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8. Human activity

Since the very beginning of the 17th century and up to the present day the area of Spitsbergen has been seeing diverse forms of human activities. In particular, this activity was focused on the North-Western part of Wedel Jarlsberg Land. It belongs to the most interesting areas of the Archipelago in terms of archaeological sites and material traces of history. Traces and remains of human activity recognised on the described area are dated to the following periods:

- West-European whaling (17th century);
- Russian walrus hunting (17th/18th to the beginning of the 19th century);
- Geographical exploration to Bellsund (the 18th, 19th);
- Norwegian hunting and trapping (19th and 20th centuries);
- Mining and exploitation of minerals (second half of 19th and 20th centuries);
- Contemporary research activities and international tourism.

Discovery

Spitsbergen – rich in natural resources and for many centuries belonging to no particular nation or state – has gone through a period of relatively intensive (for High-Arctic regions) exploitation from the beginning of the 17th century and up to the present. Nothing certain is known regarding earlier periods. Several authors have raised the problem, claiming that some groups must have been active on the archipelago long before its official discovery (Jasinski 1988). Christiansson & Simonsen (1970) have even suggested that the first human groups were present in Spitsbergen already in the Stone Age.

Other hypotheses place the first discovery in the Middle Ages. The Norsemen, who were expanding from Scandinavia since the end of the 8th century, were famous for their sailing skills. Some Icelandic Annals record the finding of ‘Svalbarð’ or ‘Svalbarði’, ‘the Cold Shores’, by the Norsemen in 1194. The location of this area is a matter of discussion (Arlov 1994). Although it forms the basis for the modern name of the archipelago, there is no scientific consensus that supports the hypothesis (Jørgensen 1997). Russian historians have claimed that Russian walrus hunters from the shores of

the White Sea – the region known in Russian as *Pomorye* may have visited the archipelago as early as in the Middle Ages. This line was largely followed by Soviet scholars, but again, no conclusive evidence has been found (Starkov 1986; Albrethsen & Arlov 1988; Chochorowski 1991; Jasinski 1993; Hultgreen 2002, 2006). The Soviet/Russian archaeologist Starkov (1986) has argued that the Russian hunters from the *Pomorye region* (Pomors) began their sea-mammal hunting activities on Spitsbergen at least as early as in the middle of the 16th century.

‘Officially’ Spitsbergen (today’s Svalbard) was discovered on 17th June, 1596 by a Dutch expedition of William Barents (ca. 1550-1597). The name ‘Spitsbergen’ meaning ‘pointed mountains’ (from the Dutch: spits – pointed, bergen – mountains), was at first applied to both the main island and the archipelago as a whole. It is first mentioned in Barents’s journal (Fig. 8.1). On Barents’ 1598 chart we see the new island being called ‘*Het nieuwe land*’ (the new land). The chart also shows ‘*Inwyck*’ (inlet, now Bellsund), another feature named by Barents.

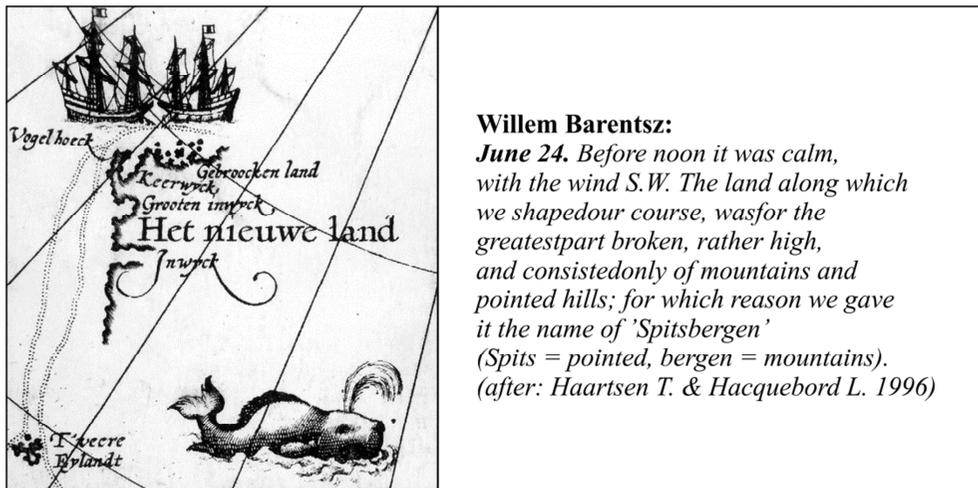


Fig. 8.1. The fragment of the Barents Chart. Cornelisz Cleasz, 1598.

West-European whaling

William Barents died on Novaya Zemlya in 1597, however, his discovery of Spitsbergen was made public and very soon attracted the attention of Dutch and English entrepreneurs. Their main interest was the reported abundance of Greenland right whales, also called Bowhead whales, as well as seals and walrus.

The upheavals in post-medieval Europe created a demand for a number of goods, including goods provided by the whaling. As Dalgård (1962) wrote in his work on the Danish-Norwegian whaling industry that the northern and western European textile industry had a great demand for oil as early as in the 16th century. Haartsen and Hacquebord (1996) also stressed the growing need for whale products. At the begin-

ning of the 17th century, the population and prosperity of the trading towns of Western Europe increased, thereby leading to a greater demand for oil and fat. Moreover, because of high corn prices, smaller quantities of oil-bearing plants were grown, resulting in a shortage of vegetable oil. There arose a great demand for substitute products, which the whalers could meet. A large part of the whale oil was, furthermore, used as raw material in the soap industry, shipbuilding, textile production and in oil lamps, both indoor- and outdoor-type. Oil was also refined from the knuckle bones, and the bones themselves were used as building materials. In addition to the blubber and bones, uses were gradually found for the baleen plates (or whalebones), for example as mirror frames and knife shafts. The demand for whalebones increased towards the second half of the 17th century, when corsets and hooped skirts became fashionable (Hacquebord 1984; Jasinski 1997).

In 1607, the waters of Spitsbergen were visited by the English explorer Henry Hudson hired by the English Muscovy Company (Holmsen 1912; Haartsen & Hacquebord 1996; Hacquebord *et al.* 2003). He was the first person who paid attention to the enormous number of whales, walrus and seals in the bays of Spitsbergen. As the English were interested in the possibilities of seal and walrus hunting near Spitsbergen, a schooner 'Amilie' was sent there in 1610. This schooner was one of many others that explored the area of Bellsund (Holmsen 1912; Molaug 1968; Jasinski *et al.* 1993; Szupryczyński 2007). It was then that the commander of the expedition Jonas Poole gave the fjord the name 'Bell Sound' ('Klock Bay') which it retains to this day. He named it after a nearby bell-shaped mountain.

In 1612 a company in Amsterdam under Lambert van Tweenhuysen sent the first Dutch whaling expeditions to Spitsbergen, commanded by Willem Cornelisz van Muyden (Haartsen & Hacquebord 1996). They hired an English pilot Alan Sallows to help them with the navigation and hunting. The expedition reached the Forlandsundet and then headed to a small bay on the north shore of Bellsund later called 'Van Muyden Harbor' (Van Muydenbukta).

The year 1612 marks the beginning of systematic whaling activity in Spitsbergen. Soon whalers from several European nations came to the archipelago to explore and harvest the natural resources. Spitsbergen whaling was dominated by English and Dutch companies, although other countries like France, Spain, Germany and Denmark/Norway were also involved. In the summer of 1613 the waters of Spitsbergen were visited by 20 ships (Holmsen 1912; Hacquebord 1999, 2001). There were plenty of whales, both in the narrow straits and in the fjord arms. Most of the catch took place near land. When the whale was killed, with harpoons and lances, they dragged it up on the beach where it was flanged (Haartsen & Hacquebord 1996). The blubber was then cooked to render it into oil at land stations (look: Photo 8.4A). Often these stations were only used for one or two seasons. In the later period some of the land stations became larger and served the whalers for several seasons.

The desire to obtain whale oil and other whale products led to several armed clashes between the British and the Dutch (Conway 1906; Haartsen & Hacquebord 1996). In 1613 two Dutch ships once again sailed to Spitsbergen. This time, the Dutch recruited twelve Basque whalers to learn the ins and outs of whale-fishery. During this expedition the ship *'Neptunus'*, commanded by Van Muyden, again reached Bellsund. The captain sailed to Recherchefjorden and settled in a little cove on its western shore, which he named Schoonhaven (now Josephbukta) – site: Renardbreen-1 (Jasinski 1994; Hacquebord *et al.* 2003). But shortly after that the station was discovered and the men were either ordered away by armed English vessels or forced to pay a fine of some sort (Vaughan 1984). However, the Dutch hold gradually became stronger, especially after 1614 when the *'Noordse Compagnie'* (*'Northern Company'*) was established (Jasinski *et al.* 1993; Szupryczyński 2007).

Whaling in the southern fjords, including Bellsund, led to fierce competition between the English Muscovy Company and the Dutch Noordse Compagnie. The issue became especially serious after 1617 when Dutch whalers from Zealand joined in. They concentrated their efforts on Hornsund and Bellsund areas, but were driven out by the English in 1619 (Hacquebord 1981; Hacquebord *et al.* 2003). An important role in this conflict was played by Thomas Edge. From 1613 to 1619 Edge served either as commander or co-commander of the English whaling fleet. He appears to have spent several of these seasons aboard ships that anchored in Bellsund, the principal area for English whaling. At the request of the Muscovy Company he was responsible for both the protection from as well as the fight against the competition.

At the same time, conflicts arose within the English group. The rapid growth of the English whaling trade during the early 17th century placed the merchants and whalers of Hull and York on a collision course with their rivals in the Muscovy Company (Appleby 2008). In 1626 the station in Recherchefjorden was destroyed by York and Hull whalers, who then sailed to their whaling station in Midterhukhamna, just across the entrance to Van Keulenfjorden. Here they were attacked by the heavily-armed flagship of the London whaling fleet, *'Hercules'*, under Admiral William Goodlad. A two-hour battle ensued, resulting in the defeat of the Hull and York fleet and their expulsion from Spitsbergen. But Hull continued to send whaling vessels to occupy this station for the next 25 years, while the English as a group probably relocated to Bellsund at least until the late 1650s (Appleby 2008).

In general, there were two main types of whaling – bay whaling, where the slaughtered animal was towed onto the land and processed at stations built on the shore (Fig. 8.2.ABC), and pelagic whaling which took place far out at sea, close to the pack ice, where the blubber was either cooked to produce oil on board the ships or packed into barrels to be processed back in the home country. With regard to Spitsbergen, until the middle of the 17th century whaling took place in summer in the fjords and in near-shore areas, with land-based stations. However, around the middle of the 17th century whales disappeared from the coastal areas of Svalbard, and whaling then con-

centrated on the open sea and along the ice edge. Long after being abandoned, shore stations were still used as emergency harbours, storage areas for whaling equipment, graveyards and meeting places for the whaling ships in the spring and autumn (Arlov 1994).

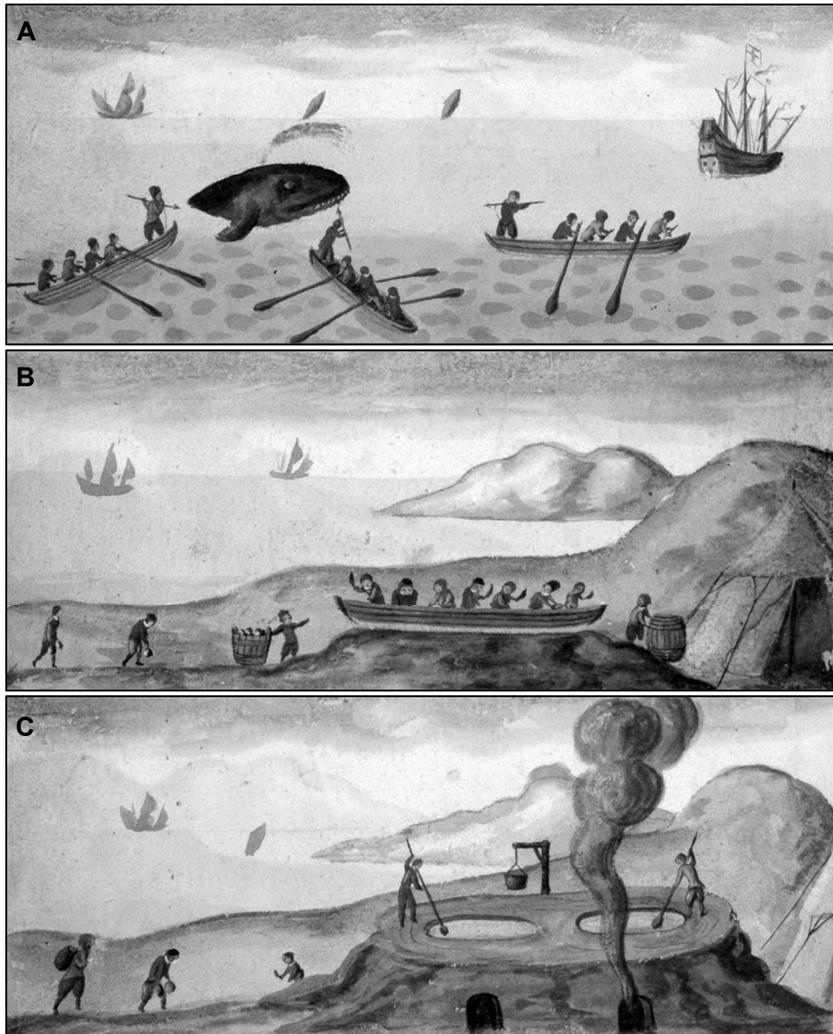


Fig. 8.2. A,B,C - the watercolors portrayed the capture and processing of whales after Fotherby (1613)¹³. Source: American Antiquarian Society.

¹³ Robert Fotherby (died 1646) was an early 17th century English explorer and whaler. From 1613 to 1615 he worked for the Muscovy Company, and from 1615 until his death for the East India Company. Fotherby was among the crew of seven ships sent by the Muscovy Company to Greenland (Spitsbergen) in May 1613. He served as master's mate aboard the ship *Matthew* (250 tons), vice-admiral of the fleet. In his journal 'Narrative of a Voyage to Spitzbergen in the Year 1613' he gave detail descriptions of the geography, wildlife and weather, and the capture and processing of whales and walrus. The journal contains also twelve watercolors illustrate whaling activities and wildlife, and map (sketch) of western coast of Spitsbergen. The only notable occurrence Fotherby spoke of in his journal was that he ascended a glacier in Josephbukta, a bay on the western side of Recherchefjorden. This is significant in that this is the first recorded glacier expedition in Spitsbergen's history. The glacier in question was probably Renardbreen.

In the region of southern Bellsund and Recherchefjorden the traces of whaling activities can be found in four areas: Renardodden – sites: Renardodden-2, Renardodden-3 (W1), near the terminal moraines of Renardbreen – sites: Renardbreen-1, Renardbreen-2 (W2), on the western part of Recherchefjorden: Snatcherpynten (W3) and on the eastern shore of Recherchefjorden – sites: Robertelva (W4), Lægerneset (W5) (site names according to Starkov & Jasinski 1998) (Fig. 8.3).

