

100. In reptiles, the whole exterior ear disappears; the auditory passage is always wanting, and the tympanum becomes external. In some toads, even the middle ear also is completely wanting. The fluid of the vestibule is charged with salts of lime, which frequently give it a milky appearance, and which, when examined by the microscope, are found to be composed of an infinite number of crystals.

101. In fishes, the middle and external ear are both wanting; and the organ of hearing is reduced to a membranous vestibule, situated in the cavity of the skull, and surmounted by semicircular canals, from one to three in number. The liquid of the vestibule contains chalky concretions of irregular forms, which are called Otolites, the use of which is doubtless to render the vibration of sounds more sensible.

102. In crabs, the organ of hearing is found on the lower face of the head, at the base of the large antennæ. It is a bony chamber closed by a membrane, in the interior of which is suspended a membranous sac filled with water. On this sac, the auditory nerve is expanded. In the cuttlefish, the vestibule is a simple excavation of the cartilage of the head, containing a little membranous sac, in which the auditory nerve terminates.

103. Finally, some insects, the grasshopper for instance, have an auditory apparatus, no longer situated in the head, as with other animals, but in the legs; and from this fact, we may be allowed to suppose, that if no organ of hearing has yet been found in most insects, it is because it has been sought for in the head only.

104. It appears from these examples, that the part of the organ of hearing which is uniformly present in all animals furnished with ears, is precisely that in which the auditory nerve ends. This, therefore, is the essential part of the organ. The other parts of the apparatus, the tympanum, auditory passage, and even the semicircular canals, have for