

Family I. DISCALIDÆ, Haeckel, 1888.

Discalidæ, Hkl., System der Siphonophoren, p. 29.

Definition.—Disconnectæ with an octoradial circular permanent umbrella, including a circular, campanulate or discoidal pneumatocyst, without vertical crest. No vertical sail upon the umbrella. Submarginal tentacles of the umbrella simple or branched, with terminal cnidospheres. Central siphon surrounded by numerous mouthless palpons, which bear the medusiform gonophores.

The family Discalidæ comprises some new, small, but very interesting Siphonophoræ from the deep sea, which were found in the collections of the Challenger. They are in general very similar to young Porpitidæ, but differ from them in the very important character, that the large central siphon alone possesses a mouth, while the surrounding gonostyles or blastostyles are mouthless palpons. The Discalidæ are therefore "*Disconnectæ monogastricæ*," and become mature in the monogastric state, which is a transitional larval stage in the Porpitidæ. These latter, as well as the Velellidæ, are in the adult state "*Disconnectæ polygastricæ*," each gonostyle possessing a mouth and representing a peripheral sexual siphon. The Discalidæ may be regarded as the simplest and most primitive of all Siphonophoræ, since they retain the original character of a simple octoradial Medusa (like *Trachynema* or *Pectyllis*) more nearly than all the others.

Umbrella.—The complete body of all Discalidæ is circular, sometimes more lenticular or discoidal, at other times more campanulate or even subglobular. The vertical or main axis is, therefore, sometimes nearly as great as the horizontal or equatorial axis, at other times scarcely half as great, or even less. The free prominent margin, or the glanduliferous *limbus umbrellæ*, marks the boundary between its upper (apical or proximal) face, the exumbrella, and its lower (basal or distal) face, the subumbrella. The former includes the pneumatophore, and represents with it the *nectosome*; the latter is the *siphosome*, and bears in its centre the large primary sterile siphon, around this numerous sexual palpons (or gonostyles), and towards the margin the corona of tentacles.

A vertical meridional section through the umbrella (Pl. XLIX. fig. 4) demonstrates that the superior half of the umbrella is occupied by the pneumatocyst (*ph*), the inferior by the large centradenia (*uc*), and from this depend in the centre the large central siphon (*sa*), and around it the corona of gonostyles (*gs*). A deep circular coronal groove separates this latter from the corona of submarginal tentacles.

Exumbrella.—The superior (apical or proximal) face of the umbrella is flat or slightly convex, smooth, and pierced by the stigmata of the pneumatocyst. It is composed of two parallel lamellæ, which are separated by the network of the pallial vessels. The external or superior lamella is the pneumatocodon, which contains numerous cnido-