

Kharlovka 1-6 on the Kola Peninsula: One of the Oldest Gressbakken House Sites in Northern Fennoscandia

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Abstract

The remains of a semi-subterranean house were discovered at the Kharlovka 1-6 site on the Barents Sea coast of the Kola Peninsula, Russia. Despite suffering from erosion, features such as a double stone-boarded hearth and chimney pipe together with diagnostic finds allow us to attribute the house to the so-called Gressbakken type. The artefact assemblage includes stone tools, bone and antler tools and adornments, asbestos-tempered pottery, an amber pendant and a copper tubular bead. Numerous faunal remains are primarily represented by marine species of mammals and birds. Radiocarbon dates on charcoal point to the period 2600–2300 calBC, which is also supported by the artefact types, elevation of the cultural layer and construction type of the house. When accounting for the early dates of Kharlovka 1-6 and several other dwellings, it can be assumed that the Gressbakken house tradition emerged around 2600–2300 calBC. This date is somewhat earlier than previously thought.

1 Introduction

In 2017–2019, the Kola Archaeological Expedition of the Institute for the History of Material Culture of RAS undertook excavations at the Kharlovka 1-6 site on the Barents Sea coast of the Kola Peninsula, approximately 170 km east of the city of Murmansk (Fig. 1). The excavations have revealed the remains of a semi-subterranean house located on top of a sandy hillock 1 km northwest of the mouth

of the Kharlovka River (Fig. 2–3). Some of the construction features and diagnostic finds allow us to attribute the excavated house to the so-called Gressbakken type.

Despite extensive destruction, the dwelling is rather exceptional for the Kola Peninsula region. The well-preserved organic material has yielded bone and antler tools and a large number of faunal remains, which provides us with data concerning subsistence strategies and seasonality.

