

36. Polycyclolithaceae Forchheimer (1972) emend. Varol (1992)

Syn: Lithastrinaceae THIERSTEIN, 1973 Eprolithaceae BLACK, 1973

Description: Calcareous nannofossil having a wall with two cycles which are made up of three to twenty-four rays, petal- or brick-like elements. The height of the two cycles may or may not be equal. The elements in each cycle of the wall are either vertical, inclined or imbricated. The wall may surround a central opening or the inner end of the elements may join in the centre leaving no central opening. When the central opening is present a median or a median diaphragm extends into the central opening from where two cycles of the wall join each other.

The cycles of the wall are twisted in various degrees along the diaphragm. The diaphragm, which is made up of dextrally imbricated elements, is single- or multi-tiered. Due to the diagenetic alteration, however, the elements may appear radially jointed to each other without any imbrication. The number of the elements in the diaphragm is always equal to that of each cycle of the wall.

In this birefringent nannolith (in plan and side view) the individual elements of the wall cycles extinguish separately under cross polarised light.

The forms assigned to this family with certainty include *Eprolithus*, *Farhania*, *Lithastrinus*, *Quadrum*, *Radiolithus* and *Uniplanarius* (Fig. 4). For the determination of the genera, the primary criteria are the presence or absence of the diaphragm, the position and the size of the diaphragm, and the shape and arrangement of the wall element.

The forms with a diaphragm are superficially similar to the Recent freshwater coccolith *Hymenomonas roseola* which forms a coccosphere with individual specimens joined to each other by their side. Because of the superficial morphological similarity between *H. roseola* and Polycyclolithaceae (with diaphragms) it may be that the latter also forms a similar coccosphere.

Varol, O., 1992. Taxonomic revision of the Polycyclolithaceae and its contribution to Cretaceous biostratigraphy. *Newsletters on Stratigraphy*, **27(3)**: 93-127.