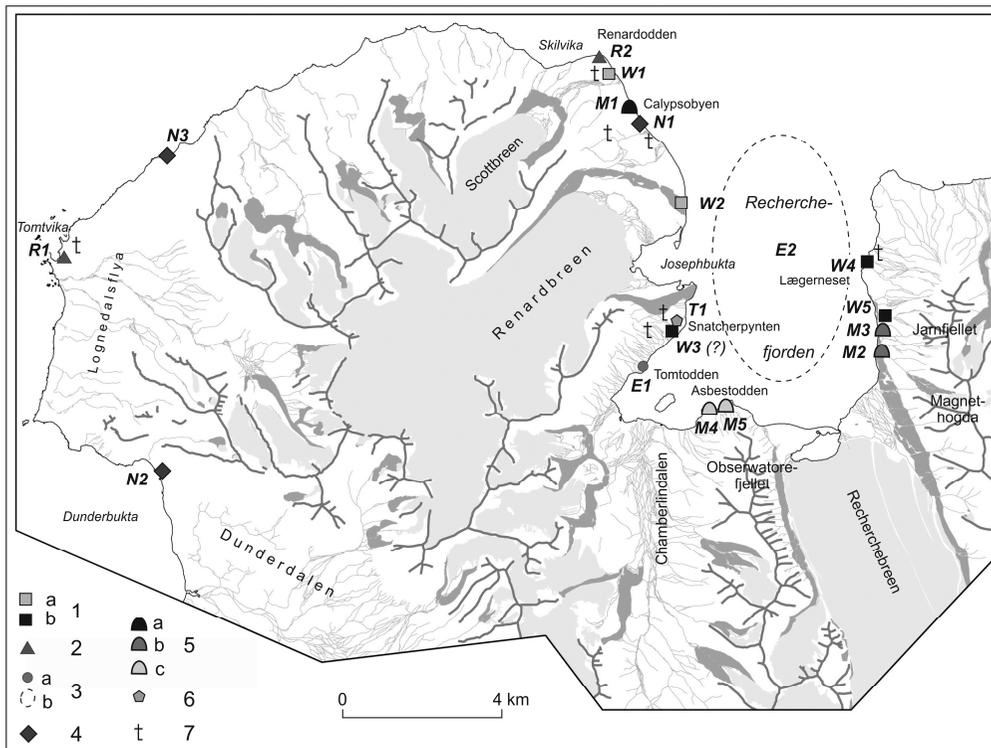


Fig. 8.3. Location of archaeological sites and objects related to human activity in the area of NW part of Wedel Jarlsberg Land: 1- whaling activity: a- Dutch (W1- Renardodden-2 and Renardodden-3; W2- Renardbreen-1 and Renardbreen-2), b- English (W3- Snatcherpynten (?); W4- Robertelva; W5- Lægerneset); 2- Russian walrus hunting stations (R1- Lognedalen; R2- Renardodden-1); 3- areas explored by geographical exploration: a- the Russian Chichagov Expedition (E1), b- the La Recherche Expedition (E2); 4- trappers cottages (N1- Calypsobyen; N2- Camp Scoresby/Dunderbukta; N3- Klokkefjellshytta); 5- mining and exploitation of minerals: a- coal (M1- Calypsobyen), b- iron (M2- Camp Iron Mountain; M3- Jarnfjellet), c- asbestos (M4- A/S Kulspids hus, M5- Camp Asbestos); 6- others objects (T1 – Camp Smith); 7- cemeteries and graves.

Renardodden (W1). There are two sites related to whaling in this region: Renardodden-2 and Renardodden-3. The Renardodden-2 site is situated 97 m to the south of a Russian hunting station (site Renardodden-1), on the surface of an ancient swell 105 m from the water edge (Fig. 8.3, Photo 8.1AB). This are the remains of the foundations of the boats (shallops) that whalers placed on land to cut the blubber (Hacquetbord *et al.* 2003; Avango *et al.* 2008) (Figs. 8.2B and 8.4ABC). The discovery of characteristic artefacts such as clay pipes with ornamented stems allowed the researchers to date the Renardodden-2 site to the second half of the 17th century (Jasinski *et al.* 1993;

Starkov 1998; Starkov & Jasinski 1998; Starkov *et al.* 2005). The Renardodden-3 site is situated 213 m south of on the same surface beach ridge (Fig. 8.5, Photo 8.1AC). The site performs a similar function as Renardodden-2 (Hacquebord *et al.* 2003). The site has several structures, including five traces of boats, seven fire places, remnants of a fat rendering oven and a kitchen waste pile. Probably already in the late 17th century the site experienced the effects of sea abrasion and is now partially destroyed by water erosion. The artefacts found at the site allow us to preliminarily conclude that Renardodden 3 was a seasonal base for Dutch whalers in the mid-17th century (Jasinski *et al.* 1993; Starkov & Jasinski 1998). The most interesting of the datable artefacts are fragments of a ceramic vessel made of red clay and glazed with green lead. The characteristic feature of this type of pottery is its decoration which consists of short vertical stripes of white paint on the upper edge of the vessel. The rim has an elaborate profile which made it easier to handle the vessel. Such bowls are typical examples of Dutch pottery, characteristic for the entire 17th century (Ruempol & van Dongen 1991). An almost complete neck of a baartman jug was found in the northern part of Renardodden-3. It is decorated with a relief effigy of a bearded face with features typical for baartman jugs with the PVA trademark (Pieter van den Ancker). Such jugs were usually used for French or Rhine wines, or Bremen beer. They are widely known in England and the Netherlands. They were only in fashion for a short period in the mid-17th century (Ruempol & van Dongen 1991). Clay pipes with barrel-shaped stems decorated with a narrow band at the top date from the same period (Hacquebord 1984).

Renardbreen moraine (W2). There are two sites related to whaling in this region: Renardbreen-1 (Renard Glacier 1 site) and Renardbreen-2 site (Fig. 8.3). The Renardbreen-1 site is defined as a temporary Dutch whaling station established in 1612 (Haartsen & Hacquebord 1996; Hacquebord *et al.* 2003). The place is unique for the whole area of Svalbard, as it was destroyed by the advancing Renardbreen during the Little Ice Age (the 19th century). In 1986, geologists from the University of Warsaw collected samples of organic material from the occupation layer. Three ¹⁴C datings conducted on these samples, published by Dzierżek *et al.* (1990a), aroused significant interest among archaeologists studying the cultural history of Spitsbergen. The ages of ¹⁴C 600 ±80 BP, 1300 ±80 BP and 1040 ±80 BP suggested that the Renardbreen-1 held the oldest known traces of human activity in Svalbard (Dzierżek *et al.* 1990b) (Fig. 8.6). Archaeological studies of the Renardbreen-1 site carried out in the seasons of 1991-1993 did not confirm the theory of Warsaw geologists based on the results of ¹⁴C datings. These further studies disprove the possibility of the site dating back to the Viking or Medieval periods (Jasinski 1994). The relatively few archaeological finds (among others, pantile fragments and a tobacco pipe) suggest that the site should be dated to the post-Medieval period, and more precisely to the interval between the turn of the 16th century and the first half of the 18th century. The ¹⁴C samples collected by geologists from University of Warsaw were, most probably taken from an older layer of peat beneath the cultural layer of the site and this fact explain the early datings of these

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samples. Determining the structure of the site, its function and the nationality of its users is even more difficult than its age. As regards the structure, there are two possibilities: (1) the wall-like construction and the occupation layer adjacent to it form the entire Renardbreen-1 site, or (2) they are only part of a larger complex (Fig. 8.7, Photo 8.2AB).

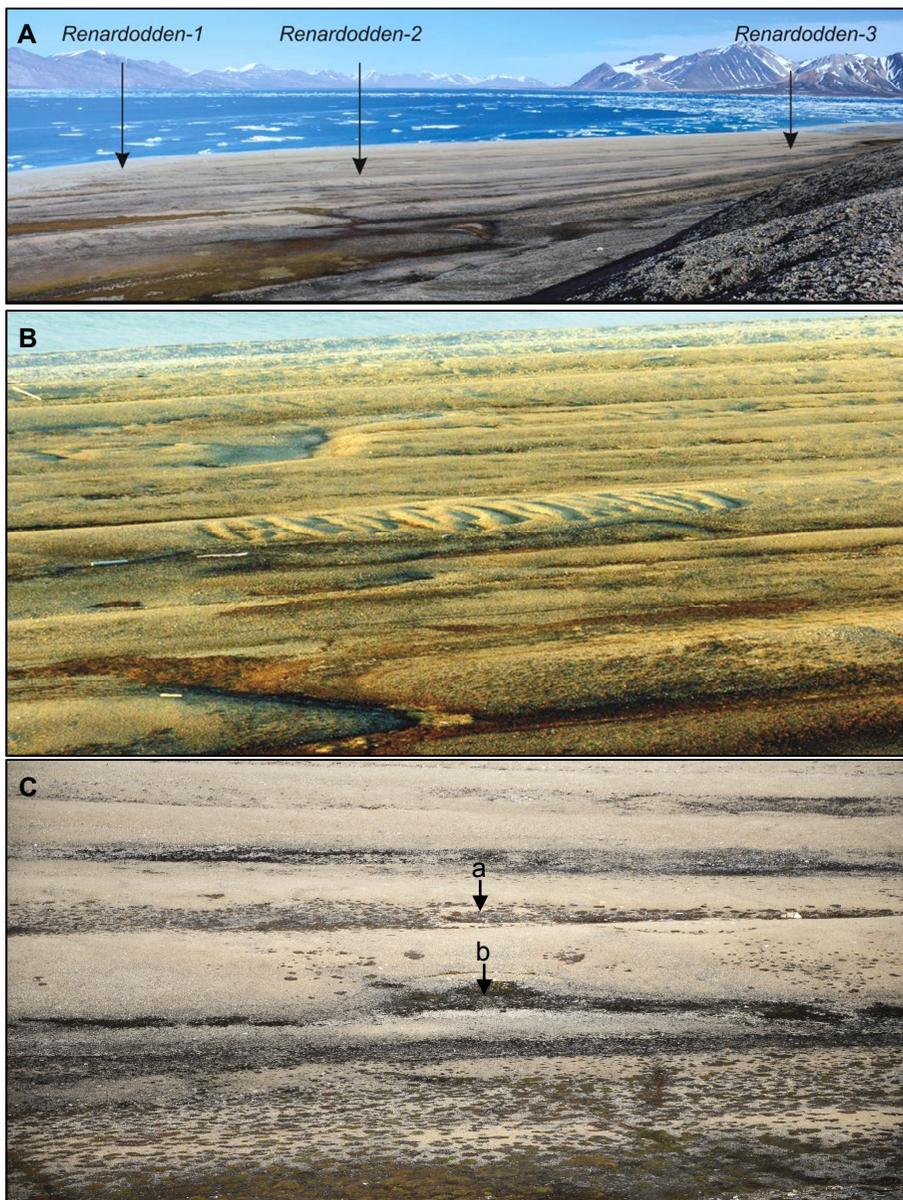


Photo 8.1. Location of all Renardodden archaeological sites: A- general view all sites, B- Renardodden-2 site, C- Renardodden-3 site (after: Avango *et al.* 2008): a- foundation walls made of beach gravel, most likely the remains of a whalers tent house, b- depressions in the beach gravel – possibly grainage ditches, witch nearby line of stone (Photos P. Zagórski).

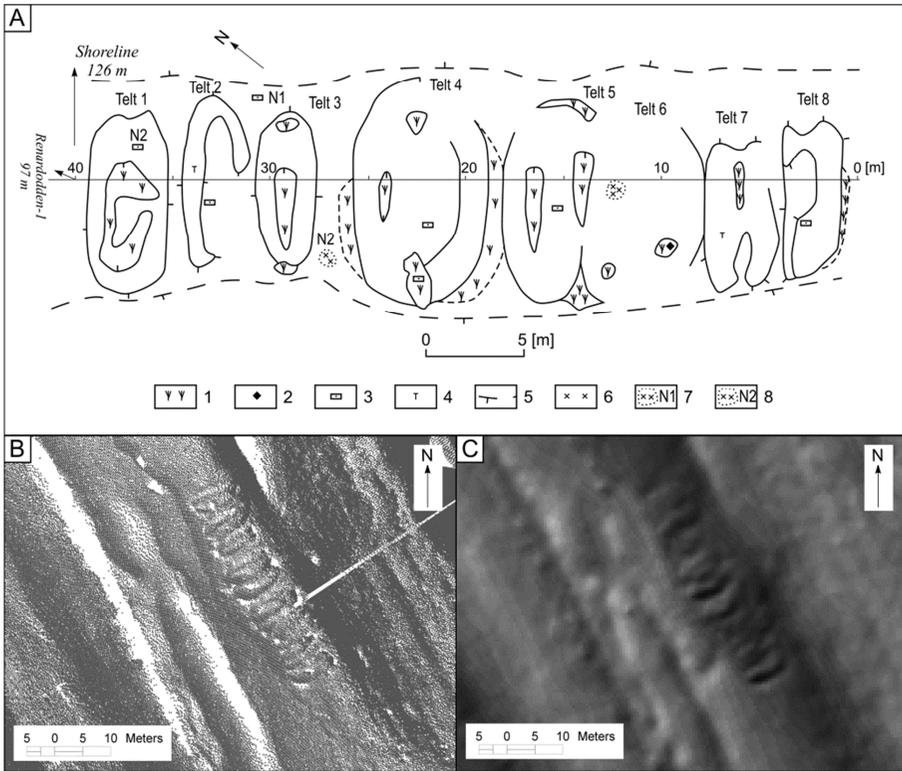


Fig. 8.4. A- plan of Renardodden-2 site (after: Jasinski *et al.* 1993): 1- tundra, 2- bricks, 3- clay pipes, 4- nails, 5- pottery, 6- slope of storm ridge, 7- concentration of the grey pottery, 8- concentration of the red pottery; B,C- laser scanning image of the archaeological site - TPI TOPCON, 2011.

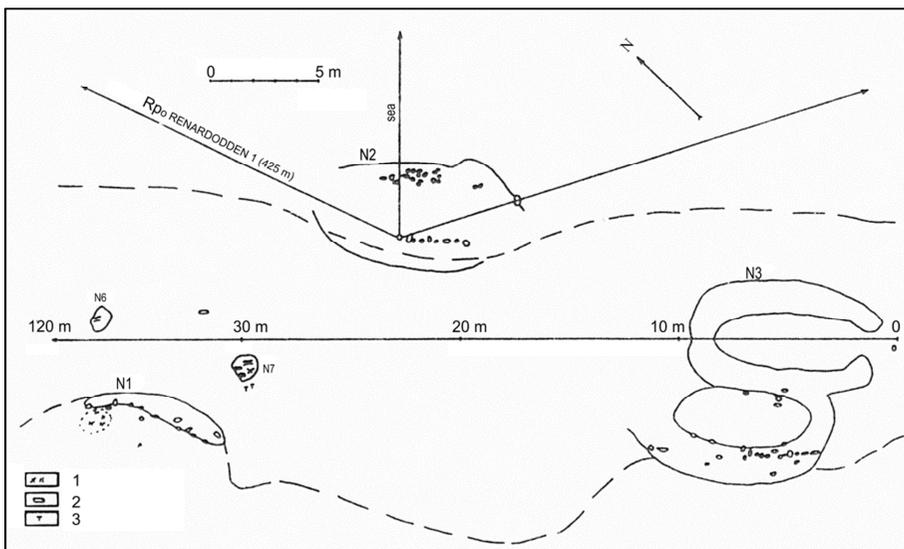


Fig. 8.5. Plan of eastern part of the Renardodden-3 site (after: Jasinski *et al.* 1993): 1- pottery, 2- wooden tobacco pipe, 3- nails.

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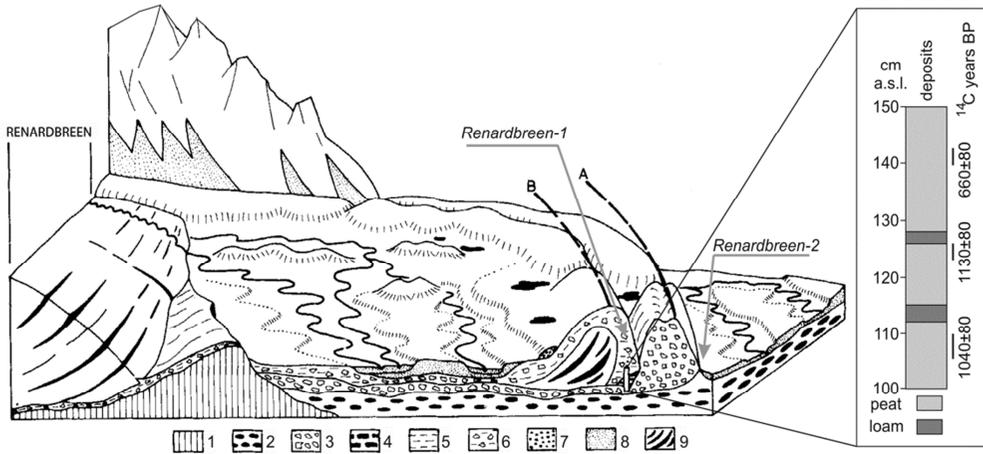


Fig. 8.6. Block diagram of the Renardbreen forefield and profile of organic sediments of the Renardbreen-1 site (Dzierżek *et al.* 1990ab): 1- bedrock 2- terrace deposits 0-6 m a.s.l., 3- older moraine deposits, 4- organo-genic deposits, 5- silts, 6- younger moraine deposits, 7- kames, 8- extra and intramarginal outwash plains, 9- glacial ice and dead ice. Glacier front positions: A- during advance in 3,500-2,000 years BP; B- during Little Ice Age.

