

subfamilies with four genera: (1) the Rhizophysidæ (with *Epibulia* and *Rhizophysa*), and (2) the Physalidæ (with *Alophota* and *Physalia*, 25, pp. 33, 36). The same two groups were accepted by Huxley, in his *Oceanic Hydrozoa*, 1859, as two separate families of Physophoridæ (9, p. 71).

*Physalia*, as the largest and most splendid of all Siphonophoræ, well known to all travellers and sailors in the Tropics, celebrated by its peculiar form and swimming locomotion, its brilliant colours and dangerous poison, has provoked a voluminous literature (compare Eschscholtz, 1, p. 159; Olfers, 79, p. 26; and Huxley, 9, p. 93). But the greatest part of it is without scientific value, full of errors, and not supported by accurate researches. Huxley rightly says, that "this department of zoological literature makes one long for the advent of a Caliph Omar, and produces a sort of unpleasant vertigo" (9, p. 99). Indeed, the knowledge of *Physalia*, although examined and described by numerous observers, has remained very insufficient up to our time.

I myself had an excellent opportunity of observing living Physalidæ, as well as Rhizophysidæ, during my residence in the Canary Island Lanzerote, in December 1866, and in January and February 1867. Among thousands of large *Physaliæ*, which appeared at Christmas 1866 in the harbour of Arrecife, there were some interesting, crestless, small, new forms, which are figured in Pl. XXVI. of this Report as *Alophota giltschiana* and *Arethusa challengerii*. Pls. XXIII. and XXIV. reproduce the figures of two new genera of Rhizophysidæ (*Cannophysa* with ordinate cormidia, and *Nectophysa* with loose cormidia, both sexually mature), which I had drawn from life in Arrecife in January 1867. But more interesting, as types of new families, may be the two remarkable forms of Cystonects which I observed in December 1881 and January 1882 in Ceylon, and which are figured in Pl. XXII. as *Cystalia monogastrica* and *Epibulia ritteriana*.

The collection of the Challenger contains a number of *Physaliæ* collected in different parts of the Tropical Atlantic and Pacific, and besides some other Cystonects or fragments of them. Among these is a very interesting deep-sea form, from the Tropical Atlantic (Station 338), *Salacia polygastrica* (Pl. XXV.); it is the type of a new family, intermediate between the Rhizophysidæ and Physalidæ.

Some other interesting new forms of Rhizophysidæ, also inhabitants of the deep sea, were described in 1878 by Studer as different species of *Rhizophysa* (40, Taf. i.); they represent, in my opinion, two different genera, *Aurophysa inermis* and *Linophysa conifera*. The large form described by Studer as *Bathypphysa abyssorum* belongs probably to the Forskalidæ (compare p. 248).

Some similar deep-sea forms, described recently by Fewkes (45), are too incomplete and too insufficiently known to allow us to recognise their true position in the system.

Recently Chun has given some valuable contributions to our knowledge of the