

Nephrolithus GÓRKA, emend. ÅBERG, 19661957 *Nephrolithus* n. gen. — Górka, p. 263.1964 Genus *Nephrolithus* GÓRKA, 1957 — Bramlette and Martini, p. 302.**Description:**

Emended Diagnosis — Coccolith convexo-concave. Outline generally kidney-shaped. Rim consisting of two rows of crystals, the inner row elevated above central area and situated on the concave side, the outer row in same plane as central area. Central area constituted by ring-shaped structures, each consisting of crystals of mutually equal shape and size encircling a small pore.

Remarks:

The generic diagnosis proposed above is in accordance with the diagnosis published by Górka as regards the general shape of the coccoliths and the presence of pores in the central area. The examinations in the electron microscope show that the central area consists of ring-shaped structures. Examination under a light microscope (Zeiss Photomicroscope, magnification $\times 1600$, and Leitz Ortholux, magnification $\times 2000$) of *Nephrolithus* specimens from the type material kindly provided by Dr. Górka, has not confirmed the presence of the bar-like structures mentioned in her diagnosis.

Furthermore, the micrographs clearly show that the rim consists of two rows of crystals. Górka mentions this fact only for the species *N. barbarae*, the occurrence of which is said to be rare. In all the specimens of the type material examined, two rows of crystals form the rim, so in the present author's opinion this must be considered a generic character.

The genus *Nephrolithus* was first figured by Archangelsky (1912), although mentioned by him as "coccoliths of unidentifiable family". His drawing gives a surprisingly accurate idea of how the coccolith really looks: two rows of marginal crystals around the annulate area.

The relationship of *Nephrolithus* to other forms is as yet unexplored. Several modern coccolithophorids belonging to different genera are characterized by coccoliths with central areas perforated by pores, which under the light microscope are reminiscent of the pores of *Nephrolithus*. They have, however, not been studied under the electron microscope, and their finer structure is not known. Of more interest is the similarity between *Nephrolithus* and *Favocentrum* BLACK. Species of this genus are distributed throughout the Maestrichtian chalks of Denmark, East Anglia (England), and Scania (Sweden). Pl. III: 6 shows a specimen of *Favocentrum matthewsi* BLACK taken from the same beds as *Nephrolithus*. It may be noted that the two layers of marginal crystals surround a large central area, consisting of a system of equidimensional crystals. These seem to be fitted closer together, although with minute pores left between them. Also, the shape of the marginal crystals is different from that of *Nephrolithus*. But despite these differences, the general appearance is strikingly reminiscent of *Nephrolithus* and may be due to a certain relationship.

Distribution — Coccoliths referable to the genus *Nephrolithus* GÓRKA have been reported from Maestrichtian deposits of several parts of the world: Poland (Górka, 1957, pp. 263—264), USSR (Archangelsky, 1912, pl. 7, fig. 17), Denmark, western Siberia, USA, New Zealand (Bramlette and Martini, 1964, p. 302). *Nephrolithus gorkae* n. sp. occurs abundantly in the Maestrichtian of Scania, Sweden.

Type species:

Nephrolithus frequens GÓRKA.

Other Species — *N. furcatus* GÓRKA; *N. barbarae* GÓRKA; *N. trientis* GÓRKA.

Author:

Åberg M., 1966, p. 64.

Reference:

Electron microscopic studies on *Nephrolithus* (Coccolithophoridae). Stockholm Contributions in Geology, vol. 13, pp. 63-67, pls. 1-3, text-fig. 1.