

mammals, the outer walls of the nose are composed of cartilage ; but internally, the nostrils communicate with bony cavities situated in the bones of the face and forehead. These cavities are lined by a thick membrane, the *pituitary* membrane, on which are expanded the nerves of smell, namely, the olfactory nerves, and some filaments of the nerve which goes to the face.

108. The process of smelling is as follows. Odors are particles of extreme delicacy which escape from very many bodies, and are diffused through the air. These particles excite the nerves of smell, which transmit the impressions made on them to the brain. To facilitate the perception of odors, the nostrils are placed in the course of the respiratory passages, so that all the odors which are diffused in the air inspired, pass over the pituitary membrane.

109. The acuteness of the sense of smell depends on the extent to which the membrane is developed. Man is not so well endowed in this respect as many animals, which have the internal surface of the nostrils extremely complicated, as it is especially among the beasts of prey.

110. The sense of smell in Reptiles is less delicate than in the mammals ; the pituitary membrane, also, is less developed. Fishes are probably still less favored in this respect. As they perceive odors through the medium of water, we should anticipate that the structure of their apparatus would be different from that of animals which breathe in the air. Their nostrils are mere superficial pouches, lined with a membrane gathered into folds which generally radiate from a centre, but are sometimes arranged in parallel ridges on each side of a central band. As the perfection of smell depends on the amount of surface exposed, it follows that those fishes which have these folds most multiplied are also those in which this sense is most acute.