

Acritarchs from the Kap Holbæk Formation, North Greenland

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In two recent general summaries of the geology of northern Greenland (Peel, 1986; Higgins *et al.*, in press) brief reference was made to acritarchs from the Kap Holbæk Formation of eastern North Greenland indicative of a Proterozoic age. The age determination is of particular interest since the formation has been interpreted widely as of Cambrian age. This short note more fully documents the evidence for this revised age determination.

In describing the Kap Holbæk Sandstone, Cowie & Adams (1953) made no direct statement of age, but they favoured correlation with the 'Thule Group' *sensu lato* and an age older than known fossiliferous Lower Cambrian in northern Greenland. Cowie (1971) suggested an Early Cambrian age, while Poulsen (1978) proposed earliest Cambrian. Peel (1980) and Peel *et al.* (1981) correlated the formation with Lower Cambrian siliciclastic sediments of the Buen Formation in Peary Land, central North Greenland, primarily on the basis of lithology.

GGU samples 198674 and 198675 were collected by Bernard O'Connor (3rd August 1978) from thinly bedded sandstones and shales occurring some 120 m below the top of the Kap Holbæk Formation at Kap Holbæk. They were processed in the manner described by Vidal (1976) and yielded scattered, yellowish-coloured small acritarchs assigned to *Leiosphaeridia asperata* (Naumova) Lindgren, *Trachysphaeridium timofeevi* Vidal and *Synsphaeridium* sp. *L. asperata* is a characteristic component of Late Proterozoic assemblages but ranges through the Riphean and Vendian; it is not known from Palaeozoic rocks. *Synsphaeridium* sp. has a similar distribution while *T. timofeevi* ranges from the Riphean into the Early Cambrian. No precise indication of the age of the investigated unit can be obtained from this poor assemblage. However, in general terms it suggests an age older than Cambrian.

Peel (this report) describes cyanobacteria from the Portfjeld Formation of central North Greenland, which underlies the Buen Formation, and summarises evidence for the Early Cambrian age of both these formations (see also Vidal & Peel, this report). Despite the similarity in lithology, the acritarch assemblage indicates that the Kap Holbæk Formation is not a correlative of the Lower Cambrian Buen Formation of more north-western areas of Greenland.

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