

In the numerous voyages which I have made during the past twenty-five years, in order to complete my *System der Medusen* (compare the Preface to that Monograph), I have found also many opportunities of examining a great number of Calyconectæ belonging to all the genera described in the following pages. The richest harvest was reaped during my residence in the Canary Islands (December 1866 to February 1867), where I was able to examine accurately a great number of new or imperfectly known Monophyidæ, Diphyidæ, and Polyphyidæ. I there traced the complete metagenesis of many typical genera and the ontogenetic connection of monogastric and polygastric Calyconectæ. Supported by this rich personal experience, I have in the following pages attempted to give a more correct definition of genera and a more natural arrangement than has hitherto been possible.

Nectophores.—The Calyconectæ differ from all other Siphonophoræ in the complete absence of any pneumatophore, so that the nectophores are the only organs of locomotion. The polygastric Calyconectæ bear on the top of the long tubular stem either one or two large nectophores (Monophyidæ and Diphyidæ), rarely a biserial nectosome, which is composed of two opposite rows of nectophores, four to six or more (Desmophyidæ and Polyphyidæ). The locomotion of the monogastric Calyconectæ is effected usually by the subumbrella of the gonophores (Eudoxidæ); but in the Ersæidæ the first-formed gonophore loses its sexual functions, and acts as a “special nectophore.”

The larva of the Calyconectæ, which develops from the fertilised egg, and which we call *Calyconula* (Pl. XXVII. figs. 8–11), is a bilateral medusoid person, the manubrium of which lies outside the campanulate umbrella, apparently protruded through a ventral fissure of the latter.¹ The “primary nectophore” of this *Calyconula* often (perhaps always) becomes detached, and replaced by a secondary nectophore, which is often heteromorphous.

The number, arrangement, and form of the nectophores in the different Calyconectæ are very variable, and serve mainly for the distinction of genera. Regarding the general form of the nectophores, we may distinguish two different main groups, Sphæronectariæ and Cymbonectariæ; the umbrella of the former consists of a very soft jelly, and is subspherical, mitriform or reniform, always devoid of distinct edges, with rounded surface. The umbrella of the latter, on the contrary, has always a definite geometrical form, and is polyhedral, either pyramidal or prismatic, with polygonal faces and sharp, often denticulate, edges; its jelly-substance is rather hard and firm, often cartilaginous.

Nectosac and its Canals.—The original form of the muscular subumbrella in the Calyconectæ is hemispherical, but usually in correlation with the fundamental form of the nectophores (primary as well as secondary umbrella) it is more or less bilateral, and at the same time quadriradial; the latter structure (inherited from the ancestral Anthomedusæ) is indicated by the constant four radial-canals of the subumbrella;

¹ 7, Taf. xvi. figs. 12–21; 85, Taf. vi., vii.; 86, Taf. xvii. figs. 6, 7.