

excreted in the urine it must be retained. May not the retention of so much acid in the system be one of the factors in the production of diabetic coma?

An excess or deficiency of phosphates has been most useful to me in the diagnosis of a class of functional nervous disorders where there is no positive symptom. In many such cases where the symptoms related by the patient may be fancied or real, they will often be found useful in deciding the doubt and directing the thoughts to the cause of the trouble.

Many of these cases will be found to be real sufferers from an over-excited condition of the nervous system, due generally to some long-continued drain, and is found among youths as well as adults. There are three principal classes of patients affected in this way.

In the first there is hyperæsthesia and paræsthesia of the nervous system generally. The patient is sleepless, and a peculiar restlessness torments his waking hours; the eyeballs are sensitive to light and tender to the touch; a ring at the door-bell goes through the patient like a painful shock of electricity; the most delicate food causes pain in the stomach; there is frequent scalding micturition, simulating cystitis; and sometimes shooting-pains and numbness of the extremities cause fears of organic nervous disease.

In another class of cases backache and melancholia are the prominent symptoms. In men, the elastic term lumbago often does duty as a diagnosis, whilst in the female the very same symptoms direct our attention to that veritable scape-goat of all obscure symptoms—the uterus.

In some of these cases the pain may be the cry of the lumbar nerves for more healthy blood, but I believe that in the large majority it is caused by the deposit of phosphatic or oxalic crystals in the pelvis or tubules of the kidney. In such cases I have sometimes found casts, doubtless formed by the inflamed condition of the tubules caused by these crystals. A short course of some saline diuretic, with free diaphoresis and restricted diet, generally gives prompt relief. There are many persons who are frequently affected with pain in the back caused in this way. If the cause is understood the treatment will be more satisfactory. It is frequently regarded as rheumatic, but a careful analysis will generally show the very opposite condition of urine to what is found in rheumatism.

A third class of cases complain chiefly of dyspepsia and weakness. There is intense irritability of stomach, the most delicate food causes intense pain of a burning character, and sometimes vomiting is so persistent as to cause fears of organic disease. In such cases anæmia is a prominent feature.

In order to satisfy myself of the truth of these views, I have endeavored to study the natural history of such cases unmodified by medicine and without any treatment whatever but the removal of what I conceived to be the cause. In this manner, administering only a little colored water as a placebo, I have treated a number of severe cases of dyspepsia, anæmia, melancholia, etc., with the most satisfactory results,—and that, in some cases, after the ordinary medicinal treatment had failed. I do not wish to be understood as applying this treatment to any cases but those that are caused by some disturbance of the nervous system. In such medicine will often fail without the needed rest.

I am convinced from my, so far, imperfect study of this subject, that the cause of any marked and continued increase in the amount of phosphates excreted is always due to some irritation of the nervous system, whether in the form of injury, disease, or over-excitement. When examining the urine of students passing their examinations, I have invariably found that the anxious, excitable student was distinguished from his cooler companion by a greater excretion of phosphates. But exalted function must always be followed by depression, and an excess of phosphates at one time will bring a diminution at another.

When giving expression to these views I have been asked why we never used to hear of nervous exhaustion. The answer is two-fold. In the first place disorders that were formerly called "liver complaint," "dyspepsia," etc., are now recognized as merely the symptoms of "exaggerated nervous mobility," and treated accordingly. Again, the nervous strain of this age is immense when compared to that of even a generation ago. More rapid intercommunication, an increased consumption of tea, coffee, alcohol and other stimulants, a greater possibility giving rise to an increased desire for wealth, diminished rest to the nervous system through the improvement and cheapening of artificial light, the more general diffusion of literature