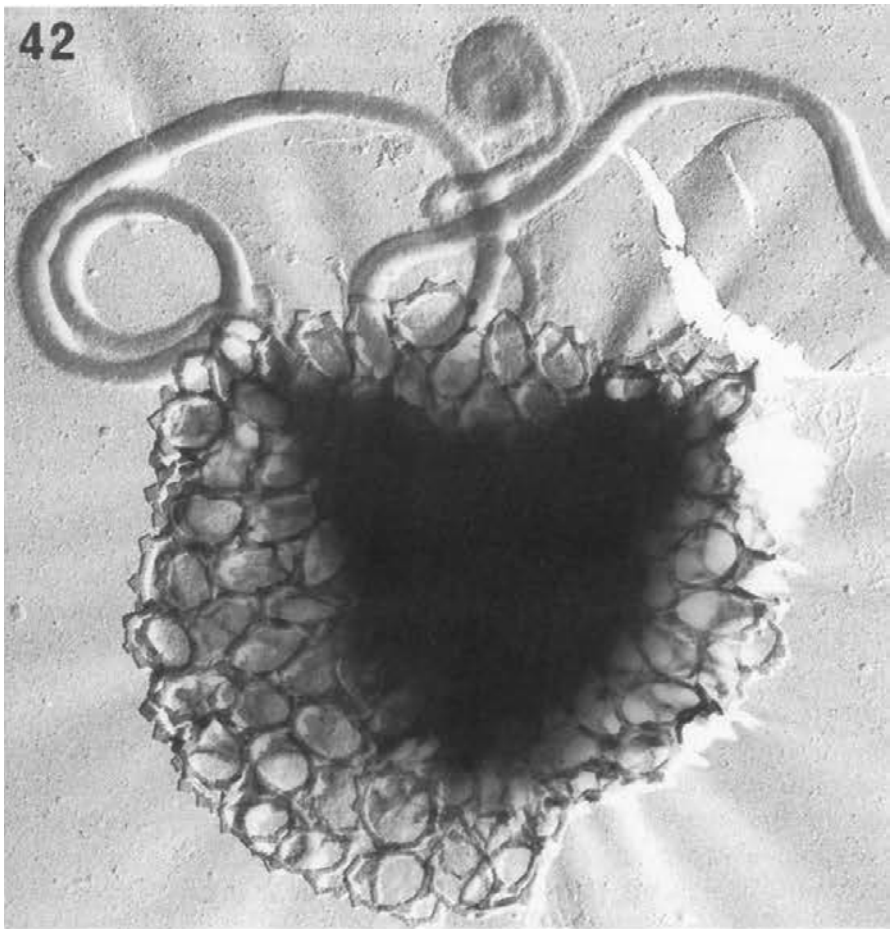
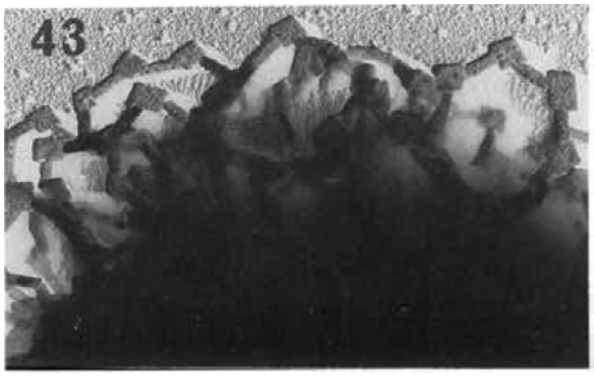
55. Papposphaera simplicissima Thomsen in Thomsen et al. (1988)





Figs 41-43

Figs 41-43. *Papposphaera simplicissima.*

Fig. 41. Detail of coccoliths showing rim calcification. Micrograph T00653, x 30000.

Fig. 42. Complete cell with two flagella and loosely coiled haptonema (type specimen). Micrograph T00655, x 12000.

Fig. 43. High magnification of coccoliths to show rim calcification and base-plate patterning. Micrograph T01059, x 25000.

Cellula sphaerica, altero flagello 11 μm, altero 7 μm longo, haptonemate 7 μm longo. Coccolithi monomorphi, solum juxta margines laminarum basalium organicarum ovalium 0.5-0.6 x 0.3-0.4 μm magnarum calcificati. Crystallitae dimorphi in una serie alternantes, alteri bacilliformes, 0.2-0.25 x 0.03-0.07 μm magni, alteri rectanguli, 0.12-0.18 x 0.07-0.11 μm magni. Laminae basales striis radiantibus ornatae.

(Figs 41-43). Cell spherical, ea. 4 μm in diameter, with two flagella (11 μm and 7 μm) and a haptonema (7 μm) (Fig. 42). Coccoliths of one type only, with calcification limited to the rim of the oval organic base-plate (0.5-0.6 x 0.3-0.4 μm). Crystallites of two types occur alternately along the scale periphery. These are rod-shaped crystallites (0.12-0.25 X 0.03-0.07 μm) and rectangular crystallites (0.12-0.18 x0.07-0.11 μm). Base-plate patterning involves radiating threads.

Type micrographs: Figs 41, 42. Cell found 19 March 1986 in a surface water sample from st. M 30 (64°49,3' S, 44°41,8' W).

Specimens of *P. simplicissima* were observed in samples from st. M 1 (0 m), M 30 (1 m/ 10m), M 38 (30 m/50 m), M 49 (0 m). Electron micrographs of five specimens have been examined.

Despite the absence of central appendages from the coccoliths described above, it seems reasonable, at least for the present, to allocate this new species to the genus *Papposphaera* (Tangen 1972). Of major importance in this context has been the recent finding from the Baltic Sea of an undescribed coccolithophorid species which possesses coccoliths with a base-plate calcification almost identical to that of *P. simplicissima* (Thomsen, 1982; Thomsen, unpubl. results). The Baltic Sea species (Figs 44, 45) is at the anterior cell end additionally furnished with coccoliths with central appendages reminiscent of those of *P. sagittifera* (cfr. Figs 35, 36). All coccoliths of the generic type, *P. lepida* Tangen are furnished with highly characteristic equally sized four- lobed central appendages. *Pappsphaera sarion* Thomsen displays differently sized central appendages, and in *P. sagittifera* cells from West Greenland a pronounced difference in the length of the shafts of the central appendages from one end of the cell to the other is evident (Thomsen 1981). In Weddell Sea material of *P. sagittifera* some medianly positioned coccoliths even appear to be without central appendages (Fig. 35). Based upon this variability the widening of the generic concept

to include species with a very limited number of coccoliths carrying central appendages (Baltic Sea species) as well as a species carrying no central appendages *P. simplicissima)* seems called for.

Thomsen, H.A., Buck, K.R., Coale, S.L., Garrison, D.L. & Gowing, M.M., 1988. Nanoplanktonic coccolithophorids (Prymnesiophyceae, Haptophyceae) from the Weddell Sea, Antarctica. *Nordic Journal of Botany*, **8:** 419-436.