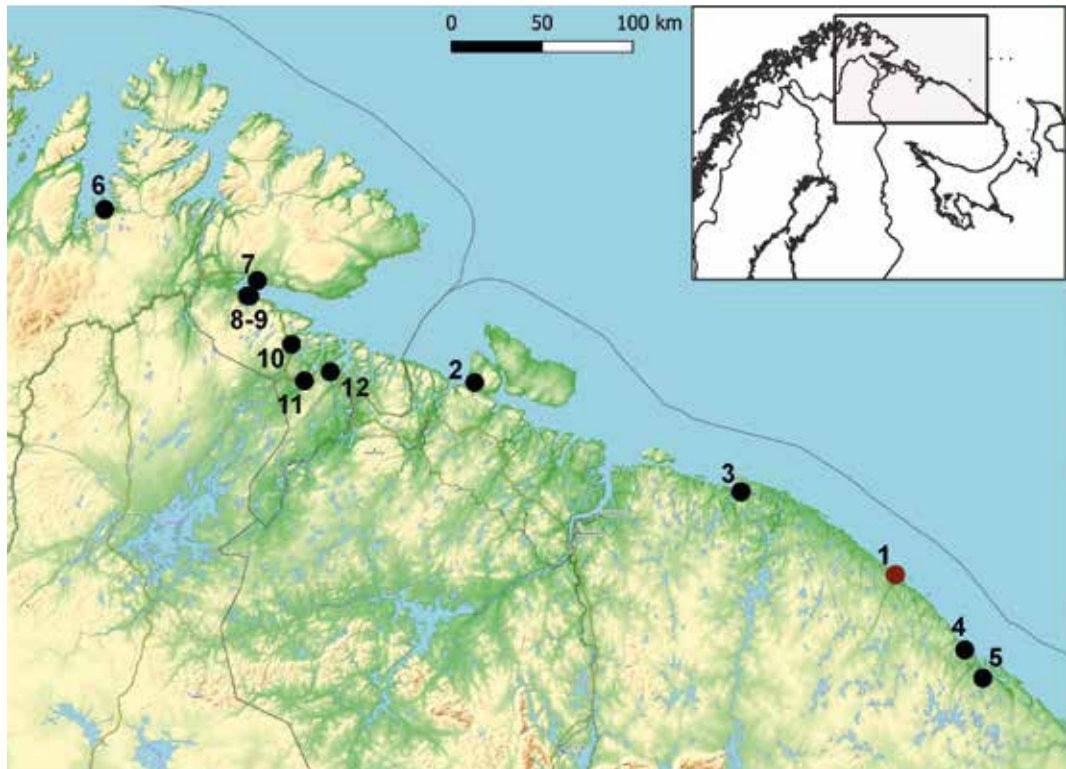


Figure 1. Overview map showing the location of Kharlovka 1-6 and other sites mentioned in the text. 1 – Kharlovka 1-6, 2 – Grottug (Rotojoki), 3 – Zavalishina 5, 4 – Dvorovaya, 5 – Ust-Drozdovka 3, 6 – Leirpollen, 7 – Bergeby, 8 – Gressbakken Nedre Vest, 9 – Advik, 10 – Bugøyfjord, 11 – Kalkillebukta, 12 – Høybukt. Drawing: A. Kiseleva.

The archaeological material from the site includes several unique finds made of copper and amber. These exotic goods reflect distant contacts that the ancient population of the Kola Peninsula had with southern regions. Together with one bone artefact manufactured with a metal implement, the copper item demonstrates one of the earliest occurrences of metal use in Arctic Europe. Finally, the radiocarbon dates point to the middle of the 3rd millennium calBC, making the excavated dwelling one of the oldest examples of the Gressbakken house tradition in northern Fennoscandia. A presence of similar constructive features of Gressbakken dwellings and dwellings of the taiga zone of Eastern Europe may also indicate contacts with southern and eastern territories.

2 Research history

To date, the Kola Archaeological Expedition has recorded 1,300 semi-subterranean and above-ground houses in the Murmansk region, of which a significant number date back to the prehistoric period. The largest clusters of houses have been recorded in Nokuev and Teriberka bays, along the Kildin Strait and on the Fisher and the Sredniy peninsulas. In total, 28 dwellings from the Neolithic – Bronze Age (Early Metal Age) have been excavated (Kolpakov et al. 2020: 279–288, 296, Fig. 18), including a house at Kharlovka 1-6 that was studied in recent years.

The mouth of the Kharlovka River was first explored by Nina Gurina in 1947, but she discovered the Kharlovka 1-6 site in

