

from cells in the motor area of the cerebral hemisphere of the same side, and which, as they run downward in the medulla spinalis, cross in succession through the anterior white commissure to the opposite side, where they end, either directly or indirectly, by arborizing around the motor cells in the anterior column. A few of its fibers are said to pass to the lateral column of the same side and to the gray matter at the base of the posterior column. They conduct voluntary motor impulses from the precentral gyrus to the motor centers of the cord.

The **vestibulospinal fasciculus**, situated chiefly in the marginal part of the funiculus and mainly derived from the cells of Deiters' nucleus, of the same and the opposite side, *i. e.*, the chief terminal nucleus of the vestibular nerve. Fibers are also contributed to this fasciculus from scattered cells of the articular formation of the medulla oblongata, the pons and the mid-brain (tegmentum). The other terminal nuclei of the vestibular nerve also contribute fibers. In the brain stem these fibers form part of the median longitudinal bundle. The fasciculus can be traced to the sacral region. Its terminals and collaterals end either directly or indirectly among the motor cells of the anterior column. This fasciculus is probably concerned with equilibratory reflexes.

The **tectospinal fasciculus**, situated partly in the anterior and partly in the lateral funiculus, is mainly derived from the opposite superior colliculus of the mid-brain. The fibers from the superior colliculus cross the median raphé in the fountain decussation of Meynert and descend as the ventral longitudinal bundle in the reticular formation of the brain-stem. Its collaterals and terminals end either directly or indirectly among the motor cells of the anterior column of the same side. Since the superior colliculus is an important visual reflex center, the tectospinal fasciculus is probably concerned with visual reflexes.

Ascending Fasciculi.—The **ventral spinothalamic fasciculus**, situated in the marginal part of the funiculus and intermingled more or less with the vestibulospinal fasciculus, is derived from cells in the posterior column or intermediate gray matter of the opposite side. Their axons cross in the anterior commissure. This is a somewhat doubtful fasciculus and its fibers are supposed to end in the thalamus and to conduct certain of the touch impulses.

The remaining fibers of the anterior funiculus constitute what is termed the **anterior proper fasciculus** (*fasciculus anterior proprius; anterior basis bundle*). It consists of (a) longitudinal intersegmental fibers which arise from cells in the gray substance, more especially from those of the medial group of the anterior column, and, after a longer or shorter course, reënter the gray substance; (b) fibers which cross in the anterior white commissure from the gray substance of the opposite side.

Fasciculi in the Lateral Funiculus.—1. *Descending Fasciculi.*—(a) The **lateral cerebrospinal fasciculus** (*fasciculus cerebrospinalis lateralis; crossed pyramidal tract*) extends throughout the entire length of the medulla spinalis, and on transverse section appears as an oval area in front of the posterior column and medial to the cerebellospinal. Its fibers arise from cells in the motor area of the cerebral hemisphere of the opposite side. They pass downward in company with those of the anterior cerebrospinal fasciculus through the same side of the brain as that from which they originate, but they cross to the opposite side in the medulla oblongata and descend in the lateral funiculus of the medulla spinalis.

It is probable¹ that the fibers of the anterior and lateral cerebrospinal fasciculi are not related in this direct manner with the cells of the anterior column, but terminate by arborizing around the cells at the base of the posterior column and the cells of Clarke's column, which in turn link them to the motor cells in the anterior column, usually of several segments of the cord. In consequence of these interposed

¹ Schäfer, Proc. Physiolog. Soc., 1899.