

own combination; and, again, it would seem that at the free surface of the cells (*a*) the wall is very thin, like that of the interior ones (fig. 5b, *b*). The interior cells are nearly globular in shape, and do not appear to press against each other. The walls are excessively thin, and their contents, as well as the contents of the superficial cells, are perfectly homogeneous, and hyaline. At no time, as far as we have investigated the cells of the chorda, could the least trace of a mesoblast be detected in them. No reagents were used in this investigation.

The Vertebrae. At the time the vertebrae have appeared along nearly the whole length of the embryo, and the branchial fissures have begun to develop, (see Pl. 12, fig. 5, 8, 9, 9a, 11, and p. 548,) each vertebra is composed of a single layer of cylindrical, wedge-shaped cells, (Pl. 19, fig. 3,) having their broader ends outward, and the narrower ends pointing towards the square, hollow, clear space in the interior. (See also p. 591, and Pl. 19, fig. 3.) Their contents are perfectly homogeneous and hyaline, without any trace of a mesoblast. At the time the Turtle is born, the peripheric portion (w-c. 12, *a*², p. 591) of the vertebrae is ossified to a certain depth. The outer, very elastic layer (Pl. 22, fig. 3, *a*) can hardly be distinguished from the unossified, fibrous lining of the shield; in fact, not at all, except by its hardness. These hardened, calcified fibres lie close to each other, but leave here and there numerous elongate-oval, clear spaces, which trend, with the fibres, in the same direction as the axis of the vertebrae. They consist of rows of minute granular bodies, containing, or in fact made up, of lime (fig. 3a). Transverse to the fibres of the outer layer, those of another layer (fig. 3, *b*) may be found lying closely pressed upon them, and similar in the arrangement of the fibres and of the clear spaces. A third fibrous layer (*c*) has clear spaces, the longer diameter of which trends in the same direction as in the third layer. The clear spaces of the second and third layer are more or less broad and irregular, resembling the very large and jagged, broad, oval, or round openings in the spongiform, innermost mass (*d*) of the bone. The fibres of the third layer (*c*) cannot be made out at all, and those of the second layer are very faint, whilst those of the first (*a*) are easily recognized. The meshes or interspaces of the spongiform, calcareous, innermost layer are very clear, and appear perfectly amorphous when seen in this position. From the manner in which the fibres of the torn edge of the first (*a*) and second (*b*) layers bristle out, each one supporting itself, it is made clear that the granules composing the fibres (fig. 3a) are the recipients of a calcareous deposit. This deposit gradually fills up the minute interspaces between the fibres, and thus forms a uniform, apparently homogeneous layer, (*c*) with clear spots, scattered here and there, throughout the stratum. The appearance of the third layer (*c*) is so similar to the two outer ones, and to the second one in particular,—which only differs in showing very faint,