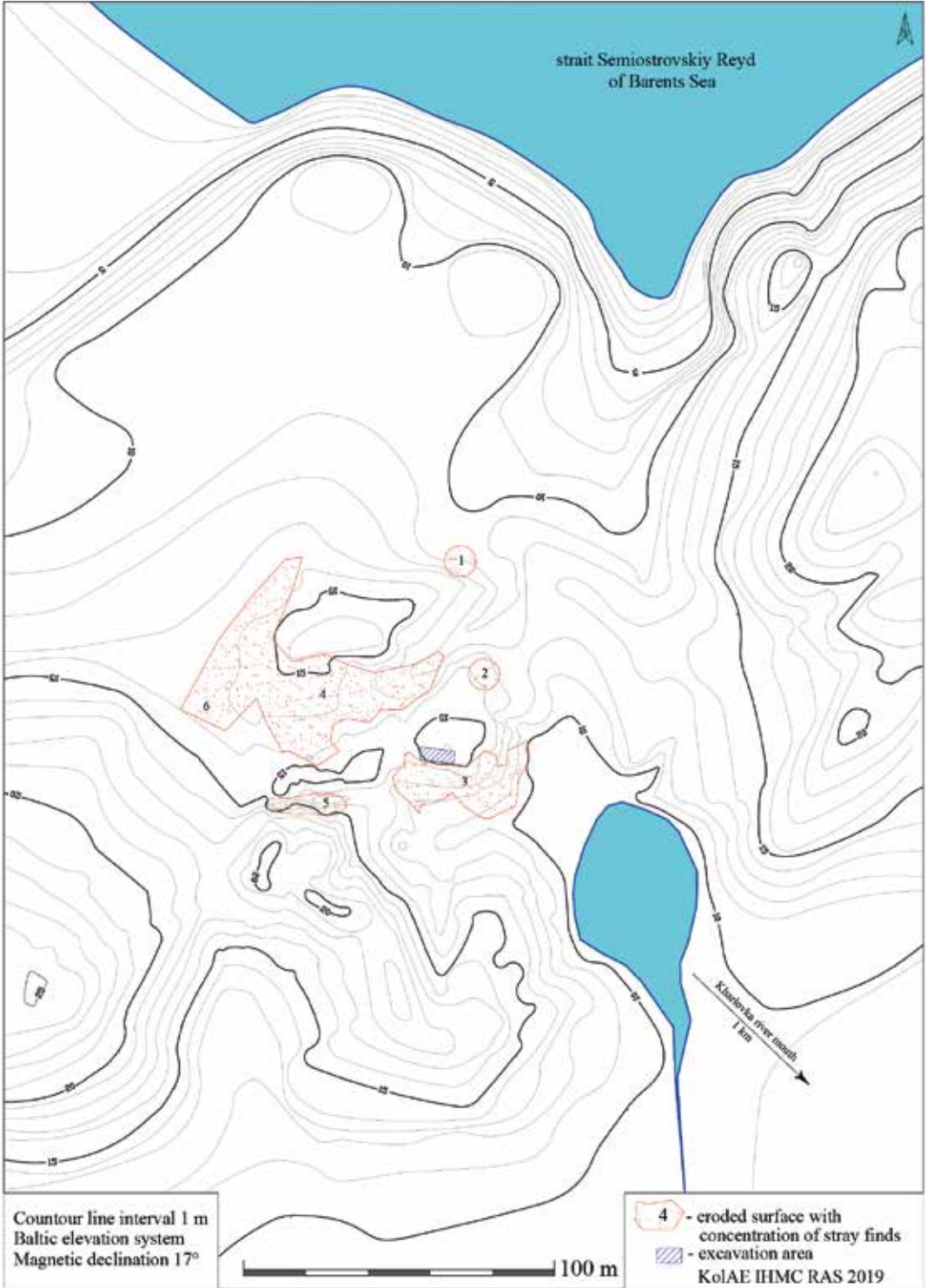


Figure 2. The topographic plan of the Kharlovka 1-6 site. Drawing: E. Kolpakov.



Figure 3. The location of the Kharlovka 1-6 site. Aerial view from the south. Photo: E. Kolpakov.

1974. The researcher documented six concentrations of lithic artefacts on an exposed sandy surface (Fig. 2) and excavated 40 square metres near concentration no. 2. A hearth and numerous slate and quartz flakes were registered in the excavated area (Gurina 1974). Later, Vladimir Shumkin again surveyed the site in 1978. In addition to stone artefacts and one ceramic fragment, he found a large number of marine mammal bones on the sandy surface of the hillock. However, he assumed that these remains were modern as opposed to prehistoric (Shumkin 1978).

In 2014, we surveyed the Kharlovka River area and the sites that had been investigated earlier, including the sandy hillock with faunal remains. We documented a bone- and artefact-rich cultural layer on top of the slope, from which the date 2940–2570 calBC (SPb-1561) was derived (see below in the 6. Dating section). Though the date was

derived from seal bones and the marine reservoir effect had a certain impact, the evidence showed that the layer likely dated back to the Stone Age. Topographic features of the area also indicate the prehistoric character of the site (Kolpakov 2014).

Archaeological sites with good preservation of organic matter are extremely rare in the northern part of Fennoscandia. Previously, only three settlements (Ust-Drozdovka 3, Mayak 2, Zavalishina 5) with large amounts of faunal remains and bone tools have been excavated on the Kola Peninsula. Therefore, Kharlovka 1-6 is particularly interesting to researchers.