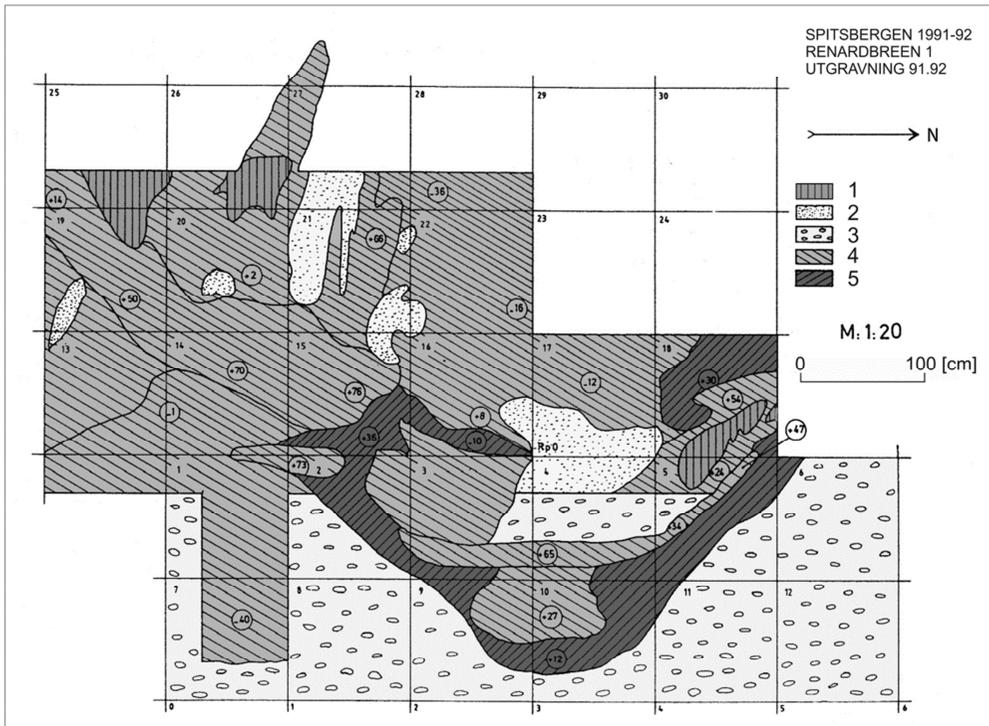


Fig. 8.7. Renardbreen-1 archaeological site, excavations 1991-1992 (after: Jasinski & Starkov 1993): 1- marine sediments, 2- sand, 3- marine gravel, 4- brown/black occupation layer, 5- wall-like construction.



Photo 8.2. Renardbreen 1 site: A- archaeological works (Photo K. Pękala 1991), B- the occupation layer still visible in the northern margin of the trench (Photo K. Pękala 1991).

Investigations carried out in years 1991-1993 allowed to prepare a relatively detailed description of respective archaeological layers. They contained, e.g. fragments of wool fabric, baleen, animal bones, timber (Krawczyk & Reder 1989; Jasinski & Starkov 1992, 1993; Jasinski 1994) (Fig. 8.7, Photo 8.2AB). The last season (1993) was the most notable, not because of the number of artefacts, but due to their historical value. The organic material included fragments of bird bones, a single piece of whale bone, several small pieces of wood, a fragment of hemp rope, some pieces of baleen, and some fragments of animal skin. Inorganic artefacts included several pieces of brick and an iron object found in square 1 at a depth of 37 cm below the level of benchmark 0, an iron nail of the type used in boat-building, and a fragment of clay tobacco pipe found on the last day of excavations, in square 2-40 cm below the level of benchmark 0. This fragment of clay pipe is the only datable object found at the site. The relatively large diameter of the smoke channel (3.3 mm) suggests that the pipe can be

dated to the first half of the 17th century. However, one should be wary of dating an entire archaeological site on the basis of only one tobacco-pipe fragment. Even though the typology of such pipes and their dating based on their diameter are relatively well-established methods, there is a risk that, for some reason, this particular fragment may have a diameter that is abnormally large for its age. Therefore, several fragments are needed to determine a reliable age for the site (Jasinski 1994). The Renardbreen-1 site is also important from the point of view of paleogeographic studies such as shoreline change and deglaciation reconstructions (Jasinski *et al.* 1997; Zagórski *et al.* 2007).

The other mentioned site – Renardbreen-2, is located at the edge of the extra-marginal outwash plain at the foot of a moraine rampart. Here, the archaeologists found: fragmented roof tiles, faience smoking pipes and other artefacts. Similar fragments of roof tiles and whale bone were discovered during excavations at the moraine base (Renardbreen-1). In the past the two sites could form a single complex (Starkov & Jasinski 1998).

Snatcherpynten (W3). The site is located on the terrace 2-3 m a.s.l., approximately 100 m to the south-east of Camp Smith (Giæverhuset) (Fig. 8.3). These are the remains of whaling stations (Krawczyk & Reder 1989; Jørgensen 1997; Avango *et al.* 2008). It has the three objects: the foundation of the fat melting furnace, central reservation in a “T” – probably basis for primitive tent or in an ancillary building (analogous to an object on Höferpynten; Chochorowski 1989), and a small circular embankment – a wooden post that may or not be related to the whaling station. This should be combined with the English (?) whaling in the first half 17th century (Avango *et al.* 2008).



Photo. 8.3. Remains of a blubber furnace made of gravel and rocks (Photo D. Avango 2006; source: Avango *et al.* 2008).

East coast of Recherchefjorden (W4, W5). There are two archaeological sites related to whaling in this region: the Robertelva (Robert River) (W4) and the Lægerneset (W5) sites (Fig. 8.3). The Robertelva site is situated on marine terraces, 5-20 m high, on

a strip of the coast approximately 500 m long. Most of the terraces are in the area of active marine cliffs, by the Robertelva estuary, showing a great deal of erosive and accumulative activity. Archaeological surveys at the Robertelva site were conducted by the following teams: Polish-Norwegian in the years 1991-1993 (Kazimierz Pękala, Marek E. Jasinski, members of UMCS Polar Expeditions) and a Dutch team in the years 1998-1999 (L.Hacquebord, W.Prummel and F.Steenhuisen, project: *'Bio-archaeological Surveys'*) (Jasinski & Pękala 1994; Hacquebord 1999).

The archaeological finds from the Robertelva site area include (Jasinski & Pękala 1994): (1) the remains of three blubber ovens partly destroyed by sea waves. It cannot be excluded that other ovens existed at the site, but were destroyed by the sea, (2)- the foundations of eight buildings belonging to the whaling station, (3) a cemetery situated on a gravel hill, constituting a storm ridge of an elevated marine terrace 18 to 20 metres above sea level. There are at least over 15 graves at the cemetery. A detailed survey documentation of the sites was presented by Krawczyk (1996), who identified 18 objects (Fig. 8.8; Photos 8.3 and 8.4ABC). Traces of buildings and the discovered artefacts indicate that this was a very large and well-prepared western European (English) whaling station from the first half of the 17th century. It is possible that the complex also includes traces of whaling stations established by other countries.

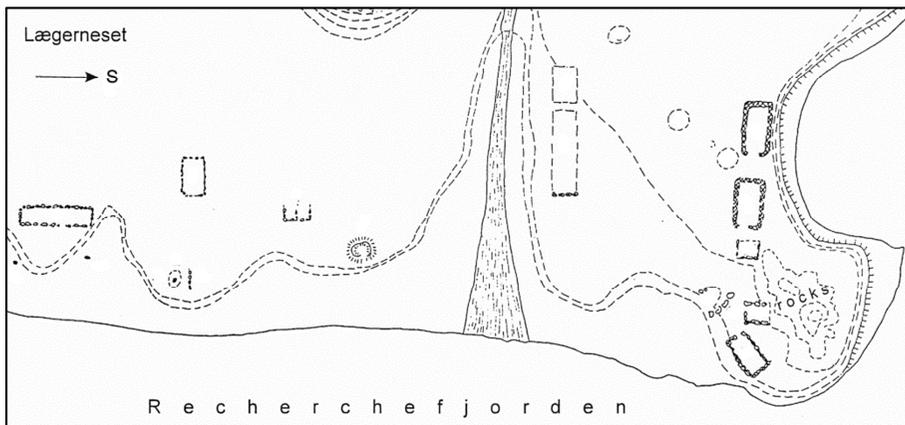


Fig. 8.8. Plan of the Robertelva site (W4) (after: Krawczyk 1996: Lægerneset).

The station was founded by Dutch whalers probably in 1612. It was later taken over by the English, who named it 'Edges Point'. The facility was operational approximately until the year 1640 (Appleby 2008). Some authors hypothesised that the site in question (Robertelva) was probably the location of the first, albeit unplanned, wintering of the English commanded by Edward Pellhman, which took place in the years 1630-1631 (Jasinski & Pękala 1994; Jørgensen 1997; Hacquebord *et al.* 2000). Others suggest, however, that the Englishmen first spent the winter on the western coast of Recherchefjorden, i.e. in the area of Josephbukta (Renardbreen-1) or Snatcherpynten (Krawczyk 1996; Jørgensen 1997; Salvigsen 1998).

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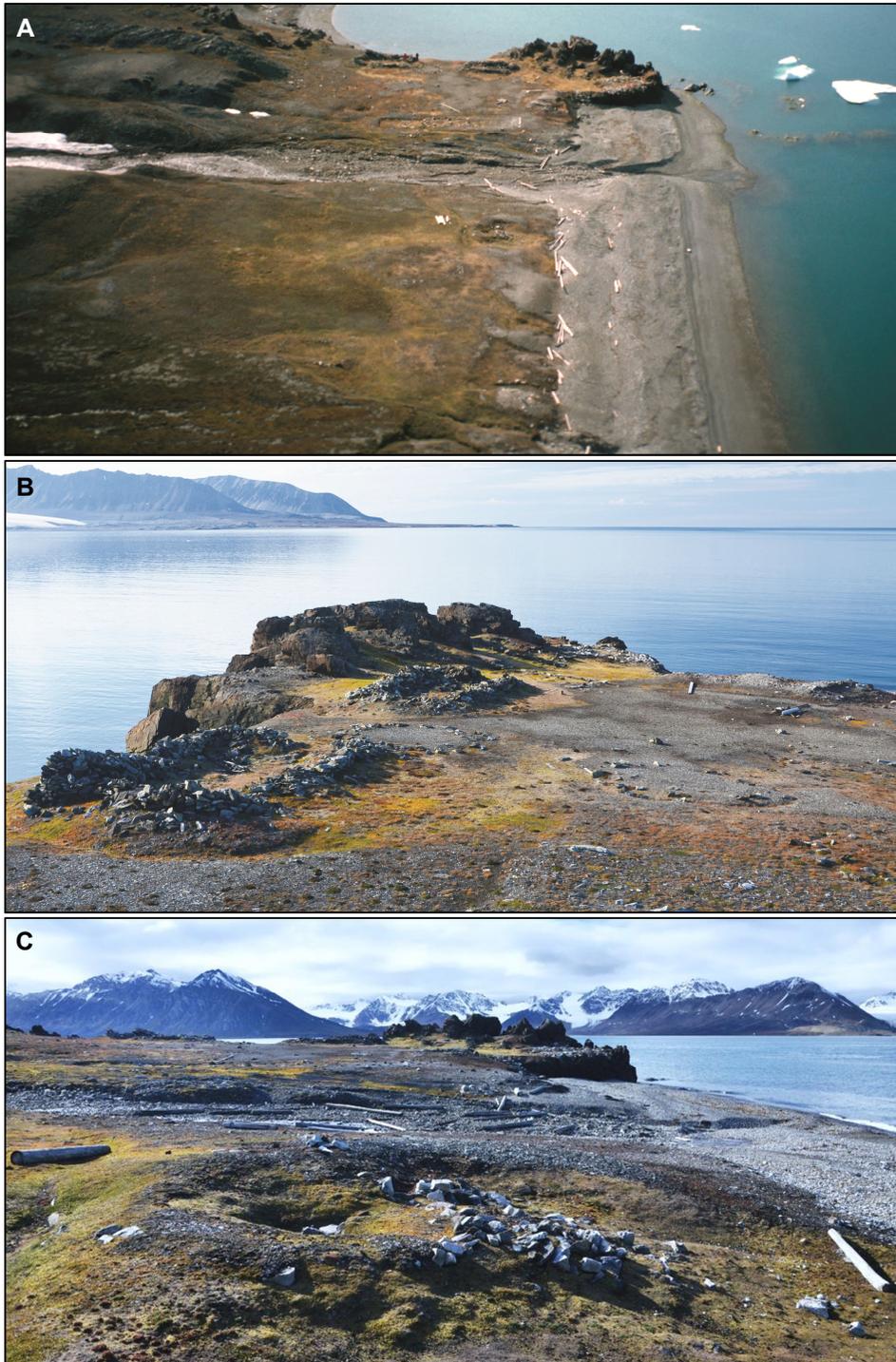


Photo 8.4. The Robertelva archaeological site (W4): A- general view (Photo K. Pękala 1993), B- view of the foundations cottages and tent (Photo P. Zagórski 2011), C- view from east of the Robertelva estuary and of the residual rock – in the forefront a whale oven corroded by solifluction processes (Photo P. Zagórski 2011).

Approximately 1.2 km to the south of the Robertelva archaeological site there is a second whaling station called the Lægerneset site (Recherchefjorden Øst-A site, after: Krawczyk 1996). It is located on a marine terrace, 5-8 m a.s.l., right at the edge of the formation (Figs. 8.3 and 8.9ABC). Remains of four tent dwellings may be traced here, looking like artificial swells surrounded by stones. The surface findings include fragments of pottery and faience smoking pipes. The site was most probably used by the whalers as an observation post.

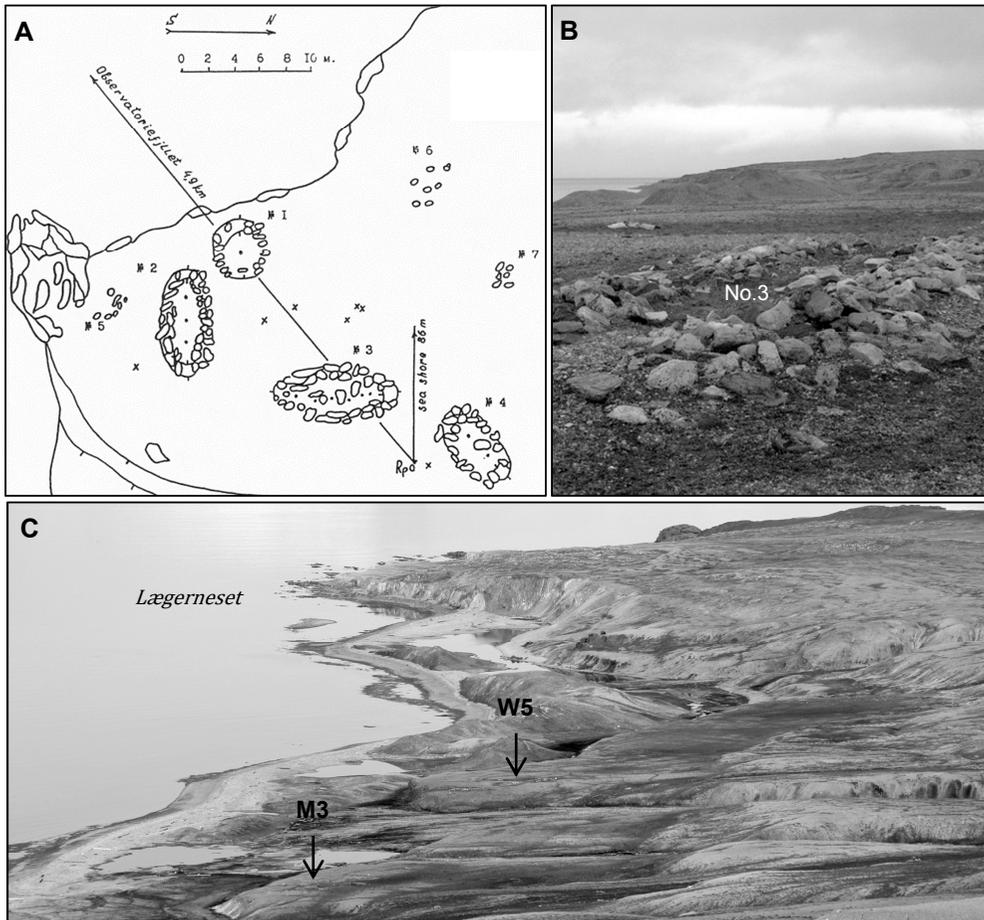


Fig. 8.9. A- plan of Lægerneset site (W5) - structure made out of large stones (Jasinski *et al.* 1993), B- structure No. 3 – possible the remains of a shelter (together with a boat) (Photo D. Avango 2006; source: Avango *et al.* 2008), C- location of Lægerneset (W5) and Jarnfjellet (M3) sites (Photo M. Łodziński 2009).

In conclusion, the whaling industry had a devastating impact on the whales in the area (Jackson 1978; Hacquebord 1984). When the Greenland right whale population began to decline dramatically in the area around Spitsbergen, the main focus of whaling activities switched from Spitsbergen to Jan Mayen, and then to the Davis Straits between Greenland and Canada. It is estimated that, in total, approximately 120,000

Bowhead whales were caught between 1612 and 1800. Currently almost no Greenland right whales are left in the Northern Atlantic Ocean. In the end, whaling in Svalbard led to a complete eradication of the Greenland right whale from the marine ecosystem (Hacquebord 1999, 2001; Węśławski *et al.* 2000; Hacquebord & Avango 2009).

