

Remnants of the earliest human invasion at Bellsund, Svalbard

JAN DZIERZEK, JERZY NITYCHORUK AND ANNA RZĘTKOWSKA



Dzierżek, J., Nitychoruk, J. & Rzętkowska, A. 1990: Remnants of the earliest human invasion at Bellsund, Svalbard. *Polar Research* 8, 299–302.

Jan Dzierżek, Jerzy Nitychoruk and Anna Rzętkowska, Institute of Geology, Warsaw University, Żwirki i Wigury 93, 02-089 Warsaw, Poland; August 1989 (revised April 1990).

During the first (1986) scientific expedition to Spitsbergen organized by the Maria Skłodowska-Curie University, Lublin, the authors explored the region of Wedel-Jarlsberg Land. They discovered submoraine organogenic deposits at 100–150 cm a.s.l. within the Renardbreen frontal moraine zone (Fig. 1) (Dzierżek et al. this volume).

The profile of the organogenic deposits has

been composed of peat-like deposits with an admixture of sand and single gravels. There have been two layers of light gray silt with moss pedicles at 112–114 and 125–128 cm a.s.l., respectively (Fig. 2). There are also chips of wood (several cm in length, level 100–114 and 123–150 cm a.s.l.), pieces of charcoal (140–150 cm a.s.l.) and red pottery (?). Pieces of pottery, several millimetres to a few centimetres in



Fig. 1. Profile of the organogenic deposits within the Renardbreen terminal moraine zone. Scale bar – 20 cm.

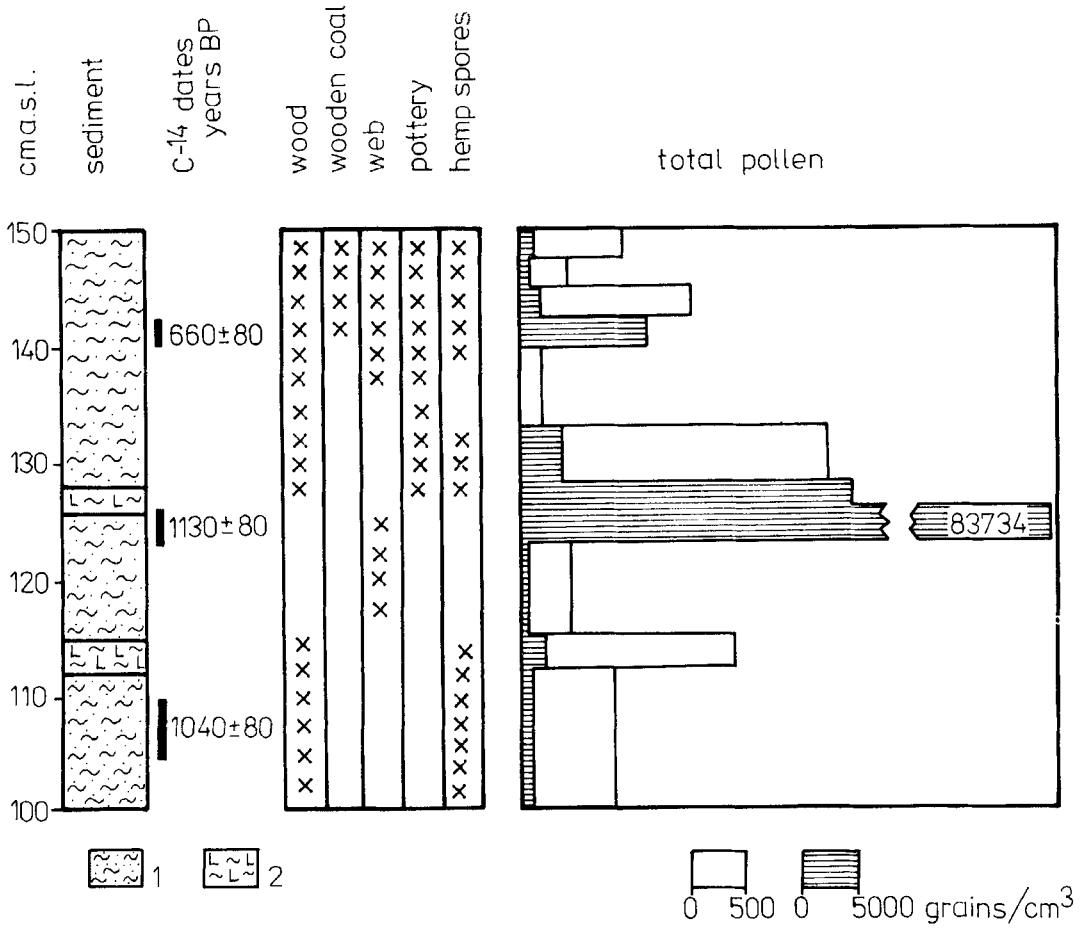


Fig. 2. Composite pollen diagram based on quantity of pollen grains within 1 cm³ of the organogenic deposits. Distribution of the macroscopic remnants is also marked. 1. Peat (TB*3Ga 1G+); 2. Silt (Ag3 Tb*1).

