

pherie part, resembles exactly the ambulacral pouches, but its actinal termination is on the margin of the genital pouches, while the actinal part of the ambulacral pouches communicates directly with the main central cavity. The tentacular or broad pouches communicate also with the genital pouches, and in this respect they stand in the same relation to the main cavity, as the middle interambulacral pouch; thus disclosing their interambulacral nature.

An attempt to designate the radiating segments of the gelatinous disk, in accordance with their homological relations, presents great difficulties, owing to the fact that these segments do not correspond to the circumscription of either the ambulacral or interambulacral areas of the actinal system. On the contrary, in comparing the description of the disk with what has just been said of the essential elements of the structure of *Cyanea*, it appears that of the eight long junctions, four correspond to the middle of the ambulacral system, and four to the middle of the interambulacral system; while the eight short junctions correspond to the middle of the eight large pouches, which are themselves the equivalent of the eight simple radiating tubes without eyes in *Aurelia*; so that each of the four ambulacral systems corresponds to portions only of the adjoining segments along four long junctions, while the four interambulacral systems correspond to two entire adjoining segments along the long junctions, in the direction of the interambulacral eyes, plus that portion of the other segments which is not covered by the ambulacral systems. In this disagreement between the segments of the disk, and the main cavities of the body, we have a new evidence that the disk itself does not belong to the same organic system as the radiating pouches. In fact, these segments may be homologized with the rows of plates in the calyx of those Crinoids in which these rows do not coincide with the arms or ambulacra, and, from this homology, I infer that the disk of our *Medusæ* is as truly an abactinal structure as the calyx of the Crinoids.

As in all *Discophoræ*, the substance of the disk is a gelatinous mass, consisting of immense cells, the caudate prolongations of which traverse it in different directions, assuming the appearance of flat muscular fibres. But this appearance is deceptive, and the substance of the disk does not, in reality, contain distinct muscles, though it is highly contractile, especially in the thinner part of the margin. Its movements are owing to the structure of the lower floor.

The amount of water contained in the tissue of the disk is truly extraordinary. A specimen, weighing thirty-five pounds, exposed to evaporation, left a viscous mass, chiefly composed of common salt, showing the water to be common sea-water. The salt having been washed out with fresh-water, and the organic substance dried simply in the sun, weighed less than an ounce.

Returning now to the lower floor, and leaving out of consideration all the organs