Russian walrus hunting

Hunting in Svalbard in its first stages, i.e. until the appearance of Norwegian hunters, was mostly related to the activities of peoples from the northern parts of Russia living along the coasts of the White Sea (Russian: *Pomorje*).

The development of Russian hunting in Svalbard was related to the general socio-economic situation in Russia between the 16th and 19th century. The main elements of the ongoing changes were: the incorporation of the peripheral regions, such as Pomorje and Siberia, into the centralised empire system, and particularly the tightening of economic relations (Jasinski 1991). One of the results was a very rapid increase in the Pomoryan contribution to exporting Russian goods. The export of the 'products of the North', mainly walrus tusks and furs, had gone on for many centuries, dating back to the period of domination of Novgorod. In the 16th century, however, trade became greatly intensified and was channelled mainly through the newly created port of Archangelsk (Fisher 1943). The northern areas of Russia were rich in walruses, seals and foxes, and the port made these valuable goods readily available. The Pomors hunted these animals both along the shores of the White Sea and the coasts of Siberia. At that time, they frequently organised voyages eastward to the mouth of the River Taz, where a trade station, Mangazeya, was established (Jasinski 1991).

In 1619 the tsar of Russia, Mikhail Fedorovitch, passed a decree banning all voyages from the White Sea to Mangazeya. This decree radically changed the economic standing of the Pomor hunters by effectively separating them from convenient hunting areas in these regions. The situation forced Pomor hunters to seek new hunting regions. The way east was closed to them by the tsar's decree. In the west they faced Norwegian competition. Therefore, the only direction left was northwards, to Spitsbergen (Russian: Grumant), which was at that time 'No Man's Land' (Jasinski 1991).

The date of the appearance of Pomors on Svalbard is the subject of a discussion that has been going on for over 30 years already (e.g. Starkov 1986; Jasinski 1993; Gjertz & Øystein 1994; Starkov *et al.* 2002, 2005; Hultgreen 2006; Szupryczyński 2007). As was already mentioned, several Russian historians published hypotheses about the early presence of Russian hunters in Spitsbergen. The most optimistic estimates claim that hunting activities in the area began in the Middle Ages. Soviet/Russian archaeologist Vadim F. Starkov dates the earliest Russian hunting stations on Spitsbergen to the middle of the 16th century. His arguments are, however, not very convincing – see: Starkov (1986) and analysis of Starkov's arguments in Jasinski (1993). Results of Norwegian-Polish archaeological research from between 1987-1991 suggest that Pomors

possibly began hunting in the archipelago around the middle of 17th century (see: Chochorowski & Jasinski 1993; Jasinski 1993). What remains undisputable is the fact that Russian hunters were very active in Spitsbergen during the 18th century and up to the 1850s (e.g. Albrethsen & Arlov 1988; Jasinski 1993; Hultgreen 2006, and the references therein).

The history of Russian hunting in Svalbard was characterised by a gradual expansion of hunting grounds in the archipelago from the south to the north. The process was almost continuous, without significant interruptions from its initial phase to its decline. In the beginning, the whole enterprise was organised by the well-off Pomoryan peasantry, who owned the necessary ships, and by the local merchants/ship-owners. Later on, it was only the merchants (indirectly controlling the trade monopolies) who financed the expeditions. Between 1803 and 1813 a prominent role was played by the White Sea Company. After its bankruptcy individual merchants once again rose in importance and remained the dominant force until the end of the 1840s – at that point probably only the orthodox monasteries from the area of Pomorye (such as the Solovetskiy Monastery) were still attempting to organise hunting expeditions, albeit without success (Jasinski 1993).

Contrary to West-European whaling on the waters of Spitsbergen, which took place during summer months with whaling ships mostly arriving in the late spring and heading back in autumn, the Russian hunters usually spent the winter on the archipelago. Wintering in the High Arctic was a demanding experience, made difficult by the natural environment as well by factors related to social interactions. In addition to technical aspects, like: proper equipment, means of transport and food, it was particularly important to select the right hunters for your group. Apart from hunting skills, these people had to be able to live together in relatively small huts under extreme conditions.

Russian hunting in Spitsbergen went through two major transformations during its history. The first one, which took place around 1720, was characterised by a switch from the period of reconnaissance expeditions to the stable undertakings performed by small groups of hunters, who achieved results that were satisfactory for local Pomoryan organisers.

The second transformation happened throughout the end of the 18th century and the beginning of the 19th century (1760/80-1820) and was characterised by quantitative and qualitative structural changes. Hunting parties became much bigger and more complex; the same thing happened to their stations. The change was initiated by the state government which, by establishing several monopolies, wanted to expand this industry in order to increase the income of the Treasury from taxes, and also wanted to have grounds for ultimately claiming sovereignty over the archipelago (Jasinski 1993).

The new trends led to hunting groups growing in size. They were now living in settlements resembling communities from Pomorye rather than simple hunting camps, which also resulted in an increase of expenses. These, unfortunately, were not balanced

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by profits because the efficiency, the level of professionalism and the adaptive abilities of the new hunters were quite different than those of their predecessors. The Pomoryan way of life transplanted into the High-Arctic did not bring the expected results, rather the opposite.

The Pomoryan hunting in Grumant declined in the 1850s. The reasons for this were complex: the unfortunate reorganisation, the Norwegians pressing in on the hunting grounds, and the wavering interest of Pomoryan organizers who could profit more from the so-called 'Pomor trade' with their northern neighbour – Norway (after: Jasinski 1993). They were, for the most part, walrus hunters, but they also hunted seals (Photo 8.5AB), reindeers, foxes and polar bears. They spent the winters in cottages (Norwegian: *fangsthytta* or *hytta*), in small groups of 2 to 8 or 10 people. Cottages were constructed from driftwood found in large quantities on the coasts of Spitsbergen, as well as from timber which they brought on boats from the area of Archangelsk and the White Sea (Chochorowski & Jasinski 1993).

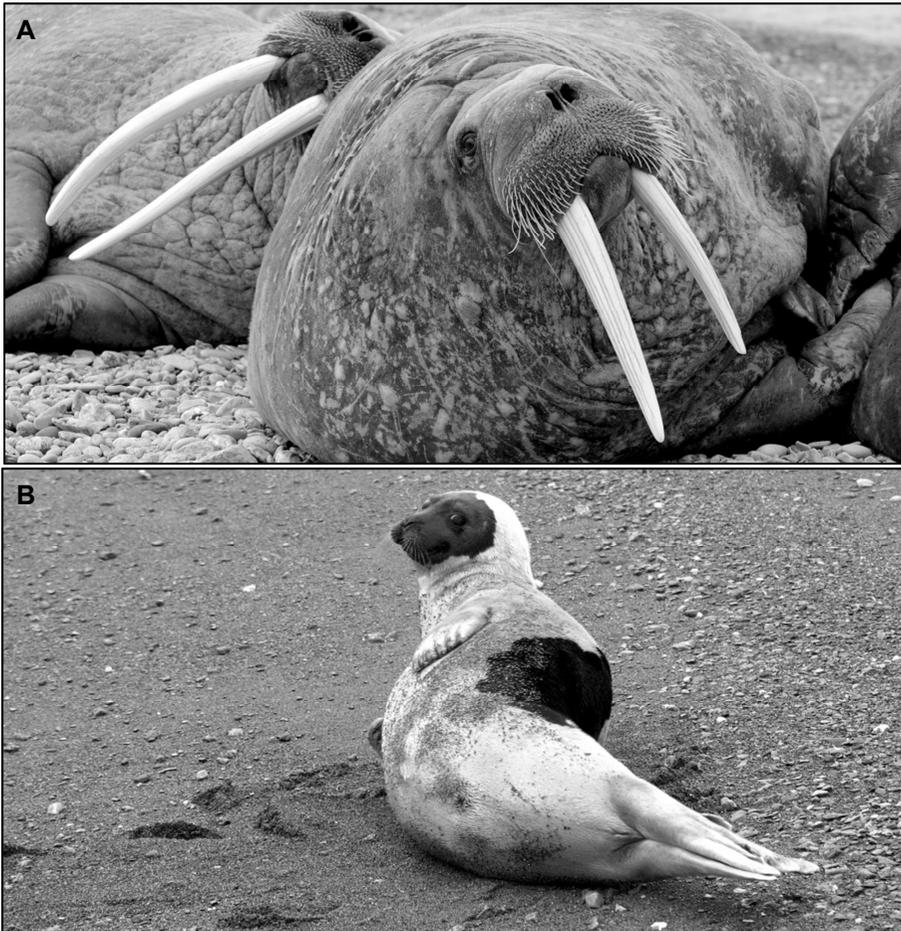


Photo 8.5. A- the walrus (*Odobenus rosmarus*) (Photo Ł. Franczak 2012), B- the bearded seal (*Erignathus barbatus*) (Photo P. Zagórski 2006).

The Pomors were also interested in Bellsund, which for a long time became one of the chief regions for hunting sea mammals, particularly walruses and belugas, also called white whales. Two of their stations existed here at the time: Lognedalen (R1) and Renardodden 1 (R2) (site names according to Starkov & Jasinski 1998).

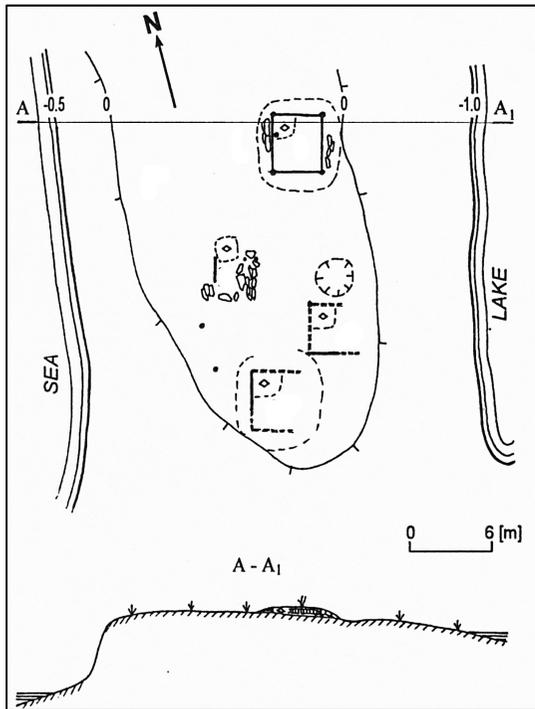


Fig. 8.10. Layout of Lognedalen archaeological site (R1) (after: Starkov & Jasinski 1998).

Lognedalen Site (R1). The site is located in the southern corner of Bellsund, near the Logna on the edge of the first terrace, 10 m high (Starkov & Jasinski 1998) (Fig. 8.3). It includes four dwellings and a cross (Fig. 8.10, Photo 8.6). It is only clear that it was constructed out of cants and thick boards. In the north-western corner of the dwelling the archaeologists found a collapsed brick stove. The structures offered numerous finds such as fragmented pottery, chess figures, a glass bead, a fat lamp, components of fire arms, fragmented Dutch smoking pipes with an I-shaped mark or an ornament of bird feathers wrapped with a ribbon. Based on the typology of these artefacts the site was dated to the second half of the 18th century (Starkov & Jasinski 1998; Starkov *et al.* 2005).



Photo 8.6. Lognedalen archaeological site (R1) (Photo P. Zagórski 1998).

Renardodden-1 site (R2). It is located on the edge of a poorly discernible terrace, 1.9 m high, sloping down to the sea approximately 1.5 km from the abandoned mining settlement of Calypsobyen (Figs. 8.3, 8.11 and 8.12; Photos 8.1A and 8.7). The first information about this site was published in 1989 (Krawczyk & Reder 1989).



Photo 8.7. The excavation at Renardodden-1 site in 1995 (Photo Z. Jóźwik).

One of its interesting features is the positioning of the site in relation to sea level. Remains of two dwellings bear clear traces of sea wave impact and are therefore in a relatively poor state of preservation. Excavations and geomorphological studies at Renardodden-1 showed that the site was partly washed out by the sea and then covered with a layer of shore deposits (Jasinski & Zagórski 1996; Zagórski 2007ab). The excavation site at dwelling No. 1 offers the following stratigraphic picture. The upper layer is formed of pebble-and-sand deposits, up to 5 cm thick (accumulation level), the middle layer consists of washed out mixed fill of the dwelling, up to 8 cm thick (destruction level), and the lower layer – *in situ* soil which comes from accumulation (Starkov *et al.* 2005) (Figs. 8.11 and 8.12; Photo 8.7). It is also very interesting to analyse the geomorphological characteristics of the site's location. Originally, the dwelling was constructed beyond the reach of storm waves (Fig. 8.12). However, due to intensification of abrasive processes (19th/20th century), the old storm ridge was destroyed and the waves scattered pieces of brick and organic remains all over the tidal zone (Jasinski & Zagórski 1996; Zagórski 2007ab). This remained the case until the beginning of the 1960s i.e. when quick recession of the Scottbreen began.

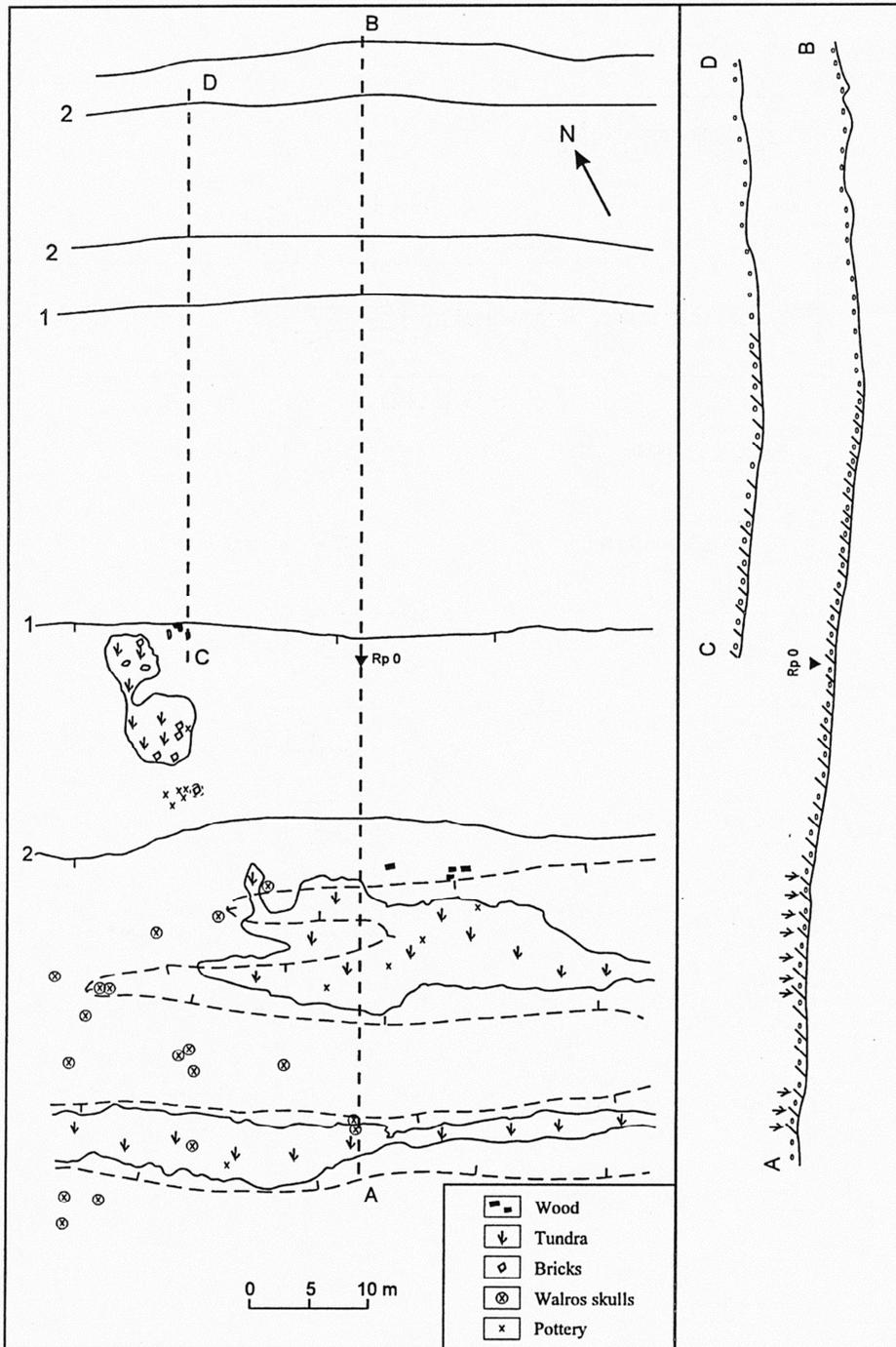


Fig. 8.11. Layout of Renardodden-1 site (after: Starkov 1998).

