

neurone consists of a cell body and processes (dendrite and axone). In the brain proper we have, in addition to the motor and sensory neurones, other neurones which make up that part of the nervous system, in which is situated the higher mental faculties and the special senses, such as vision, taste and touch.

Let us first take up the *neurones for motion*. It is seen that there are two distinct systems of neurones, one called the upper the other the lower motor. The cell bodies of the upper motor neurone are situated in the motor area of the cortex round about the fissure of Rolando, their axones or nerve fibres penetrating inwards to the centre of the brain, pass down the internal capsule through the pes, pons and medulla, reach the cord, and end by arborization round about the cell bodies in the anterior horns, either in the cervical, dorsal or lumbar sacral regions of the cord. Some only reach the floor of the fourth ventricle, and do not enter the cord. The cell bodies of the lower motor neurones lie in the third and fourth ventricles and in the anterior horns in the whole extent of the cord. Their axones passing from the brain form the cranial nerves, while the axones of the cell bodies in the anterior horns pass out at the anterior surface of the cord, and are there called the anterior roots; from there outwards in connection with the sensory neurones they constitute the peripheral nerves. Now, let us take up the position of the *sensory neurones*. Like the motor, we have two systems, the upper and lower. The cell bodies of the lower sensory neurones lie in the ganglia of the posterior roots of the cord. Their dendrites stretch from the skin up to the cord, and along with the lower motor axones make up the peripheral nerves. The axones of the lower sensory neurones, after leaving the ganglia, enter the cord at the posterior roots, and, through some processes, arborize around the cells in the posterior horns of the gray matter; some go to the anterior horns of the gray matter, while others ascend in the posterior columns to the medulla, and there ramify around the cell bodies of the upper sensory neurone. The axones of the upper sensory neurones ascend from these upwards to the brain by way of the fillet.

I have just mentioned that there are two systems in the motor and sensory neurones, but in all likelihood there are relays of neurones, interspersed between the periphery and the cerebral cortex, as, for instance, some of the upper sensory neurones pass first to the cerebellum, and from there on to the cerebrum. But for all intents and purposes required in this lecture, or for knowledge to understand the clinical signs of involvement of the nervous system, this will suffice.

Now let us see what are the functions of the upper motor neurones.