FIELD MAPPING IN PALAEOZOIC AND MESOZOIC SEDIMENTS OF JAMESON LAND, SCORESBY LAND AND WERNER BJERGE

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In this second year of the five year project of mapping the Scoresby Sund region three field parties spent the six-week season mapping in the northern part of the area.

One party mapped the flat land south-west of Olympen, one party completed the map of the south-western part of Scoresby Land while the third party spent three weeks in the Werner Bjerge and the rest of the season in north-western Jameson Land.

In the area studied Palaeozoic sediments are exposed only at the eastern and western borders of the Jameson Land basin; clastic Triassic and Jurassic deposits cover the whole central part. At the western border Carboniferous sediments are faulted down against the crystalline rocks of the Staunings Alper by several faults which have a dominantly N-S strike. The continental Carboniferous and Lower Permian sediments are over 2000 m thick and consist mainly of coarse conglomerates and arkoses, interbedded with sandstones, silty shales and a few thin calcareous beds. The known lithostratigraphical units from the areas south and north of Werner Bjerge – a Tertiary intrusive massif – are not easily correlated. This is partly due to the different types of exposure: gentle hills along Schuchert Dal and in the Mesters Vig region, in contrast to steep walls and crests separated by glaciers in Werner Bjerge. As a result no direct correlation could be made of the lithological units introduced by Kempter (1961) for lower Schuchert Dal and by Witzig (1954) for the Mesters Vig region.

No Carboniferous sediments were met with at the eastern border of the basin where the Upper Permian basal conglomerate transgresses over a strong relief consisting of Devonian sandstones. These Devonian sandstones contain several conglomerate layers. No fossils could be found. On the western border, the Upper Permian transgression covers a peneplain consisting of Carboniferous and Lower Permian deposits. The Permian basal conglomerate is overlain by a reef or gypsiferous layers or both, on both sides of the basin. The thickness of the reef limestones attains about 150 m at the borders of the basin and diminishes rapidly towards its centre. At the head of Nathorst Fjord deposition of marine Lower Triassic sediments is seen to have begun by filling up the basins within the strong relief of the underlying Permian reefs. The overlying continental Triassic sediments, which consist mainly of conglomerates and arkoses, thin rapidly from over 450 m thickness in the east to only a few metres at the head of Fleming Fjord.

Triassic and Jurassic sediments have been described by Birkelund & Perch-Nielsen (1969a & b).

A large collection of trace fossils of the Middle Jurassic "Yellow Series" was made by one of the parties. This material indicates shallow marine and delta conditions of sedimentation for these beds.

A preliminary study of the sills and dykes in the sediments around Werner Bjerge has been started. The dykes can vary in thickness from a few cm to 15 m and the sills from one to over a hundred metres near Ørsted Dal. The direction of the dykes was found to be variable, but large numbers could be observed with trends of 10°, 80° and 125°.

References

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OBSERVATIONS ON THE PRECAMBRIAN ROCKS OF SCANDINAVIA AND LABRADOR AND THEIR IMPLICATIONS FOR THE INTERPRETATION OF THE PRECAMBRIAN OF GREENLAND

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During the summer of 1969 the writer visited two of the main North Atlantic Shield areas outside Greenland as a guest of the Geological Surveys of Sweden, Finland and Canada. The visit to Scandinavia was organised as a field excursion in conjunction with the I. U. G. S. Subcommission on Precambrian Stratigraphy meeting held in Stockholm at the beginning of June. I would like to thank Professors Rankama, Simonen and Welin for their arrangements, and my companions during the field excursion for stimulating discussion of Precambrian problems. The visit to northern Labrador was initiated by the Geological Surveys of Greenland and Canada as part of a programme to compare the geology on each side of the Davis Strait. I would like to thank Dr F. C. Taylor whose party Dr B. F. Windley (Leicester University) and I joined in Labrador for his help in planning and carrying out this part of the program-