

Structure.—The cranial dura mater consists of white fibrous tissue and elastic fibers arranged in flattened laminae which are imperfectly separated by lacunar spaces and bloodvessels into two layers, **endosteal** and **meningeal**. The **endosteal layer** is the internal periosteum for the cranial bones, and contains the bloodvessels for their supply. At the margin of the foramen magnum it is continuous with the periosteum lining the vertebral canal. The **meningeal or supporting layer** is lined on its inner surface by a layer of nucleated flattened mesothelium, similar to that found on serous membranes.

The **arteries** of the dura mater are very numerous. Those in the anterior fossa are the anterior meningeal branches of the anterior and posterior ethmoidal and internal carotid, and a branch from the middle meningeal. Those in the middle fossa are the middle and accessory meningeal of the internal maxillary; a branch from the ascending pharyngeal, which enters the skull through the foramen lacerum; branches from the internal carotid, and a recurrent branch from the lacrimal. Those in the posterior fossa are meningeal branches from the occipital, one entering the skull through the jugular foramen, and another through the mastoid foramen; the posterior meningeal from the vertebral; occasional meningeal branches from the ascending pharyngeal, entering the skull through the jugular foramen and hypoglossal canal; and a branch from the middle meningeal.

The **veins** returning the blood from the cranial dura mater anastomose with the diploic veins and end in the various sinuses. Many of the meningeal veins do not open directly into the sinuses, but indirectly through a series of ampullae, termed **venous lacunae**. These are found on either side of the superior sagittal sinus, especially near its middle portion, and are often invaginated by arachnoid granulations; they also exist near the transverse and straight sinuses. They communicate with the underlying cerebral veins, and also with the diploic and emissary veins.

The **nerves** of the cranial dura mater are filaments from the semilunar ganglion, from the ophthalmic, maxillary, mandibular, vagus, and hypoglossal nerves, and from the sympathetic.

The **Spinal Dura Mater** (*dura mater spinalis; spinal dura*) (Fig. 767) forms a loose sheath around the medulla spinalis, and represents only the inner or meningeal layer of the cranial dura mater; the outer or endosteal layer ceases at the foramen magnum, its place being taken by the periosteum lining the vertebral canal. The spinal dura mater is separated from the arachnoid by a potential cavity, the **subdural cavity**; the two membranes are, in fact, in contact with each other, except where they are separated by a minute quantity of fluid, which serves to moisten the apposed surfaces. It is separated from the wall of the vertebral canal by a space, the **epidural space**, which contains a quantity of loose areolar tissue and a plexus of veins; the situation of these veins between the dura mater and the periosteum of the vertebrae corresponds therefore to that of the cranial sinuses between the meningeal and endosteal layers of the cranial dura mater. The spinal dura mater is attached to the circumference of the foramen magnum, and to the second and third cervical vertebrae; it is also connected to the posterior longitudinal ligament, especially near the lower end of the vertebral canal, by fibrous slips. The subdural cavity ends at the lower border of the second sacral vertebra; below this level the dura mater closely invests the filum terminale and descends to the back of the coccyx, where it blends with the periosteum. The sheath of dura mater is much larger than is necessary for the accommodation of its contents, and its size is greater in the cervical and lumbar regions than in the thoracic. On each side may be seen the double openings which transmit the two roots of the corresponding spinal nerve, the dura mater being continued in the form of tubular prolongations on them as they pass through the intervertebral foramina. These prolongations are short in the upper part of the vertebral column, but gradually become longer below, forming a number of tubes of fibrous membrane, which enclose the lower spinal nerves and are contained in the vertebral canal.

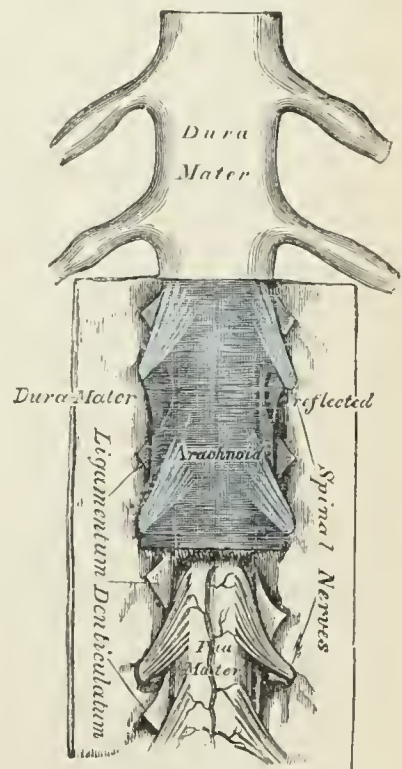


FIG. 767.—The medulla spinalis and its membranes.