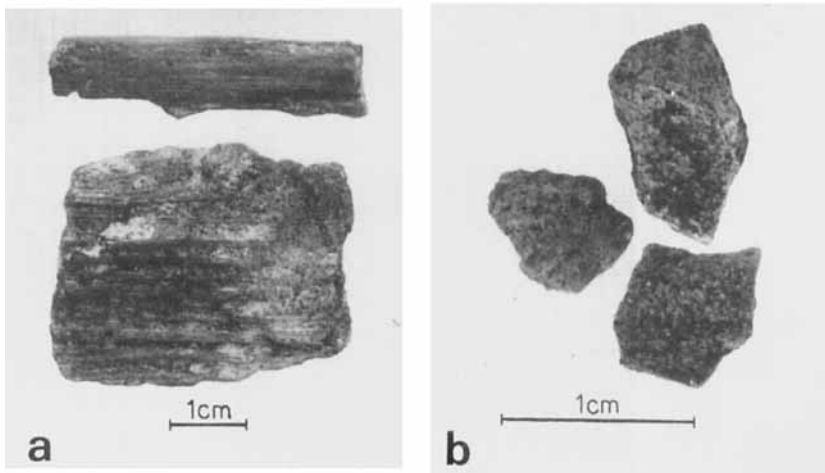


Fig. 3. a. Wood fragments (chips); b. Pottery fragments.

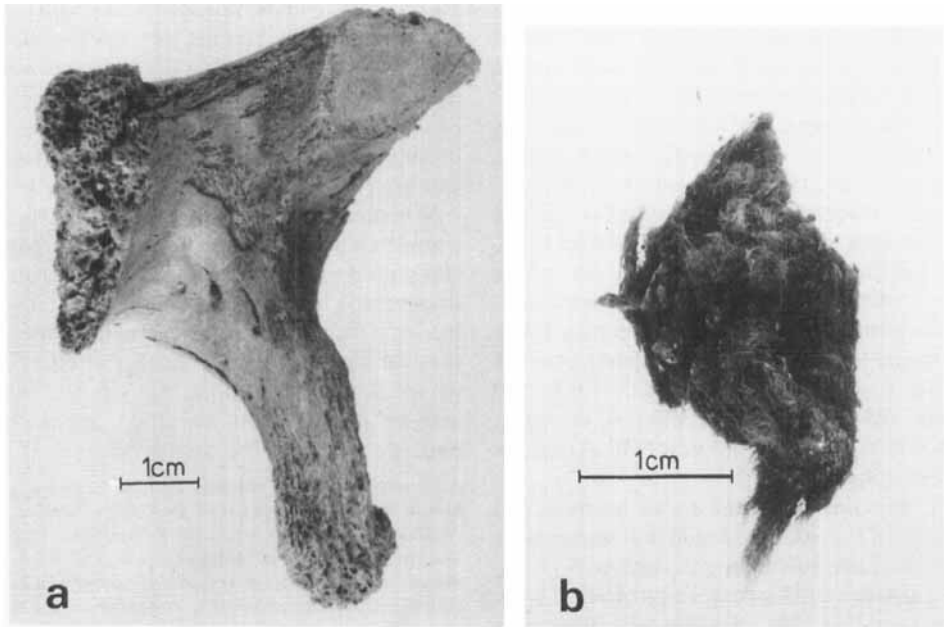


Fig. 4. a. Fragment of a walrus bone, b. Piece of a woolly material.

diameter (Fig. 3), occurred at level 124–150 cm a.s.l., whereas tiny fragments of that pottery were randomly scattered within the lower part of the profile (Fig. 1). In the upper part of the outcrop a walrus *Odobenus* sp. bone (Fig. 4a) (Borsuk-Bialynicka pers. comm.) and whalebones (Fig. 5) (Halba pers. comm.) were encountered. The attention should be paid to cuttings of the whalebone fragments, the presence of animal hair (within the whole section) and fragments of animal fur, feathers and pieces of woollen web – at 133–150 cm a.s.l. as well as at 115–125 cm a.s.l. (Figs. 1, 4b).