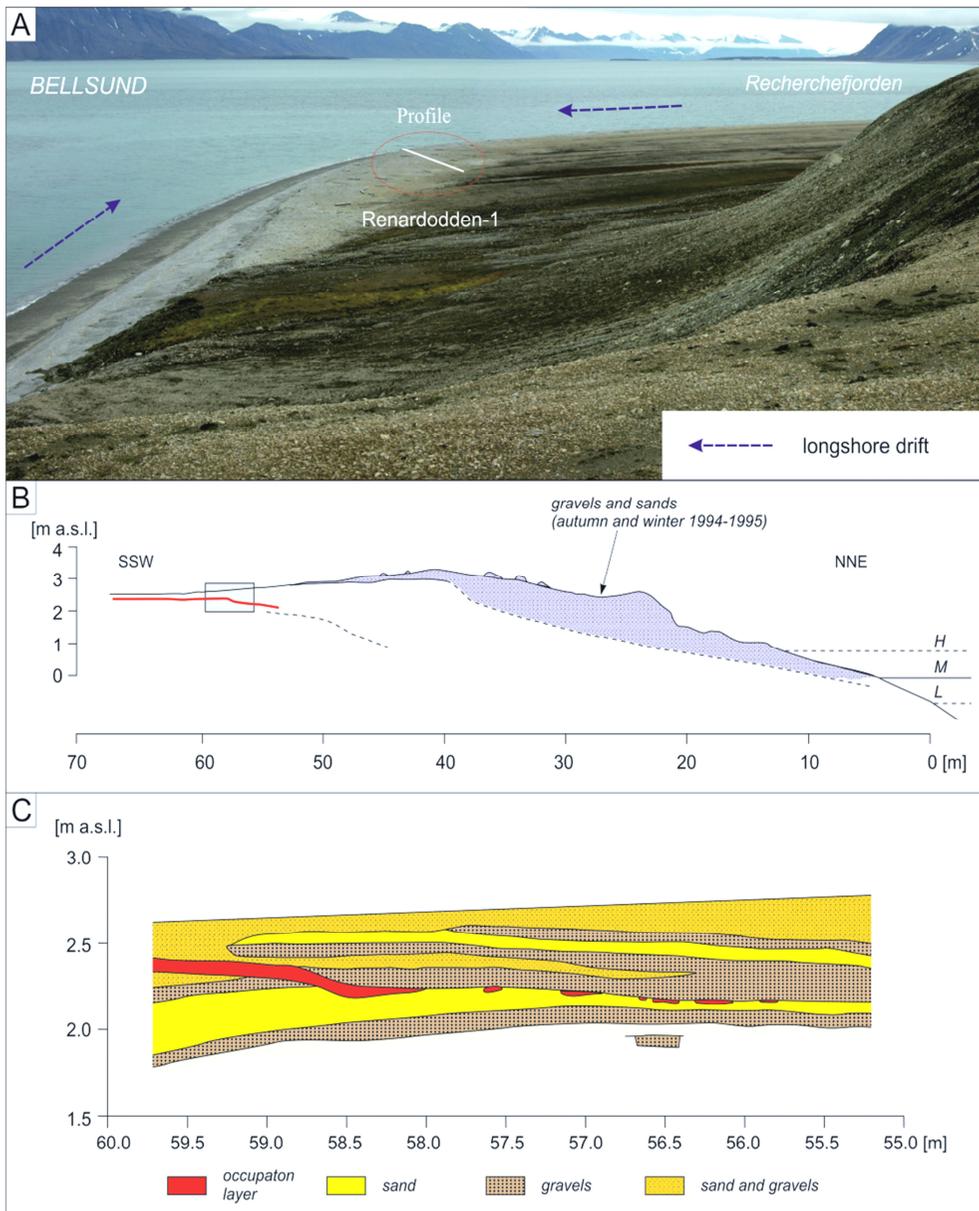


Fig. 8.12. Renardodden-1 site: A- general view (Photo P. Zagórski 2005), B- geological profile across the storm ridge, C- geological profile across the fragment of storm ridge with dragged occupation layer (after: Jasinski & Zagórski 1996; Zagórski 2007b).

Collection of artefacts discovered at the site includes a neck of an archaic glass bottle, gun flints, fragmented pottery and numerous animal bones. According to Starkov (1998) and Starkov *et al.* (2005) this site should be dated to 17th century.

Geographical expedition to Bellsund

The end of the 18th century and the beginning of the 19th century, despite the appearance of the Pomors, was actually characterised by a decreased intensity of human activities in Svalbard. There is a stark contrast between the whaling period, when numerous and often large groups of whalers were exploiting the marine resources of the Arctic, and the years that followed (Arlov 1994). The Enlightenment period, characterised by an economic progress on an unprecedented scale, made people want to seek knowledge and experience the world. Some once again focused on the idea of finding a way through the polar region to the Pacific (Northeast Passage). Two notable expeditions left their mark on the region of Bellsund: the Russian Chichagov Expedition in 1764-1766 (E1) and the La Recherche Expedition in 1838-1840 (E2) (Fig. 8.3). The first expedition left traces in the form of archaeological sites (Chichagov Expedition camp), and the second one is remembered for collecting scientific data and naming specific features of the area.

Chichagov Expedition (1764-1766) (E1). It was led by admiral Vasili Yakovlevich Chichagov (1726-1809) and organised on the initiative of the scientist Mikhail Lomonosov, who wanted to find the Northeast Passage between the Atlantic and Pacific oceans. This goal, however, was not fulfilled. In 1765 the expedition reached the point with the coordinates: 80°26'N, and in 1766 – 80°30'N. Spitsbergen (Bellsund) was selected to be the location of one of the bases. A camp was built in the area of Tomtodden on the western coast of Recherchefjorden in 1764 (Krawczyk & Reder 1989; Starkov 1997; Starkov & Jasinski 1998; Starkov *et al.* 2002) (Fig. 8.3, Photo 8.8). The base allowed sailors led by lieutenant M.T.Ryndin to spend the winter on Spitsbergen. The camp located on a 5-10 m terrace consisted of five huts, a storehouse, and a bath house. Some of the structures were investigated by the Soviet archaeological expedition in 1979, which led to the conclusion that a large dwelling existed in the center of the camp. It adjoined the bath-house from the west and smaller dwellings further on. A collection of findings from the area included numerous hunting tools, household articles and various implements (Starkov 1997). The survey also detected at least five foundations for monumental crosses typical of the Russian orthodox church. These were described by the members of the 'La Recherche Expedition' in 1838 (Bertrand 1852) (Fig. 8.13).

La Recherche Expedition (1838-1840) (E2). This was a French expedition, whose goal was to explore the northern reaches of Europe (Arlov 1994; Drivenes 2012). Led by Joseph Paul Gaimard, a French doctor and naturalist (1796-1858), it was named after the name of the corvette *'La Recherche'*, which carried the members of the expedition over the waters of the Arctic. A total of three expeditions were launched, and during the ones the area of Spitsbergen was also the subject of studies in 1738 – Bellsund and 1739 – Magdalenafjorden (Fig. 8.14AB). This was a strictly scientific undertaking. The participants carried out field works and observations related to natural

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sciences and anthropology. These were overseen by a team of French scientists, who were joined by Scandinavians, among others the Swedish-Sami botanist Lars Levi Læstadius (1800-1861). This gave the expedition an international character. Its members also included artists, who prepared unique sketches, drawings and paintings. The results of the expedition were published in 16 narrative volumes and 5 plate volumes (Drivenes 2012).



Photo 8.8. Remains of the Chichagov Expedition settlement (Photo P. Demczuk 2009).



Fig. 8.13. Tomtodden - Chichagov sites – lithography made by Auguste Mayer during 'La Recherche' Expedition in 1838 (Bertrand 1852). Source: Bibliotheque Sainte Genevieve.

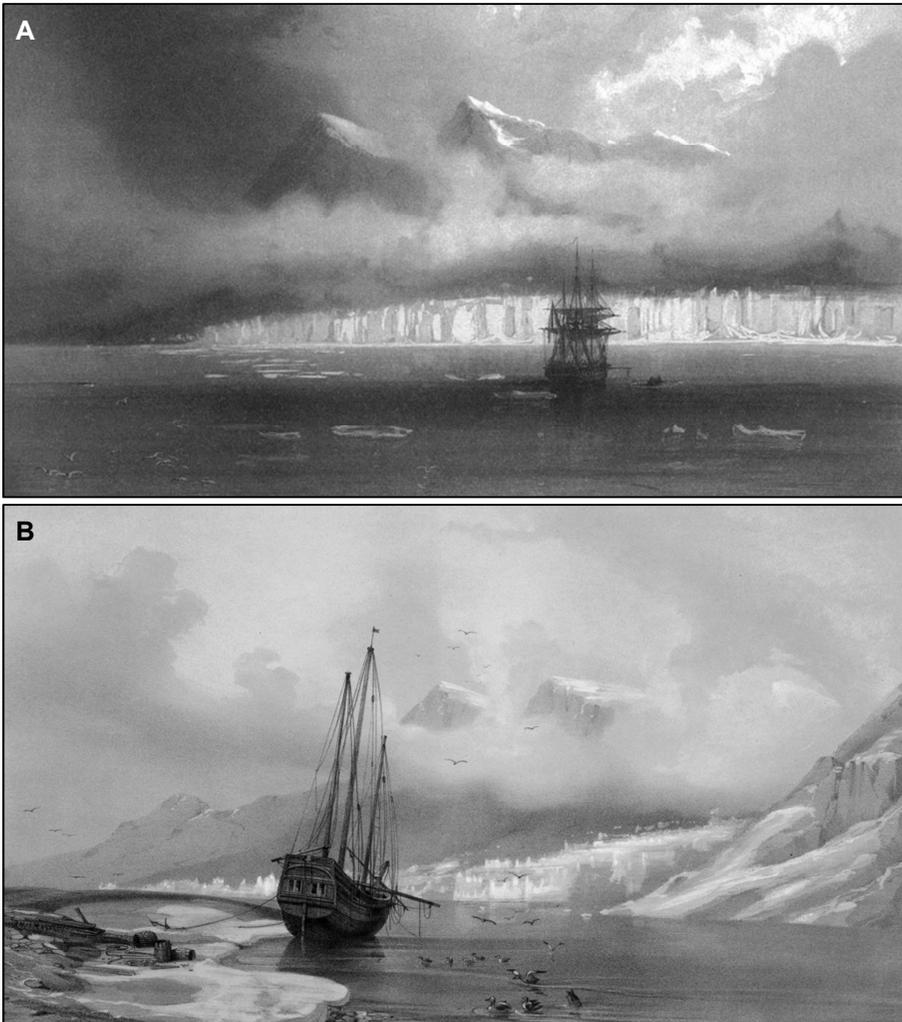


Fig. 8.14. A,B- corvette *'La Recherche'* in Recherchefjorden in 1838 – lithography made by Auguste Mayer (Bertrand 1852). Source: Bibliotheque Sainte Genevieve.

During the first expedition, on 25th July, 1838 *'La Recherche'* dropped anchor in 'Schoonhoven', currently known as Recherchefjorden (Conway 1906). Sir Martin Conway (1906, s. 300) wrote: *'The officers of the ship set up an observatory on Observatory Hill (364 m), the ascent of which is not so difficult as their account implies. They made a number of observations on the meteorology, the geology, and botany of the neighborhood and so forth: they likewise made an excellent survey of the bay. On the 5th of August the Recherche sailed for Norway.'*

During the expedition many places were renamed, and the new names are still used today, e.g. Recherchefjorden.

The scientific approach to the exploration of Svalbard region, the origins of which are related to the expeditions of Chichagov and La Recherche, led to a new era in

the study of Svalbard, which commenced in the second half of the 19th century. Expeditions began to focus solely on scientific goals, e.g. charting the archipelago, or climatic, geological and botanic studies. Case in point – the expeditions of Otto M. Torell (1828–1900), Adolf E. Nordenskiöld (1832–1901), Gerard J. De Geer (1858–1943), or Sir William M. Conway (1856–1937). The collected knowledge about the area, particularly with regard to geology, prompted others to commence economic exploitation of Svalbard which mostly took place at the turn of the 19th and 20th century.

Norwegian hunting and trapping

In the 18th and 19th century the area of Svalbard still played an important role as a hunting ground. At the end of the 18th century Norwegian hunters appeared in the region. Their main goal was to hunt arctic foxes and polar bears, whose hides were then sold back in Norway (Arlov 1994) (Photo 8.9ABC). Apart from that, they gathered the down of the common eider and would also sometimes hunt white whales. Other animal species, such as rock ptarmigans, reindeers or seals were utilised to satisfy ongoing needs (Photos 8.5B, 8.9DE and 8.10). The most profitable business turned out to be acquiring animal furs during the winter – these fetched the highest prices. First Norwegian wintering on Svalbard took place in the season of 1795/96, most probably in the area of Isfjorden. Traditional trapper-style hunts began. The first of these was organised by 16 winterers in the season of 1822/23 in the area of Krossfjorden (Rossnes 1993). This business really flourished after 1892. Professional hunting operations continued all the way until 1973, and were interrupted only once – during World War II (WWII). In the 1920s more than 900 bears lost their lives each year in Svalbard, and even after WWII the number of bears killed annually was as high as 400–500. During the last 25–30 years before the treaty entered into force, harvesting decreased somewhat, but still the hunters killed several hundred polar bears a year. Around the year 1970 there were probably no more than 1,000 polar bears left in Svalbard, and the species was in danger of becoming extinct (Jaklin & Holmén 2005) (Fig. 8.15).

In the region of southern Bellsund the hunters focused their attention mostly on polar foxes and, to a lesser extent, bears. Foxes were caught using wooden traps weighted down with stones, so as not to damage the fur (Photo 8.11A). The bears, on the other hand, were hunted using specially constructed self-shooting box, poisoned bait (this method was eventually abandoned) or, when it was possible – simply with a rifle (Rossnes 1993) (Photo 8.11B). The hunters would also sometimes capture young bears in order to sell them to zoos, which paid good money for such specimens. The Norwegian trapping system consisted of relatively large primary stations (e.g. Calypsobyen, see: Chapter I) and numerous smaller cottages utilised regularly during winter hunts, which made it possible to expand the hunting grounds (e.g. Camp Scoresby /Dunderbuktahytta; Rossnes 1993).

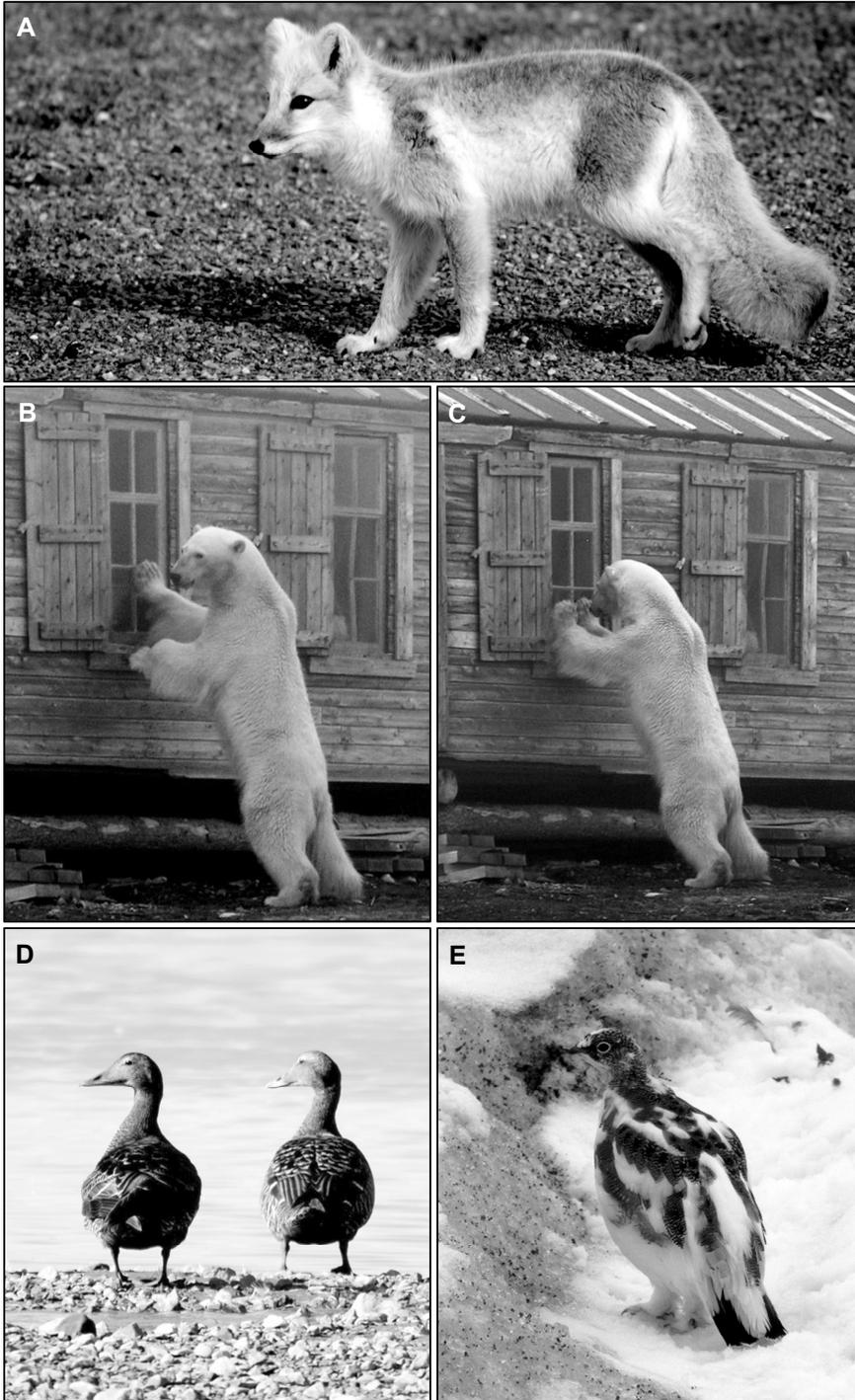


Photo 8.9. A- the arctic fox (*Vulpes lagopus*) (Photo P. Zagórski 2011); B, C- the polar bear (*Ursus maritimus*) – storage building (B) in Calypsobyen (Photos P. Demczuk 2009); D- the common eider (*Somateria mollissima*) (Photo P. Zagórski 2011); E- the rock ptarmigan (*Lagopus muta hyperborea*) (Photo P. Zagórski 2007).

