contains both neuroglia cells, and small nerve cells. Between the anterior and posterior columns the gray substance extends as a series of processes into the lateral funiculus, to form a net-work called the **formatio reticularis**.

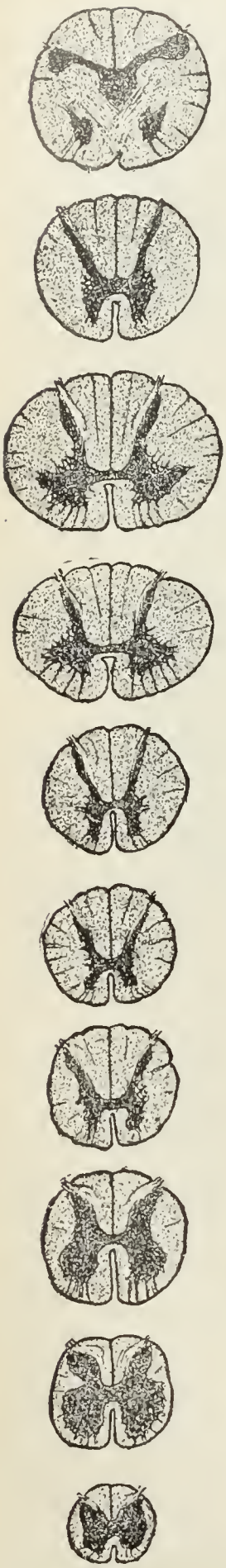

Fig. 666.—Transverse sections of the medulla spinalis at different levels.

The quantity of gray substance, as well as the form which it presents on transverse section, varies markedly at different levels. In the thoracic region it is small, not only in amount but relatively to the surrounding white substance. In the cervical and lumbar enlargements it is greatly increased: in the latter, and especially in the conus medullaris, its proportion to the white substance is greatest (Fig. 665). In the cervical region its posterior column is comparatively narrow, while its anterior is broad and expanded; in the thoracic region, both columns are attenuated, and the lateral column is evident; in the lumbar enlargement, both are expanded; while in the conus medullaris the gray substance assumes the form of two oval masses, one in each half of the cord, connected together by a broad gray commissure.

The **Central Canal** (*canalis centralis*) runs throughout the entire length of the medulla spinalis. The portion of gray substance in front of the canal is named the **anterior gray commissure**; that behind it, the **posterior gray commissure**. The former is thin, and is in contact anteriorly with the anterior white commissure: it contains a couple of longitudinal veins, one on either side of the middle line. The posterior gray commissure reaches from the central canal to the posterior median septum, and is thinnest in the thoracic region, and thickest in the conus medullaris. The central canal is continued upward through the lower part of the medulla oblongata, and opens into the fourth ventricle of the brain; below, it reaches for a short distance into the filum terminale. In the lower part of the conus medullaris it exhibits a fusiform dilatation, the **terminal ventricle**; this has a vertical measurement of from 8 to 10 mm., is triangular on cross-section with its base directed forward, and tends to undergo obliteration after the age of forty years.

Throughout the cervical and thoracic regions the central canal is situated in the anterior third of the medulla spinalis; in the lumbar enlargement it is near the middle, and in the conus medullaris it approaches the posterior surface. It is filled with cerebrospinal fluid, and lined by ciliated, columnar epithelium, outside of which is an encircling band of gelatinous substance, the **substantia gelatinosa centralis**. This gelatinous substance consists mainly of neuroglia, but contains a few nerve cells and fibers; it is traversed by processes from the deep ends of the columnar ciliated cells which line the central canal (Fig. 667).