

dated. Clastic rocks with associated intrusions in Peary Land to the east are at least 1000 m.y. old (Henriksen & Jepsen, 1970), and since farther east in Kronprins Christian Land, the Carolinian orogeny clearly separates two igneous suites within correlatable strata (Haller, 1970), a tentative correlation of groups (2) and (3) with the pre- and post-Carolinian magmatic episodes can be made. Further isotopic work using more sophisticated methods is necessary to decide whether this suggestion is prematurely based.

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¹⁴C DATING OF SURVEY MATERIAL PERFORMED IN 1972

General compilation by **Anker Weidick**

Forty radiocarbon age determinations of shell samples (36), wood (1), bone (1) and turf (2) are assembled into this account. Most of this material was collected by Survey personnel, and a smaller part was collected by independent workers and later presented to the Survey. The dates should be considered along with the 38 samples dated in 1971, a catalogue of which has been published (Weidick, 1972a).

At present the Survey has no capacity for ¹⁴C dating work and the samples have been treated elsewhere in Denmark and in the United States. The samples

marked K have been dated by H. Tauber at the Carbon-14 Dating Laboratory, National Museum, Copenhagen; those marked UW by A. W. Fairhall at the Quaternary Research Center, University of Washington, Seattle, and those marked I at Isotopes Inc., Westwood, New Jersey.

Shell samples collected in Scoresby Sund region, East Greenland by S. Funder

These samples were collected in 1971 and the dates have been reported on elsewhere (Funder, 1972). The surface of the shells was removed prior to analysis.

GGU 106510: UW-227. At stream 4 km south of Gurreholm, Jameson Land, 71°12'N, 24°33'W.

37 000 ± 1100 B.P.

35 050 B.C.

Shells of *Hiatella* (= *Saxicava*) *arctica* from surface of cliff of sorted silt 45 m above sea level. The top of the cliff forms an extensive terrace 50 ± 5 m above sea level.

Datings of material from different levels in the shells have been performed. By this dating an age of >40 000 years B.P. has been obtained for both the outer and inner fractions of the shell material. In both these datings however, there were traces of C¹⁴ suggesting an age between 40 000 and 50 000 years for the sample (A. W. Fairhall, pers. comm. to GGU).

GGU 106518: UW-228. At the coast of Jameson Land, north of Lollandsely, 70°57'N, 24°13'W.

19 500 ± 250 B.P.

17 550 B.C.

Shells of *Hiatella* (= *Saxicava*) *arctica* and *Mya truncata* from the surface of polygons on top of a bank of sorted silt 36 m above sea level.

GGU 106524: 1-5419. Coast of Jameson Land at Heden, 70°46'N, 24°07'W.

(a) 21 020 ± 430 B.P.

19 070 B.C.

(b) 24 300 ± 700 B.P.

22 350 B.C.

Shells of *Mya truncata* found *in situ* in cliff of grey silt 42–45 m above sea level. The top of the cliff forms an extensive abrasion terrace that ends in a boulder shoreline 50 m above sea level.

The two ages represent individual datings on material from the same sample; before dating (a) 62 % of the shell substance was removed from the surface; in (b) 37 % was removed.

GGU 146503: K-1917. "The Flakkerhuk moraine" at Kap Stewart, Jameson Land, 70°27'N, 22°42'W.

>35 000 B.P.

Shell fragments of *Mya truncata*, *Hiatella* (= *Saxicava*) *arctica* and *Tridonta* (= *Astarte*) *borealis* from the surface of an exposure of sorted silt 33–36 m above sea level in the lower part of the moraine that here attains a height of 69 m above sea level. The shell fragments were somewhat worn and may be reworked.

GGU 146504: K-1918. At coast north-east of Kap Tobin, 70°25'N, 21°54'W.

380 ± 100 B.P.

A.D. 1570

Shells of *Mya truncata* and *Hiatella* (= *Saxicava*) *arctica* from rock fissures 6–8 m above sea level. Barnacle shells were found with the bivalve shells and barnacle footplates were noted on the rock surface.

The data indicate that the bivalve shells may have been thrown up by the surge or pressed up by ice.

GGU 146506: K-1919. Mouth of Ryders Elv, Hurry Inlet, 70°52'N, 22°29'W.

9010 ± 140 B.P.

7060 B.C.

Shells of *Mya truncata* on the surface of deposits of sorted silt and sand 30–33 m above sea level; indicative of sea level 35–41 m above the present.

Shell samples collected in Peary Land, North Greenland by P. R. Dawes

The samples were collected in 1969. Altitude measurements are based on hand-level and altimeter readings and should be considered approximate. Geographical coordinates given are taken from the U.S.A.F. World Aeronautical Chart 1:1 000 000, 5th edition.

