

alveolar calymma and by a voluminous mass of blackish-brown pigment, the phæodium; numerous, long, hollow, cylindrical tubes were scattered on the surface of the calymma. At that time I did not know the tripylean character of the central capsule and the peculiar radiate operculum in the PHÆODARIA, and therefore placed *Thalassoplancta cavispicula* among the Thalassosphærida.

The second description of a complete form of Cannorrhaphida was given in 1879 by R. Hertwig, under the name *Dictyocha fibula* (Organismus d. Radiol., p. 89, Taf. ix. fig. 5). The genus *Dictyocha* had been already founded by Ehrenberg in 1838, with the following definition:—"Lorica simplex, univalvis, silicea, laxe reticulata aut stellata" (Abhandl. d. k. Akad. d. Wiss. Berlin, 1838, p. 128). Ehrenberg had found only scattered pieces of the skeleton, fossil in Tertiary rocks. He placed them among the *Bacillaria* (= *Diatomaceæ*), but added, that they may be possibly scattered spicula of Sponges ("forsan Spongiarum ossicula").

In 1859 I myself observed similar forms of *Dictyocha* at Messina, and first recognised them as true Radiolaria. But I placed them at that time among the Acanthodesmida, beside *Prismatium*, supposing that a small spherical body which I had sometimes seen in the cavity of the pileated pieces (probably a phæodellum) was the small central capsule (Monogr. d. Radiol., 1862, p. 271, Taf. xii. figs. 3-6). The complete body of *Dictyocha* was not described till 1879, when R. Hertwig gave a full description of its peculiar structure, and especially of the great central capsule, which resembles that of the other PHÆODARIA. He first stated that the singular pileated pieces described by Ehrenberg were not complete shells, but isolated pieces of the skeleton, which are scattered in the jelly-envelope around the central capsule in a mode similar to the spicula of *Thalassoplancta*, *Thalassosphæra* and *Sphærozoum*. Hertwig also first recognised that the thin rods, which compose the reticular pileated pieces of the skeleton in *Dictyocha*, are not solid bars, but thin hollow tubules, similar to the hollow rods of *Aulacantha* and of other PHÆODARIA.

Numerous complete and well-preserved specimens of *Dictyocha*, which I found in the collection of the Challenger, have convinced me that the accurate description of R. Hertwig is correct in every respect, and that these remarkable bodies are true PHÆODARIA, most closely allied to *Cannobelos* (= *Thalassoplancta*) and to *Aulacantha* (compare Pl. 101, fig. 10). I now regard them as representatives of a peculiar subfamily of Cannorrhaphida, which I call Dictyochida. To the same subfamily also belong the small annular bodies which Ehrenberg described in 1841 as *Mesocena* (*loc. cit.*, p. 401), and the elegant, more complicated, reticular and pileated bodies, which Stöhr figured in 1880 under the name *Distephanus* (Palæontogr., vol. xxvi. p. 121). These peculiar bodies are also only isolated pieces of the siliceous skeleton, and are scattered tangentially in great numbers in the calymma, around the tripylean central capsule. A still higher degree of development is attained by the interesting forms