

is entirely removed in the zone a' ; another is cut to the base of the tentacles in the zone a ; two others, in the zones a'' and a''' , are cut very short; and one, between a'' and a''' , is preserved to a greater extent. The circular folds of the lower floor are entirely preserved between the zones a'' and a''' and in the zone a , and partially so in the zone a'' and a . The radiating folds are best seen in the zones a' a'' a''' , and partially in the zone a .

Fig. 2 represents a part of the outer surface of the lower floor in connection with the oral appendages, aa being the smooth membrane in the direction of the centre of the ambulacra, as seen in fig. 1, in the zones a' a'' and a''' ; bb the radiating folds in the same zones; cc the radiating folds in the interambulacral zones; dd' and e the circular or concentric folds, e being in the ambulacral and d and d' in the interambulacral zones; 1 and 1 are the two pillars of one corner of the mouth, to the right and left of which projects a sexual pouch: at 2 these pillars unite with the horizontal and circular thickenings (3 and 4) of the oral circle, and at 5 arise the folds of the oral lobes.

Fig. 3 represents the marginal folds of the disk surrounding the eye abc ; a being the ambulacral tube of the eye, narrowed in b , before reaching the eye proper e . The whole magnified twenty-five diameters.

Fig. 4. A fold of the margin of the oral lobes magnified twelve diameters, to show the clusters of lasso-cells scattered upon their inner surface; one of these clusters is magnified 250 diameters in fig. 4a.

Fig. 5. A lobe of the margin of the disk to show the ramifications of the chymiferous tubes.

Fig. 6. The margin of the disk folded downward over the furrow in which the eye lies, to show the thickness of the gelatinous upper layer of the umbrella.

Fig. 7. A portion of the lower floor of the disk, seen from its upper or inner surface, to show how the cavity of the tentacles opens into the main cavity of the body.

PLATE V. Besides many structural details relating chiefly to the tentacles, this plate represents our *Cyanea* as seen from above, with the margin fully expanded.

Fig. 1 gives a general view from above, the animal resting upon a dark ground. All the figures visible in this drawing are the optical expression of the unequal transparency of the gelatinous mass of the disk, through which shines the reddish-brown lining of the lower side of its upper layer. In the centre appears a tessellated, circular disk, which in adult specimens readily separates from the peripheric part. The straight rays

mark the deep furrows of the lower surface, radiating from the central disk to the base of the eyes and to the middle of the interambulacral zones; the eight longer rays being the ambulacral furrows, the eight shorter ones the interambulacral furrows. The thicker bands, converging and diverging again about half-way their length, correspond to the thickenings of the gelatinous mass to which the lower floor of the disk is attached; so that by this connection of the two floors the main cavity of the body is divided into an open circular central space and sixteen radiating flat chambers, the eight narrower of which, trending in the direction of the eyes, are the ambulacral chambers, and the eight wider ones alternating with them the interambulacral chambers. Upon comparing this figure with fig. 1 of Pl. IV. it will be seen that the eight bunches of tentacles communicate with the eight interambulacral chambers; and that the four sexual pouches and the four angles of the mouth face alternate ambulacral chambers.

Fig. 2 corresponds to fig. 6 of Pl. IV., but represents the same segment of the margin of the disk from the upper side. This shows the eyes to be above the margin of the disk, as the tentacles also are.

Fig. 3 represents a band of the inner surface of the oral lobes magnified, from the margin upwards; showing that along the margin the epithelial cells are smallest and consist chiefly of lasso-cells, fig. 3d, while higher up the lassos are in clusters, and the intervening epithelial cells are gradually larger and larger. On the outer surface the lasso cells are few and far apart.

Fig. 4. Section of a tentacle, covered with clusters of lasso-cells, showing its inner channel and the transparent gelatinous wall. Magnified 12 diameters.

Fig. 5. Clusters of lasso-cells from the surface of a tentacle. Magnified 250 diameters.

Fig. 6. Other clusters of similar cells. Magnified 250 diameters.

Figs. 7, 8, 9, and 10. Segments of tentacles, magnified 60 diameters, showing different combinations of epithelial cells and clusters of lassos. a indicates the central cavity of the tentacles, and b the band of longitudinal cells by the contraction of which the tentacles are shortened.

Figs. 11 and 12. Cells lining the cavity of the tentacles. Magnified 250 diameters.

PLATE V^a. Structural details of *Cyanea arctica*.

Fig. 1. Transverse section of the peripheric part of one side of an ambulacrum, across the furrow for the eye- o furrow for the eye; a^1 a^2 sections of the chymiferous tubes.