Palynological analysis of ten samples taken from the investigated sediments pointed out the dominance of *Graminae*, with maximum occurrence at 126–128 cm a.s.l. (Fig. 2). Moreover, the spores of *Betula* cf. *nana*, *Coryphylaceae* (*Cerastium Stellaria* type), *Cruciferae*, *Saxifragaceae* (*Saxifraga granulata* type), *Rosaceae* and *Comositate tubuliflorae* have also been found. Occasionally, *Pinus* and *Myrica* pollen have appeared, suggesting allochthonous origin.

Most interesting has been finding the spores of *Humulus/Cannabis* type within the sediments. The clear identification of such spores is impossible due to their being damaged. Nevertheless, the presence of *Humulus/Cannabis* type spores has

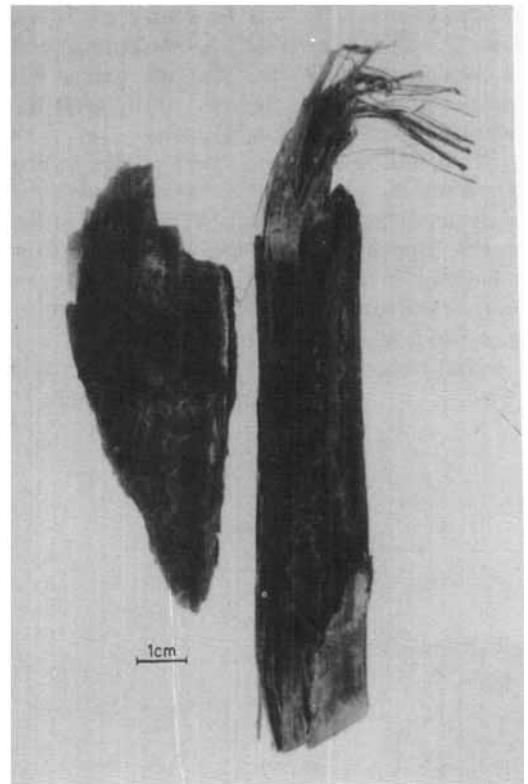


Fig. 5. Whalebone fragments.

been unequivocally determined. Both *Humulus lupulus* and *Cannabis sativa*, being rather characteristic for a warm climate, constitute an exception within Holocene floras of temperate zones. Thus, we suggested these spores, especially hemp, had to be brought with human beings, from whom other traces have also been found.

A wider discussion on palynological analysis data (Dzierżek et al. this volume) resulted in the conclusion that these deposits were formed under slightly cooler conditions than the present ones.

Radiocarbon dating of three samples taken from organogenic deposits (peaty part) gave the following results: 105–110 cm a.s.l.: $1,040 \pm 80$ years BP; 123–126 cm a.s.l.: $1,130 \pm 80$ years BP; 140–143 cm a.s.l.: 660 ± 80 years BP (Dzierżek et al. this volume).

These data determine the age of warming and deposition of the examined sediment sequence of the Middle/Late Subatlantic transition.

The existence of charcoal, chips of wood (Fig. 3a), pottery (Fig. 3b), woollen web fragments (Fig. 4b) and hemp spores within organogenic deposits indicates human activity in the investigated region since $1,130 \pm 80$ years BP, that is, c. 9th century. This may be supported by the piece of walrus bone (Fig. 4a), cutting fragments of whalebones (Fig. 5), hair and animal fur fragments. The latter findings may suggest the hunting character of human activity.

^{14}C dating of the upper part of the section points out the long term, perhaps seasonal, stay of human beings (up to the 14th century) in the region. It might be due to the superb locality for a harbour in the shadow of the Renardbreen moraines. Boats of early mediaeval people could here find a safe harbour in Josephbukta.

In old Iceland text-books one can read about

the discovery of Svalbard in the 12th century (Krawczyk 1987). The authors' findings shift that date back about 300 years. Hence, invasion on Spitsbergen could be earlier than the discoveries of Iceland and Greenland. Possibly, it took place during the great Norman migration in the 9th century (Mowat 1972; Foote & Wilson 1975).

Whether or not the authors' findings should be connected with the possibility of the Normans (they used pottery of a different kind from that discovered) or other groups (Celts, Dorsets) having invaded Spitsbergen from the 9th century, the findings will be of further archaeological perspective. Furthermore, the relics of whalers' activity superimposed on that ancient cultural finding should also be considered.

Acknowledgements. – The authors gratefully acknowledge M. Borsuk-Bialynicka (Institute of Geological Sciences, Polish Academy of Sciences) and S. Halba (Institute of Zoology, Warsaw University) for paleontological identifications and discussions. Special warm thanks are directed to M. Gruszczyński (Institute of Geological Sciences, Polish Academy of Sciences) for criticism on drafts of the manuscript and helpful remarks. K. Ziclińska (Institute of Geology, Warsaw University) is also acknowledged for photos.

This paper was prepared within the project CPBP 03.03.B7.

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