

Structure.—The spinal dura mater resembles in structure the meningeal or supporting layer of the cranial dura mater, consisting of white fibrous and elastic tissue arranged in bands or lamellæ which, for the most part, are parallel with one another and have a longitudinal arrangement. Its internal surface is smooth and covered by a layer of mesothelium. It is sparingly supplied with bloodvessels, and a few nerves have been traced into it.

The Arachnoid.

The **arachnoid** is a delicate membrane enveloping the brain and medulla spinalis and lying between the pia mater internally and the dura mater externally; it is separated from the pia mater by the subarachnoid cavity, which is filled with cerebrospinal fluid.

The **Cranial Part** (*arachnoidea encephali*) of the arachnoid invests the brain loosely, and does not dip into the sulci between the gyri, nor into the fissures, with the exception of the longitudinal. On the upper surface of the brain the arachnoid is thin and transparent; at the base it is thicker, and slightly opaque toward the central part, where it extends across between the two temporal lobes in front of the pons, so as to leave a considerable interval between it and the brain.

The **Spinal Part** (*arachnoidea spinalis*) of the arachnoid is a thin, delicate, tubular membrane loosely investing the medulla spinalis. *Above*, it is continuous with the cranial arachnoid; *below*, it widens out and invests the cauda equina and the nerves proceeding from it. It is separated from the dura mater by the **subdural space**, but here and there this space is traversed by isolated connective-tissue trabeculæ, which are most numerous on the posterior surface of the medulla spinalis.

The arachnoid surrounds the cranial and spinal nerves, and encloses them in loose sheaths as far as their points of exit from the skull and vertebral canal.

Structure.—The arachnoid consists of bundles of white fibrous and elastic tissue intimately blended together. Its outer surface is covered with a layer of low cuboidal mesothelium. The inner surface and the trabeculæ are likewise covered by a somewhat low type of cuboidal mesothelium which in places are flattened to a pavement type. Vessels of considerable size, but few in number, and, according to Bochdalek, a rich plexus of nerves derived from the motor root of the trigeminal, the facial, and the accessory nerves, are found in the arachnoid.

The **Subarachnoid Cavity** (*cavum subarachnoideale*; *subarachnoid space*) is the interval between the arachnoid and pia mater. It is occupied by a spongy tissue consisting of trabeculæ of delicate connective tissue, and intercommunicating channels in which the subarachnoid fluid is contained. This cavity is small on the surface of the hemispheres of the brain; on the summit of each gyrus the pia mater and the arachnoid are in close contact; but in the sulci between the gyri, triangular spaces are left, in which the subarachnoid trabecular tissue is found, for the pia mater dips into the sulci, whereas the arachnoid bridges across them from gyrus to gyrus. At certain parts of the base of the brain, the arachnoid is separated from the pia mater by wide intervals, which communicate freely with each other and are named **subarachnoid cisternæ**; in these the subarachnoid tissue is less abundant.

Subarachnoid Cisternæ (*cisternæ subarachnoidales*) (Fig. 76S).—The **cisterna cerebellomedullaris** (*cisterna magna*) is triangular on sagittal section, and results from the arachnoid bridging over the interval between the medulla oblongata and the under surfaces of the hemispheres of the cerebellum; it is continuous with the subarachnoid cavity of the medulla spinalis at the level of the foramen magnum. The **cisterna pontis** is a considerable space on the ventral aspect of the pons. It contains the basilar artery, and is continuous behind with the subarachnoid cavity of the medulla spinalis, and with the cisterna cerebellomedullaris; and in front of the pons with the cisterna interpeduncularis. The **cisterna interpeduncularis** (*cisterna basalis*) is a wide cavity where the arachnoid extends across between the two temporal lobes. It encloses the cerebral peduncles and the structures contained in the interpeduncular fossa, and contains the arterial circle of Willis.