distinguishing the Mertensidæ from the Cydippidæ proper. As we have seen, the spheromeres of the Cydippidæ are so uniform in their size, structure, and radiated arrangement, that their conformity to the type of the Ctenophoræ, in their bilateral disposition, is barely perceptible: in the Mertensidæ, on the contrary, the anterior and posterior spheromeres are very different in their form and size, and even in their structure, from the lateral ones, so that the bilateral symmetry of these Ctenophoræ is one of their most characteristic family distinctions. But this symmetry is so peculiar, that, far from exhibiting a transition to the Cestidæ and Calymnidæ or Mnemiidæ, as Gegenbaur believes, it presents the most striking contrast with them. In the Cestidæ, as well as in the Calymnidæ and Beroids proper, the compression is lateral; that is to say, the lateral spheromeres are reduced in comparison to the great development of the anterior and posterior pairs, or, in other words, the cœliac diameter is the longest, and the diacœliac the shortest, of the two transverse diameters: while in the Mertensidæ the compression is diametrically opposite, the lateral spheromeres being greatly developed, while the anterior and posterior pairs are much reduced, so that here the cœliac diameter is much shorter than the diacœliac. Mertens, in his description of Beroe compressa, has already alluded to this difference between the two types, and also noticed another structural peculiarity coinciding with the antero-posterior compression in the form of the circumscribed area, which is short and petaloid, while in the Cydippidæ it is long, with parallel sides. In conformity with this inequality of the spheromeres and the prominence of the anterior and posterior pairs, the abactinal side of the larger spheromeres projects more or less, thus giving a heart-shaped outline to the abactinal pole, on which the circumscribed area is seen in a depression of the short cœliac diameter. A corresponding inequality is observed in the development of the vertical chymiferous tubes and their rows of locomotive flappers. In the Cydippidæ proper, there is hardly a perceptible difference between them: in the Mertensidæ, on the contrary, the lateral pairs are much longer than the anterior and the posterior pair. This again might easily be mistaken for a resemblance between the Mertensidæ and the Mnemiidæ or Calymnidæ, were not the most developed chymiferous tubes and rows of locomotive flappers in the latter those of the anterior and posterior spheromeres, while in the Mertensidæ the most extensive chymiferous tubes and rows of locomotive flappers are those of the lateral spheromeres. The extraordinary development of the parts arranged in the direction of the diacœliac diameter constitutes, in fact, the most striking family character of the Mertensidæ, and determines its peculiar form. In accordance with this preponderance of the sides, it is worthy of remark that the whole tentacular apparatus of the representatives of this family is larger and more complicated than that of any other group of Ctenophoræ, in comparison to the absolute size of these animals. Mertens