

veli, descends upon its upper part from between the inferior colliculi, and on either side of this the trochlear nerve emerges.

The **posterior medullary velum** (*velum medullare posterius; inferior medullary velum*) is a thin layer of white substance, prolonged from the white center of the cerebellum, above and on either side of the nodule; it forms a part of the roof of the fourth ventricle. Somewhat semilunar in shape, its convex edge is continuous with the white substance of the cerebellum, while its thin concave margin is apparently free; in reality, however, it is continuous with the epithelium of the ventricle, which is prolonged downward from the posterior medullary velum to the ligulæ.

The two medullary vela are in contact with each other along their line of emergence from the white substance of the cerebellum; and this line of contact forms the summit of the roof of the fourth ventricle, which, in a vertical section through the cavity, appears as a pointed angle.

The **Fibræ Propriæ** of the cerebellum are of two kinds: (1) **commissural fibers**, which cross the middle line at the anterior and posterior parts of the vermis and connect the opposite halves of the cerebellum; (2) **arcuate or association fibers**, which connect adjacent laminæ with each other.

Gray Substance.—The gray substance of the cerebellum is found in two situations: (1) on the surface, forming the cortex; (2) as independent masses in the anterior.

(1) The **gray substance of the cortex** presents a characteristic foliated appearance, due to the series of laminæ which are given off from the central white substance; these in their turn give off secondary laminæ, which are covered by gray substance. Externally, the cortex is covered by pia mater; internally is the medullary center, consisting mainly of nerve fibers.

Microscopic Appearance of the Cortex (Fig. 706).—The cortex consists of two layers, viz., an external gray molecular layer, and an internal rust-colored nuclear layer; between these is an incomplete stratum of cells which are characteristic of the cerebellum, viz., the **cells of Purkinje**.

The **external gray or molecular layer** consists of fibers and cells. The nerve fibers are delicate fibrillæ, and are derived from the following sources: (*a*) the dendrites and axon collaterals of Purkinje's cells; (*b*) fibers from cells in the nuclear layer; (*c*) fibers from the central white substance of the cerebellum; (*d*) fibers derived from cells in the molecular layer itself. In addition to these are other fibers, which have a vertical direction, and are the processes of large neuroglia cells, situated in the nuclear layer. They pass outward to the periphery of the gray matter, where they expand into little conical enlargements which form a sort of limiting membrane beneath the pia mater, analogous to the membrana limitans interna in the retina, formed by the sustentacular fibers of Müller.

The **cells of the molecular layer** are small, and are arranged in two strata, an outer and an inner. They all possess branched axons; those of the inner layer are termed **basket cells**; they run for some distance parallel with the surface of the folium—giving off collaterals which pass in a vertical direction toward the bodies of Purkinje's cells, around which they become enlarged, and form basket-like net-works.

The **cells of Purkinje** form a single stratum of large, flask-shaped cells at the junction of the molecular and nuclear layers, their bases resting against the latter; in fishes and reptiles they are arranged in several layers. The cells are flattened in a direction transverse to the long axis of the folium, and thus appear broad in sections carried across the folium, and fusiform in sections parallel to the long axis of the folium. From the neck of the flask one or more dendrites arise and pass into the molecular layer, where they subdivide and form an extremely rich arborescence, the various subdivisions of the dendrites being covered by lateral spine-like processes. This arborescence is not circular, but, like the cell, is flattened at right angles to the long axis of the folium; in other words, it does not resemble