

Order V. CYSTONECTÆ, Haeckel, 1888.

(Pls. XXII.—XXVI.)

Pneumatophoridæ, Chun, 1882, 86, p. 1168.*Cystonectæ*, Haeckel, 1888, 95, p. 44.

Definition.—Siphonophoræ with a large apical pneumatophore, without nectophores and without bracts. Nectosome represented only by the pneumatophore, which always bears an apical stigma. Siphosome either a single cormidium with one siphon (Monogastricæ), or a tubular or vesicular trunk which bears numerous cormidia (Polygastricæ) Gonodendra always monostylic, provided with gonopalpons.

The order Cystonectæ comprises all Siphonanthæ which possess neither nectophores nor bracts, the only organ of swimming being the large apical pneumatophore. They differ in this respect from the three preceding orders, and agree with the Disconanthæ or Disconnectæ; but the structure of the float, as well as the entire organisation, is in these latter perfectly different (compare above, pp. 25, 26). We unite in the order Cystonectæ five different families, three of which are new, viz., the monogastric Cystalidæ and the polygastric Epibulidæ and Salacidæ; the two other families, formerly known, and both polygastric, are the Rhizophysidæ (usually united with the Physonectæ) and the Physalidæ; these two families have been united by Chun, in 1882, under the name Pneumatophoridæ (86, p. 1168). All known Cystonectæ agree in the complete absence of nectophores and bracts, and in the possession of a large pneumatophore of peculiar structure, provided constantly with an apical stigma for the emission of air. All the genera of this order agree further in the peculiar composition of the monostylic gonodendra, the gynophores of which are detached from the trunk before ripening. In most other respects the Cystonectæ agree generally with the Physonectæ; they may be derived from this order by the loss of the nectophores.

History.—Eschscholtz in his fundamental work (1) described, in 1829, three genera and six species of Siphonophoræ which belong to our order Cystonectæ, viz., (1) the Mediterranean *Rhizophysa filiformis*, Lamk. (described already in 1775 by Forskål, 11, as *Physophora filiformis*), and the closely allied *Rhizophysa planostoma*, Péron (14, pl. xxix. fig. 3); (2) the Australian *Epibulia chamissonis* (figured in 1821 by Eysenhardt, 77, as *Rhizophysa chamissonis*); and (3) the well-known interesting genus *Physalia* with three species (the Atlantic *Physalia caravelle*, the Indian *Physalia pelagica*, and the Pacific *Physalia utriculus*). Eschscholtz, as well as most following authors, united these three genera of Cystonectæ with the Physophoridæ (our Physonectæ).

Brandt, in 1835, relying on the excellent (unfortunately hitherto unpublished) figures and descriptions of several new Cystonectæ by Mertens, established for them two different