

Family XXII. PYLODISCIDA, n. fam. (Pl. 48, figs. 12–20).

Definition.—Discoidea without phacoid shell, with flat discoidal shell, in which a simple spherical central chamber is surrounded by one or two concentric triradial girdles; each girdle with three gates, separated by three simple arm-chambers. Surface of the disk with three open or latticed gates on each flat side.

The family Pylodiscida represents a new small but interesting group of Discoidea, which exhibits rather complex affinities to different groups of Sphærellaria. In my Prodrômus (1881, p. 464) I had enumerated only two genera of this family, *Triopyle* and *Hexapyle*, and had united them with *Tetrapyle* and allied genera in the family Pylonida. Indeed, the resemblance of skeletal structure in the two groups is very great. The most simple forms of both groups exhibit a simple spherical latticed central chamber, which is surrounded by few latticed chambers of similar size and form, separated by open gates. But in the Pylonida these chambers are opposite in pairs, and form together a complete lattice-girdle around the central chamber, whereas in the Pylodiscida the chambers are not opposite in pairs in one axis, and form therefore only latticed half girdles, which arise from the central chamber like radial arms, and may perhaps better be called "arm-chambers"; their number is constantly three. The free open spaces between these three arm-chambers form three gates, comparable to the two or four gates of *Amphipyle*, *Tetrapyle*, &c., and become afterwards closed by lattice-work in a similar way in both groups. A more important difference between them is indicated by the further mode of growth. The Pylonida build new girdles in all three dimensive planes (alternating in the transverse, lateral, and sagittal planes); their geometric fundamental form is therefore the "lentellipsis" or the "triaxial ellipsoid." The Pylodiscida, however, grow only at the periphery of the discoidal shell in one single plane (the equatorial plane); their fundamental form is therefore the biconvex lens or the flat disk (a shortened cylinder). This important difference is my deciding motive, in separating the latter from the former and in regarding the Pylodiscida as true Discoidea, the more so as they can easily be derived from *Archidiscus*, the fundamental and ancestral form of the Porodiscida.

One single form of *Archidiscus* seems to be of peculiar importance in this relation, viz., *Archidiscus hexonicus* (Pl. 48, fig. 10). In this species the simple central chamber is surrounded by a latticed ring or girdle, composed of six equal chambers of the same size and form, all lying in the same plane with the central chamber. In a nearly allied species, viz., *Archidiscus pyloniscus*, the six ring-chambers are different, three smaller (with denser network) alternating with three larger (of looser network); if we imagine the network of the latter reduced to a marginal bar we get *Triopyle*, and if also this bar disappear by reduction we get *Triolena*, the most simple form of the Pylodiscida.