

the progress of this process to its completion. The egg of *Chelydra serpentina* is that in which we have followed most carefully the successive steps of the absorption of albumen, up to the period when the yolk sac is more than half full of clear fluid. At this last-mentioned stage of the resorption of albumen, the egg had been laid about three days and six hours. In an egg of *Ozotheca odorata* a week old, the albumen was all within the yolk sac. This also obtained in eggs of *Thalassochelys Caouana* of the same age (Pl. 9b, fig. 8).

In both these cases, however, the embryo was not so far advanced in development as at the last stage to which we have traced this process in the egg of *Chelydra serpentina*. After the yolk sac is filled, the yellow part of the yolk mass continues to lessen in size, and the space above it, containing the clear fluid and the cerebro-spinal part of the embryo, to increase in magnitude, until the period when the Turtle leaves the shell. The older the egg, the more distended does the shell appear, so that, when a mere pinhole is opened in it, a portion of the contents protrude through the aperture. This becomes very troublesome when investigating those eggs which have a flexible and elastic shell, like that of *Chelydra*; for, in such cases, the moment an opening is made, the confined fluid tears open the embryonic envelopes¹ and rushes out in a forcible jet, causing the embryo to assume an unnatural position.

SECTION IV.

THE TRANSFORMATIONS OF THE YOLK IN THE FECUNDATED EGG.

In the preceding chapter² we have described the mode of formation of the yolk, and its successive changes prior to the last copulation. We have now to consider the changes which it undergoes after this period.

The yolk cells continue to grow, in certain respects, after the egg has entered the oviduct. There is, at this stage, something unprecedented in the unceasing enlargement of the mesoblast, until it finally so fills the ectoblast that the wall (Pl. 9a, fig. 33b) of the latter is hardly to be distinguished from the encroaching surface of the former. To an unprepared eye, especially if one had not seen the intermediate steps, (Pl. 9, fig. 11f, 11g; Pl. 9a, fig. 2d, 33a, 33b,) the mesoblast would appear destitute of any wall beyond its own (fig. 39a-39e); but

¹ This tearing of the egg membranes may be prevented by making a hole in the lower side of the egg and letting out a portion of the yolk, especially

in instances when it is not desirable to keep the latter intact for further investigation.

² See p. 458-475.