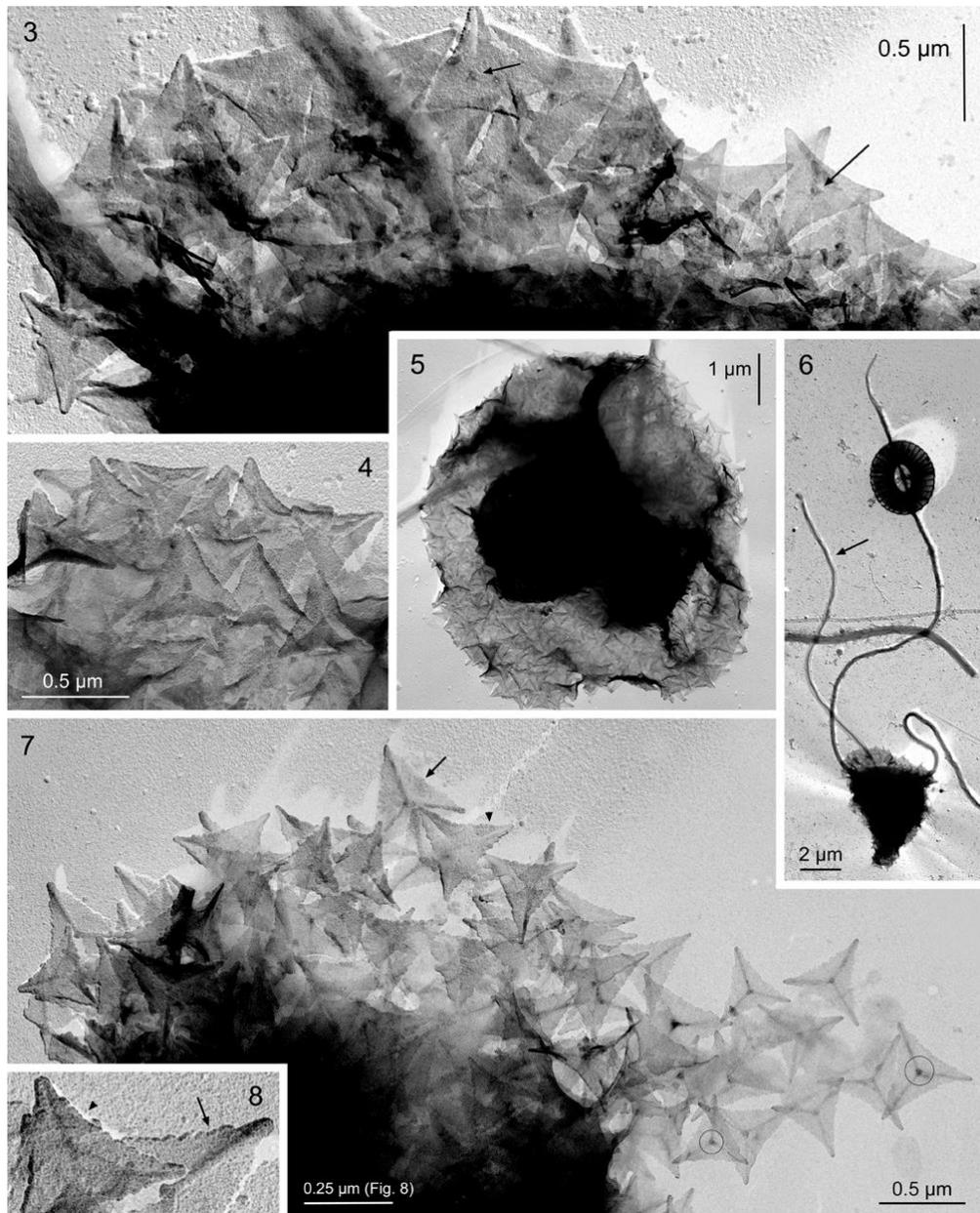


Mercedesia aspiphora Thomsen & Østergaard (2015)



