

this solid deposit is found to be composed of a fibrous substance similar to, and no doubt identical with, that of the shell membrane, but of a much more tender and less dense consistency, (Pl. 9a, fig. 43c,) varying according to the species to which the egg belongs. Thus, in *Chelydra serpentina* it equals about one third the thickness of each shelly nodule (fig. 43, a) of which it formed the basis; in *Platypeltis ferox* it bears about the same proportion; but in *Cinosternum pennsylvanicum* it dwindles down to almost one sixth that of its shell, and is much more tender and transparent than in the two above-mentioned species, indicating that there is far less organic substance for the calcareous deposit in this Turtle than in the others.

In these three species, radiating lines spread out, from the centre of the base of the nodule (fig. 43c, b) toward the surface a, just as in the calcareous state (fig. 43, a, b); no doubt impressed upon it by the columnar arrangement of the crystals of carbonate of lime, which trend in this same direction, as will be seen presently. In those shells where the structure is evidently nodular, as in *Chelydra*, (Pl. 9a, fig. 42, 43, a,) the basis, deprived of its line, still simulates its former shape, (43c,) although, as we have said, on a reduced scale; but where the surface of the shell is smooth and uniform, as in *Cinosternum* and *Platypeltis*, its basis, when treated as above, is continuous all over the egg as a wavy stratum, each wave corresponding to a group of crystals of carbonate of lime.

On examining an egg of *Chelydra* in which the shell is still soft and but very little lime has been deposited, we find that the surface of the shell membrane is striated by lines running parallel to the axis of the oviduct, and that these lines are composed of rows of nodules, (Pl. 9a, fig. 44,) which, upon closer inspection, are found to present the characteristic forms in which the crystals of carbonate of lime group themselves (fig. 44a). Every little nodule, viewed from the outside, appears striated concentrically and radiatingly, each ring between two successive concentric striæ representing a stratum of crystals, the sides of which are indicated by the radiating lines. The centres of crystallization vary in their distances from each other: in some instances they are very close together, so that the increasing nodules soon press against their neighbors, forming a straight line of contact; in other cases, where they are further apart, they retain their globular form much longer. Those which are formed early seem to be flattened against each other more than those formed later, which fill up the spaces between the original series. The earliest indications of these nodules are little, clear, homogeneous, globular masses, scattered here and there, which, as they increase in size, begin to show faint, radiating, and concentric striæ. These striæ soon develop themselves strongly, so as to be seen without difficulty, as in the nodules which we have described as arranged in lines. In fully perfected nodules this striation is quite strong and