

MICROPALAEONTOLOGY NOTEBOOK

Fentonia bjaerkei gen. et comb. nov.; transfer from *Parvocysta* Bjaerke 1980

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ABSTRACT - A new acritarch genus, *Fentonia*, is proposed for palynomorphs previously referred to as *Parvocysta bjaerkei* Smelror (1987).

BACKGROUND

In a study based on outcrops of Toarcian strata from Spitzbergen and Kong Karls Land, Bjaerke (1980) described the genus *Parvocysta* for single walled, atabulate, proximate dinoflagellate cysts with a hexagonal (geniculate) intercalary archaeopyle. Considerable variation in cyst outline was allowed for including apical and lateral horns. Bjaerke (op. cit.) described ?*Parvocysta* sp. B, which was later elevated to formal specific level by Smelror (1987) as *Parvocysta bjaerkei*.

Having observed many specimens of this taxon from all over northwest Europe and Greenland, the present authors have never observed an archaeopyle. The presence of an archaeopyle, or other excystment aperture has not been demonstrated in any published reports. Bjaerke (1980) placed the taxon in open nomenclature, questioned the generic assignment to *Parvocysta*, and stated that no archaeopyle was observed in any of his specimens.

Smelror (1987) stated that the archaeopyle 'appears to be intercalary, but the exact outline is not known'. The accompanying figures including an SEM illustration of the holotype (Smelror, 1987, fig. 4G) do not illustrate an archaeopyle.

One of us (DAB) has observed *F. bjaerkei* abundantly in otherwise non-marine assemblages. For this and the reasons discussed above, we do not consider this taxon to be a dinoflagellate cyst, but would be better placed under a new genus in the Group Acritarcha.

SYSTEMATIC TAXONOMY

Algae Incertae Sedis

Group *Acritarcha* Evitt 1963

Genus *Fentonia* gen. nov.

Type species: *Fentonia bjaerkei* Smelror 1987 comb. nov. et emend. = *Parvocysta bjaerkei* Smelror 1987, p. 227, 230, fig. 4G.

Diagnosis: Small to medium sized, single-walled, dorsoventrally compressed palynomorphs with a prominent apical protuberance and bilateral symmetry. Four lateral protrusions arise, separated by a mid lateral constriction. Antapex between posterior process elements flat or mildly concave. Conspicuous folds may be present in the apical region oriented apically-antapically. Excystment aperture not developed.

Derivation of name: In honour of Dr J.P.G. Fenton, of Simon Petroleum Technology.

Fentonia bjaerkei Smelror 1987 comb. nov. et emend.

1977 Sp. Indet. Bjaerke, pl. 10, fig. 5.

1980 *Parvocysta?* sp. B Bjaerke, p. 68-69, pl. 1, figs 13, 16, 17, text fig. 3E.

1984a *Parvocysta* cf. *barbata* Bjaerke 1980: Riding, pl. 1, fig.8.

1984b *Parvocysta* cf. *barbata* Bjaerke 1980: Riding, pl. 6, fig. L.

1987 *Parvocysta bjaerkei* Smelror, p. 227, 230, fig. 4G.

Holotype: Smelror 1987, p. 227, 230, fig. 4G.

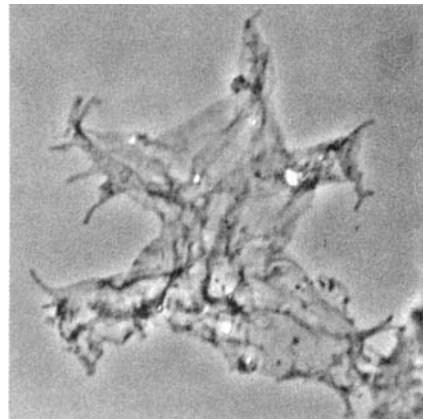


Fig. 1. *Fentonia bjaerkei* comb. nov. Specimen from the Middle Jurassic of the North Sea. x1000 (approx).

Emended description: Small, with strong dorsoventral compression autophragm and conspicuous protrusions. Apical protrusion moderately rounded. Longitudinal folds may be developed in the apical region. Lateral protrusions terminate in three to five smaller acute protrusions which themselves may be distally bifurcate. Antapex flat or mildly concave. No excystment aperture observed. Autophragm more or less smooth.

Remarks: Some other genera, eg. *Subtilisphaera*, *Palaeohystrichophora* also do not have obvious archaeopyles and are still considered to be dinoflagellate cysts. These have additional features, such as a paracingulum and parasulcus.

Stratigraphic distribution: This taxon is recorded consistently in sediments of Late Pliensbachian to Early Bathonian age in northwest Europe (pers. obs.). Younger records from the Late Bathonian and Callovian (eg. Bjaerke, 1977; Smelror, 1987) are very inconsistent and are considered to be reworked.

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REFERENCES

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- Smelror, M. 1987. Bathonian and Callovian (Middle Jurassic) dinoflagellate cysts and acritarchs from Franz Josef Land, Arctic Soviet. *Polar Research*, **5**: 221-238.