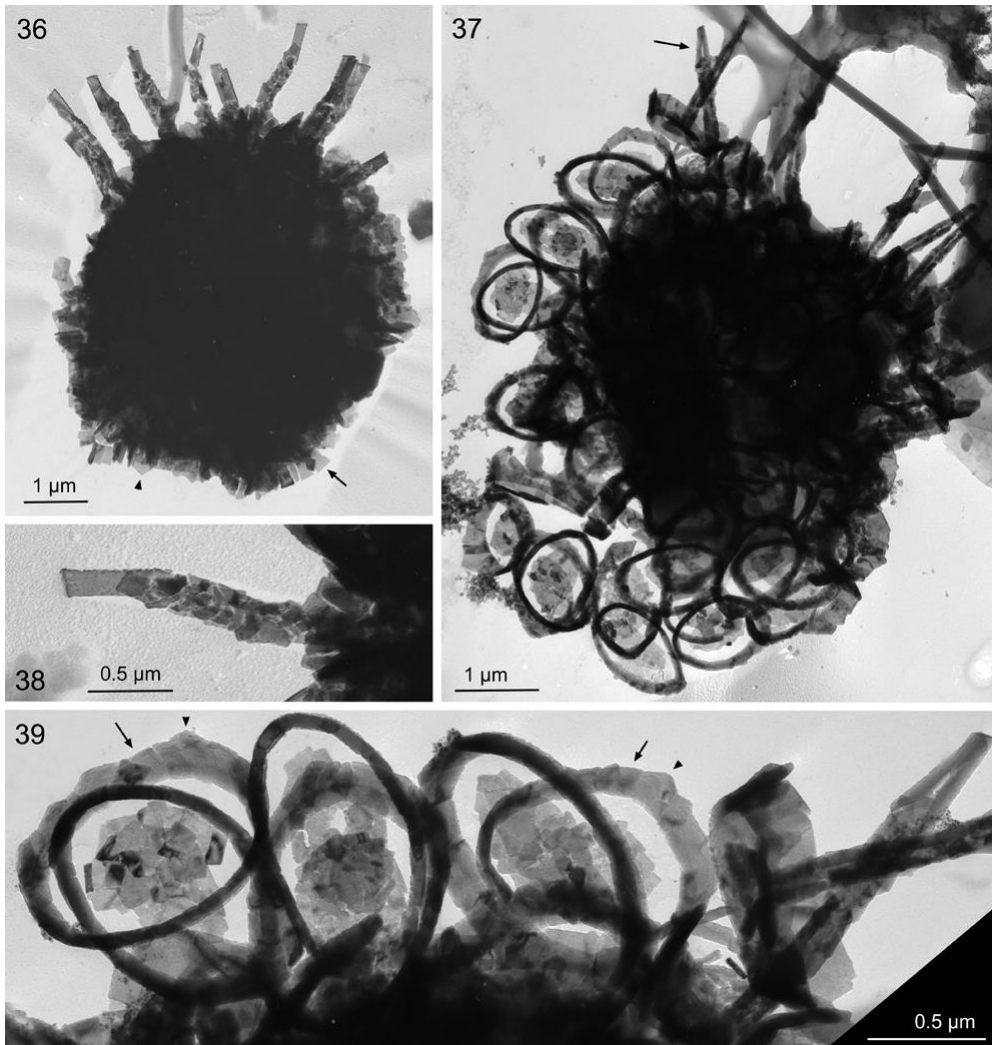
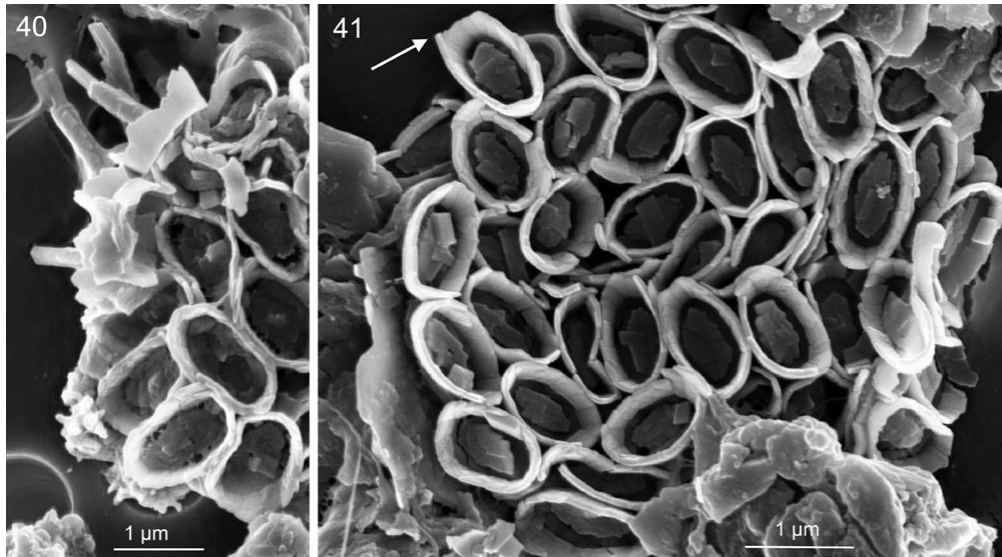


