

which has been regarded as the earliest rudiment of a cochlea; and there are two folds of the skin, resembling eye-lids, at the external orifice of the organ, which appear like the first step towards the development of an external ear.

The structure of the ear in the Crocodile is but an approximation to that which we find prevailing in Birds, where the organ is of large size compared with that of the head. The rudimental cochlea, as seen at κ in Fig. 405, which represents these organs in the Turkey, is of large size, and slightly curved. In the cavity of the tympanum (τ) is seen the columella, which extends to the fenestra ovalis; and beyond it, the semicircular canals (s,) the bony cells (B) which communicate with the tympanum, the os quadratum (q,) the zygomatic process (z,) and the lower jaw (J.) The ear-drum is now no longer met with at the surface, but lies concealed at the bottom of a short meatus, the orifice of which is surrounded with feathers arranged so as to serve as a kind of imperfect concha, or external ear.

In Owls these feathers are a prominent and characteristic feature; and in these birds there is, besides, a membranous flap, acting as a valve to guard the passage.

The chief peculiarity observable in the internal ears of Mammalia is the great development of the cochlea, the tubes of which are convoluted, turning in a spiral, and assuming the figure of a turbinated shell. From an extensive comparison of the relative size of the cochlea in different tribes of quadrupeds, it has been inferred that it bears a tolerably constant proportion to the degree of acuteness of hearing, and that, consequently, it contributes essentially to the perfection of that faculty: bats, for instance, which are known to possess exquisite delicacy of hearing, have a cochlea of extraordinary size, compared with the other parts of the ear. The tympanic ossicula are completely developed only in the Mammalia.* It is also in this class alone that

* These tympanic ossicula are regarded by Geoffroy St. Hilaire as corresponding to the opercular bones of fishes, where, according to his theory, they have attained their highest degree of development.