Note

The following 20 articles report the Survey's principal field activities in Greenland in 1973 together with some laboratory investigations. Articles dealing with North Greenland and central West Greenland come first, followed by those from southern West Greenland, South Greenland and East Greenland.

The main results of isotopic age determination work carried out on Survey material during 1973, will be published in a sequel report (Report 66).

Unless otherwise stated at the end of each article, the author's address is the Survey's headquarters in Copenhagen.

LATE SILURIAN AND EARLY DEVONIAN GRAPTOLITES FROM NORTH GREENLAND

William B. N. Berry, Arthur J. Boucot, Peter R. Dawes and John S. Peel

The precise age of the youngest part of the geosynclinal fill of the North Greenland fold belt has been the subject of important discussion, particularly with regard to the problem of dating the Palaeozoic diastrophism (Kerr, 1967; Dawes, 1971). Since Lauge Koch's field work between 1916 and 1923 it has been known that strata bearing *Monograptus priodon* were involved in the folding (Koch, 1920), indicating the presence of Silurian of Llandovery-Wenlock age. In addition, Poulsen (1934) identified *Cyrtograptus* cf. *C. multiramus* and *Monograptus bohemicus* in collections made by Koch from unfolded shales on the platform, to the south of the fold belt, which demonstrated that the section included Wenlock and early Ludlow strata.

Preliminary examination of fossil material collected from both the platform and the fold belt in the Hall Land – Wulff Land region, during Operation Grant Land 1965–66, provided little new information on the age of the upper part of the succession (Dawes, 1971). However, a recent study of graptolites in these collections (W.B.N.B.) has revealed the presence in the fold belt of strata of Ludlow, Pridoli and earliest Devonian ages. Ludlow graptolites are also recorded from central Nyeboe Land, confirming the earlier platform record of Poulsen (1934).

Current examination of brachiopods in several faunas of 'shelly' fossils from the platform strata of Hall Land and Nyeboe Land also suggests the presence of Silurian strata as young as Ludlow (A.J.B.).

Localities and fauna

Collections from three localities are discussed.

Locality 1, GGU Collections 82722–82731 collected by P. R. D. and J. H. Allaart in 1965 about 3 km to the east of Hall's Grav, western Hall Land at an altitude of about 80 m. A series of deformed shales on the edge of the fold belt has yielded:

Monograptus sp. of *M. transgrediens* type
Monograptus cf. *M. aequabilis*

The presence of abundant monograptids similar to *M. transgrediens* indicates a Pridoli, probably later part of Pridoli, age. A single specimen closely similar to *M. aequabilis* indicates an earliest Devonian age for the strata from which it was collected.

Locality 2, GGU Collections 83305–83315, 83317, 83319–83323 collected by P. R. D. and Steen Skytte in 1966 in northern Hendrik Ø. A series of shales in a folded sandstone-conglomerate-limestone sequence has yielded:

Bohemograptus bohemicus tenuis?
Monograptus sp.
Pristiograptus sp.
Saetograptus fritschi
Saetograptus sp.

This assemblage is of early Ludlow age.

Locality 3, GGU Collections 83415–83417, 83433, 83435–83453, 83456–83457, 83459–83467, 83470–83471 collected by P. R. D. and Steen Skytte in 1966 to the east of Korsgaard Bjerg, central Nyeboe Land. A series of unfolded off-reefal shales underlying a sandstone unit has a fauna which includes:

Bohemograptus bohemicus tenuis
Monograptus sp. (?*M. colonus*)
Monoclimacis sp.
Pristiograptus cf. *P. dubius*
Pristiograptus sp.

This assembly is of Ludlow, probably early Ludlow age.

Conclusions

The greywacke flysch-type sedimentation characteristic of the upper part of the Franklinian geosynclinal pile continued into at least early Devonian time in North Greenland. Despite possible stratigraphic complications due to tectonism, at least 100 m of sandstone and shale appear to overlie the graptolite-bearing shale at the Hall's Grav locality. There higher beds contain a limestone unit which has yielded a vertebrate fauna also suggestive of the Silurian-Devonian boundary (see

Bendix-Almgreen & Peel, this report). In addition, it is probable that the clastic, apparently unfossiliferous sections described already to the east from Nansen Land (Ellitsgaard-Rasmussen, 1955) and northern Peary Land (Dawes & Soper, 1973), similarily extend into the Devonian.

The suggestion about the presence of Devonian rocks in North Greenland has hitherto been made mainly on the basis of comparisons with the Canadian part of the Franklinian geosyncline where Devonian sediments are well developed (e.g. Kerr, 1967). The present graptolite determinations, together with the vertebrate fauna mentioned below, supply the first faunal evidence to support such an inference.

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W. B. N. B.,
Department of Paleontology,
University of California,
Berkeley,
California 94720,
U. S. A.

A. J. B.,
Department of Geology,
Oregon State University,
Corvallis,
Oregon 97331,
U. S. A.

EARLY DEVONIAN VERTEBRATES FROM HALL LAND, NORTH GREENLAND

Svend Erik Bendix-Almgreen and John S. Peel

During investigation of collections from North Greenland made by P. R. Dawes and J. H. Allaart, as part of Operation Grant Land 1965–66, one of the authors (J. S. P.) found vertebrate remains in samples which had been subjected to acetic acid digestion. The vertebrate material was subsequently examined by S. E. B.-A. who found it to comprise thelodonts, heterostracans and acanthodians (illustrated