

ment, that is to say, they form a crest projecting outward along the tube. If this view of the small lobes is correct, we may consider the vertical branch or fork of the chymiferous tube, which extends beyond the auricles toward the corners of the mouth, as the direct prolongation of the ambulacral tube proper, and the fork which diverges into the large lobes as the anastomotie fork connecting the ambulacral tubes all round the body. The horizontal branches along the sides of the mouth should then be considered as the anastomotie branches between the two lateral ambulacral tubes of each side, and thus the circle would be made perfect.

With these facts respecting the structure of our *Bolina* before us, we are prepared to take another and not less instructive view of its peculiar symmetry, which may lead to a fuller insight into the characteristic features of Radiata. Not only are the two anterior and the two posterior spheromeres different in their development from the two lateral pairs, but they stand also in peculiar antitropic relations to one another. In the first place, the large lobes, each considered as a whole, are antitropic to one another, that is to say, they bend in opposite directions toward the vertical axis; and every point of the symmetry presented in a lateral view of the animal arises from this even balance of the anterior and posterior parts of the body, as seen in *Fig. 88*. But each lobe again consists of antitropic halves; or, in other words, the two spheromeres which form one lobe are as truly antitropic to one another as the two lobes themselves, for the outlines of the lobes as well as the course of their chymiferous tubes are evenly balanced, as *Fig. 89* shows. The same is true of the lateral spheromeres: for here those of the same side, as seen in *Fig. 88*, are antitropic to one another, not only in their general outline, but more especially in the relative position and antagonistic movements of the auricles; and yet these adjoining spheromeres do not form a pair together, but stand again in antitropic relation to the lateral spheromeres of the opposite side, as *Fig. 90* may show. Such a symmetry exists nowhere among bilateral animals, and appears to me one of the most striking peculiarities of the Radiates. Again, the opposite poles of the vertical axis exhibit the most striking contrasts, both in their differences and their antitropy, for the spheromeres converge as well toward the actinal as toward the abactinal area, though the two are occupied by different organs, or by identical parts unequally developed. A comparison of *Figs. 90* and *91* may show at a glance the correspondence and the difference.

There is a great interest connected with a further investigation of the vibrating cilia of the small lobes, in comparison with the locomotive combs of the ambulacra. The former being very similar to common vibratile cilia, and the latter forming a more complicated system of locomotive organs, while both are morphologically fully homologous, it follows, that, in a series of structural complications, the loco-