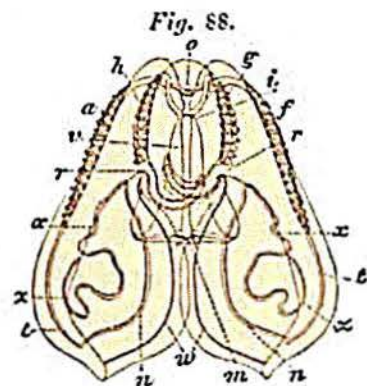


of the mouth. But the moment I placed the diameters of the two bodies in a position inverse to their length, all parts being placed in the same natural relation as far as they correspond by structure, their perfect homology, throughout the system, was at once established. And not only the correspondence and antagonism between the abactinal area and the tentacles, but also the minor details in the ramifications of the chymiferous system, agreed in every respect. The difficulty under which I had labored was precisely that of an artist attempting in a family picture to bring out the resemblance between two kindred faces, while contemplating one individual in profile and the other in a front view, but believing their position to be the same. With this inverse relation between the homologous parts, considered in their reference to form in the two genera *Bolina* and *Pleurobrachia*, there is a corresponding opposition between the natural positions of the two animals in the surrounding medium. *Pleurobrachia*, as I have stated, swims naturally with the mouth upward or forward, and the circumscribed area downward or backward; *Bolina* moves with the mouth downward and the abactinal area upward.

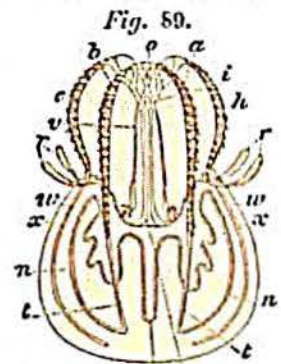
The position of the tentacles, their natural relations to the body when in motion, and the direction of the aperture through which they issue, were the chief sources of error which led me at first to consider them as different organs; for in *Pleurobrachia* (Pl. II<sup>a</sup>. *Figs.* 22, 23, and 25) they are turned toward the cœliac apertures, while in *Bolina* (*Figs.* 88 and 89 *m*) they are turned toward the oral aperture. But

now we may ascertain the homological identity of these appendages, by placing these two animals in their normal position, instead of viewing them in their natural attitudes. And it will be easy to understand how, in accordance with the form and movements of the various members of the whole family, the tentacles may issue from different heights of the vertical diameter upon the sides of the body, and, according to the direction of its movements, be bent either toward the mouth or toward the cœliac apertures. Judging from *Pleurobrachia* and



*BOLINA ALATA*, Ag.  
(Seen from the broad side.)

*a* and *f* Long rows of locomotive fringes. —  
*g* and *h* Short rows of locomotive fringes.  
—*o* Central black speck (eye-speck). —  
*i* to *m* Triangular digestive cavity. — *i* to *o*  
Funnel-like prolongation of the main cavity.  
— *v* Chymiferous tube of the tentacular apparatus. — *m* Tentacular apparatus on the side of the mouth. — *rr* Ear-like lobes, or auricles, in the prolongation of the short rows of locomotive fringes. — *tt* Prolongation of the vertical chymiferous tubes. — *nn* The same tubes turning upwards. — *xx* Bend of the same tubes. — *zz* Extremity of the same tubes meeting with those of the opposite side. — *ww* Recurrent tube anastomosing with those of the auricles.



*BOLINA ALATA*, Ag.

(Seen from the narrow side.)

*a b* Long rows of locomotive fringes. — *c h* Short rows of locomotive fringes. — *o* Central black speck (eye-speck). — *i* Upper end of the digestive cavity. — *i* to *o* Funnel-like prolongation of the main cavity of the body. — *m* to *i* Digestive cavity. — *rr* Auricles. — *m* Mouth. — *tt* Prolongation of the vertical chymiferous tubes. — *nn* The same turning upwards. — *xx* Bend of the same tubes. — *z* Anastomosis of the two longitudinal tubes *tt*. — *ww* Recurrent tube, anastomosing with those of the auricles. — A comparison of this figure with *Fig.* 88 gives a distinct idea of the relative position of the digestive cavity, *m* to *i*, and the chymiferous tubes of the tentacular apparatus *v*.

*Mertensia* when contrasted with *Bolina* and *Euramphæa*, we might infer that the