

of corms were described by Quoy and Gaimard (2, 19, 20) and by Lesson (3, 22); but their figures are so unnatural and incomplete, and their descriptions so superficial and devoid of scientific understanding of the subject, that they have only produced extraordinary confusion and numerous mistakes.

Eschscholtz, the founder of the System der Acalephen (1829), first established the family Physophoridæ, and distinguished it from the other two families of his Siphonophoræ (Diphyidæ and Velellidæ) by this definition:—"The soft body bears at its upper end a swimming-bladder filled with air." He distinguished (1, p. 141) ten different genera; three of these, however, belong to the Cystonectæ, and one to the Calyconectæ, so that six remain; of these, *Apolemia* and *Athorybia* are types of two separate families; *Agalma* and *Stephanomia* belong to the Agalmidæ; *Physophora* and *Discolabe* to the Discolabidæ. The system founded by Eschscholtz was much extended, but not advanced, by Lesson, who in his Acalèphes (1843) gave a most confused compilation of all descriptions published up to his time. Brandt (in 1835) founded the two families Agalmidæ and Anthophysidæ (25). The first good anatomical description of a Physonect was published in 1841 by Milne-Edwards, who illustrated the Mediterranean *Stephanomia* (= *Forskalia*) *contorta* (71). Another excellent paper on *Agalmopsis elegans* was written in 1846 by Sars (27, i.).

A more accurate knowledge of the peculiar organisation of the Physonectæ, and a more natural explanation of their complicated structure, was not acquired before the sixth decade of this century. At this time Kölliker (4), Vogt (6), Leuckart (5 and 8), Gegenbaur (7 and 10), and Huxley (9) so greatly advanced our knowledge by a series of excellent illustrations and accurate descriptions, that most succeeding observers have only been able to add single particulars. Claus, in his monographs of *Physophora hydrostatica* (34), *Halistemma tergestinum* (74), and *Agalmopsis utricularia* (75), advanced mainly our histological knowledge of the Physonectæ; as did afterwards, more especially, Korotneff (1884), but, unfortunately, without sufficient knowledge of their morphological and systematic relations (50).

My own observations on the Physonectæ were commenced in 1859 in Messina, and advanced much in 1866 during my residence at Lanzerote in the Canary Islands. I found here, and still more in 1881 in Ceylon, and during my voyage in the Indian Ocean, the opportunity of examining a number of interesting new forms and even new types of Physonects (*Circalia*, *Athoria*, *Dicymba*, *Crystallodes*, *Anthemodes*, *Lychnagalma*, *Nectalia*, *Discolabe*, &c., Pls. XI.-XXI.). The Challenger collection, however, contained only very few specimens of Physonectæ which were preserved well enough for description; only scattered fragments and detached parts (nectophores, bracts, siphons, gonophores) were found in many of the bottles.

Relying on these extended observations, and comparing the numerous scattered descriptions and figures of former observers, I was enabled to establish the new system