

cavity; for the main trunks of the chymiferous tubes, with their forks branching in a very symmetrical way in the right and left parts of the body, undergo a rhythmic movement of contraction and dilatation, alternating between the two sides. In those Ctenophoræ which have an oral chymiferous tube communicating with the recurrent branches of the ambulacral tubes, the bilateral circulation is not so prominent. The axial cavity, which I have called funnel, is not to be mistaken for the digestive cavity, though it extends in the same axis with it, in the direction of the abactinal pole; nor is the digestive cavity entirely surrounded by the chymiferous system, as I had supposed when I published my paper in the *Memoirs of the American Academy*, but only flanked on each side by so wide a coeliac tube as readily to appear like a sac surrounding the whole digestive cavity.<sup>1</sup> The funnel has two apertures, by which it communicates with the surrounding water, and through which it discharges the refuse chyme. These apertures are placed in a symmetrical position on the two sides of the oblong area, opposite the mouth and near its centre, obliquely opposite each other; so that one is in the anterior half upon one side of the body, the other in the posterior half upon the other side. These openings are generally shut; but they open at intervals to discharge the fecal matters, and are afterwards instantaneously shut again. It is very difficult to catch these movements; and even after I had seen them open and shut, I have frequently watched for days without observing a repetition of the operation, which I have, however, seen so many times now, that I entertain no doubt respecting the position of these openings and their natural function. Moreover, balls of fecal matters may almost constantly be seen floating with a rotating motion below these apertures.

This sketch gives as yet but a slight, very incomplete, and superficial idea of the remarkable complication of structure which may be observed in these animals; but such a preliminary illustration was necessary before undertaking a minute description of all parts and their natural relations. And, before alluding to these details, I would request the reader to bear the following points in mind: that *Pleurobrachia* is not strictly spherical, nor even strictly circular, in any direction; that there is a longitudinal axis, which passes through the mouth and the area opposite; that the tentacles are in the transverse axis, at right angles with the fissure of the mouth; that the digestive cavity trends in the vertical and in the longitudinal axis; that the chymiferous system branches symmetrically in the right and left halves of the body, eight branches reaching the eight vertical rows of

<sup>1</sup> Milne-Edwards has made the same mistake in representing the chymiferous cavity as surrounding the sac into which the mouth leads. *Comp. Ann.*

*Sc. Nat.* 4e sér. vol. 7, Pl. XVI. *Fig. 2.* The coeliac tubes occupy only the more deeply colored part of his drawing, on the sides of the digestive cavity.