

VI. THE FEMALE GENITAL APPARATUS.

According to Darwin, the female genital apparatus consists of the true ovaria, or glandular bodies seated on each side, not far from the basal edge of the labrum; the main or unbranched ovarian ducts; and the ovarian branching tubes and cœca. The latter in the pedunculated Cirripedia are placed high up in the peduncle, and in all sessile Cirripedia lie between the calcareous or membranous basis and the inner basal lining of the sack. After the most careful and repeated examination of various Lepadidæ and Balanidæ, Darwin became convinced that there were no oviducts; he therefore supposed that the ova were brought to the surface by the formation of a new membrane round the sack underneath them, and by the subsequent exuviation of the old membrane. This supposition of Darwin's has proved to be erroneous. What Darwin called the main or unbranched ovarian duct is in reality the oviduct; it does not run up to the glandular bodies (which I have described in one of the foregoing chapters), but it passes at some distance beneath them (Pl. VI. figs. 7 and 8); it describes a curve and then enters the basal segment of the first cirrus, at the foot of which it opens.¹ Krohn was the first to describe the female genital apparatus accurately; Kossmann, though in the main agreeing with Krohn, differs from him with regard to the significance of the little shoe-shaped sack which is placed in a swelling of the oviduct near its opening. I studied the female genital apparatus in *Lepas*, *Scalpellum vulgare* and *Scalpellum regium*, in *Conchoderma virgatum* and in *Balanus*. In all essential points the results of my researches tend to confirm those of my predecessors; in detail I think I am able to add to our knowledge.

From the existence of two oviducts we may conclude that there are also two ovaries present. In the full-grown animals their numerous and strongly ramified cœca are united so intimately that they seem to form a single mass only. The cœca of the right side, however, communicate with the right oviduct, the others with that on the left.

A study of the way in which the ova are formed has given the following results. The oviduct itself is lined by a very distinct and well-developed epithelium; where the limits of the cells are not distinct, which may be due to the condition of the material at command, the nuclei are placed so regularly along the wall that even the dimensions of the epithelial cells can still be made out. Where the oviduct passes over into a cœcum of the ovary, the epithelium of the wall is no longer so distinct, and in its place nuclei are seen rather irregularly along the wall; of the true body of the cell there are only traces here and there. The ovigerms or future ovarian eggs are seen in the interior along this wall. When the ovary is mature or nearly so, we observe in the first place the large ovarian eggs, each having a nucleus with a sparkling nucleolus (Pl. VI. fig. 2) about

¹ Zool. Chall. Exp., part xxv. p. 12, pl. i. fig. 2.