

constitute its generic characteristics. For, unless attempts are made to analyze the meaning of the facts observed, zoölogy will forever retain a purely descriptive character, and never assume the true dignity of science. That the Cyaneidæ constitute a distinct family has already been shown, and yet, unless the genus *Cyanea* is carefully contrasted with certain genera of other families, it may not always be easy to distinguish it from them. A *Phacellophora*, for instance, floating in the water, must have a very striking resemblance to a *Cyanea*, judging from the figures of Mertens published by Brandt. For in that genus the actinostome is very large, the genital pouches form pendant sacs, of considerable size, and the tentacles, of large dimensions, are grouped in bunches on a crescent-shaped base of insertion, at some distance from the margin, and must, therefore, present an aspect quite similar to that of our *Cyanea*. But as soon as we consider the relations of their structure to their form, we find the greatest difference between them. In the first place, the chymiferous cavities, which radiate from the main central cavity, are broad pouches in *Cyanea*, terminating in rounded lobes at the margin. In *Phacellophora* they consist of numerous radiating tubes, ramifying towards the margin, in a manner similar to, and yet distinct from, *Aurelia*; for here the simple tubes are those which correspond to the bunches of tentacles, and the branching tubes those which terminate in the intervening lobes of the margin of the disk, while in *Aurelia* it is the reverse. Moreover, there are, in *Phacellophora*, four bunches of tentacles in each interambulaerum; namely, two bunches on each side of the chymiferous tubes, radiating from the middle of the genital pouches, while in *Cyanea* there is only one bunch on each side of the genital pouches. The total number of the large bunches of tentacles is, therefore, sixteen in *Phacellophoræ*, beyond which projects a rounded lobe of the margin of the disk. There are, further, sixteen three-leaved lobes, alternating with the tentacular lobes; four in the prolongation of the corners of the mouth; four in the prolongation of the middle of the genital pouches, and eight corresponding to the angles of the genital pouches. Whether all these have eyes, or only those in the prolongation of the angles of the mouth and of the genital pouches, cannot be ascertained from the figures of Mertens.

The genus *Heccædecoma*, which belongs to the same family as *Phacellophora*, has, in some respects, a still greater general resemblance to *Cyanea*, and is considered by Brandt simply as a sub-genus of *Cyanea*; and yet I am satisfied that it does not even belong to the same family, for, like *Phacellophora* and *Sthenonia*, it has branching chymiferous tubes, extending from the main cavity to the margin of the disk, instead of pouches as *Cyanea* has; but it approximates *Cyanea* more by the structure of its actinostome, which consists of four thin, flowing curtains. The margin of the disk is also very differently scalloped, consisting of sixteen