(Fig. 672). The portion of the medulla spinalis which lies in front of the postero-lateral sulcus is termed the **antero-lateral region**. The anterior nerve roots, unlike the posterior, are not attached in linear series, and their position of exit is not marked by a sulcus. They arise by separate bundles which spring from the anterior column of gray substance and, passing forward through the white substance, emerge over an area of some slight width. The most lateral of these bundles is generally taken as a dividing line which separates the antero-lateral region into two parts, viz., an **anterior funiculus**, between the anterior median fissure and the most lateral of the anterior nerve roots; and a **lateral funiculus**, between the exit of these roots and the postero-lateral sulcus. In the upper part of the cervical region a series of nerve roots passes outward through the lateral funiculus of the medulla spinalis; these unite to form the spinal portion of the accessory nerve, which runs upward and enters the cranial cavity through the foramen magnum.

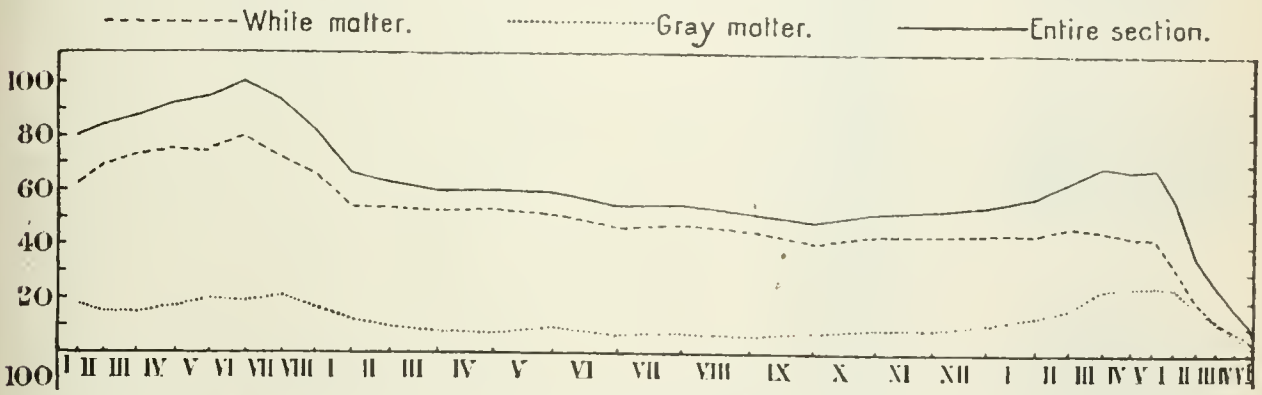

FIG. 665.—Curves showing the sectional area at different levels of the cord. The ordinates show the area in sq. mm. (Donaldson and Davis.)

The Internal Structure of the Medulla Spinalis.—On examining a transverse section of the medulla spinalis (Fig. 664) it is seen to consist of gray and white nervous substance, the former being enclosed within the latter.

Gray Substance (*substantia grisea centralis*).—The gray substance consists of two symmetrical portions, one in each half of the medulla spinalis: these are joined across the middle line by a transverse commissure of gray substance, through which runs a minute canal, the **central canal**, just visible to the naked eye. In a transverse section each half of the gray substance is shaped like a comma or crescent, the concavity of which is directed laterally; and these, together with the intervening gray commissure, present the appearance of the letter H. An imaginary coronal plane through the central canal serves to divide each crescent into an **anterior** or **ventral**, and a **posterior** or **dorsal column**.

The **Anterior Column** (*columna anterior; anterior cornu*), directed forward, is broad and of a rounded or quadrangular shape. Its posterior part is termed the **base**, and its anterior part the **head**, but these are not differentiated from each other by any well-defined constriction. It is separated from the surface of the medulla spinalis by a layer of white substance which is traversed by the bundles of the anterior nerve roots. In the thoracic region, the postero-lateral part of the anterior column projects lateralward as a triangular field, which is named the **lateral column** (*columna lateralis; lateral cornu*).

The **Posterior Column** (*columna posterior; posterior cornu*) is long and slender, and is directed backward and lateralward: it reaches almost as far as the postero-lateral sulcus, from which it is separated by a thin layer of white substance, the **tract of Lissauer**. It consists of a **base**, directly continuous with the base of the anterior horn, and a **neck** or slightly constricted portion, which is succeeded by an oval or fusiform area, termed the **head**, of which the **apex** approaches the postero-lateral sulcus. The apex is capped by a V-shaped or crescentic mass of translucent, gelatinous neuroglia, termed the **substantia gelatinosa of Rolando**, which