

Subclass II. SIPHONANTHÆ.

Order II. CALYCONNECTÆ, Hæckel, 1888.

(Pls. XXVII.—XLII.)

Diphyidæ, Eschscholtz, 1829, 1, p. 122.*Calycophoridæ*, Leuckart, 1854, 8, p. 256.

Definition.—Siphonophoræ with one or more nectophores, without pneumatophore, and without palpons. Nectosome always without pneumatocyst, represented only by the nectophores. Siphosome either a single siphon (Monogastricæ) or a long tubular stem, bearing a series of equidistant siphons, separated by free internodes (Polygastricæ). Each siphon with a single tentacle bearing a series of tentilla or lateral branches; each tentillum with a cnidosac and a simple terminal filament.

The order Calyconnectæ, hitherto usually called Calycophoridæ, comprises all Siphonophoræ without pneumatophore. No doubt this large group is very natural; it differs from all the other Siphonophoræ, not only in the complete absence of the important pneumatic apparatus, but also in a number of other peculiarities. The primary larva develops first a nectophore (in the others a pneumatophore). The siphons have always the same structure, and so also the single tentacle, which is attached to each siphon; it bears a naked cnidosac (without involucre) of a constant structure. The long tubular stem of the polygastric Calyconnectæ always bears a single row of ordinate cormidia, separated by naked free intervals. Each cormidium constantly bears a single siphon only, and a single tentacle. Palpons and palpacles never occur in the Calyconnectæ.

History.—Eschscholtz, in his fundamental work,¹ divided the order Siphonophoræ into three natural families; the first of these, Diphyidæ, differs from the two other (Physophoridæ and Velellidæ) in the complete absence of any float filled with air. He distinguished six different genera; three of these (*Eudoxia*, *Ersæa*, *Aglaïsmia*) are monogastric ("with a single suctorial tube"); the three others (*Abyla*, *Cymba*, *Diphyes*) are polygastric ("with a long digestive tube bearing numerous suctorial tubes").

The oldest known of these six genera was *Diphyes*, founded by Cuvier in 1817,² upon an apparently double animal, or twin-zoophyte, of which Bory had given the first figure in 1804 under the name *Biphora bipartita* (13) (= *Diphyes dispar*, Chamisso).

Lesson adopted in 1843 (3, p. 424) the system of Eschscholtz, and divided the family Diphyidæ also into Monogastricæ and Polygastricæ. But he distinguished a greater number of genera and subgenera (partly constituted already in 1827 to 1833 by Quoy and Gaimard, 2 and 20). Lesson collected all the scattered descriptions of Diphyidæ

¹ System der Acalephen, 1829, p. 122.² Règne animal, édit. i., tome iv. p. 61.