afferent and one efferent neurone. According to some, the connection between the two neurones centrally is not made directly by the processes of the cell body but by an "intermediate" or "shunt" cell. The diagrams shewn will make this clear. Besides, in nature we must al-

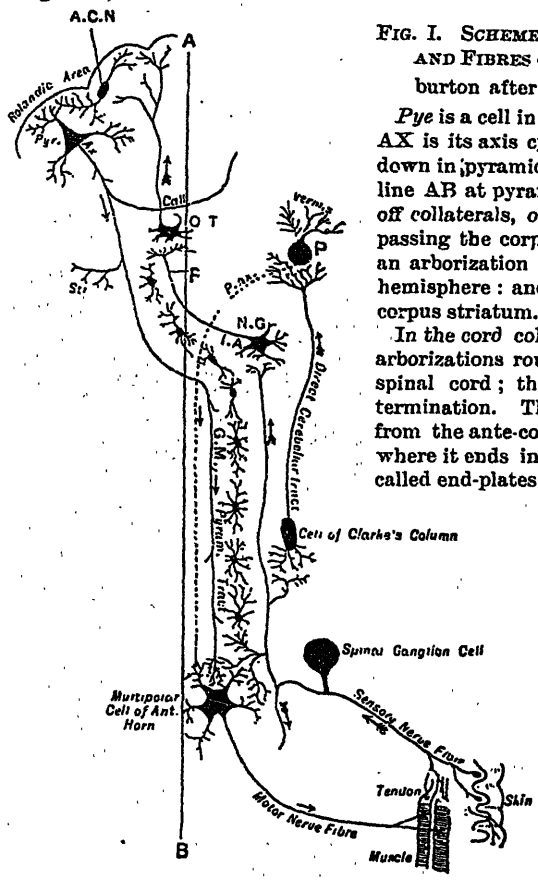

FIG. I. SCHEME OF RELATIONSHIP OF CELLS AND FIBRES OF BRAIN AND CORD. (Halliburton after Mott.)

Pye is a cell in the Rolandic area of cortex. AX is its axis cylinder process, which passes down in pyramidal tract and crosses middle line AB at pyramidal decussation. It gives off collaterals, one of which (*call*) is shown passing the corpus callosum to terminate in an arborization in the cortex of the opposite hemisphere: and another (*slr*) passes into the corpus striatum.

In the cord collaterals pass off and end in arborizations round cells of the ante-horn of spinal cord; the main fibre has a similar termination. The motor nerve fibre passes from the ante-cornual cell to muscular fibres where it ends in the terminal arborizations called end-plates.

Coming now to sensory fibres, a cell of one of the spinal ganglia is shown. Its axis cylinder process bifurcates, and one branch passes to the periphery ending in arborizations in skin and tendon.

The other (central) branch bifurcates on entering the cord and its divisions pass upward and downward, the latter for a short distance only.

The main ascending branch arborizes around a cell of the nucleus gracilis (N.G.) or nucleus cuneatus. The axis-cylinder process of this cell passes over to the other side as an internal arcuate fibre (I.A.) and becomes longitudinal as one of the fibres of the mesial fillet (F.) which terminates round a cell of the optic thalamus (O.T.) from which a new axis cylinder process passes to form an arborization around the dendrons of one of the cerebral cells (A.C.N.).

The axis cylinder process of A. C. N. arborizes round the dendrons of *Pye* from which we started.

Cerebellum.—A collateral of the sensory nerve fibre arborizes around a cell of Clarke's column from which a fibre of the direct cerebellar tract passes to end in an arborization around a cell in the vermis of the cerebellum.

P. is a cell of Purkinji, the axis cylinder process (*P. ax*) of which passes to the cerebro-spinal axis. A dotted line indicates its course towards an ante-horn cell as it has not been clearly demonstrated.

G. M. is the gray matter continuous from spinal cord to optic thalamus through which pain impulses travel upward.

Arrows indicate course of nervous impulses.