

and alkiline, are excreted in excess. Nitrogenous solids are often inadequate in amount. Oxalates are found in older cases, but indicate no more than does excess of urates—i.e., a lithæmic state. The amount of urine passed is variable. Sometimes there is polyuria, but, on the whole, the total amount is variable. Respirations are normal in number, but shallow, and deficient respiratory expansion may be noted. Younger patients and women are generally anæmic, but middle-aged adults are not, the face being full and ruddy, and the mucous membrane of good color.

When neurasthenia begins before the age of twenty-five, there is more distinct evidence of neuropathic constitution and inheritance. Mental symptoms are more marked, approaching those of hypochondriasis, and there is greater depression and greater introspection. Neurasthenia of the climacteric, in both men and women, is of comparatively short duration and favorable in its course. Neurasthenia in women shows itself by a greater dominance of sensory and irritative symptoms. There is more pain, headache, neuralgia, and spinal ache, and a greater subjective sensation of "nervousness," more restlessness and irritability. There is greater variability in the rise and fall of symptoms. The neurasthenic women under excitement does all that a healthy woman can, then collapses entirely. Women of strong purpose will be thus alternately sick and helpless, or bright, active, and cheerful. Those of weak will, aided by the mistaken ministrations of sympathetic friends, get in bed and stay there, drifting into permanent invalidism, because overcome by the pain and weariness that active movement excites. Hysteria often complicates these cases. "Crises" of palpitation occur, of vomiting, tympanites, diarrhæa, pulmonary oppression, syncope, and emotional excitement. Nutrition suffers more than in men, the disorder is of a severer form, and the patient emaciates. Symptoms are slightly exaggerated at the time of menstruation. Rarely, if ever, beginning before eighteen or after fifty, neurasthenia occurs in the following order as regards age: First, between eighteen and thirty; then between thirty and forty; and less frequently between forty and fifty. Exciting causes are excessive mental strain, sudden shocks, injuries, frights, sunstroke, excessive child-bearing, domestic troubles, sexual excesses, especially masturbation, irregularities and excess in eating, drinking, and smoking. Overwork does not cause it, provided there is no great mental worry. Even these can be borne if the patient is regular in eating and sleeping, and does not drink or smoke too much. Reckless indulgence in athletics during youth, particularly if combined with the over-use of tobacco, may be a cause. In some cases it follows apparently some single powerful physical exertion. Malarial poisoning, syphilis, the infective fevers, particularly cerebro-

spinal meningitis, are important agents in causing neurasthenia. Of reflex influences that cause and keep it up, disturbances of the stomach, intestines, and liver are by all odds the most important; next come irritations from the pelvic and generative organs.

Neurasthenia is a condition in which the nutrition of the nerve-cells is primarily at fault. These cells have lost their power of building themselves up into stabler compounds. They break down under slight irritation, and consequently send out but feeble impulses. It is thought by some that this dystrophic condition especially involves those parts which make up the vaso-motor neuro-mechanism. If this be so, it is the nervous tissue of the medulla and central parts of the spinal grey matter that are most involved. There is little doubt, however, that the cortical grey matter and higher centres of the brain are also implicated, for mental symptoms are always prominent. Peripheral nerves are not primarily at fault. Cerebral and spinal hyperæmiæ are secondary to nervous disturbance. Neurasthenia is primarily cellular and secondarily vascular.

The duration of the disease is from one to ten years, depending largely upon treatment and habits of life. Most patients get well, or practically well, with some reminders that they cannot overtax themselves or do the work of those of strong nerves. The late years are the best, owing to lessened nervous sensibility and early, orderly, and temperate living. Neurasthenics, if they get well, get old. With care, neurasthenia may readily be differentiated from simple nervousness, degenerative forms of insanity, such as *folie du acute*, from hypochondriasis, from melancholia, hysteria, and spinal irritation. The patient should have his course of treatment laid out for him. Rest, or lessening of business or domestic duties is fundamental. While travelling is bad, a sojourn at such places as the Azores, West Indies, Bermuda, or some special point in Southern Europe where outdoor life is possible, is of benefit. Diet should be rather nitrogenous than otherwise. Fats, green vegetables and fruits may be added. Sugars and starches are to be avoided, though malt preparations usually agree. Nutrition must be carefully watched, the patient must be weighed and sometimes fattened, using water, malt, oil and cream for this purpose. In many cases a low diet, but one perfectly digestible, is indicated. Cold sponge-baths, the shower, a strong jet of cold water on the back, a cold plunge, or the wet pack, are measures almost invariably indicated. Lukewarm baths, 95° F. to 98° F., for half an hour at night, relieve the paræthesiæ and insomnia. The skin should have a thorough rubbing every day. Interesting respiratory exercises that expand the lungs should be encouraged. Drugs that are most useful are the bromides, nux vomica, mineral acids, quin-