the circulation for a sufficient time to follow the entire course of the chymiferous fluids within the body, throughout all its parts. Besides, being already minutely acquainted with the arrangement of the chymiferous tubes in Pleurobrachia, I was fully prepared to institute a minute comparison between the two genera, to ascertain their differences, and to recognize the homology of their structure. I was even able to trace the connection of all the parts of the chymiferous system so fully in Bolina that I could ascertain the natural connections between all its peripheric tubes and the central chymiferous cavity, as well as the peripheric anastomoses of the tubes themselves. Such anastomoses are entirely wanting in Pleurobrachia, in which the ambulacral tubes end in blind sacs, on the actinal as well as the abactinal side of the body. Milne-Edwards presses too far the typical identity of the chymiferous system in Ctenophoræ. Had he perceived that these Acalephs, instead of forming one natural family, constitute four sub-orders with many distinct families, he would, no doubt, have given more weight to the differences which he himself has observed in their chymiferous system, and of which he makes too light.

In order fully to understand the structure of Bolina alata,[1] and the relations of its various parts, it is necessary first to have a precise idea of its external form, which it is by no means easy to acquire, even after repeated investigations. Like Pleurobrachia, the body of Bolina is more or less ovate, but in an inverse direction; for its greater diameter follows the plane of the corresponding organs in such a connection as to show that the antero-posterior diameter is the longer, while it is the shorter in Pleurobrachia, and *vice versâ* that the transverse diameter is the shorter, while it is the greater in Pleurobrachia. This inverse agreement between the natural relations of the organs and the external form is most satisfactorily ascertained, upon comparing the position and direction of the circumscribed area and of the tentacles; and we shall hereafter see that the proportions of the body with reference to their longitudinal and transverse development are in every respect reversed in the two genera. Before this contrast had been established, I was unable to trace the homology of parts between the two genera. Indeed, taking the general form as a guide, I began by comparing the two animals in a position in which I undertook to place their prominent diameters in the same relation, and thus arrived at the conclusion, that the tentacles of Bolina, which are far less developed and issue from the margin of the mouth itself, were organs entirely different from the tentacles of Pleurobrachia. The latter I considered as a system peculiar to this type of Ctenophoræ, because they are protruded from the sides of the body; while the tentacles of the type of Bolina appeared to me as a sort of fringes

[1] As I have published numerous views of this animal, in different attitudes, in my paper on Beroid Medusæ, printed in the Memoirs of the American Academy, I would refer to them for further comparisons, having only reproduced a few of them in the wood-cuts of the following pages.