

The ante-vestibulum, or the cavity of the tympanum, (fig. 6, fig. 7, and w-c. 6, *e'*, w-c. 7, *i*), which contains the bone, the stapes of the ear, is very large, and is divided into two compartments, one nearly globular, the mastoid sinus, (fig. 6, and w-c. 6, *e'*), opening forward into a larger one, the true tympanic cavity, (fig. 7, and w-c. 7, *i*), which is very high, and narrower than the other. The ante-vestibulum extends much further, both before and behind, than the vestibulum. The stapes, the only bone of the ear that the Turtle possesses, is a short and thick cartilaginous cylinder, (fig. 7, and w-c. 7, *i*), with very broad exterior and interior ends.

The Nostrils. Whatever may be necessary to the understanding of the formation and development of the nostrils has already been mentioned above. (See p. 555, Pl. 24, fig. 12, *v*, p. 559; Pl. 18a, fig. 9, *v*, p. 562; Pl. 24, fig. 11, *v*.)

The Vertebral Column. The process of the origin of the vertebral layer, and the mode of formation of the vertebræ from this layer, have been quite fully described, when treating of the earlier stages of the embryo as a whole. (See p. 543 and 545.) There are a few points, however, which need separate notice, in regard to the special growth of the vertebræ. After the vertebræ are clearly defined, (Pl. 12, fig. 3, 3a, 3b,) the centre of each changes in its appearance, and becomes more transparent than the periphery. Upon investigating this peculiarity in a little later stage, (fig. 9, *f*, fig. 9a, *f*), it was found that each vertebra, or rather each half vertebra, is composed of cylindrical, wedge-shaped cells, forming a very thick wall, (Pl. 19, fig. 3,) inclosing a large, clear space. By following the development of the vertebræ through their progressive stages, we find that this clear space finally loses its sharply marked boundaries, and gradually blends with the surrounding wall (Pl. 24, fig. 14, *f*). The centre remains for a while transparent, probably in a fluid state; but between this centre and the walls a more solid substance seems to be filling in. What the nature of this substance is, was not ascertained. Finally, the whole half vertebra appears, under a low magnifying power, homogeneous throughout (Pl. 24, fig. 9, *f*). In the latest stages, at the time of hatching, when the vertebræ have become partially ossified at the periphery, (Pl. 22, Wood-cut 12, fig. 3, and w-c. 12, *a*²), the centre (*a*¹) of each half is again very clear, and is composed of large cartilage cells, (Pl. 22, fig. 4,) identical with those found in the centre of the ribs (see Pl. 22, fig. 1, *a*, fig. 2, *a*). How these cartilage cells are developed in this instance has not been ascertained, nor have we any data upon which a supposition can be founded. The chorda dorsalis has disappeared at this age, and the two halves of the vertebra have united at the middle line, (w-c. 12, *a*³) so as to leave no sign of their point of junction. The vertebræ may be traced to the very tip of the tail; and their number, fifty-five, equals that found in the adults.

