

duced by irritants (chemical stimuli), effects of electrical disturbance (electrical stimuli), or lastly, the passage of a molecular disturbance from any other nerve-fibre with which the one in question may be connected.

Nerve-cells are usually found collected together in aggregates, which are called ganglia, to and from which large bundles of nerve-fibres come and go. These rope-like clusters of nerve-fibres constitute the white threads and strings which we recognize as nerves when we dissect an animal. (See Fig. 3.) The relation of the clusters of fibres to the cluster of cells is now such as to supply the anatomical condition to the performance of a physiological

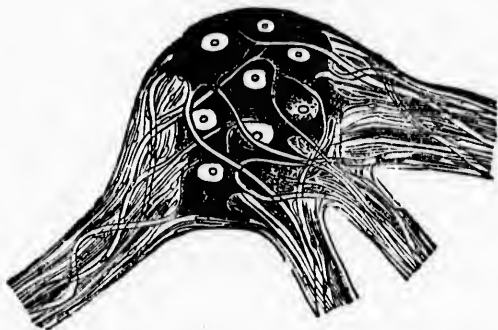


FIG. 3.—Small Sympathetic Ganglion (human) with Multipolar Cells. Magnified about 400 diameters. (Leydig.)

process, which is termed Reflex Action. If we suppose the left-hand bundle of fibres represented in the woodcut to be prolonged and to terminate in a sensory surface, while the other three bundles, when likewise prolonged, terminate in a group of muscles, then a stimulus falling upon the sensory surface would cause a molecular disturbance to travel along the left-hand or in-going nerve to the ganglion; on reaching the ganglion this disturbance would cause the ganglion to discharge its influence into the right-hand or out-going nerves, which would then conduct this disturbance into the group of muscles and cause them to contract. This process is called reflex action, because the original stimulus falling upon the sensory surface does not pass in a direct line