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Photo 8.10. The Svalbard reindeer (*Rangifer tarandus*) (Photo P. Zagórski 2006).

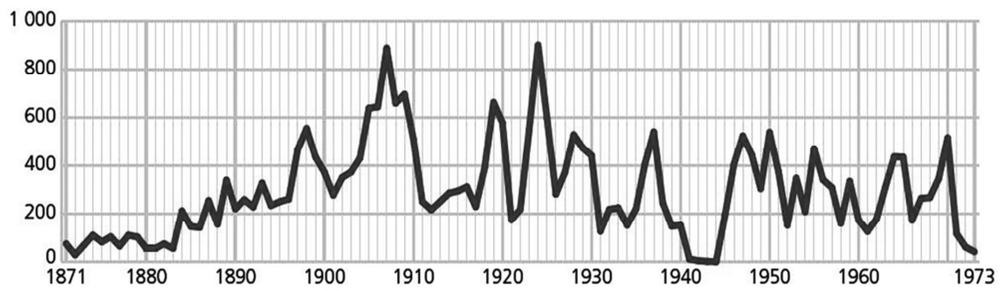


Fig. 8.15. Intensity of polar bears hunting in the Svalbard area (after: Statistics Norway 2012).

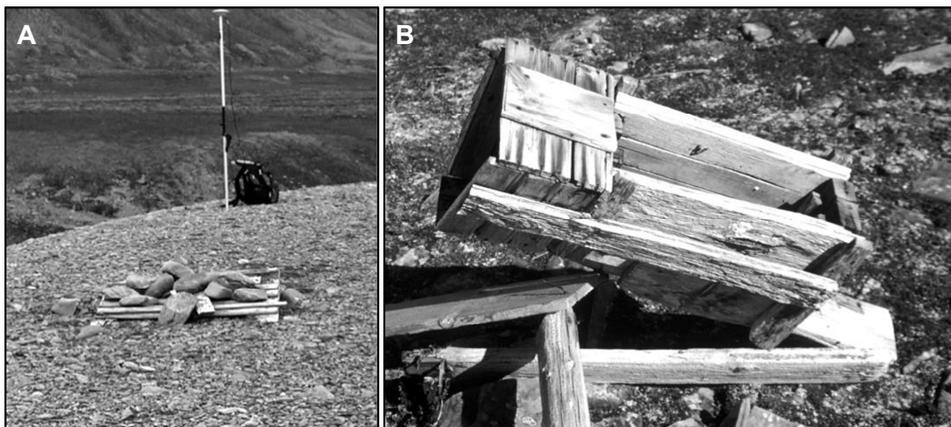


Photo 8.11. A- the wooden traps for fox (Photo P. Zagórski 2005), B- the self-shooting box for polar bears from former hunting times. (Photo P. Zagórski 1999).

In the area of southern Bellsund the trappers, among other things, made use of the following: buildings located in: Calypsobyen (N1) (for a detailed description see: Chapter I), Camp Scoresby/Dunderbuktahytta (Dunderbukta Cottage, N2) and Klokkefjellshytta (Klokkefjellet cottage, N3) (Fig. 8.1).

Camp Scoresby/Dunderbuktahytta (N2). It is located on a terrace, 5-10 m a.s.l., on the north-eastern part of the bay (Krawczyk & Reder 1989; Bohlmann & Fink 2010). It is a log-construction wooden building with a pitched roof and a post-and-beam antechamber (Figs. 8.3 and 8.16A; Photo 8.12A), consisting of one room (2.4 x 2.2 m) with a small south-facing window and an antechamber (1.3 x 0.9 m) with the door also facing south. It was built in 1909 by Artur Oxaas and Aldor Andreassen as a secondary station (bistasjonen), and was used as such in the following years. The last trappers to occupy the cottage were Svein Olsen and Jan Bakkerud in the years 1969/70 and 1979/71 (Oxaas 1955; Krawczyk & Reder 1989; Rossnes 1993). In the summer of 1988 members of the UMCS Expedition carried out an overhaul of the cottage.

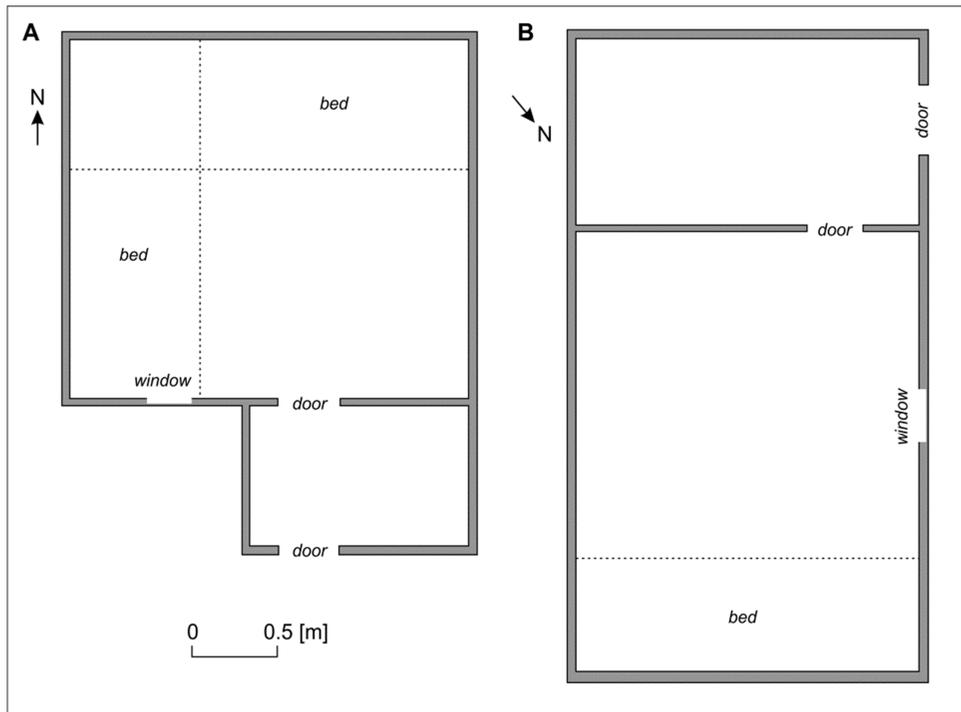


Fig. 8.16. Cottage plans: A- Camp Scoresby/Dunderbuktahytta, B- Klokkefjellethyttta (after: Krawczyk & Reder 1989).

Klokkefjellshytta (N3). It is located on a terrace, 10 m a.s.l. The cottage is a wooden building with a vertical-post log construction (3.8 m x 2.1 m), covered with a pitched roof. It consists of one room (2.5 x 2.1 m) and an antechamber (Krawczyk & Reder 1989; Bohlmann & Fink 2010). The door and the window face north west. The

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building is equipped with 2 bunk beds, a table and a stove (Fig. 8.16B, Photo 8.12B). The cottage was probably erected in 1911 by the NEC as a secondary station for the trappers: Gustav Linquist and Edvard Abrahamsen, and served its purpose from then on. In 1932 it became the property of the state of Norway. The trappers S. Olsen and J. Bakherud were the last ones to use the cottage – in the years 1969-1971 (Krawczyk & Reder 1989; Rossnes 1993).



Photo 8.12. A- Camp Scoresby/Dunderbukta cottage, B- Klokkefjellshytta (Photos P. Zagórski 2012).

Mining and exploitation of minerals

By the end of the 19th century Svalbard was still perceived as *'No Man's land'* and there was no local population. Then, this empty polar area saw a sudden burst of the activity connected with the exploitation of its mineral resources. The first decades of the 20th century were a very busy period of prospecting and claiming land. Companies were founded and mines opened. Often such operations lasted just for a few years and then the sites, along with all the buildings and much of the technical equipment, were abandoned (Roll 1993).

The 'industrial boom' on Svalbard began at the turn of the 19th and 20th century. Operations focused on extracting hard coal, but there were also attempts to excavate other minerals. The first Norwegian company dealing in coal exploitation was established in 1900 on the initiative of captain Soren Zachariassen (Roll 1993). At the same time several other enterprises were founded. All of these were, however, too small and ultimately lacked the funds to begin extraction works. Nevertheless, they still sent out mining expeditions to Svalbard. One of these expeditions that took place in 1901 was financed by a businessman and politician Christian Michelsen (1857-1925) – who later served as the prime minister of Norway in the years 1905-1907. Expedition members explored, among other areas, the region of Bellsund, Recherchefjorden and Van Mijenfjorden. It was during this expedition that the building complexes known as Camp Morton (NW coast Van Mijenfjorden) and *Camp Jacobsen* (Calypsobyen) (Roll 1993) were built. Soon the small-sized Norwegian enterprises were forced to seek financing for their mining operations from foreign countries. The first years of the 20th century marked the beginning of a period of international attempts at exploiting the natural resources and buying out land (plots) on Svalbard. There were basically no procedures in place for purchasing land, so it often happened that several entities claimed ownership over a given area. The matter was finally resolved by the Spitsbergen Treaty of 1920, which recognised Norwegian sovereignty over Svalbard, subject to a few limitations.

One of the most important companies that exploited the natural resources in the NW part of Wedel Jarlsberg Land was NEC, founded in 1910. Until the year 1913, Ernest Mansfield was a shareholder in the expeditions to Svalbard, as well as their leader (Arlov 1994). It was on his initiative that many large land plots were purchased, particularly in the area of Kongsfjorden and on the coast of Bellsund.

In his short career in the company that he established, the explorer investigated lands from Hornsund in the south to Krossfjorden in the north. He focused on all regions where commercially valuable minerals might be found. For a few years Bellsund became the primary destination of NEC operations. Camp Morton was set up here to exploit coal, Camp Asbestos – to exploit asbestos, Camp Iron Mountain– to exploit iron, and so on. In the north the company established Ny-London in Kongsfjorden with the intention of extracting marble. All along the west coast of Spitsbergen you can

still find cottages in various states of disrepair that were built by, on behalf of, or with funding from Mansfield and the NEC.

Out of all the mining operations, the construction of marble quarries on Blomstrandhalvoya was considered particularly promising. The company's incredible optimism was shared by marble experts. It was dubbed 'Marble Island' and was going to be the new Carrara¹⁴, supplying a large variety of exquisite marbles all over the world (Roll 1993). However, the marble exported to Europe turned out to be of poor quality. This did not stop the company from resuming its activities after World War I. The first expeditions after the war were so busy repairing houses and machinery that they did not have time for quarrying. After the signing of the Treaty of Spitsbergen in 1920 the activity of the company gradually stopped and in 1932 all of its property was sold to the Norwegian government. The great expectations, the energetic period of expansion and construction and the poor results – this was a typical fate for many of the companies working in Svalbard before 1920. NEC's activity was, however, more extensive and wide spread than the operations of most other companies.

In the area of Bellsund NEC erected several settlements related to its prospecting and mining projects. In the season 1908/09, before the company had been established, E. Mansfield spent the winter in Camp Bell (northern Bellsund, several kilometres west of Akseløya) searching for gold for the most part. At the end of World War I there was an increase in the demand for coal. As a result, NEC reopened its mine at Camp Morton and established another one in Calypsobyen (for a detailed description see: Chapter I) (Photo 8.13).

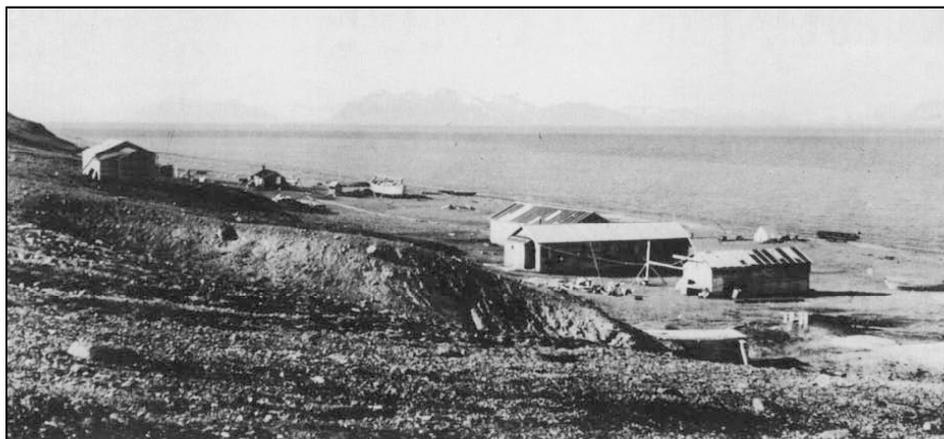


Photo 8.13. Calypsobyen – photo by A.K. Orvin, 14.07.1936. Source: Norsk Polarinstitut, Rossnes (1993).

Exploitation of other minerals, e.g. iron ore, was also attempted in the region of Recherchefjorden. For this purpose, a complex of barracks-like buildings, so-called Camp Iron Mountain, was erected along the eastern coast of Rechechefjorden (Roll

¹⁴ Carrara is a city and comune in the Province of Massa and Carrara (Tuscany, Italy), notable for the white or blue-grey marble quarried there.

1993; Krawczyk 1996). Currently, the structures are either in a very poor condition that requires renovation or had been destroyed completely.

Main facilities of the Camp Iron Mountain are located in a region that Krawczyk (1996) calls 'Jarnbekken'. The camp is located on the eastern shore of Recherchefjorden, 50 m north of the Jarnbekken bed, on the right (eastern) lateral moraine of the Recherchebreen, at the level of 5 m a.s.l. (objects c and d) and 8 m a.s.l. (objects a and B), about 20 m from the sea. The remains of a mining station consist of two ruined barracks (A, C), traces of a third one (B) and an outline of foundations of a fourth (D) (Figs. 8.3 and 8.17; Photo 8.14). It is known that Birger Jacobsen and Captain Frank Wild, along with 17-19 men, worked for NEC in that region in 1919. Three standing buildings (A, B, C) as well as the foundations, the collapsed roof and overturned walls of the fourth one (D) are visible in A. K. Orvin's photo taken in 1936 (Arlov & Reymert 2001). Description of objects by Krawczyk (1996, see: Fig. 8.17): (A) – wooden barrack placed on concrete logs. The logs from under the western wall changed their position by up to 90 cm because of the movements of the ground, which caused the whole building to tilt. The building would collapse if not for the beams supporting the walls from the outside. The inside was once divided into smaller rooms but is now completely ruined. The barrack has a ridge roof, and two entrances: from the north and south; (B) – traces of a building: ground beams and roof fragments laying loosely, including two triangle garret elements, which indicate that it was a ridge roof; (C) – ruins of a wooden barrack: a protected basis and a collapsed roof which lies wholly on said basis; (D) – a rectangular stony embankment adjoining object C from the south. It is the basis for the foundations of a building once situated here.

