

80. *Solisphaera* Bollmann et al. (2006)

Coccolithophori parvi coccosphaeris monothecatis probabiliter hemisphaericis, polymorphi, coccolithis et coronariis et corporis, bis in genera duo pluriave descriptis. Coccolithi coronarii coronam circularem circum coccosphaeram facientes; sunt planolithi, basi oblonga protrusione longitudinali ex elementis parvis rhombicis imbricantibus antihelice dispositis constato; axibus longitudinalibus ad corona m parallel is; extremitatibus coccolithorum contiguorum superpositis, inter se extremitate huius in constrictionem illius tenucm connexis. Coccolithi corporis sunt planolithi elliptici vel multanguli, margine ex uno circulo elementorum tangentialium tigillatorum constato interdum instructi: valde aut leuiter calcarei protusione interdum muniti.

Small coccolithophores with monothecate, probably hemispherical coccospheres; polymorphic with coronal coccoliths and two or more types of body coccoliths. The coronal coccoliths form a circular corona around the coccosphere. They are planoliths with an oblong base and a longitudinally-aligned protrusion, formed of small rhombic elements, arranged in an anticlockwise, imbricate pattern. The coronal coccoliths are arranged with their long-axes parallel to the corona; the ends or adjacent coronal coccoliths overlap and lock into a small constriction at the base of the protrusion of the adjacent coccolith. The body coccoliths are elliptical to polygonal planoliths: they may have a rim constructed of a single cycle of tangential, lath-shaped elements. They are heavily or lightly-calcified and may bear a protrusion.

Type species (designated here): *S. emidasia* Bollmann, Cortes, Kleijne, Østergaard & Young.

Etymology: *sol* = sun, *sphaera* = sphere: the collapsed coccosphere is reminiscent or a stylised sun.

Remarks: Only collapsed coccospheres of these species have been found and, therefore, no definite cell shape and cell orientation can be given. However, the disposition of the coccoliths on the filters gives rather strong indications of the shape of the living cells. The collapsed coccospheres nearly always consist of a ring of protrusion-bearing coccoliths (the coronal coccoliths) surrounding a field of simpler coccoliths. However, the simpler coccoliths may be either (1) a low number of heavily-calcified non-overlapping planoliths, or (2) numerous lightly-calcified overlapping planoliths (Figs 1-4).

A possible explanation for these observations is that the coccospheres are hemispherical, with the lightly-calcified coccoliths occurring on the domal side and the heavily-calcified coccoliths on the planar side. This shape of a coccosphere explains the smaller number of coccoliths on one side of the coccosphere and the greater overlap of the

coccoliths on the other side in collapsed coccospheres.

In this structure, the continuous ring of interlocked coronal coccoliths around the cell may function as a girdle that stabilizes a more or less hemispherical shaped coccosphere (Fig. 4).

Bollmann, J., Cortes, M.Y., Kleijne, A., Østergaard, J. & Young, J.R., 2006. *Solisphaera* gen. nov. (Prymnesiophyceae), a new coccolithophore genus from the lower photic zone. *Phycologia*, **45(4)**: 465-477.