

Fossils from the Poulsen Cliff Formation, Washington Land, western North Greenland

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The Poulsen Cliff Formation of Washington Land, western North Greenland, is a recessive, pale weathering unit, 100–125 m in thickness, of thinly-bedded dolomite, shale and sandstone with conspicuous evaporites. The formation represents the continuation into Greenland of the lower part (member a) of the Baumann Fiord Formation evaporite sequence of the Canadian Arctic Islands, which outcrops over a distance of about 1000 km from Cornwallis Island to Ellesmere Island (Mossop, 1979; Peel & Christie, 1982; Peel, in press). The Poulsen Cliff Formation was first described by Troelsen (1950). It did not yield fossils to Troelsen but could with certainty be ascribed an Early Ordovician age on account of its stratigraphic position between fossiliferous units (Poulsen, 1927; Peel & Christie, 1982).

In 1976 Peel collected fossils from near the top of the formation at 'Winterhouses' west of Nygaard Bugt, on the south coast of Washington Land. The fossils occur within discontinuous, mound-like beds up to 50 cm thick of digitate stromatolites, preserved in pale grey lime mud (GGU sample 206483).

Trilobites dominate, with two bathyrid species present. The most common is a species of *Peltabellia* Whittington, very like that described by Ross (1951) from the Garden City Formation of Utah. The other is a species of *Licnocephala* Ross, possibly identical with one described by Cullison (1944) from the Lower Ordovician of Missouri. Molluscs include a monoplacophoran (? *Pilina* Kobayashi), the gastropods *Plethospira* Ulrich in Ulrich & Scofield and *Seelya* Ulrich in Ulrich & Scofield, and fragmentary orthocones. Syntrophiid brachiopods are also present.

The trilobites indicate a general middle Canadian age (Early Ordovician), equivalent to trilobite zones F and G in the Utah sequence. This is in good agreement with conodont identifications on samples from the same locality, with V. E. Kurtz and James E. Miller (written communication) reporting faunas of conodont zone D.

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