

crowded upon the surface of the spermatic sacs, so that all the ambulacral rows appear one-sided, on account of the prominence imparted to them by the pigment cells crowded over the spermatic sacs. Moreover, the ovarian and the spermatic sacs are developed on opposite sides in adjoining ambulacra, so that proximate sides of different ambulacra have the same kind of sexual organs, while alternate interambulacra have different kinds, the total arrangement being such that ovaries occupy the anterior and the posterior interambulacra, as well as the lateral interambulacra in which trend the coeliac tubes, while the four intervening interambulacra are occupied by spermaries. The sexual sacs begin to appear early in August or in the latter part of July. They are filled with eggs and spermatic cells in the latter part of August; and at that time, in the larger specimens, these may be seen circulating in the ramified tubes arising from the ambulacral tubes, which soon fill so completely with eggs (Pl. II. *Fig. 6*) as to appear like blood discs in a blood-vessel. Owing to the ramifications of the ambulacral tubes and the extension of the ovisac in the shape of similar branches extending into the spherosome, while the spermatic sacs communicate only with the main tubes of the ambulacra, it follows that the contents of the spermaries are emptied into the ambulacral tubes, and through them circulated into the ovarian sacs as soon as the eggs begin to pass into the ramifications of their pouches, and, finally, eggs and spermatic particles are lodged together in the ramifications of the chymiferous system, which penetrate the spherosome, where the eggs remain enclosed until the spherosome itself is broken up and decomposes, when the eggs and the young, in various stages of development, are set free. This constitutes a marked difference from *Pleurobrachia* and *Bolina*, in which the eggs are only moved to and fro through the main chymiferous tubes.

The central eye-speck (Pl. II. *Figs. 3, 8, 9, and 18*) has the same structure as in *Pleurobrachia* and *Bolina*, and may be so easily observed, that, were there distinct nerves connected with its bulb, I could hardly have failed to see them. That the eight narrow branches converging under the base of its bulb (Pl. II. *Fig. 3*) are not nerves, but a direct prolongation of the rows of locomotive fringes, presenting in their abactinal extension (Pl. II. *Figs. 8 and 9*) the same character as on their actinal prolongation (*Fig. 17*), is easily ascertained; and the circumstance, that while they are plainly visible at the two extremities of the rows of locomotive flappers nothing of the kind can be seen under them, not even when the ambulacra are examined from their inner surface as in *Fig. 10*, shows distinctly that they form a part of the system of locomotive flappers. But why they should reach the base of the eye and terminate there is not so easily understood; unless it is to establish a connection of some kind between sight and locomotion, in the same way as the eye-specks of the Echinoderms are placed in the prolongation of the ambulacra. This connection seems to me an additional evidence that the eye-speck