lected by earlier observers is not surprising; but that Gegenbaur should have published a figure and description of a new Cydippe, without noticing the course of these tubes and the connection of the tentacles with this system, is unpardonable, the more so since he positively affirms that that species, Cydippe hormiphora, has not only a hollow tentacle, but that the peculiar cirrhi attached to it are also hollow, and communicate with the cavity of the tentacle. If these tentacles were truly hollow, it would be of the highest interest to know in what way the interambulacral tubes penetrate into their cavity, and what are the relations of the currents extending into these tubes to the general circulation of the chymiferous fluid through the whole system; since in Pleurobrachia the interambulacral tubes do not extend beyond the base of the tentacular apparatus, and the tentacles are not hollow. It may be that there are two types in the structure of these interambulacral or tentacular tubes, as there are two types of tentacles among the naked-eyed Medusæ, some being hollow, as in Sarsia, and others plain, as in Bougainvillea; but, until the connection of the tentacular cavity of Cydippe hormiphora with the interambulacral tubes, and the connection of these with the central cavity of the chymiferous system, be more fully ascertained, the statement of Gegenbaur remains unsatisfactory. That a current through the tentacles is not a necessary condition of their extraordinary power of extension and rapid contraction, is plainly seen by the fact, that the tentacles of Sarsia, which are hollow, are neither more active, nor, comparatively to their size, more extensively movable, than those of Bougainvillea, which are full. Milne-Edwards has mistaken the bulb of the tentacular apparatus of LeSueuria for a secretory organ, and erroneously considered it as discharging its contents outward. It is certainly closed, and no more open than the interambulacral dilatations of the radiating tubes of Aurelia, which Ehrenberg also erroneously described as opening outward, and performing the functions of multiple anal apertures. I have carefully examined these swellings in Bolina, LeSueuria, and Aurelia, and am certain, that, unless they are accidentally injured, they in no way communicate with the surrounding medium. That these tentacular tubes are interambulacral, and not ambulacral, is at once settled by their position, since they are intermediate between the radiating tubes extending to and communicating with the vertical, peripheric, ambulacral tubes; but they are homologous to the simple radiating tubes arising in Aurelia from the angles of the sexual cavity, and enlarging in the margin into the little pouches mistaken by Ehrenberg for cloacas, and supposed by him to open outward through as many anal apertures as there are such interambulacral radiating tubes. The tentacles connected with these tubes are therefore also interambulacral, and on that account cannot be considered as homologous to the simple ambulacral tentacles of Sarsia, or to the bunches of tentacles of Bougainvillea. We shall see