

the lower sensory and lower motor neurone is interfered with, the normal stimuli necessary for the lower motor neurone to act being affected, the vitality of the cell is affected and a certain amount of loss of tone occurs. For the sake of a figure, let us call the normal tone 100 per cent. Now, any diminution in tone, however small, has a marked effect in diminishing the reflexes. This is noticed clinically, as the knee jerk is the first thing to disappear and the last thing to reappear, which shows that this idea is correct, and that the knee jerk and other deep reflexes are simply an expression of tone. Let us take as an instance a case of *tabes dorsalis* where the knee jerks have been lost for years, supposed to be due to the reflex arc being destroyed. The sensory neurones being completely degenerated, no stimuli can pass along them. Suppose this patient develops a hæmorrhage in the internal capsule. This will partially or completely destroy the upper motor neurones, with the result that the inhibitory influence over the lower motor neurone is removed. This being so, there is an output of tone from the lower motor neurone, and we find all the reflexes greatly exaggerated on this side, while the knee jerk might still remain absent on the other side. If the patient makes a good recovery in time, the knee jerks will be lost. This can be shown again in cases of complete transverse division of the cord in man where we have complete paralysis of motion and sensation, flaccidity and absence of the reflexes. Take a faradic battery, apply two needles to the ends of the wires, place one in the calf muscle, the other in the external popliteal nerve, continue this for half an hour or an hour, and if the division of the cord has been fairly recent, you can get the return of the knee jerk, lasting for a few minutes to half an hour. This is obtained by the increased tone produced by the battery. Similar conditions can be seen in tabetic patients, who later on in the disease develop general paralysis. In this condition the upper motor neurones are affected, and the picture first presented as a true tabetic condition passes into one where the reflexes are greatly exaggerated. I could relate many such cases showing that man and the lower animals are not comparable with regard to the ætiology of the deep reflexes.

As to the result of pressure upon the brain, spinal cord and peripheral nerves, let us begin first by observing what happens when, either by accident or by disease, pressure is exerted upon the peripheral nerves. To illustrate this, let us suppose that we have before us a dog with its sciatic nerve exposed. On this we place a test tube half an inch in circumference containing mercury one inch in depth. In an hour we shall find that the motor paresis begins to develop, while sensation to touch, pain, heat and cold is normal. If this be kept up for four or five hours the paresis becomes more marked, but there is no