

the direction of the corners of the mouth (σ''), and four correspond to the centre of the genital pouches (σ'), while the eight broader pouches are immediately above the eight bunches of tentacles.

With these data, we may now proceed to an inquiry into the combination of these structural elements, with reference to their homology with similar parts in *Aurelia*, and, at the same time, with reference to the whole constitution of a *Cyanea*. We have seen, that in *Aurelia* there are four simpler systems of radiating tubes, alternating with the genital pouches, the main branch of which terminates at four eyes, and which we were led to consider as the ambulacral system of that genus. This conclusion was founded upon the fact, that these systems correspond to the corners of the mouth and alternate with the sexual pouches. For the same reasons, we shall consider the four narrow pouches of the *Cyanea*, which are in the same trend with the corners of the mouth, and also alternate with the genital pouches, as the four ambulacral systems of *Cyanea*; and the four other narrow pouches, in the radial prolongation of the genital pouches, as the interambulacral system, since they stand in the same relation to the genital organs as the more complicated system of radiating tubes in *Aurelia*, the branches of which arise from the genital pouches. The only question which may here present some difficulty is the connection of the broader pouches, of which we have seen that there are eight in *Cyanea*. At first sight, it might appear as if there was nothing like them in *Aurelia*, and as if they, alone, should be considered as interambulacral structures.¹ Their alternate position, between the narrow pouches corresponding to the corners

¹ At the time of the publication of the third volume of this work, I was still under the impression that the eight broad pouches alone belong to the interambulacral system, and considered then the four narrow pouches, in the direct prolongation of the genital pouches, as ambulacral. I had not yet divested myself of the belief that the presence of an eye, at the termination of these pouches, indicates an ambulacral structure. A closer comparison of *Cyanea* with *Aurelia* has satisfied me that I was mistaken. There can be no doubt, in *Aurelia*, that the complicated system of radiating tubes is, in its totality, the peripheric prolongation of the genital pouches, and therefore entirely interambulacral. It is equally certain now, that the broad pouches of *Cyanea* are homologous to those simple chymiferous tubes of the *Aurelia* which terminate at the margin without eyes; they must, therefore, by ho-

mology, be considered as the lateral parts of the narrow pouches in the direct prolongation of the genital pouches, with which they freely communicate, and on that account be referred, two and two, as part of that interambulacrum, to which the narrow pouch which they embrace belongs. In the chapter on *Aurelia*, I have already alluded to *Tiaropsis*, as furnishing satisfactory evidence that the presence of eyes does not necessarily indicate an ambulacral structure, since this genus has no eyes in the prolongation of the radiating chymiferous tubes, while there are two in each interambulacrum. Moreover, the ambulacra of a large number of *Radiates* terminate without eyes, as, for instance, in all *Holothurians*, in all *Crinoids*, and in all *Ophiurans*, while they are well developed in all *Asterians* and in all *Echinoids*. They are also wanting in most *Polyps*.