Porsildia acerviphora Thomsen & Østergaard (2015)



Figs 36-39

Figs 36–39. *Porsildia acerviphora*. TEM whole mounts from Arctic Station, West Greenland, collected during 1990. 36 – cell with incomplete flagellation (only one flagellum visible); ten flagellar pole coccoliths with a central process; body coccoliths with an irregular rim formed by a mixture of differently shaped elements with squares (arrow) and pentagons (arrowhead); 37 – holotype; arrow points to a central appendage termination which is clearly divided into two elongate parallel elements; 38 – flagellar pole coccolith (detail from Fig. 36); 39 – high magnification of coccoliths (detail from Fig. 37); the central heap of elements as well as the irregular rim are evident; arrows point to square rim elements while toothed elements are denoted by arrowheads.



Figs 40–41

Figs 40–41. *Porsildia acerviphora*. SEM whole mounts from Isfjorden, Svalbard, collected during August 2013. 40 – detail of anterior cell end showing flagellar pole coccoliths; notice the highly irregular rim on the coccolith that is laterally profiled; 41 – body coccoliths showing solid rims as well as heaps of elements covering the central parts of the coccolith central area; an arrow points to a particularly enlarged rim element.

Diagnosis: With all characteristics of the genus. Up to 10 circumflagellar pole coccoliths. The central process measures 1.7–1.9 µm in length and 0.2–0.3 µm in width. The length of the distal twin pair of elongate elements is 0.5–0.7 µm. Body coccoliths oval (1.0–1.2 × 0.6–0.7 µm) with an irregular outline and a central heap of calcified elements. The rim has an irregular upper margin and it is asymmetrical; one end bears a distinctly larger, widening and pointed, element of variable shape. The height of the rim is variable within the range 0.2–0.4 µm.

Holotype: Figs 37, 39 (same cell) from Arctic Station, Disko Bay, West Greenland, occurring in a sample from 50 metres depth (34 PSU, 2°C) processed 1 Sep. 1990.

Etymology: from '*acervus*' (L) pile and '*phora*' (Gr.) carrying.

The material from West Greenland, comprising only two specimens, is supplemented with material from Svalbard (courtesy of M. Heldal, Univ. of Bergen) collected from the Adventsfjord (June 2012) and the Isfjord (Aug. 2013). The SEM images (Figs 40–41) document the general appearance of the robust central process. The solid and somewhat irregular rim is also evident from both micrographs, as is also the pile of rectangular elements found in the central area of a body coccolith. Numerical data comparing material from West Greenland and Svalbard is provided in Table 4. It is evident that the cells examined, irrespective of geographical origin or times of collection, are basically identical. It is evident from Fig. 41 that the central area heap of calcified elements in body coccoliths shows much diversity with regard to shape and dimensions of the individual

elements. Some are square while others are rectangular. Typical dimensions are within the range 0.12–0.23 μm and the thickness of a plate ca. 0.05 μm . The material examined so far does not allow for conclusions with regard to the structure of the central area in the circumflagellar coccoliths.

Porsildia acerviphora is included in this paper because of its Arctic origin and also because its body coccoliths have a structure similar to those found on the heterococcolithophorid species that forms part of the *Quaternariella obscura* life cycle (Figs 30–35). Shared characteristics are 1) the coccolith wall formed by an irregular mix of square (Figs 30, 32, 35, 39; arrows), rectangular and pentagonal (Figs 30, 32, 35, 39; arrowheads) elements, and 2) the occurrence of a central structure of differently sized and shaped elements in the central area of the body coccoliths (Figs 33, 35, 39, 41).

Table 4. Coccolith dimensions (μm) of *Porsildia acerviphora*.

| Source of material | Cell diam. | Central appendage (flag. pole coccolith) | | | Body coccolith | | Rim |
|-------------------------------------------|------------|------------------------------------------|----------------|---------|----------------|---------|---------|
| | | Length | Length (term.) | Width | Length | Width | Height |
| Arctic Station, W. Greenland (Figs 36–39) | c. 5 | 1.6–1.9 | 0.5–0.7 | 0.2–0.3 | 1.0–1.2 | 0.6–0.7 | 0.2–0.4 |
| Svalbard, Adventsfjord | c. 5 | 1.6 | | 0.2 | 0.9–1.0 | 0.5–0.7 | 0.2–0.3 |
| Svalbard, Isfjord (Figs 40–41) | c. 5 | 1.3–1.5 | 0.40–0.45 | 0.2–0.3 | 0.7–1.0 | 0.5–0.6 | 0.2–0.3 |

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