wide central chymiferous cavity may be seen. On the actinal side, half the oral tube is exposed, and on the margins its sections through the anterior and the posterior interambulacra are visible as black specks.

The course of the fluid in all these tubes is very easily traced. Starting from the central chymiferous cavity, the main currents flow toward the actinal side of the body through the ambulacral tubes and empty into the circular oral tube, but, owing to the frequent contraction and great activity of the actinal region, the progress of the fluid is constantly interrupted; it then flows back and moves to and fro in the ambulacral tubes, filling and distending to the utmost their ramifications in the spherosome, and thus distending it in the manner in which erectile tissues are distended by capillary vessels. But when the obstacle arising from the contraction of the actinal region is overcome, the fluid rushes into the circular tube, from which arise also branches ramifying into the spherosome, and then runs back through the cœliac tubes into the central chymiferous cavity. The total absence of ramifications from the cœliac tubes into the spherosome or upon the walls of the digestive cavity shows, that, in this type at least, the essential function of the cœliac tubes is not to provide the digestive apparatus with nutritive fluid.[1] In very young specimens these ramifications do not exist at all, and the chymiferous tubes are as simple as in Pleurobrachia; but as they increase in size there arise a few lateral branches, at first simple, then dividing (Pl. I. *Fig.* 6ª and 6ª magnified), and then becoming more and more numerous and branching more extensively so long as they continue to grow.

The ovaries and spermaries stand in such close connection with the ambulacral tubes and their ramifications, that they are best considered in this connection. In very young specimens the ambulacral tubes are straight, simple canals; but as they advance in age, shallow pouches grow out of them upon the sides, increasing gradually in size and expanding into irregular sacs, sometimes with a broad base tapering gradually, at other times with a narrow base and expanding into irregular vesicular sacs, usually, but not always, continued into slender ramifications penetrating into the spherosome. In these sacs the ovarian and spermatic cells are developed; but, as already remarked, each ambulacral tube produces eggs in the sacs of one of its sides and spermatic cells in the other: and while pigment cells of a pale color line these sacs, superficial pigment cells of a deep pink color are

the Clypeastroidæ, and forming a regular circular tube along the margin in the Scutellidæ, are homologous to the lateral tubes of the Beroids branching from the ambulacral tubes in the spherosome. In Echinoderms, however, the tubes send off suckers similar to though smaller than the ambulacral tubes.

[1] Milne-Edwards represents the cœliac tubes as ramified in Beroe Forskâli, Ann. Sc. Nat. 2d. sér. vol. 16, Pl. VI. *Fig.* 1ª, *b*. It certainly gives off no branches at all in our Idyia, nor have I seen any such ramifications of the cœliac tubes in the other true Beroids which I have observed.