About 800 m to the north of Camp Iron Mountain, on a terrace 4-5 m a.s.l., there is a second object related to NEC operations – 'Jarnfjellet' (after: Krawczyk 1996) – most probably called Camp-2, later closed down (Orvin 1939; Rossnes 1993). It consists of the following (Figs. 8.3, 8.9C and 8.18; Photo 8.15): (a) – traces of a building with a floor, a fragment of a laid wall built of boards. Judging by the size and thinness of walls it was not a dwelling-house but an auxiliary building, maybe a shed for machines; (b) – a gravel embankment which probably surrounded a tent. However, it might as well be a trace of a completely demolished habitable building. The size of the embankment corresponds to the size of the Bamsebu building in Ingebrigtsenbukta and it is known that Ingvald Svendsen relocated this building there from the so-called Camp-2 on the eastern shore of Recherchefjorden in 1930; (c) – excavations, may be traces of prospecting. There are a lot of metal items (pipes, cog-wheels, sticks) all around, some of them below the terrace on the beach.

NEC also conducted extensive operations in the region of the whaling station called Robertelva site/Lægerneset (Starkov & Jasinski 1998). This is confirmed mainly by archive photos taken at the beginning of the 1920s, which show at least two buildings (Arlov & Reymert 2001; page: 160, 164). However, at this point no clear traces of those buildings remain in the area.

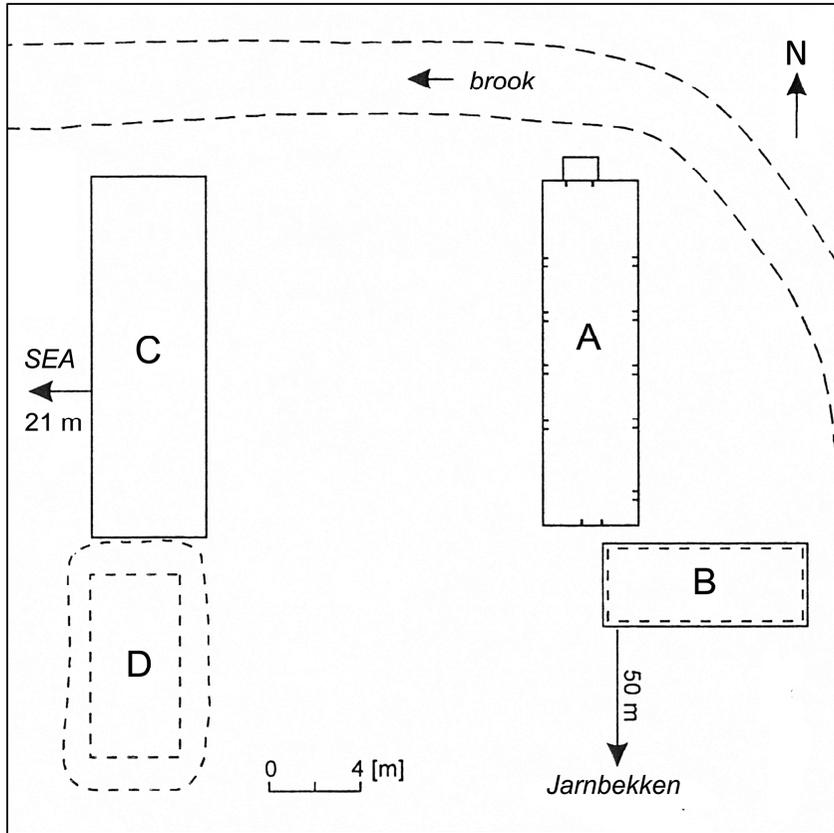


Fig. 8.17. Plan of 'Camp Iron Mountain' (after: Krawczyk 1996, modified).

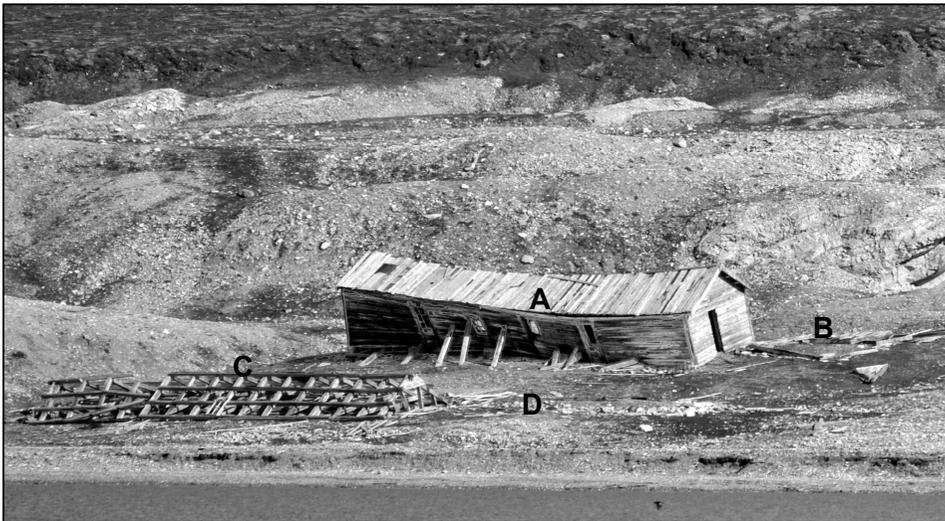


Photo 8.14. Remains of 'Camp Iron Mountain' (Photo P. Zagórski 2011).

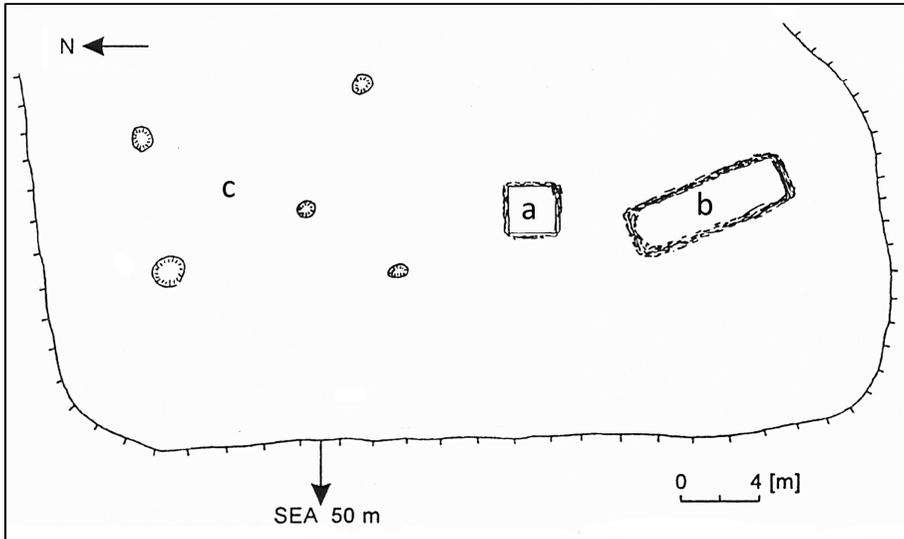


Fig. 8.18. Plan of Jarnfjellet site (after: Krawczyk 1996).



Photo. 8.15. Jarnfjellet site – object (a) (Photo D. Avango 2006; source: Avango *et al.* 2008).

Another interesting detail about the area is the fact that mining of ‘exotic’ minerals, i.e. asbestos, was attempted in the area of southern Recherchejorden (called Asbestodden). However, in this regard NEC encountered competition in the form of the Norwegian company A/S Kulspids, which had been the owner of land plots in Asbestodden since 1907. NEC built its own facility in the area – the Camp Asbestos (Arlow & Reymert 2001; page: 145). The two enterprises operating next to each other did everything in their power to make life difficult for the competition. But mining of asbestos minerals turned out to be unprofitable for both companies. Today, you can still see the remains of the A/S Kulspids hus (most probably built in 1918) located right next to the

beach at the foot of a rocky outcrop, but they are in very poor condition (Photo 8.16AB). Whereas there are basically no traces of the Camp Asbestos left.

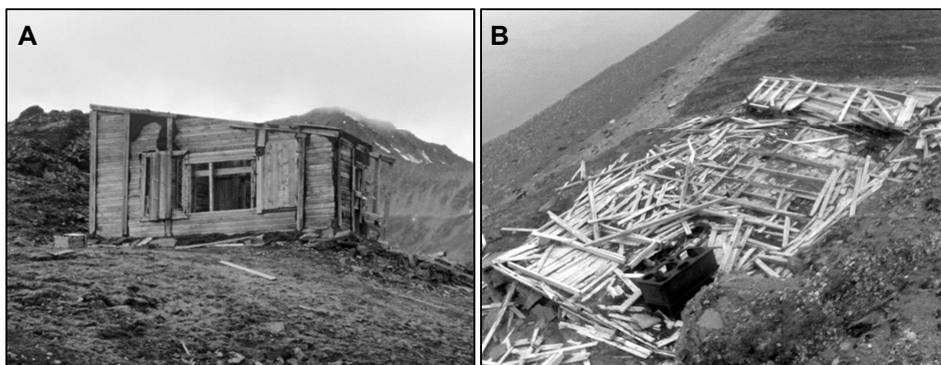


Photo 8.16. Remains of the A/S Kulspids hus: A -in 1999, B - in 2009 (Photos P. Zagórski).

Another object that is, in part, related to the economic (tourist) activities of the time is the imposing Camp Smith – located near Snatcherpynten, on the western coast of Rechechefjorden – also known as: *Giæverhuset*, *Giævervillaen* (Arlov & Reymert 2001) (Fig. 8.3). The structure was built in 1904 for consul Johannes Giæver from Tromsø, as a private estate (Photo 8.17A). At the time the consul was related to studying whale activity in northern Norway, but also to tourism, which saw rapid development during that time. It might be that *Giæverhuset* was erected not only for personal pleasure, but also for business purposes. This seems plausible, especially since there is information about the site being visited in 1908 by cruise ships of the Hamburg-Amerika Linie (Hamburg American Line – Northland Cruise -1908¹⁵). In 1910 both the building and the land plot were purchased by NEC, and the site was renamed to Camp Smith, after the English financier Dudley Smith (Krawczyk & Reder 1989; Arlov & Reymert 2001). The motivation behind this purchase remains unclear, as the plot has no value in terms of mining operations. It can only be interpreted as an attempt to emphasise NEC's dominance in Bellsund as the main exploiter of mineral deposits in the area.

Camp Smith (*Giæverhuset*) itself is a multi-storey, post-and-beam, wooden building (10 x 8 m), with walls made of a double layer of boards and a pitched roof. Main entrance is through a porch on the eastern side. The ground floor includes 2 residential rooms, a kitchen, a toilet, a storeroom, and an antechamber with stairs leading up. On the upper floor there is a hallway and 2 residential rooms. Until recently the house had been secured with four chains leading from its corners to concrete hooks in the ground (currently there are none). Right now the structure is in a state of complete disrepair: no windows or doors, leaky roof. The solifluction movements of the soil caused the wall base to shift from under the eastern wall, which led to the whole house

¹⁵ <http://www.gjenvick.com/HistoricalBrochures/Steamships-OceanLiners/HamburgAmericanLine/BookOfPhotographs/NorthlandTrips/1908/SpitsbergenNorway.html#sthash.Kqps4aXJ.dpbs>

tilting in that direction. Nearby there are also remains of a whaling station and a small cemetery. It houses, among others, the grave of Trygve Olsen of Tromsø, who died here while spending the winter in 1914. Right next to the beach you can still find a lot of mining equipment (carts), once used by the NEC (Photo 8.17BC).

Contemporary human activities

During the 1970's and 1980's an important economic change occurred on Svalbard. The hunting and mining became dominated by tourism and scientific exploration. The change was connected with new legal regulations related to environmental protection and establishment of national parks. Longyearbyen became a centre for touristic activities with modern logistical support and infrastructure. The importance of tourism for Svalbard economy increases year after year. The beginning of professional tourism on Svalbard dates back to the turn of 19th and 20th century. Although the first 'touristic' ship visited Svalbard in 1870 (Hall *et al.* 2009), the 'birth' of modern tourism on Svalbard was initiated in 1990 by Norwegian Government. The aim of Norway was to establish the best organised and managed area of wild nature in the world (Guðmundsdóttir & Sæþórsdóttir 2009). In years 1970-1990 number of tourists has increased four times. Such a high growth of touristic activities was treated as a potential danger for a fragile Arctic nature and new regulations were introduced to limit the human impact on the environment (Kaltenborn 2000).

In 2008 Svalbard was visited by 40,000 tourists travelling by plane and 30,000 tourists travelling by sea transport. Tourist enterprises in Svalbard had turnover of NOK 200 million in 2010 and accounted for 150-plus of the 1,400 man-years of labour performed in the islands (Statistic of Svalbard 2012). From 1999 to 2008, the number of guest nights in Longyearbyen rose from just over 43,000 to just under 89,000, subsequently falling to around 85,000 (Fig. 8.19A). The number of guest nights in Longyearbyen has been relatively stable from 2001 to 2012, with a steady increase from about 70,000 guest under 80,000, with 90,000 at the most.

Passengers aboard the cruise ship overseas for the past ten years has increased from approx. 20,000 passengers in excess of 40,000. After declining in 2008-2011, this traffic increased sharply in 2012. Coastal cruise traffic, which accounts for a large part of the sea-based tourism on Svalbard, increased at the beginning of the last decade, but it now looks as if the traffic is stabilised with a little over 10,000 passengers annually. After a period of steady growth, in 2009 a significant reduction (11.7%) in the number of people on the cruise. Number of landing sites increased from 139 locations in 2001 to 238 in 2012 (Fig. 8.19B). On many of the landing sites are the heritage.

Bellsund region is one of the most attractive areas of Svalbard and during the summer season (July – August) it is frequently visited by touristic ships and yachts (e.g. the Polish yachts: 'Panorama', 'Nasza Chata', 'Spirit One' and 'Operon') (Photos 8.18AB).

8. Human activity



Photo 8.17. A- Camp Smith building (Photo P. Zagórski 2011), B- small cemetery (Photo P. Zagórski 2000), C- NEC mining equipment – carts (Photo P. Zagórski 2011).

Calypsobyen was also a place visited during the field sessions and conferences e.g. in 1996 ('Barents, Spitsbergen, Arctic' Conference), in 2003 (Geomorphological Workshop), in 2004 (Glaciological Workshop), in 2007 (Regional Conference on Geomorphology 'Geodiversity of polar landforms') (Photo 8.18C). Each of the visitors of Calypsobyen are recorded in the special 'cabin book' (hytta book) and creates a great chance to share scientific knowledge about the natural environment of Bellsund with curious tourists.

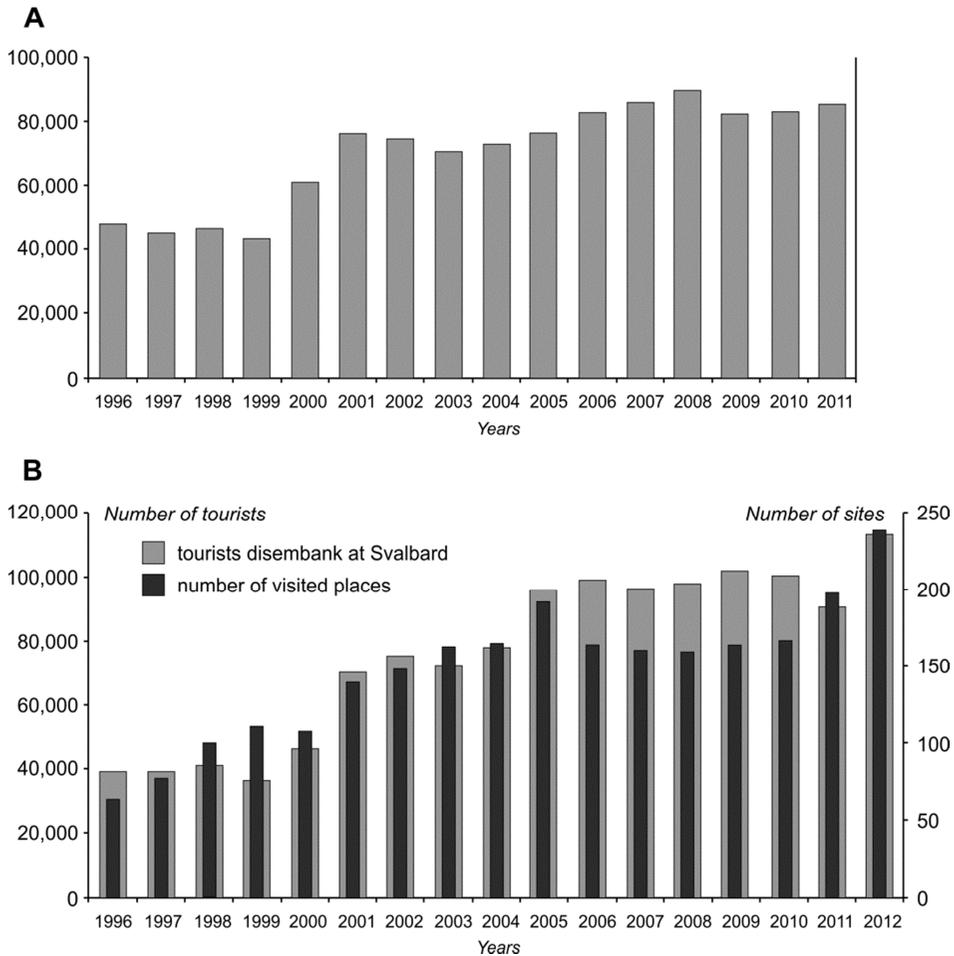


Fig. 8.19. A- guest nights at hotels/boarding houses in Longyearbyen (Statistic of Svalbard 2012), B- the number of tourists disembark at Svalbard and how many places they visited for the period 1996-2012 (Sandodden *et al.* 2013).

