

to support his jaw. The weakness of the arms was manifested especially in actions which required them to be raised; *e.g.*, he could not put the bridle on his horse. He had great difficulty in winding the clock, which stood high up on the wall. His ability or inability to do this he used as a test of what progress he was making towards recovery.

On August 28th, 1906, his wife reports that he has no double vision, no weakness of any kind, and is now overlooking some building contracts.

The age of this patient made me doubt whether this might not be a case of bulbar paralysis, but the condition of the tongue, palate and uvula, and the involvement of the arms, negatived that. The non-appearance of atrophy, and, above all, the subsequent history, puts that out of court. The absence of sensory symptoms led me to exclude neuritis.

Although this patient is after a year and a half apparently perfectly recovered, yet it is well not to be too sanguine, for the symptoms have been known to recur after even longer intervals.

The upward rotation of the eye is of interest, especially in view of the statement made by Gowers that a striking difference from the ophthalmoplegia of muscular degeneration is the greater escape in myasthenia of the muscles moving the eye-balls downwards.

Myasthenia cannot be due to any local disease of the nerves. Any organic affection of the governing nerve centres is equally improbable. Moreover, neither gross nor microscopic examination has shown any condition of the nervous or muscular system capable of producing the phenomena of the disease.

The very same phenomena are seen in muscles after undue and prolonged use. We then speak of it as fatigue, and regard it as a normal condition. In myasthenia gravis, however, the phenomena appear after muscular movements not unduly prolonged nor severe.

What is fatigue? What changes take place in the structure of the muscles, or in their intracellular chemistry in fatigue?

Contraction is said to follow on a stimulus carried to the muscle by the nerve, but Langley¹ has shown that even after nerves have been cut, or paralysed by nicotine, the muscle will still contract, so that the nervous impulse does not act directly on the contractile substance of the muscle, but on some accessory substance—called by him the receptive substance of the muscle—which receives the stimuli, and transfers them to the contractile substance.

In all cells two constituents, at least, are to be distinguished: a chief substance which is concerned with the chief function of the cell, as contraction and secretion, and receptive substances