

“*Calodictya* and *Lithocyclidina*” of Ehrenberg and a great part of his “*Haliommatina*.” As three different subfamilies of that family I separated the Coccodiscida (with five genera), the Trematodiscida (with seven genera), and the Discospirida (with two genera; Monogr. d. Radiol., p. 485). A fourth group of Discoida was constituted by the Spongodiscida (with eight genera, including the *Spongocyclida*), which at that time I united with the Spongurida, because of their spongy structure (*loc. cit.*, p. 452).

As the number of fossil Discoida found in the Tertiary rocks of Barbados and of the Mediterranean shores (Sicily and Greece) is comparatively very large, we find even in the first system of Polycystina of Ehrenberg (1847), not less than twelve genera distinguished, viz., six *Calodictya*, two *Haliommatina*, and four *Lithocyclidina* (Monatsber. d. k. preuss. Akad. d. Wiss. Berlin, 1847, p. 53). The whole number of Radiolarian genera distinguished in that first system was forty-four. The diagnoses of them given by Ehrenberg were as usual very insufficient. The characters of the three families given by him were the following:—*Calodictya*—“Testarum intus spongiosarum et nucleo destitutarum orbes; *Haliommatina*—Testæ subglobosæ nucleus radiatus; *Lithocyclidina*—Testarum disci in media parte nucleati margine celluloso.” In the latest work of Ehrenberg (1875, p. 157) the same system was repeated, but some new genera added; and thirty-eight different species, appertaining to the Discoida, were figured in the same work (Abhandl. d. k. Akad. d. Wiss. Berlin, 1875, Tafs. xx.—xxx.).

Richard Hertwig, 1879, in his excellent work, *Der Organismus der Radiolarien* (pp. 57–68), gave a detailed description of the skeleton of some Discoida, and arrived at the conclusion that this whole family had a spirally constructed skeleton, and should therefore be derived from the Lithelida. But this conclusion is certainly erroneous, and in my opinion the whole explanation of that spiral structure, and of its signification in the development of the Discoida, is the weakest part of that otherwise very important work.

In my *Prodromus* (1881, p. 456) I gave a provisional system of the Discida or Discoida from the immense quantity of new material collected by the *Challenger*, and could distinguish not less than eighty-four genera. This number is from subsequent research only augmented by seven, so that in the following pages ninety-one genera with five hundred and one species are described. In the *Prodromus* I had disposed them in four different families, which number is now increased to six. These six families can be again disposed in two main groups or sections, the Phacodiscaria and the Cyclodiscaria, each section with three families.

The Phacodiscaria are characterised by the possession of a typical “phacoid shell,” and contain the three families Cenodiscida, Phacodiscida, and Coccodiscida. On the other hand, the Cyclodiscaria are distinguished by the absence of such a “phacoid shell,” and contain the three families Porodiscida, Pylodiscida, and Spongodiscida. Both sections exhibit an analogous development.