

**A GEOCHRONOLOGICAL STUDY OF POLYMETAMORPHISM
WITHIN THE CALEDONIAN MOUNTAIN BELT OF
CENTRAL EAST GREENLAND**

A Dissertation submitted

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by

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of the Hinks Land nappe took place during Caledonian times, subsequently the whole region was involved in a strong uplift.

B.3.5. The age of the tillite.

Although no isotopic data have been obtained from the tillite it seems reasonable to discuss the age relationship to the dated surrounding rocks, this because the age of the tillite has been a subject of intense discussion among geologists.

Tillites of Eocambrian age are known from several localities in East Greenland, among others from the region north of Scoresby Sund where they occur in a narrow belt within supracrustal rocks that were folded during the Caledonian orogeny (Fränkl 1953; Katz 1954). The closest locality is about 180 km ENE of the Charcot Land tillite Wenk (1961) has described a tillite of possible earlier age from Gåseland about 180 - 200 km south of Charcot Land, resting directly on the basement.

Steck (1971) correlated the Charcot Land tillite with the Eocambrian tillite group. This correlation still seems to be valid except for a few modifications. The boulders from the underlying granite had already been metamorphosed when they were deposited and the matrix was not involved in the main regional metamorphism but was overprinted during Caledonian times by a low-grade metamorphism.

B.4. Summary of the conclusions.

On basis of the isotopical data outlined above the following conclusions for the evolution of the rocks in the Charcot Land window seem to be reasonable.

- 1) The Charcot Land supracrustal sequence rests on a basement that is probably of Archean development and must be older than about 2100 m.y.
- 2) The Charcot Land supracrustal sequence was deposited before 1900 m.y.
- 3) The major regional metamorphism is probably not much older than the intrusion of the pegmatite granite mass.
- 4) The pegmatite granite mass was formed approximately 1875 m.y. ago.
- 5) The tillite might belong the group of Eocambrian tillites known from several localities in East Greenland.
- 6) Low-grade metamorphism in the tillite and low-grade retrogressive overprinting of the supracrustal rocks are correlated with overthrusting and subsequent uplift in the course of the Caledonian orogeny.