

neurasthenia, the spine should suffer in this way so frequently is more difficult to understand, but if we consider that the spinal column with its muscles and its supply of ligaments is so constantly in action during the waking state, the fact that it should suffer early when nervous weakness arises is easily comprehensible, the degree in which it suffers being influenced by hereditary predisposition or otherwise. Whilst the action of the muscles of the back is largely automatic, the impulses from the higher centres are called upon more frequently as the nervous action which is sufficient in a normal state becomes weakened by disease and this increased demand on the higher centres gradually induces in them a condition of irritation which is expressed peripherally by the deranged sensations in the structures of the dorsal region. The localization of the pain in certain spots, as in the "plague sacrée" of Charcôt, or as in the tenderness to pressure of certain spinous processes, may be due to a slight strain of the ligaments or muscles, which has taken place without the attention of the patient being especially attracted to it, and which would never have developed but for the existence of the nervous weakness. A case in point is one of a young lady who, after having led an active out of door life with plenty of exercise, became neurasthenic and one day in lifting a book felt a sudden pain in the muscles of the forearm. This subsided in a little time and only recurred on making a sudden effort with the arm which was otherwise quite well. The strain was in this case due, not to any local trouble in the forearm, but to a lesion of the higher centre of the brain, and disappeared entirely as the central nervous system regained its normal tone, as is frequently seen in cases of traumatic myalgia. In an analogous manner a lesion of the spinal structures may develop producing an irritated centre in the brain which gradually increasing, shows itself in the symptoms known as spinal irritation. The importance of the suggestion that the real cause of the trouble is psychical rather than physical, is very great in consideration of the treatment.

We now come to the second phase which was mentioned above, namely the question of the relation between neurasthenia and incipient mental disease. Authors generally, consider that neurasthenia terminates, only as an exception, in mental disease. I believe, on the contrary, that certain forms of neurasthenia (especially those affecting the intellect or the emotions) *frequently* do so. This belief is based on clinical experience, and is supported by the researches of Hodge. The latter, as you are all aware, demonstrated with the microscope, the changes which take place in nerve cells after physical fatigue and electrical stimulation, and showed that after an excessive degree of fatigue, the cells recovered their normal condition only with difficulty, or not at all. This whole subject has been ably discussed by Tuke, who maintains that the changed conditions of the cells of the cortex, probably combined with the toxin introduced in the blood through deranged metabolism of these cells, must naturally lead to a disturbance of function of the higher centres of the brain, which unless corrected, must necessarily lead to definite mental disease. He says that "In the course of almost every case of idiopathic insanity, *i. e.*, insanity due to over-exertion of the brain, we have a fairly well marked prodromal period indicating the diseased balance between nutrition and