

of the mouth and those in the direct prolongation of the genital pouches, favors the view already discussed, of the possibility of eight spheromeres in Aurelia. But a more careful comparison between Cyanea and Aurelia, will disclose an unexpected correspondence between the two, in the relation to the broad pouches flanking the narrow pouches in the prolongation of the genital pouches and the complicated system of radiating tubes arising from the genital pouches in Aurelia. In the latter genus this system exhibits three main branches, starting from each pouch, the middle of which terminates at an eye, while the outer ones, which unquestionably arise from the same genital pouch, border on the simpler ambulacral systems of radiating tubes. Now, in Cyanea, the narrow pouches, in the direct prolongation of the genital pouches, which terminate at an eye, also correspond to the middle main branch of the complicated system of Aurelia, while the broader pouches, on each side of these, correspond to the outer main branches of the complicated system of Aurelia. To complete the identity, it may easily be ascertained that the broader pouches communicate freely with the genital pouches, as seen Pl. IV. *Fig. 1*, in the prolongation of σ'' , and in the prolongation of a and a' , where the sack of the genital pouches has been removed. There can be no doubt, therefore, that, widely developed and highly complicated as these systems may appear, the whole segments, from which hang a genital pouch and two adjoining bunches of tentacles with their broad pouches, as well as the narrow pouch between them, terminating in an eye, are interambulacral systems. To facilitate comparisons in tracing these homologies, the figures representing our Cyanea on Pls. IV. and V., have been drawn exactly in the same position as those of Aurelia, in Pls. VI. and VII. With these facts before us, it must be evident that the indentations along the margin of Cyanea, though a very important feature in the form of that genus, in no way indicate the organic divisions of its body. Nor are, indeed, these indentations homologous to those of Aurelia, according to the degree of their prominence; for in Aurelia the most marked indentations correspond to the position of the eyes, and the least marked ones, to the termination of the simple branches of the complicated system of radiating tubes, which have no eye; while in Cyanea the lesser indentations are in front of the eyes, and the deeper indentations in front of the wider pouches, which correspond, as we have just seen, to the simple radiating tubes without eyes.

The essential elements of the structure of Cyanea, therefore, are four narrow ambulacra, in the direction of the four corners of the mouth, alternating with four very wide and complicated interambulacra, facing the genital pouches. In these interambulacra we may distinguish the middle pouch, which is in the direction of the centre of the genital pouches, and the tentacular or lateral pouches, of which there is one on each side of the middle pouch. The middle pouch, in its peri-