

shell are extremely fragile, so that complete and well-preserved specimens are rare. Some species are among the most admirable forms of Radiolaria, and are similar to small elegant Medusæ, e.g., *Medusetta* (Pl. 120, figs. 1-4), *Gazelletta* (Pl. 118, fig. 1), and *Gorgonetta* (Pl. 119).

The shell of the Medusettida is usually very small and delicate, in comparison to the long, often exceedingly large, feet, which depend from the margin of its mouth. From the size and the weight of these feet, we must suppose that the shell floats in the water in the same position as in the NASSELLARIA, so that the main axis is vertical, and the open mouth with the feet on its lower pole. The form of the shell exhibits the same varieties as the similar umbrella of the Medusæ. It is usually more or less hemispherical, sometimes flatter, cap-shaped, at other times more highly vaulted, campanulate or ovate. The similarity with the umbrella of a Medusa is so great, that in many species the large lower opening on the mouth of the shell is surrounded by a prominent ring or diaphragm, comparable to the velum of the Craspedotæ or Hydro-medusæ (Pl. 120, figs. 3-4).

The structure of the shell, which we term shortly "alveolate," is very remarkable, and seems to be different from that of all the other PHÆODARIA. Its reticulate appearance seems to indicate at first sight the usual lattice-shell, pierced by numerous very small pores (Pl. 118, figs. 1-3). But as soon as we make the shell dry, air always enters into its thin walls, and each apparent pore is found to be a small alveole or a separate compartment, which contains a small bubble of air (Pl. 120, figs. 11, 16). The thin wall of the shell is therefore double, composed of two parallel, very thin lamellæ of silica, which are little distant from one another, and are connected by a network of small rods or septa. This network is rarely regular, with square meshes (Pl. 118, fig. 3), or with hexagonal or triangular meshes (Pl. 116, fig. 2); it is usually irregular, with polygonal meshes (Pl. 120, figs. 11-16). The size of the meshes or alveoles is usually smallest on the aboral apex of the shell, and increases gradually towards the mouth. The largest alveoles are around the mouth, on the velum-shaped peristome, and here the marginal alveoles of the shell pass directly over into the separate alveoles or hollow compartments of the articulate feet (Pl. 118, fig. 1). Probably each alveole is a separate compartment, filled up by jelly, and has a small opening or pore on its inside; this pore is very distinct in the marginal alveoles of some larger species (Pl. 116, fig. 1a; Pl. 120, fig. 14), but I have not been able to recognise it everywhere. Moreover, it often happens that the alveoles are apparently completely closed. In some smaller species the alveolate structure seems to be present only in the peripheral part of the shell, whilst the central part is solid.

The outer convex surface of the shell is usually smooth, sometimes papillate (Pl. 116, fig. 1), at other times studded with small, conical, radial spines (Pl. 118, fig. 1; Pl. 120, figs. 4-11). Prolonged cylindrical spines or tubes are rarely