3 Excavation results

During three field seasons, 44 square metres were studied. We excavated a turf-covered section of a hillock not destroyed by erosion.

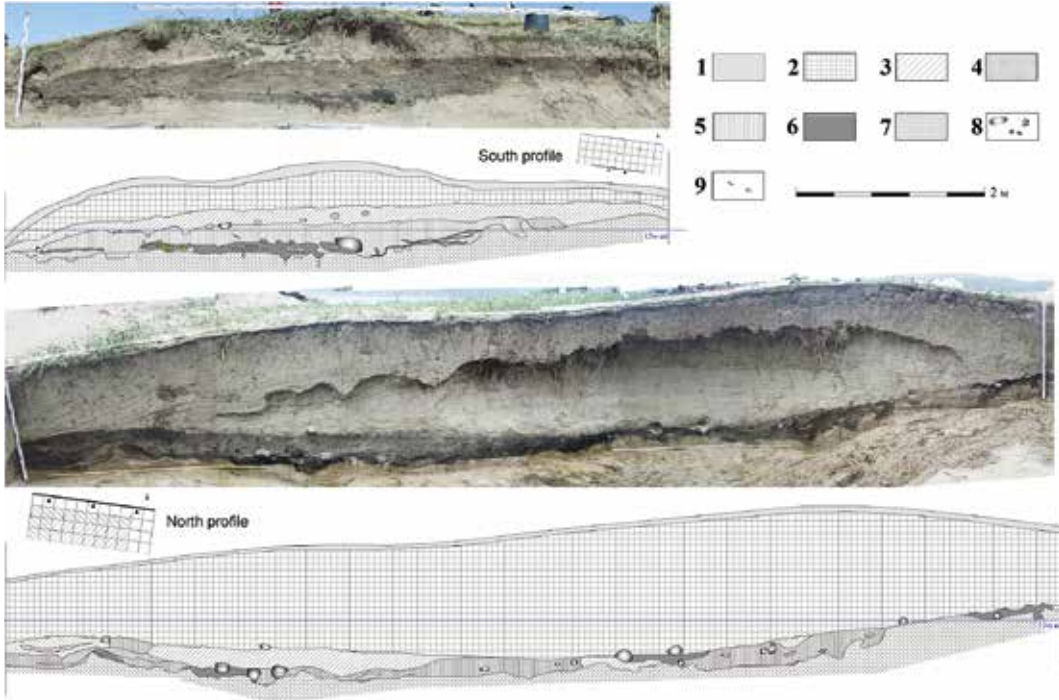


Figure 4. Southern and northern profiles of the excavation area at Kharlovka 1-6. 1 – turf, 2 – light grey sand, 3 – dark brown organic reach sand with lenses (a cultural layer), 4 – grey sand, 5 – grey sand with charcoal and bone fragments (a cultural layer), 6 – dark organic reach sand, 7 – light grey sand (natural layer), 8 – stones, 9 – bones. Drawing: E. Kolpakov.

In addition, archaeological and faunal material was collected from the destroyed surface to the south and southeast of the excavation area. During the excavation process, it became clear that the excavation area contains the remains of a badly damaged house. The southern part of the house and the upper part of its walls have been destroyed by erosion. The layer of the house lies at an elevation of 14,3–15,3 m in the Baltic elevation system.

3.1 Stratigraphy

The stratigraphy of the excavated area consisted of a thin turf layer (3–6 cm), a sand layer (up to 140 cm thick) and a cultural layer underlain by sand (Fig. 4). Both layers of sand – those covering and underlying the cultural layer – were light grey, contained almost no archaeological finds and appeared

to be dune deposits. The occupation layer was grey and brown sand containing bone refuse, charcoal, fire-cracked stones, pebbles, artefacts and occasional shell fragments. The cultural layer, reaching a depth of 55 cm, was thickest at the centre and became thinner towards the walls.

