The **Optic Tract** (Fig. 774), passes backward and outward from the optic chiasma over the tuber cinereum and anterior perforated space to the cerebral peduncle and winds obliquely across its under surface. Its fibers terminate in the lateral geniculate body, the pulvinar and the superior colliculus. It is adherent to the tuber cinereum and the cerebral peduncle as it passes over them. In the region of the lateral geniculate body it splits into two bands. The medial and smaller one is a part of the commissure of Gudden and ends in the medial geniculate body.

From its mode of development, and from its structure, the optic nerve must be regarded as a prolongation of the brain substance, rather than as an ordinary cerebrospinal nerve. As it passes from the brain it receives sheaths from the three cerebral membranes, a perineural sheath from the pia mater, an intermediate sheath from the arachnoid, and an outer sheath from the dura mater, which is also connected with the periosteum as it passes through the optic foramen. These sheaths are separated from each other by cavities which communicate with the subdural and subarachnoid cavities respectively. The innermost or perineural sheath sends a process around the arteria centralis retinæ into the interior of the nerve, and enters intimately into its structure.

THE OCULOMOTOR NERVE (N. OCULOMOTORIUS; THIRD NERVE) (Figs. 775, 776, 777).

The **oculomotor nerve** supplies somatic motor fibers to all the ocular muscles, except the Obliquus superior and Rectus lateralis; it also supplies through its connections with the ciliary ganglion, sympathetic motor fibers to the Sphincter pupillæ and the Ciliaris muscles.

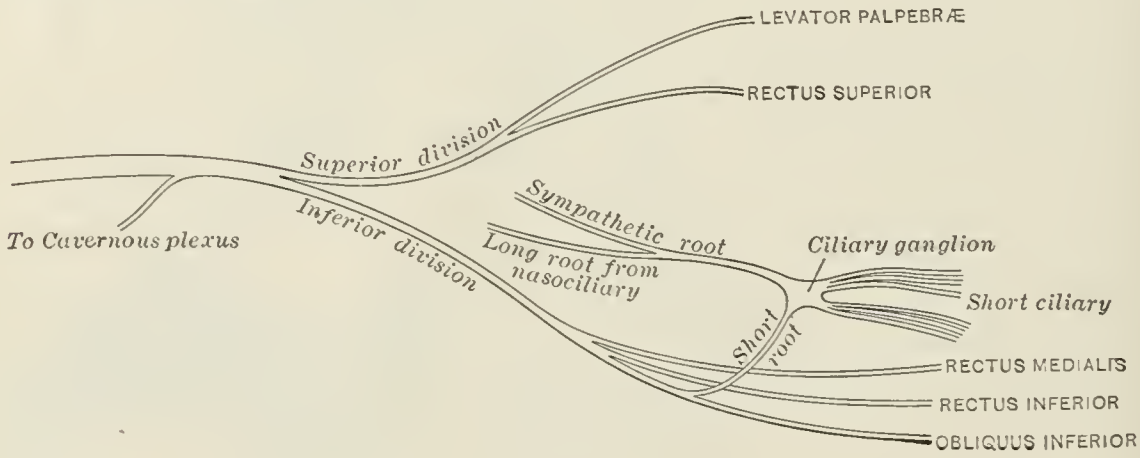

Fig. 775.—Plan of oculomotor nerve.

The fibers of the oculomotor nerve arise from a nucleus which lies in the gray substance of the floor of the cerebral aqueduct and extends in front of the aqueduct for a short distance into the floor of the third ventricle. From this nucleus the fibers pass forward through the tegmentum, the red nucleus, and the medial part of the substantia nigra, forming a series of curves with a lateral convexity, and emerge from the oculomotor sulcus on the medial side of the cerebral peduncle.

The nucleus of the oculomotor nerve does not consist of a continuous column of cells, but is broken up into a number of smaller nuclei, which are arranged in two groups, anterior and posterior. Those of the posterior group are six in number, five of which are symmetrical on the two sides of the middle line, while the sixth is centrally placed and is common to the nerves of both sides. The anterior group consists of two nuclei, an antero-medial and an antero-lateral (Fig. 762).

The nucleus of the oculomotor nerve, considered from a physiological standpoint, can be subdivided into several smaller groups of cells, each group controlling a particular muscle.

On emerging from the brain, the nerve is invested with a sheath of pia mater, and enclosed in a prolongation from the arachnoid. It passes between the superior cerebellar and posterior cerebral arteries, and then pierces the dura mater in front