the impulse of the liquid pressed into the ambulacral tubes is chiefly in one direction, the branches from the main cavity meeting the ambulacra near their upper termination, and not at about half their height, as in Pleurobrachia. So that the chief, and, I may say, almost the only constant current, is from the abactinal side of the body toward the actinal region, along the sides, following the ambulacra and all the sinuosities of their tubes in their lower course through the great lobes, as well as through the lateral auricles; and a comparatively small portion of fluid flows through the comparatively short abactinal end of the ambulacral lobes toward the circumscribed area. The ambulacral tubes therefore are not the direct prolongation of the eight forks of the main branches of this system, any more than in Pleurobrachia, but form an angle with these forks; and there is an abactinal prolongation of the ambulacral tubes, as well as a main actinal branch, above and below the insertion of the fork from the main trunks. I therefore question the accuracy of those illustrations of the ambulacral tubes which represent them as the direct prolongation of the forks arising from the main trunks.[1] The antagonism between the main currents is thus between the upper and the lower side of the body, and by no means between the right and the left side, as in Pleurobrachia. Whether, however, the retrograde current runs exclusively backward through the same tubes in which it has moved onward, or whether the winding course of the narrow tubes in the lobes constitutes a kind of capillary system, through which the liquid may pass from one side of the ambulacral tubes into the other, I am unable to decide. But I cannot help thinking that this long, winding course of the ambulacral tubes upon the inner surface of the large lobes and along the margins of the auricles and of the mouth contributes to a more extensive aeration of the chyme in circulation, than the straighter course in the wider vessels of the whole system in Pleurobrachia. Perhaps the more active alternate contractions in Pleurobrachia compensate, by their quicker movements, for the absence of ramifications of the tubes which are so extensive in Bolina.

The tentacular tubes, which run parallel with and upon the sides of the cœliac tubes, enlarge near the middle of the lateral margins of the mouth into a small, bulb-like dilatation, from which a bunch of tentacles may be projected or retracted. But this bulb is by no means so complicated as the tentacular sac of Pleurobrachia. There is no flat disk at the base of the tentacles, no deep socket into

[1] Comp. MILNE-EDWARDS, Ann. Sc. Nat. 2de sér. vol. 16, Pl. III. and 4e sér. vol. 7, Pl. XIV.; WILL, Horæ tergestinæ, Pl. I.; and GEGENBAUR, Archiv fur Naturg. vol. 22, Pl. VII. Should the ambulacral tubes of the genera described in these papers differ from those of the genera I have examined, in such a way as the figures suggest, this would constitute a remarkable, and to me unexpected, difference between them; but the letter-press gives no details upon this point.