base; so that it may with equal propriety be said, that, on the whole, there are only four tubes, the two horizontal ones branching soon again into two. In the dilated state of the main trunk, but when the branches arising from it are in a state of contraction, these all seem to originate from one common cavity, and the four horizontal tubes appear independent of each other, while the two vertical ones are brought so close together as to look like one, — making altogether five branches. In another state of contraction, the two vertical tubes may seem united, and the two pairs of horizontal ones also, when there appear to be only three branches to the main trunk. Unless the dilatations and contractions of these curious ramifications of the stems have been watched for a long time, these differences may remain unnoticed; but when fully understood, there is no contradiction in the apparently conflicting statements, that there seem at times to be three, at times four, at times five, and at times six branches, to the main trunk. I should add, that when seen from the actinal or from the abactinal pole, unless the body is somewhat inclined, the vertical tubes altogether escape attention, and that the best position to ascertain their relative connection is an external side view, as in *Fig.* 15. In *Fig.* 22, which represents the whole system in the same position as *Fig.* 15, the view of the horizontal main trunk and its branches is somewhat confused, from the circumstance that it is projected upon the vertical central cavity and the actinal prolongation of that cavity upward and downward; but in *Fig.* 15 we have only the peripheric branches arising from the main trunk, that is to say, the portion seen to the left in *Fig.* 23, while in *Fig.* 22 we have, besides that half, the central axis also, as likewise in *Fig.* 23.

I have described these peripheric branches as horizontal, — and so they appear when seen from above or from below; but in a vertical position they are seen to be somewhat deviating from a horizontal plane, the anterior and posterior branches reaching the periphery at a greater distance from the abactinal pole than the lateral branches, and the vertical branches inclining slightly outward. These different branches have by no means the same functions, and are not connected with the same apparatus; the vertical branches, which I have called interambulacral or tentacular tubes, extending to the disk from which the tentacles are protruded, while the horizontal branches communicate with vertical tubes, — the ambulacral tubes, — which follow the inner surface of the vertical rows of locomotive flappers for their whole extent.

As there are on each side four such horizontal branches and four vertical rows of locomotive flappers, there are also, in the whole, eight vertical superficial chymiferous tubes, widest in the middle, and tapering upward and downward, which are in direct communication with the central chymiferous cavity through the four horizontal tubes and the two main trunks, from which they themselves arise. The