GGU 100681: UW-229. West end of Nordpasset at the head of O. B. Bøggild Fjord, northern side of the fjord, 83°00'N, 38°20'W.

4420 ± 80 B.P.

2470 B.C.

Shells of *Tridonta* (= *Astarte*) *borealis* found in clayey silt deposits, 3–4 m above the sea ice. The date gives a minimum age of the deglaciation of Nordpasset.

GGU 100682: UW-230. East end of Nordpasset at the head of Frederick E. Hyde Fjord, southern side of the valley, 82°55'N, 37°20'W.

7240 ± 70 B.P.

5290 B.C.

Shells of *Mya truncata* found in clay-silt terrace in estimated altitude of 60 m above sea level which is the highest observed shell carrying silt terrace noted in the area. The date therefore gives a minimum age of deglaciation and subsequent marine inundation of the east end of Nordpasset.

GGU 100683: UW-235. Head of Frigg Fjord, at the southern side of Drivhuset, 83°09'N, 35°15'W.

6050 ± 60 B.P.

4100 B.C.

Shells of *Hiatella arctica* and *Mya truncata* from clay-silt terrace approximately 30 m above sea level. The date gives a minimum age for the marine deposits at this height. Shell fauna previously collected from this locality by Eigil Knuth has been described by Laursen (1954).

GGU 100684: UW-236. Citronens Fjord, western side of its head, 83°03'N, 29°35'W.

8200 ± 120 B.P.

6250 B.C.

Shells of *Hiatella arctica* from grey silt 35 m above sea level. The date gives a minimum age of the deglaciation of this small tributary to Frederick E. Hyde Fjord and the subsequent marine inundation.

Shell samples collected in West Greenland by R. Beschel and A. Weidick

The samples were collected in 1961.

GGU 63101: UW-237 Tasiussaq, Sukkertoppen district, 65°34'N, 52°46'W.

8510 ± 100 B.P.

6560 B.C.

Shells of *Mya truncata*, *Chlamys islandica* and *Balanus* sp. from clay lenses in alluvial plain related to the oldest moraines of historical time at a height of 2 m above sea level.

Shells must pre-date the moraines and date a period prior to the reglaciation of the inner part of Tasiussaq bay since the climatic optimum.

GGU 63102: UW-240. Tasiussaq, Sukkertoppen district, 65°35'N, 52°48'W.

8120 ± 100 B.P.

6170 B.C.

Shells of *Mya truncata* in shell bank about 5 m above sea level containing abundant shells of *Chlamys islandicus*, *Mytilus edulis*, *Cardium ciliatum* and *Macoma calcarea*. Shells are situated in the surface of undisturbed clay. The bank is situated approximately 1 km north-west of historical maximum extent of Tasiussaq glaciers and the date gives a minimum age of deglaciation of Tasiussaq bay.

GGU 63109: UW-241. Sukkertoppen town, 65°25'N, 52°56'W.

8100 ± 70 B.P.

6150 B.C.

Shells of *Balanus balanus* in gravel on top of terrace at 24 m above sea level.

GGU 63136: I-6236. Sarfat, Sukkertoppen island, Sukkertoppen kommune, 65°26'N, 52°55'W.

8570 ± 125 B.P.

6620 B.C.

Shells of *Balanus balanus* and a few fragments of *Mya truncata* and *Chlamys islandica* from approximately 2 km north of the town of Sukkertoppen at 25 m above sea level. The age must refer to a pronounced former sea level indicated also by the date from Sukkertoppen town (UW-241) and Agto (I-6237).

GGU 63141: I-6237. Agto island, Egedesminde district, Kangâtsiaq kommune, 68°56'N, 53°35'W.

8480 ± 125 B.P.
6620 B.C.

Shells of *Balanus balanus*, *Chlamys islandica*, *Hiatella arctica* and fragments of *Macoma calcarea* found in shelly gravel approximately 2 km south-east of village.

GGU 63126: I-6238. Ingmikortukavsak near Sarqaq, Vaigat kommune, Disko Bugt, 70°04'N, 52°06'W.

5845 ± 115 B.P.
3895 B.C.

Shells of *Mya truncata*, *Hiatella arctica* *Macoma calcarea* from the mud volcano Ingmikortukavsak at 20–30 m above sea level and around 2 m above river level. The shells are found in silt underlying the mud volcano.

GGU 63104: I-6240. Ikamiut kangerdluarssuat, Sukkertoppen kommune, 65°47'N, 52°41'W.

8010 ± 130 B.P.
6060 B.C.

Shells of *Chlamys islandica* and *Mya truncata* from silt, 9–10 m above sea level. The deposit is situated only 1–2 km from present local glaciers. The marine beds are undisturbed and must be younger than the glaciation of the head of Ikamiut kangerdluarssuat fjord.

Shell samples collected in West Greenland by S. Funder

The material was collected in 1965.

GGU 79521: I-6244. Qûgssuk in the inner part of Godthåbsfjord, Godthåb kommune, 64°45'N, 51°03'W.

7965 ± 125 B.P.
6015 B.C.

Shells of *Chlamys islandica* taken from a clay cliff on south side of inner part of Qûgssuk a few metres above sea level.

GGU 79555: I-6374. Avatdleq in Ikertoq fjord, Holsteinsborg kommune, 66°49'N, 52°22'W.

7400 ± 120 B.P.
5450 B.C.

Shells of *Mya truncata* excavated at 17 m above sea level from marine gravel and sand

in a cliff. The sample is taken near a terrace surface at 20 m. Description of the locality is given by de Quervain & Mercanton (1925).

GGU 79562: I-6376. Nuerssorfik, Itivdleraq, Nordre Strømfjord, Kangâtsiaq kommune, 67°56'N, 51°34'W.

4130 ± 100 B.P.

2180 B.C.

Shells of *Balanus balanus* and *Hiatella arctica* from top of cliff at 8–9 m above sea level. The shells are found in a 10–15 cm thick shelly gravel near surface of moraine deposit.

Shell samples collected in West Greenland by J. Liboriussen

This material was collected in 1969.

GGU 122261: I-6434. Kangerdluarssuatsiaq peninsula at the west end of Taserssuaq lake, Holsteinsborg kommune, 66°59'N, 51°10'W.

6890 ± 120 B.P.

4940 B.C.

Shells of *Mya truncata*, *Hiatella arctica*, *Mytilus edulis* and *Balanus balanus* from shelly gravel in beach ridge, 50 m above sea level.

GGU 122262: I-6433. Kangerdluarssuatsiaq peninsula, west end of Taserssuaq lake, Holsteinsborg kommune, 66°59'N, 51°10'W.

5910 ± 115 B.P.

3960 B.C.

Shells of *Mya truncata* and *Macoma calcarea* from shelly ground of a beach ridge 25 m above sea level.

GGU 122269: I-6483. The valley leading from Taserssuaq lake to the head of Akugdleq fjord, Ikortoq fjord system, Holsteinsborg kommune, 66°57'N, 51°59'W.

6855 ± 120 B.P.

4905 B.C.

Shells of *Balanus balanus*, *Mya truncata* and *Hiatella arctica* from beach ridge at 55 m above sea level. Shells occur in gravel on top of the beach ridge.

Samples collected in West Greenland by H. C. Petersen, S. Lægaard and P. W. F. Gribbon

The samples were all collected independently from GGU during the last decade and later presented by the collectors to the Survey.

GGU 61401: I-6235. Holsteinsborg town, 66°56'N, 53°38'W.

5845 ± 115 B.P.

3895 B.C.

Cranium of whale found at Knud Rasmussens Højskole in road cutting in beach ridge 63 m above sea level. The age is apparently too young to correspond with altitude and measurements on other material (Weidick, 1972b). Collected by H. C. Petersen, Holsteinsborg.

GGU 63144: I-6239. Kangårssuk, Disko island, 69°15'N, 53°50'W.

4685 ± 120 B.P.

2735 B.C.

shells of *Mytilus edulis* in shelly gravel at a pronounced marine level at the peninsula at 19 m above sea level. The age can be compared to the dates of K-1035 and K-1376 from Holsteinsborg from 20 and 24 m above sea level with respective ages of 4590 and 4970 years B. P. (Weidick, 1972b). All these ages seem to be too young for the heights at which the material was collected and this is possibly due to transport upwards of material by surges at the outer coast. Collected in 1962 by S. Lægaard, Godhavn.

GGU 79574: I-6241. Ikamiut kangerdluarssuat, Sukkertoppen kommune, 65°47'N, 52°41'W.

5910 ± 115 B.P.

3960 B.C.

Shells of *Balanus balanus* from 19 m above sea level related to a terrace cut in moraine. Collected by P. W. F. Gribbon, University of St. Andrews Expedition 1965. The fauna has been described in the expedition report (Gribbon, 1967).

Samples collected in Holsteinsborg-Jakobshavn region, West Greenland by A. Weidick

The material was collected in the period 1963–1969.

