

PLATES III., IV., V., and V<sup>a</sup>.CYANEA ARCTICA, *Pér.* and *LeS.*

[All the figures of these plates were drawn from nature by A. Sonrel.]

PLATE III. represents *Cyanea arctica* in one of its natural attitudes, quietly floating near the surface of the water with all its appendages hanging loosely down, most of the tentacles being fully extended, and a few only contracted. The attitude chosen makes it possible to appreciate the position of the different parts, in their natural relations, as seen in profile. One of the pillars of the digestive cavity being in the centre of the figure, two of the ovarian pouches are visible to the right and left of it, behind the curtain formed by the four bunches of tentacles of the same side. The crescent-shaped line of insertion of the tentacles is well displayed by the two bunches on the right and left of the pillar of the main cavity; it is foreshortened in the two bunches occupying the margins of the figure. Three eyes are visible, one in the centre of the margin of the disc and one on each side, a lobe without eyespeck intervening between them. The festoon-like ramifications of the chymiferous tubes in the lobes of the margin of the disk are plainly visible, the disk being slightly contracted, in which case the margin is bent downwards. The dark ridges in the centre of the figure, terminating in sharp points, mark the outlines of the lower surface of the gelatinous disk, which is of a rich reddish brown color, and forms the roof of the main cavity of the body, exhibiting deep radiating furrows arising from an even central flat disk. Between the margin of the disk and the pillars of the digestive cavity appear the circular and the radiating folds of the lower floor of the main cavity of the body, and below the ovarian pouches and behind the tentacles hang the folds of the prolongation of the oral tentacles, which are more extensive in the genus *Cyanea* than in any other Medusa.

The specimen represented was an adult of ordinary size, four times larger than the figure, which may give some idea of the magnificence of such a Medusa when in full activity, with all its tentacles stretching in every direction. Specimens measuring three feet across the disk are not rare in the Bay of Boston, in September, and their tentacles may be seen trailing to a distance of ten feet in every direction from the disk. In our figure the lower ends of a large number of tentacles are cut off. When perfectly undisturbed the tentacles may be extended to an extraordinary length.

PLATE IV. represents our *Cyanea* from the lower surface, with different parts removed, and reproduced by themselves.

Fig. 1 may give a general idea of the relations of all the parts visible from the lower side, some of them being removed to allow the others to be seen in their natural connection with the whole. Of the four lobes extending from the four corners of the mouth, two are entirely removed, and one (*s*) is retained entire, its two halves *d'* and *d'''* being spread wide open to show the medial furrow leading into the digestive cavity; of the fourth (*s'*) only one half *d* is preserved with the medial furrow, and the other half is cut off along the furrow. One half *d* of the lobe *s'* and one half *d'* of the lobe *s* are seen as they unite near the mouth, to show how the four lobes are separated from one another, and how their margins are folded all round. The four ovarian pouches alternate with these four lobes; but only two are preserved in this figure, one of which is almost entirely covered by the oral lobes of that side, while the other is entirely uncovered, the two oral lobes which hang to the right and left of it having been removed. It is thus seen that the sexual pouches hang down between the pillars of the corners of the mouth, and lie in the centre of a ray terminating with an eye *o'*, each being flanked by two bunches of tentacles lying in the direction of two lobes *a''* and *a'''*, in the centre of which there are no eyes. The cavities of the sexual pouches open freely into the main cavity of the body; one of the cavities is laid open in the direction of the eye *o'''*, the walls of the pouches being cut through near the pillars of the digestive cavity. On the opposite side, the lower floor of the main cavity is entirely removed in the direction of the lobe *a'*, while in the direction of the lobe *a* the sexual pouch is alone cut off. The four oral lobes alternating with the four sexual pouches are thus seen to occupy the centre of eight rays, each of which terminates with an eye, *o o o' o'' o'''*, two eyes being covered by the oral lobes *s* and *s'*. These eight rays are the centres of the eight sphoromeres of which a *Cyanea* consists. Homologically speaking, they are the eight ambulacral zones of the *Cyanea*. With them alternate eight interambulacral zones, *a a' a'' a'''*, the centres of the four others being covered by a bunch of tentacles on the left side of the figure and by the oral lobes at *d'' d'* and *d*. In the centres of these eight interambulacral zones there are eight bunches of tentacles, three of which are covered by the oral lobes preserved in this figure, and one of which