Discolithus phaseolus Black & Barnes, 1961

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**Discolithus phaseolus** sp. nov.

Fig. 1 — Holotype, No. 3375b, × 20,000.

Fig. 2 — Small example, showing plates in the form of flattened rhombohedra. No. 3357, × 20,000.

Fig. 3 — No. 3420, × 15,000.

Fig. 4 — Specimen with the outer rim partly broken away, revealing the edge of the central disk. No. 3338, × 20,000.

Farinacci, 1969 - I/105
Description:

Diagnosis — Elliptical to reniform discoliths consisting of spirally overlapping, flat, rhomb-shaped crystals, rising to a slight eminence in the centre, and surrounded by a marginal rim of calcite rhombs, the width of the rim being equal to about one-eighth of the smaller diameter of the whole disk.

Dimensions of holotype — 3.6 \( \mu \times 2.2 \mu \), width of rim 0.3 \( \mu \).

Remarks:

Measured specimens range from 2.6 \( \mu \) to 4.5 \( \mu \) in length, and from 1.7 \( \mu \) to 3.6 \( \mu \) in breadth. There is a little variation in the ratio between length and breadth, as may be seen from the representative set of specimens shown in Pl. 26. Specimens of normal size or larger usually show a flattening of the longer sides of the ellipses, or a slight embayment of one or both sides, giving the coccoliths a distinctive outline. The plates of the central disk itself take the form of much flattened rhombohedra, most clearly seen in small specimens with few plates (fig. 2); in larger specimens the rhombohedral shape is usually still apparent, although often slightly modified. In the centre of the disk the calcite plates tend to pile up into a cone-shaped prominence, which in some specimens is high enough to form a short spine.

The rim is constructed of well-shaped rhombohedral crystals, rather stouter and more nearly equidimensional than those of the disk. These can be most readily seen in damaged coccoliths, such as that shown in fig. 4, where the rhombs lie in contact with their neighbours in the rim; in other examples there are signs of slight overlap or interlocking at the contacts between adjacent crystals. The rim overlaps the margin of the central disk, and the crystals of these two structures are presumably keyed together at the contact between them.

The curious waisted or bean-shaped outline of this species is unusual amongst coccoliths. In Thorosphaera flabellata Halldal and Markali (1955, p. 19, Pl. 26), the ordinary coccoliths are similarly shaped, but they differ from ours in their smaller size \((c. 2.0 \mu \times 1.4 \mu)\) and in several other respects. The electron micrographs published by Halldal and Markali show no trace of the central swelling which is characteristic of our species and they further show the presence of a transverse groove which does not appear in ours.

Discolithus phaseolus is not uncommon in our sample, and the coccoliths are usually preserved complete and undamaged.

Type level:

Tertiary. Specimens re-worked on ocean floor.

Type locality:

Sample collected by the Challenger at station 338, lat. 21°15'S, long. 14°02'W, from a depth of 1990 fathoms on the central ridge of the South Atlantic Ocean.

 Depository:


Author:


Reference: