Notes on the Holocene marine fauna of eastern North Greenland

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Bennike, O., Funder, S. & Hjort, C.: Notes on the Holocene marine fauna of eastern North Greenland. Bull. geol. Soc. Denmark, vol. 35, pp. 71-74, October, 29th, 1986.
<https://doi.org/10.37570/bgsd-1986-35-08>

A list of invertebrates, notably molluscs, from the raised Holocene marine sediments in eastern North Greenland is given. The faunas have low diversity, and contain an element of Arctic sublittoral and bathyal species indicative of cold surface water.

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During the GGU expeditions to the Peary Land region, North Greenland, in 1979 and 1980, we collected molluscs and other invertebrates in the raised marine deposits of the region (fig. 1). The material was collected partly for ^{14}C -dating, partly for investigations on the fauna.

Previous faunistic work is confined to a list of moluscs collected by members of the Danish Peary Land Expeditions (Laursen 1954), and some scanty information in Funder (1982), Funder & Hjort (1980), Jensen (1917) and Weidick (1977, 1978).

As in other arctic areas *Hiatella arctica* and *Mya truncata* are by far the most common species (table 1). They are usually found together, and

they both appear to be primarily members of the imfauna, because their shells often occur paired and in life position in the sediments in which they lived. *Mya truncata* is represented by typical *M. truncata* and by *M. truncata* var. *uddevalensis* Forbes, whereas *M. truncata* var. *ovata* Jensen (= *M. pseudoarenaria* Schlessch) has not been observed. *Astarte borealis* is very common, sometimes dominant, in faunas at low elevations, but also occurs at fairly high elevations. *Hiatella arctica* shells with borings in the posterior part were encountered in a few samples. The borings have been identified as ichnogenera *Caulostrepsis* (Bromley & D'Alessandro 1983), and were probably made by the polychaete *Polydora*. Subfossil

Fig. 1. Sites for collection of faunas. Locality numbers refer to the fauna list (table 1).

9	223233	25
9	223234	20
9	223235	24
9	223236	18
9	223237	20
9	223238	20
9	223239	22
9	223240	5-8
10	223243	3
11	223248	32
11	223249	12
11	223250	1
11	223252	54
11	223253	34
11	223254	46
11	223257	49
11	223258	27
12	197173	c.25
12	197176	c.35
12	223270	45
12	223271	30
12	223272	70
12	223303	30
12	223310	50
13	223201	55-58
13	223202	2
13	223203	2
13	223206	70
14	223328	13-18
14	223329	40
14	223330	43
15	223327	30
16	223320	30
16	223321	60
16	223322	28
17	223331	40
18	223332	30-35
18	223333	8
18	223334	30
18	223335	50
18	223336	48-50
18	223337	48-50
19	223338	38-42
20	223339	35
21	197200	26
21	223340	49
22	223343	16-20

shells with similar borings have been observed in material from central North Greenland and from the Danmarkshavn area, and in a *Littorina* shell from the Scoresby Sund area (Funder 1978). The only *Polydora* species which has been taken alive in Greenland is *P. coeca* (Wesenberg-Lund 1950, 1953). This species is mainly distributed in boreal and lusitanian waters and is considered rare in the Arctic. Our findings indicate, that the species is present even in the high-arctic.

Sample 197189 from locality No 1 (Kap Kane) comes from a tiny island, consisting of gravel and situated some hundred metres from the mainland coast. The island resembles Oodaaq Ø off northern Peary Land, as does its fauna (Funder & Hjort 1980). The fauna is considered to be subrecent, because it includes a number of well preserved thin shells. The shells have probably been transported out of the water by sea ice push.

The area studied lies far to the north of the zoogeographical boundary between the subarctic and the arctic, and hence is not sensitive to shifts in this boundary. Although the recent fauna of the region has been little studied due to sampling difficulties, all the reported species presumably occur in the region today.

The fauna is less diverse than Holocene faunas from East and West Greenland. It includes a number of taxa which have only rarely been recorded as subfossils, such as *Portlandia frigida*, *Arca glacialis*, *Lima hyperborea*, *Astarte crenata inflata* and *Pandora glacialis*. These species are all members of the Arctic sublittoral and bathyal fauna communities, and their occurrence along the Arctic Ocean coasts may indicate very low temperatures in the surface water. On the other hand, species like *Serripes groenlandicus* and *Macoma calcarea*, which are rather common in subfossil faunas in East Greenland (Funder 1978), have not been recorded in Holocene deposits from eastern North Greenland.

Acknowledgements. This paper is published with the permission of the Director of the Geological Survey of Greenland. C. Rasmussen prepared the figure, K. Bille Hansen identified the bryozoans, R. G. Bromley and J. Kirkegaard identified the polychaete borings and R. Feyling-Hanssen identified the foraminifera. R. J. Braithwaite checked the English language.

Dansk sammendrag

Holocæne, marine aflejringer er vidt udbredte i det østlige Nordgrønland. Aflejringerne makroskopiske invertebratfauna domineres af muslingerne *Hiatella arctica*, *Mya truncata* og *Astarte borealis*. Udover muslinger findes der arter af snegle, børsteorme, mosdyr, søpindsvin og foraminiferer. Faunaerne, der præges af lav diversitet, indeholder en række arter der indicerer, at overfladevandet ved det Arktiske Ocean er meget koldt.

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