Figs 3–8

Figs 3–8. *Mercedesia aspiphora*. TEM whole mounts (Figs 3, 6) from Antarctica (EPOS) and (Figs 4, 5, 7, 8) from the Arctic (NEW). 3 – high magnification of triangular nannoliths from the cell shown in Fig. 6; arrows point to distinct central knobs; 4 – high magnification of nannoliths from Fig. 5; 5 – complete cell with armour of triangular nannoliths; 6 – complete cell (type material) with appendages; the haptoneuma (arrow) is both shorter and thinner than the flagella; a single coccolith (*Emiliania huxleyi*) almost the size of the entire *M. aspiphora* cell obscures part of the flagellum; 7 – high magnification of nannoliths; the arrow points to a nannolith with the distal face upwards, whereas an arrowhead points to a nannolith with the proximal face exposed; circles indicate distinct central knobs; 8 – detail from Fig. 7 showing the finely serrate margin of the nannoliths in distal (arrow) and proximal (arrowhead) views.

Synonym: 'Coccolithophorid sp. 1' in Thomsen *et al.* 1988 (loc. cit. Fig. 47).

Diagnosis: Cell quasispherical (diam. 3–5 μm) with two flagella (ca. 20 and ca. 25 μm long) and a somewhat shorter haptonema (10–15 μm). The coccosphere (Fig. 5) consists of a dense layer of monomorphic triangular, slightly convex nannoliths. The nannoliths have three slightly concave sides (ca. 0.5 μm long) and a central three-armed rib pattern on the distal side (Figs 3, 4, 7). Most cells have nannoliths with a small central nodule on the distal side (Figs 3, 7).

Holotype: Figs 3, 6 (same cell) from the Weddell Sea, Antarctica (EPOS st. #161 at 57°30.3 S / 47°00.6 W) occurring in a mixed sample from 10 and 20 meters depth and processed on 13 December 1988.

Etymology: '*aspis*' (Gr.) shield and '*phora*' (Gr.) carrying.

Numerical details of *M. aspiphora* have been accounted for in Table 1. The interpretation above of nannolith shape and form, in particular with respect to the distal convexity of the liths, remains questionable and can most likely only be fully ascertained from sectioned material studied in the TEM. The critical question is whether the nannoliths are in fact triangular and convex with the 3 ribs on top or if they are rather concave with 3 radial depressions. We have here assumed for geometrical reasons that the concave face of the triangular nannolith is most likely representing the proximal side. Figs 7–8 show both sides of the nannoliths. The arctic coccospheres originating from NEW deviates slightly from the antarctic EPOS material in having minutely serrate edges on the triangular nannoliths (Figs 7–8). However, this could very well be an artefact caused by partly decalcification of the nannolith rims. There is no indication for presence of organic underlayer scales in this taxon, nor have we observed combination cells involving *M. aspiphora*.

Mercedesia aspiphora was abundant (> 25 specimens) in samples from Antarctica (AMERIEZ, EPOS) and rare (< 5 specimens) in samples from the Arctic (NEW, NOW).

Table 1. Cell and nannolith dimensions (μm) of *Mercedesia aspiphora*. Notice that none of the measurements, e.g. cell diameter, have been corrected for the transformation from a 3D to a 2D object that occurs to a variable degree during cell drying.

Flagella Haptonema Cell diam.			Nannolith dimensions (edge)				Source of material (microgr. #)
			Mean	SD	min/max	n	
21/25	11.8	3.3 × 4.9	0.671	0.078	0.607–0.847	10	EPOS 10007 (Fig. 6)
							EPOS 10006 (Fig. 3)
20.4/21.7	10.6	4 × 5	0.486	0.034	0.398–0.520	18	EPOS 11296 + 11297
19.6/24.7	14.6	4.2 × 4.8	0.483	0.073	0.4–0.6	6	EPOS 4912
		c. 5	0.433	0.029	0.395–0.487	9	NEW 24936 (Figs 4, 5)
			0.549	0.055	0.432–0.638	18	NEW 24896 (Fig. 7)
			0.461	0.061	0.366–0.569	9	NOW 39922

Thomsen, H. A., & Østergaard, J. B. 2015. Coccolithophorids in polar waters: *Mercedesia* gen. nov., *Ericiolus*, *Quaternariella* and *Porsildia* gen. nov. *Acta Protozoologica*, **54(3)**: 155-169.