

Periphylla,¹ Steenstrup, 1837.

Periphyllidæ with four perradial buccal pouches of the œsophagus and four perradial completely separated niches of the basal stomach. Between these niches, the four subumbral funnel cavities (or the four hollow interradianal tæniola of the basal stomach) form hollow cones, which are beset along their whole length by two rows of gastral filaments and touch each other above in the point of the cone.

The genus *Periphylla*, as well as the following closely allied genus *Periphema*, was only presented in the Challenger collection by a single specimen. However, its large size and its excellent state of preservation enabled me to examine it more minutely and thoroughly than I had ever been able to examine any other *Peromedusa*. So that the following description of *Periphylla mirabilis* with the six plates (XVIII.–XXIII.) may be accepted as a firm foundation for the anatomical knowledge of the whole order of Peromedusæ. This conspicuous and remarkable group of Acraspeda was, till lately, almost unknown. On the one hand, it keeps in many ways the primitive formation of the Stauromedusæ, and is more closely connected both with the Tesseridæ and the Lucernaridæ than the two orders of Cubomedusæ and Discomedusæ, especially with regard to the remarkable formation of the central gastrovascular system. On the other hand, it is raised so far above the other three orders of Acraspedæ by the peculiar complication of its anatomical structure, and specially by complicated formation of the pouches, that in many respects it may be called the most highly developed of all Medusæ. At any rate, we must consider them as an independent principal group, as a special "order" of Acraspedæ, which have no direct connection with the Cubomedusæ and Discomedusæ, but must be rather regarded as a peculiarly developed branch of the Stauromedusæ. All that was known of the wonderful Peromedusæ up to the year 1879 was limited to the imperfect description of three different species of the genus *Periphylla*. But two of these figures showed only the empty umbrella of the dead animal without any internal organs—*Charybdea periphylla*, Péron and Lesueur (1809); and *Charybdea bicolor*, Quoy and Gaimard (1833). The description of the third species, *Dodecabostrycha dubia*, Brandt (1838), is partly good, partly very erroneous and incomplete, and remained to be completely unintelligible. Detailed examination of several well-preserved specimens of the stately *Periphylla hyacinthina* and some other smaller species made by me on the genera *Pericolpa*, *Pericrypta*, and *Peripalma* first enabled me, in 1879, to describe more minutely the hitherto unknown organisation of the Peromedusæ, and to place them as an independent order of the class (in the System der Medusen, pp. 396–422, Pls. XXIII., XXIV.). The anatomical description given there will, however, be enlarged and completed in many points by the following more

¹ Περιφύλλα = set round with leaves.