Firstly, motion; secondly, inhibitory action or controlling influence over the lower motor neurones. Injury, let us say of the upper motor neurones of the leg-centre in the cerebral cortex, is followed by paresis or paralysis of the leg, and following this, due to the inhibitory control being removed from the lower motor neurone, the tone in the muscle is greatly increased, and this is shown, clinically, by the presence of a rigid or spastic gait. But the tone of the muscle, as already said, being increased naturally, one finds that the deep reflexes are all increased, this being really a mechanical condition, and not due to a true reflex, which will be discussed later on. There is no alteration in the muscles to faradic and galvanic current. Injury or destruction of the lower motor neurone is followed by paresis or paralysis of the leg. On account of the lower motor neurone being the trophic centre for the muscles, a flaccid condition is present, this being an expression of lack of tone. This condition is soon followed by an atrophy of the muscle on account of its trophic centre being destroyed, and along with this we find marked lessening or loss to the faradic current and typical galvanic alteration or degeneration. As we have here a flaccid condition, due to loss of tone, we find that the deep reflexes are lost.

Let us now take up the lower sensory neurone. Destruction or injury of the lower sensory neurone produces a paresis or paralysis of sensation in the leg, giving clinical signs of either objective or subjective sensory disturbances. Following this, certain loss of tone occurs, and the deep reflexes are lessened or lost. There is no alteration to faradic or galvanic irritability in the muscles. Injury or destruction of the upper sensory neurone produces exactly the same symptoms as the lower sensory with this exception, that the deep reflexes are normal, while in the lower sensory neurone we saw that they were absent.

I might here stop for a moment and discuss particularly the ætiology of the deep reflexes, such as the knee jerk, elbow jerk and Achilles' reflex. To obtain a reflex in the lower animals, and even in the monkey, it is necessary for the lower motor and sensory neurones to be intact, so that when tapping the patellar tendon the impulse or stimulus travels up the lower sensory neurones and forward to the cell body of the lower motor neurones situated in the anterior horns. From there the impulse is carried down to the muscle, with the result that we get a knee jerk. In man it is not the same. I will try to explain in as brief a way as possible wherein lies the difference. We know that the lower motor neurone supplies tone to the muscle. The amount of that tone is regulated by the upper motor neurone. Let us say, for the sake of argument, that the normal lower motor neurone gives out 100 per cent. of tone, and, to use a mechanical term, let us call it "*rebound.*" Now, though the lower motor neurone gives out