

Huxley gave an accurate description of the only nectophore observed of these four "Diphyidæ"; he supposed (as did also his predecessors) that the second nectophore had been accidentally lost; it does not, however, exist at all. The genus *Sphæronectes* was rightly regarded by Huxley as the type of a peculiar family—Sphæronectidæ.

During my residence in the Canary Island of Lanzerote (December 1866 to February 1867), I observed four different species of Monophyidæ, viz.:—

- (1) *Monophyes hydrorrhœa*.
- (2) *Mitrophyes peltifera* (Pl. XXVIII.).
- (3) *Muggiæa pyramidalis*.
- (4) *Cymba crystallus*.

I was able to examine the complete metagenesis of the latter species, and the development of its Eudoxia, *Cuboides crystallus* (Pls. XLI., XLII.).

A Mediterranean species of *Sphæronectes*, very similar to the Australian form discovered by Huxley, was described in 1874 by Claus, and called *Monophyes gracilis* (70, pl. iv.). He observed the development of its Eudoxia, which was formerly described by Gegenbaur as *Diplophysa inermis* (7, Taf. xvi. fig. 3). Another Mediterranean Monophyid described by him, *Monophyes irregularis*, may remain the type of this genus. Claus replaced the term Sphæronectidæ of Huxley by the name Monophyidæ, which was accepted as more significant, in opposition to Diphyidæ.

The metagenesis of the two Mediterranean Monophyidæ was afterwards very accurately examined by Chun (86–88). Compare his memoirs also for the history of this family.

During my voyage through the Indian Ocean (November 1881 and March 1882) and in Ceylon, I had the opportunity of examining some very interesting new forms of Monophyidæ and their development, viz., *Monophyes princeps* and *Cymbonectes huxleyi* (Pl. XXVII.). Supported by these observations, and by some specimens found in the Challenger collection, I was able to give the following description of Monophyidæ.

*Nectophore*.—The single nectocalyx of the Monophyidæ exhibits differences in form and structure similar to the first or proximal of the Diphyidæ. Accordingly, I divide the family Monophyidæ into two subfamilies; the first of these, Sphæronectidæ, has a smooth hemispherical or mitriform nectophore, without sharp edges, and is allied to the Prayidæ among the Diphyidæ. The second subfamily, Cymbonectidæ, has a pyramidal nectophore with five prominent edges, and is nearly allied to the Diphypsoidæ and Abylidæ. The single nectophore of the Monophyidæ is relatively large, of a bilateral and quadriradial fundamental form, sometimes symmetrical, at other times asymmetrical. The first nectophore of their larva is replaced by a permanent, often heteromorphous, swimming-bell.

*Hydræcium*.—Since the single nectocalyx of the Monophyidæ corresponds to the first apical or proximal nectophore of the Diphyidæ, it possesses a hydræcium for the reception of the retiring siphosome. This is an open hydræcial groove, protected by