Palaeozoic fossils from Troms, Norway

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Fossils found in Caledonian rocks in Troms indicate the age of the Middle thrust sheet to be between Caradocian and Frasnian. These fossils are described.

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Hitherto unexpected fossiliferous rocks belonging to the 'Middle thrust sheet' of the Sagelvvatnet area (Fig. 1) indicate a post-Caradocian displacement of the sheet. This preliminary note merely describes the fossils found. A detailed description of the stratigraphy of the area will be presented later by Arne Bjørlykke and Snorre Olaussen.

The succession in the area was assigned to the lower limestone zone of the Middle thrust sheet ('Midtre skyve dekke') by Landmark (1973). The following succession is seen in the area around Sagelvvatnet:

phyllitic limestone, locally conglomeratic	5–10 m
ore-bearing dolomite	15–20 m
graphitic dolomitic limestone	25–30 m
pink slaty marble	40–50 m
graphitic dolomitic limestone	75–100 m

The stratigraphical relationship between this succession and nearby outcrops of conglomerates and volcanic rocks is uncertain. The uppermost phyllitic limestone outcrops south of Sagelvvatnet contain the fossils mentioned here. A dolomite breccia occurs below the phyllitic calcarenite in the fossiliferous locality.

Composition of the fossiliferous rocks

The fossiliferous phyllitic limestone is grey-green with rusty flecks of oxidised pyrite and dark grey bioclastic fragments. Pale dolomitic intraclasts also occur. X-ray diffractometer analyses indicate the presence of chlorite, mica, quartz, plagioclase and orthoclase feldspar, calcite dolomite, and pyrite. Dolomitic intraclasts contain no orthoclase feldspar, and show lower amounts of mica and calcite than the host rock.

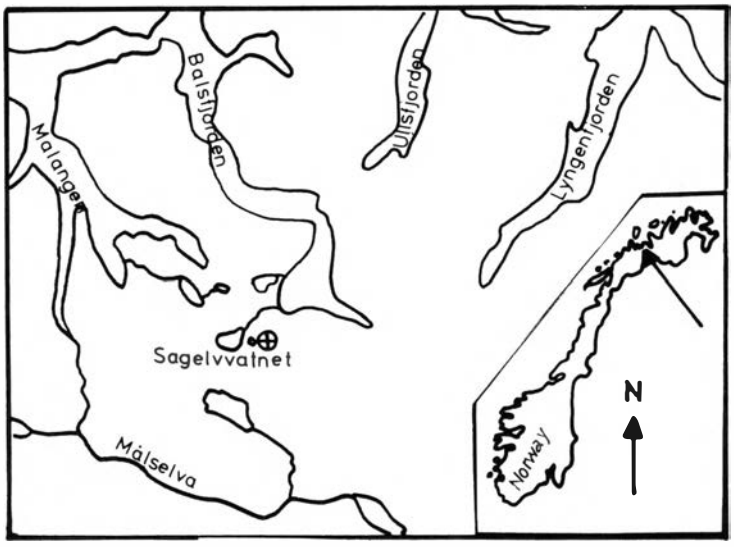

Fig. 1. Location map. ⊕=Fossil locality.

Counts of bioclastic fragments in 10 etched slabs (total area 500 cm²) give the following results: 80 pentamerid brachiopods, 40 rugose corals, 1 gastropod, 1 cephalopod, and 120 unidentified fragments (including a possible halysitid coral).

The occurrence of the fossils in the etched slabs is shown in Figs. 2 and 3.

The fossils (PMO 97445, 97446 and 97447) cannot be identified in more detail than indicated above, but the joint occurrence of pentamerids and rugose corals imposes lower and upper limits for the age of the host rock, i.e. between the Caradocian and Frasnian. Although the total faunal composition suggests an upper Ordovician and Silurian age, this cannot be established with certainty on the basis of the material. Future finds as well as a verification of the possible occurrence of halysitid corals, may well permit a more exact dating.

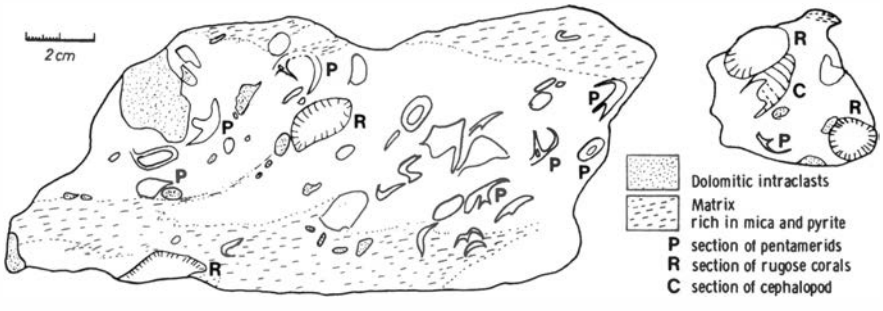

Fig. 2. Sketch of an etched slab of the fossiliferous rock.

Fig. 3. Sections through pentamerid fragments (p).

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REFERENCE

Landmark, K. 1973: Beskrivelse til de geologiske kart 'Tromsø' og 'Målselv'. *Tromsø Museums Skr. XV*.