this same uric acid, combined with one of the alkaline bases that I have mentioned above. Fortunately these cases generally consult a medical man before this latest stage is reached. They come complaining of "kidney disease," decidedly a vague term, but one which to their idea is undoubtedly evidenced by the appearance of "gravel" in the urine. I have noticed also that in many cases the disease from which they suppose they suffer has some very remarkable symptoms, which, when we analyse, we find agree with those given in some of the wonderful advertisements we see in our daily papers, particularly one that begins in large letters, Are you Tired? Have you a Pain in your Back? etc., etc. The difficulty does not exist so much in learning what symptoms they think they have, as in finding any condition of the human body the symptoms of which they have not. And all these symptoms are set down as those of that much dreaded "kidney disease" which must exist because they can see the brick-dust deposit in their urine.

Almost or quite convinced that they really have some disease of the kidney, these people

fall an easy prey to unscrupulous quacks, who confirm their idea of their disease. Whereas, as a matter of fact, this brick-dust deposit, so far from betokening disease of the kidney, is an evidence to us that the kidneys are doing more than their share of work, instead of less. And yet the treatment generally laid down in the text books almost forces one to the conclusion that the kidney has, through some faulty action of its own, something to do with the formation of this deposit; and so we are told to give alkalis when uric acid is present, and acids when the urine is alkaline; that is, to give liquor potassæ, bicarbonate and citrate of potash, Vichy water, phosphate of soda and ammonia (as having the power of keeping uric acid in solution in the urine), benzoic acid, benzoate of lithia, etc.

Now this treatment by no means removes the disease, it merely gets rid of the deposit by producing a chemical change. It does not remedy the pathological condition, it only deceives the patient by covering up his most appreciable symptom.

Looking at the pathology of gouty and uric acid cases, I find Garrod says, in speaking of gout: "This disease involves a peculiar morbid condition of the blood, namely, an abnormal accumulation of uric acid." Sir Henry Thompson says this condition is the result of "a defective assimilation on the part of the organs of the primæ viæ." We find that in these cases we have a train of symptoms which when taken together constitute what is called "Torpid Liver." The symptoms consist of an almost constant deficient excreting function of the bowels, often accompanied with some symptoms of indigestion, a condition which it is customary with many to refer to a form of congestion of the liver. Whatever the exact condition is, certain it is that the liver exerts a very important action on the products of digestion. When this organ, alone or together with certain other glands of the digestive apparatus, is overworked, or overloaded, the kidney makes an attempt to assist in the elimination of certain materials which are to be got rid of, and the consequence is that the urine contains a larger amount of some of its solid constituents