8. Human activity

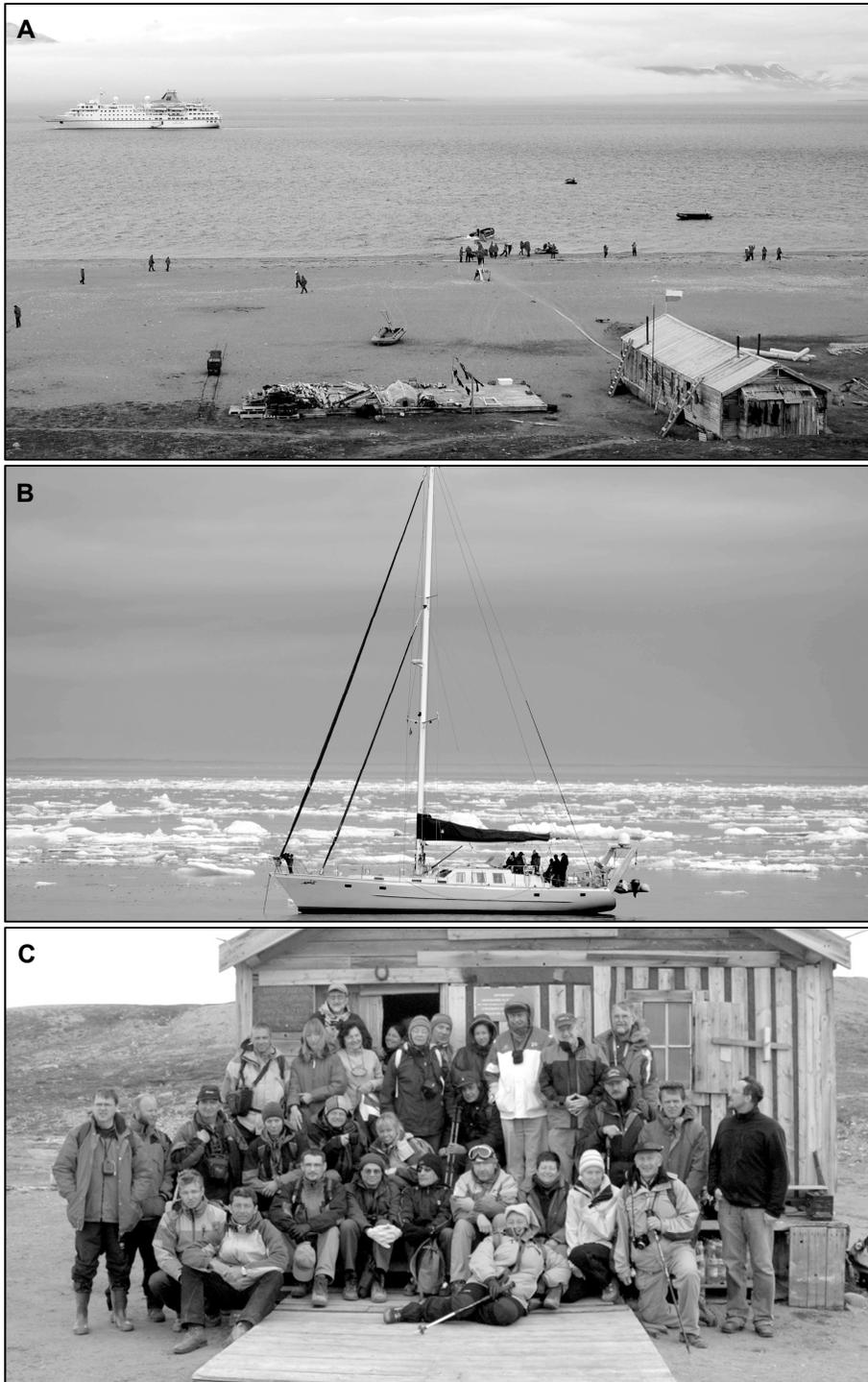


Photo 8.18. A- visit an organised tourist groups – Calypsobyen (Photo P. Zagórski 2011), B- Yachts 'Spirit One' in Bellsund, the captain J. Kosz (Photo P. Zagórski 2011), C- participants of Regional Conference on Geomorphology 'Geodiversity of polar landforms' in 2007 (Photo P. Zagórski).

Streszczenie

Działalność człowieka

Od początku XVII wieku i do dnia dzisiejszego Spitsbergen, największa z wysp archipelagu Svalbard, jest obszarem różnych form działalności człowieka. W szczególności działalność ta koncentrowała się w północno-zachodniej części Ziemi Wedela Jarlsberga, jednym z najciekawszych, pod względem archeologicznym, obszarów archipelagu. Można wyróżnić kilka okresów aktywności człowieka w tym rejonie: (1) wielorybnictwo zachodnio-europejskie (XVII wiek), (2) łowiectwo rosyjskie (przełom XVII-XVIII wieku i początek XIX wieku), (3) pierwsze wyprawy badawcze do Bellsundu (XVIII i XIX wiek) (4) łowiectwo i myślistwo norweskie (XIX i XX wiek) (5) górnictwo i wydobywanie kopaliny (druga połowa wieku XIX i XX wiek), (6) współczesna działalność naukowa i turystyczna (ryc. 8.3).

„Oficjalnie” Spitsbergen został odkryty 17 czerwca 1596 roku przez Williama Barentsa (1550-1597). Wyspa od samego początku przyciągała uwagę przedsiębiorców holenderskich i angielskich ze względu na obfitość fauny: wielorybów, fok i morsów. Za początek systematycznej aktywności łowiectwa wielorybniczego na Spitsbergenie uznawany jest rok 1612 (Haartsen, Hacquebord 1996). Nieco później, pod koniec XVII wieku na obszarze Spitsbergenu pojawili się Pomorcy, społeczność pochodzenia rosyjskiego znad Morza Białego. W północno-zachodniej części Ziemi Wedela Jarlsberga odkryto kilkanaście osad z XVII-XVIII wieku. Obszarem ich działalności był również rejon Bellsundu, który na długi czas stał się jednym z głównych obszarów polowań na ssaki morskie, w szczególności na morsy i białuchy (wał biały).

Stanowiska z XVII wieku związane są z obecnością wielorybników zachodnio-europejskich oraz rosyjskich myśliwych polujących na zwierzęta morskie. Angielski przemysł wielorybiczny istniał na Spitsbergenie prawdopodobnie od 1630 r. Z tych czasów pochodzą szczątki głównej bazy Robertelva, znajdującej się na wschodnim wybrzeżu Recherchefjorden. Do naszych czasów przetrwały ruiny kamiennych domów, pieców do wytapiania tłuszczu i urządzenia cumownicze. Na południe od Robertelvy znajduje się niewielka osada Lægerneset, w której zachowały się ślady czterech namiotów. Z całą pewnością znajdował się tu punkt obserwacyjny łowców wielorybów. Natomiast wątpliwości co do przynależności angielskiej budzi stanowisko Snatcherpynten, na zachodnim wybrzeżu Recherchefjorden, gdzie zachowały się ślady stacji wielorybniczej.

Z holenderskimi łowcami wielorybów może być związane stanowisko archeologiczne Renardbreen-1, na zachodnim wybrzeżu Recherchefjorden. Jest to stanowisko unikatowe w skali całego Svalbardu, ponieważ zostało ono zniszczone w wyniku awansu Renardbreen w okresie Małej Epoki Lodowej (XIX wiek). Pozostałości wielorybnictwa holenderskiego występują również na Renardodden (Renardodden-2 i Renardodden-3). Charakterystyczne dla nich jest istnienie całego kompleksu różnych obiektów: śladów po namiotach, resztek pieców do wytapiania tłuszczu, urządzeń cumowniczych, miejsc do wyrzucania odpadków kuchennych.

Na XVIII wiek datowane są natomiast rosyjskie osady w Lognedalen, leżące na południowym brzegu Bellsundu. Są to ślady (pozostałości) 4 budynków mieszkalnych. Drugie stanowisko to Renardodden-1, usytuowane obecnie blisko wybrzeża i datowane jest na początek XIX wieku. Badania archeologiczno-geomorfologiczne wykazały, że stanowisko to zostało częściowo zniszczone w efekcie oddziaływania czynników morskich (Jasinski, Zagórski 1996). Okres od zakończenia XVIII i początek XIX wieku po-

mimo pojawienia się Pomorców charakteryzował się raczej osłabieniem działalności ludzkiej na Svalbardzie.

Istnieje wyraźny kontrast pomiędzy okresem wielorybniczym a latami następnymi (Arlov 1994). Era Oświecenia, która charakteryzowała się niespotykanym jak do tej pory postępem gospodarczym, wyzwoliła w ludziach potrzebę poszukiwania wiedzy i poznania świata. Powrócono również do idei znalezienia drogi wiodącej poprzez krąg polarny, do Pacyfiku (*Northeast Passage*). Na uwagę zasługują dwie ekspedycje, które zaznaczyły swoją obecność w rejonie Bellsundu tj. rosyjska wyprawa kapitana Chichagowa (*Russian Chichagov Expedition*) w 1764-1766 (E1) i wyprawa korwety „La Recherche” (*La Recherche Expedition*) w latach 1838-1840 (E2) (ryc. 8.3). Pierwsza z nich pozostawiła po sobie ślady w postaci stanowisk archeologicznych (*Chichagov Expedition Camp*) natomiast druga w postaci danych naukowych i nazewnictwa.

W wieku XVIII i XIX obszar Spitsbergenu nadal odgrywał ważną rolę jako teren łowiecki. Pod koniec XVIII pojawili się tutaj łowcy norwescy. Ich głównym celem było polowanie na lisy i niedźwiedzie polarne, a pozyskane futra sprzedawali w Norwegii (Arlov 1994). Dodatkowo, trudnili się zbieractwem puchu kaczek edredonowych oraz czasem także polowaniem na wala białego. Prawdziwy rozkwit tego typu działalności nastąpił po 1892 roku. Profesjonalne łowiectwo przetrwało aż do 1973 roku, przerwane tylko II wojną światową. W rejonie południowego Bellsundu do celów łowieckich wykorzystywane były husy (budynki traperskie) między innymi w Calypsobyen, Dunderdalen i Klokkefjellshytta (ryc. 8.3).

Przełom wieku XIX i XX – to początek działalności eksploatacyjno-górnicznej. W centrum uwagi był węgiel kamienny, ale podejmowano również próby eksploatacji innych minerałów. Jedną z najważniejszych firm eksploatujących bogactwa naturalne w rejonie NW części Ziemi Wedela Jarlsberga była *The Northern Exploration Company (NEC)*. Firma *NEC* została założona w 1910 roku. Udziałowcem i liderem wypraw na Svalbard do 1913 roku był Ernest Mansfield. W rejonie Bellsundu firma *NEC* zbudowała kilka osiedli związanych z poszukiwaniem kopalni i górnictwem, uruchomiła ponownie kopalnię *Camp Morton* oraz wybudowała nową w Calypsobyen (szczegółowy opis patrz: Chapter I). W rejonie Recherchefjorden podjęto również eksploatację innych kopalni, między innymi rudy żelaza. W tym celu wybudowano wzdłuż wschodniego wybrzeża Recherchefjorden budynki w stylu koszarowym tzw. *Iron Mountain Camp* (Roll 1993; Krawczyk 1996). Ciekawostką jest również fakt, że w rejonie wybrzeży południowego Recherchefjorden podjęto próbę wydobycia minerałów „egzotycznych” – azbestu (śląd w nazewnictwie - „Asbestodden”).

Z działalnością gospodarczą (turystyczną) w tym okresie wiąże się inny niezwykle okazały obiekt zlokalizowany w rejonie Snatcherpyntem, na zachodnim wybrzeżu Recherchefjorden – *Camp Smith (Giæverhuset)*. Budynek został wybudowany w 1904 roku dla konsula Johannes Giæver z Tromsø, jako prywatna posiadłość, ale być może także dla celów biznesowych.

W latach 70 i 80-tych XX wieku zaznaczyła się zmiana wykorzystania ekonomicznego obszaru Spitsbergenu. Myślistwo i górnictwo ustępuje na rzecz rozwoju turystyki. Zmiana ta wynikała m.in. z nowych regulacji prawnych dotyczących przede wszystkim ochrony środowiska, co wyraziło się – tworzeniem parków narodowych. Centrum turystycznym stało się między innymi Longyearbyn z nowoczesnym zapleczem i infrastrukturą. Znaczenie turystyki z roku na rok wzrasta. W latach 1970-1990 zanotowano czterokrotny wzrost ilości turystów. Rozwój ten uznano za stanowiący zagrożenie dla bardzo wrażliwego środowiska naturalnego. Przygotowane regulacje prawne miały na celu stworzenie mechanizmów kontrolujących rozwój turystyki, z uwzględnieniem zasad ochrony środowiska.

Objaśnienia

Ryciny

- Ryc. 8.1. Fragment mapy Barentsa. Cornelisz Cleasz, 1598.
- Ryc. 8.2. A,B,C- akwarele prezentujące proces łowienia i obróbki wielorybów wg Fotherby'a (1613).
- Ryc. 8.3. Lokalizacja stanowisk archeologicznych i obiektów związanych z działalnością ludzką na obszarze NW części Wedel Jarlsberg Land: 1- aktywność wielorybnicza: a- holenderska (W1- Renardodden-2 i Renardodden-3; W2- Renardbreen-1 i Renardbreen-2), b- angielska (W3- Snatcherpynten (?); W4- Robnertelva; W5- Lægerneset); 2- rosyjskie stacje łowców morsów (R1- Lognedalen; R2- Renardodden-1); 3- obszary eksplorowane przez ekspedycje geograficzne: a- rosyjska ekspedycja Chichagova (E1), b- wyprawa korwety „*La Recherche*” (E2); 4- chaty traperskie (N1- Calypsobyen; N2- Camp Scoresby/Dunderbuktahytta; N3- Klokkefjellshytta); 5- górnictwo i wydobywanie minerałów: a- węgiel (M1- Calypsobyen), b- rudy żelaza (M2- Camp Iron Mountain; M3- Jarnfjellet), c- azbest (M4- A/S Kulspids hus, M5- Camp Asbestos); 6- inne obiekty (T1 – Camp Smith); 7- cmentarze i groby.
- Ryc. 8.4. A- plan stanowiska Renardodden-2 (Jasinski i in. 1993): 1- tundra, 2- cegły, 3- gliniane rurki, 4- gwoździe, 5- ceramika, 6- zbocza wału sztormowego, 7- obszary koncentracji szarej ceramiki, 8- obszary koncentracji czerwonej ceramiki; B,C- obraz stanowiska uzyskany na podstawie skaningu laserowego TPI TOPCON, 2011.
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- Ryc. 8.7. Stanowisko archeologiczne Renardodden-1 (Jasinski, Starkov 1993): 1- osady morskie, 2- piasek, 3- żwirny morskie, 4- brązowo-czarna warstwa kulturowa, 5- elementy konstrukcyjne ściany.
- Ryc. 8.8. Plan stanowiska Robertelva (W4) (Lægerneset, Krawczyk 1996).
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- Ryc. 8.13. Tomtodden – stanowisko Chichagov – grafika wykonana przez Auguste Mayera podczas ekspedycji korwety „*La Recherche*” w 1838 (Bertrand 1852). Źródło: Bibliotheque Sainte Genevieve.
- Ryc. 8.14. A,B- korweta „*La Recherche*” w Recherchefjorden w 1838 r. – grafika wykonana przez Auguste Mayera podczas ekspedycji korwety „*La Recherche*” w 1838 (Bertrand 1852). Źródło: Bibliotheque Sainte Genevieve.
- Ryc. 8.15. Intensywność polowania na niedźwiedzia polarnego na obszarze Svalbardu (Statistics Norway 2012).
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