THE CRANIAL NERVES (NERVI CEREBRALES; CEREBRAL NERVES).

There are twelve pairs of cranial nerves; they are attached to the brain and are transmitted through foramina in the base of the cranium. The different pairs are named from before backward as follows:

1st. Olfactory.
2d. Optic.
3d. Oculomotor.
4th. Trochlear.
5th. Trigeminal.
6th. Abducent.
7th. Facial.
8th. Acoustic.
9th. Glossopharyngeal.
10th. Vagus.
11th. Accessory.
12th. Hypoglossal.

The area of attachment of a cranial nerve to the surface of the brain is termed its **superficial** or **apparent origin**. The fibers of the nerve can be traced into the substance of the brain to a special *nucleus* of gray substance. The motor or efferent cranial nerves arise within the brain from groups of nerve cells which constitute their **nuclei of origin**. The sensory or afferent cranial nerves arise from groups of nerve cells outside the brain; these nerve cells may be grouped to form ganglia on the trunks of the nerves or may be situated in peripheral sensory organs such as the nose and eye. The central processes of these cells run into the brain, and there end by arborizing around nerve cells, which are grouped to form **nuclei of termination**. The nuclei of origin of the motor nerves and the nuclei of termination of the sensory nerves are brought into relationship with the cerebral cortex, the former through the geniculate fibers of the internal capsule, the latter through the lemniscus. The geniculate fibers arise from the cells of the motor area of the cortex, and, after crossing the middle line, end by arborizing around the cells of the nuclei of origin of the motor cranial nerves. On the other hand, fibers arise from the cells of the nuclei of termination of the sensory nerves, and after crossing to the opposite side, join the lemniscus, and thus connect these nuclei, directly or indirectly, with the cerebral cortex.

THE OLFACTORY NERVES (NN. OLFACTORII; FIRST NERVE) (Fig. 771).

The **olfactory nerves** or **nerves of smell** are distributed to the mucous membrane of the olfactory region of the nasal cavity: this region comprises the superior nasal

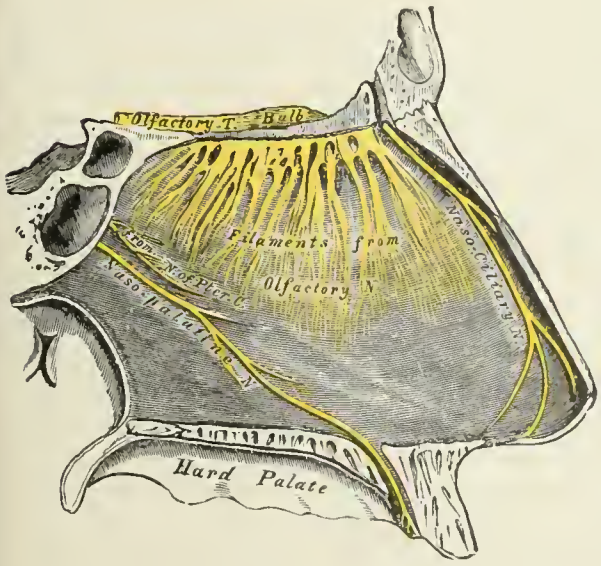

Fig. 771.—Nerves of septum of nose. Right side.

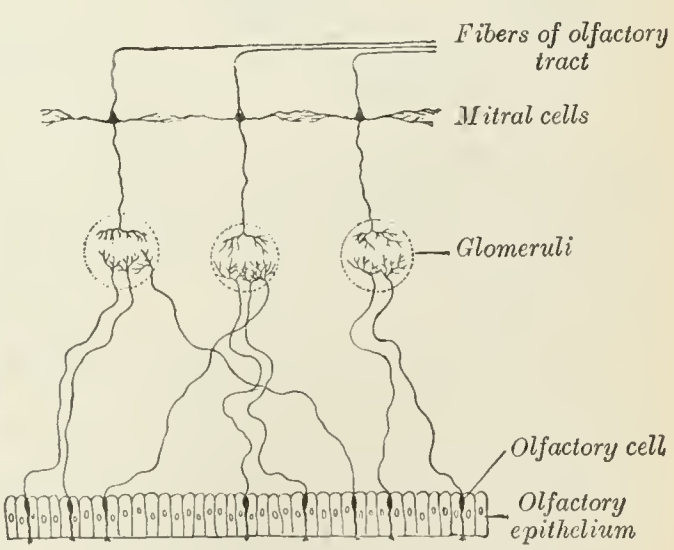

Fig. 772.—Plan of olfactory neurons.

concha, and the corresponding part of the nasal septum. The nerves originate from the central or deep processes of the olfactory cells of the nasal mucous mem-