GGU 61411: I-6242. Eqaqut, Disko Bugt, 68°56'N, 51°00'W.

5395 ± 110 B.P.

3445 B.C.

Shells of *Mya truncata* from marine clay in 3–5 m high cliff. Sample from 2 m above sea level.

GGU 61413: I-6243. Marrait near Pinguarssûp qâqâ, Disko Bugt, 69°05'N, 51°08'W.

6835 ± 125 B.P.

4775 B.C.

Shells of *Mya truncata* and a few examples of *Hiatella arctica* from a N–S trending gravel beach ridge system 30 m above sea level.

GGU 61440: I-6484. Alangordliup sermia, Disko Bugt, 58°56'N, 50°17'W.

270 ± 85 B. P.

A.D. 1680

Twig of *Betula nana* from the Inland Ice margin. The sample was collected at the glacier margin about 65 m above sea level, where the twig occurred close to the glacier in a moraine formed presumably in this century.

GGU 79546: I-6245. Maligiaq branch of Ikertoq fjord, Holsteinsborg kommune, 66°56'N, 52°34'W.

7545 ± 125 B.P.

5595 B.C.

Shells of *Balanus balanus* from top of terrace 10 m above sea level in veneer of gravel and pebbles covering marine laminated clay.

GGU 79559: I-6375. Head of Akugdleq in Ikertoq fjord, Holsteinsborg kommune, 66°55'N, 52°16'W.

6835 ± 115 B.P.

4885 B.C.

Shells of *Chlamys islandica* from shell horizon in marine clay in cliff, 0–3 m above sea level.

GGU 88901: UW-242. Kangerdluarssuk tugdleq, head of the fjord, 66°59'N, 53°12'W.

6160 ± 90 B.P.

4210 B.C.

Shells of *Mya truncata* from top layer of clayey cliff, 10 m high. The shells were excavated 2–3 m from the top in silty sand, overlying clay and underlying sand and boulders.

GGU 88905: I-6377. Rivulet near Akornga, leading from Akornga tasé, Holsteinsborg kommune, 67°02'N, 53°47'W.

7730 ± 120 B.P.

5780 B.C.

Shells of *Mya truncata* excavated from shelly gravel in cliff, 0.5 m from the top and 2 m above the river.

GGU 88907: I-6378. Rivulet near Akornga tasé, approximately 200 m north-east of I-6377, at 67°02'N, 53°47'W.

6780 ± 115 B.P.

4830 B.C.

Shells of *Balanus balanus* and *Mya truncata* from uppermost 30 cm gravel in beach ridge a few metres above sea level.

GGU 88912: I-6428. Head of Kangerdluarssuk ungatdleq, south side of the fjord, Holsteinsborg kommune, 67°06'N, 53°21'W.

4615 ± 100 B.P.

2665 B.C.

Shells of *Mya truncata* excavated in the top layer of a coastal cliff 5–7 m above sea level.

GGU 88946: I-6429. Maligiaq in Ikertoq fjord, Holsteinsborg kommune, 66°57'N, 52°34'W.

5845 ± 115 B.P.

3895 B.C.

Shells of *Mytilus edulis* and *Hiatella arctica* from gravel in marine deposit 17–18 m above sea level.

GGU 122208: I-6430. Taserssuaq-Qordlortoq, north side of main brook, Holsteinsborg kommune, 67°01'N, 51°14'W.

7770 ± 125 B.P.

5820 B.C.

Shells of large specimens of *Balanus balanus*, and shells of *Tellina calcarea* and *Cardium echinatum*. From "high profile" 43 m above sea level in laminated silt terrace.

GGU 122216: I-6431. East end of Taserssuaq lake, Holsteinsborg kommune, 67°01'N, 51°28'W.

5100 ± 105 B.P.

3150 B.C.

Shells of *Mya truncata* and fragments of *Balanus balanus* and *Hiatella arctica* from clay-silt terrace at 5 m above the lake level.

GGU 122220: I-6432. Isortoqelven, near Siorarssuit (Nûssâ), Holsteinsborg kommune, 67°21'N, 51°31'W.

1770 ± 165 B.P.

A.D. 180

Turf layer in cliff section of river terrace, 3.7 m above river level, i.e. approximately 14 m above sea level. The turf rests on cross-bedded fluvial gravel and is overlain by aeolian sands and loess.

GGU 122228: I-6426. East end of lake Ilivigdlop tasia, Holsteinsborg kommune, 68°25'N, 51°05'W.

2910 ± 90 B.P.

960 B.C.

Turf from lens-shaped inclusion in marine clay, 28 m above sea level.

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