

Order III. PHYSONECTÆ, Haeckel, 1888.
(Pls. VIII.—XXI.)

Physophoridæ, Eschscholtz, 1829, 1, p. 139.

Physophoræ, Goldfuss, Auctt.

Definition.—Siphonophoræ with a pneumatophore and several nectophores (or instead of these bracts), without aurophore. Nectosome composed of a simple, apical, monothalamous pneumatocyst, and beyond it a biserial or multiserial group of nectophores, sometimes instead of these a corona of bracts. Siphosome always with numerous palpons, usually covered with numerous bracts. The trunk of the siphosome is either a single siphon (Monogastricæ) or a tubular or vesicular stem, bearing numerous cormidia (Polygastricæ). Each cormidium with a single siphon and a single tentacle, a group of palpons and gonophores. The cormidia are sometimes ordinate, at other times irregular.

The order Physonectæ, hitherto usually called Physophoridæ, comprises those very numerous and variously organised Siphonophoræ, which possess a nectosome composed of an apical pneumatophore and a group of nectophores. They agree in this combination with the following order Aurnectæ, but differ from these as well in the absence of the aurophore as in the simple structure of the tubular trunk. Sometimes the nectophores are replaced by bracts; but these are also originally nectophores, with a reduced or lost nectosac. A further character common to all Physonectæ is the general presence of palpons or cystons; these are lacking in most other Siphonophoræ, with the exception of the Cystonectæ. The corm of the Physonectæ is rarely simple, and represents a single cormidium (in the monogastric Cirralidæ and Athoridæ); usually it is composed of numerous cormidia, which are sometimes ordinate (with free internodia), at other times irregular (with scattered organs). The primary larva is always bilateral, and develops a pneumatophore very early (*Physonula*).

History.—The oldest descriptions and figures of Physonectæ are those of Forskål (1775), and relate to three Mediterranean forms, which he united in the genus *Physophora*—*Physophora hydrostatica*, *Physophora rosacea*, and *Physophora filiformis* (11). The first has been retained as the permanent type of the genus *Physophora*; the second was afterwards called by Eschscholtz (1) *Athorybia*, and the third *Epibulia*; this latter, however, is a *Rhizophysa*, and belongs to the Cystonectæ.

In the beginning of the present century the first observations on Physonectæ were made by Péron and Lesueur. In 1807 they published figures of *Physophora myzonema* and *Stephanomia amphitrites* (14, pl. xxix.). An excellent plate by Lesueur, with a splendid figure of *Stephanomia uviformis* (= *Apolemopsis uviformis*), was unfortunately never published. Afterwards a number of detached portions of Physonectæ, and fragments