The upper part of the cultural layer was mostly brown, contained many fire-cracked stones and stone artefacts in particular, and included several dark or light grey sand lenses. This was followed by a layer of dark grey sand with a large amount of charcoal. The layer under the hearth and stone accumulations was black. It is possible that the brown and grey sand layers indicate different stages in the existence of the house pit, but distinguishing them more precisely is difficult due to the later disturbance and irregularity in their deposition. Moreover, the archaeological material from the layers does not show



Figure 5. The plan view from the North (above) and profile view from the South (below) of the double hearth recovered at Kharlovka 1-6. Photo: E. Kolpakov.

any chronological discrepancy. Therefore, we tend to consider them as one complex.

The profile of the house proved it was a semi-subterranean dwelling. The cultural layer on the eastern and western sides of the excavation area was considerably thinner than in the centre or else it was almost completely absent, which most likely indicates the borders of the dwelling chamber. It is important that the distribution of the artefacts directly correlates with the thinning of the cultural layer. The cultural layer becomes thicker again in the eastern part of the dwelling, which can indicate a midden structure or the chamber of an adjacent dwelling.

3.2 The house structure

Our excavation has revealed some structural features of the dwelling. We identified the remains of a double hearth close to the destroyed area in the centre of the house chamber: two lines of flattened stones up to 45 × 20 cm in size raised on their sides (Fig. 5). Such double hearths are quite specific and are registered in most Gressbakken

dwelling. Therefore, it is possible to determine other parts of the structure. The hearth was placed along the longitudinal axis of the house. Its length reached 3,5 metres, including the space between the two parts. Only one row of stones consisting of two parts remained. This row represents the northern half of the hearth. The southern half of the hearth was likely destroyed by erosion and fell down the slope.

An oval concentration (100 × 60 cm) of pebbles extended perpendicular to the hearth to the north of it, which included long animal bones situated perpendicular to the concentration's axis. Based on analogies from other excavated houses, we assume that this feature represents a chimney pipe running from the hearth to the back wall. We suggest that similar chimney pipes have been recorded at Zavalishina 5 (houses 6 and 7) (Kolpakov et al. 2016: Fig. 8), Ust-Drozdovka 3 (house 5) (Helskog et al. in press), most likely at Grottag (Seitsonen 2006: Fig. 3) on the Kola Peninsula and at Kalkillebukta (house 7) in Varangerfjord (Schanche 1994: Fig. 14). A. Niemi and J.

Oppvang reported the same construction in house 11 at Nyelv Nedre Vest and interpreted it to be an air channel (Niemi & Oppvang 2018: 50, Fig. 42).

Unfortunately, the northern wall of the house has not been found. Furthermore, there is a 20–35-cm downward drop in the cultural layer in comparison with the centre of the chamber and the level of the hearth. Such a feature is not found in other Gressbakken houses. The absence of the northern wall of the chamber can most likely be explained by post-deposited subsidence of the soil. On the other hand, another object like a large pit or semi-subterranean dwelling could have later disturbed or cut into the excavated house chamber, but no distinct evidence of such a process has been recorded. Otherwise, if we assume the chamber spreads in this direction, the house would have been extremely large and would have no analogies.

Four concentrations of dark sand, charcoal, pebbles and fire-cracked stones are likely to be found outside the house and relate to some other structure. Stones in the larger clusters under the northern wall of the excavation varied considerably in size (up to 37 cm) and had been laid out very densely. Decomposed wood fragments and animal bones were also found there.

3.3 Interpretation

Comparing the dwelling site with other houses allows us to offer an approximate “theoretical” reconstruction of the revealed structure (Fig. 6). The dimensions of the hearth and the distance between the eastern and western walls of the chamber are used to determine the measures of the dwelling. The dimensions of the dwelling chamber may well have been approximately 10 by 4 metres. It

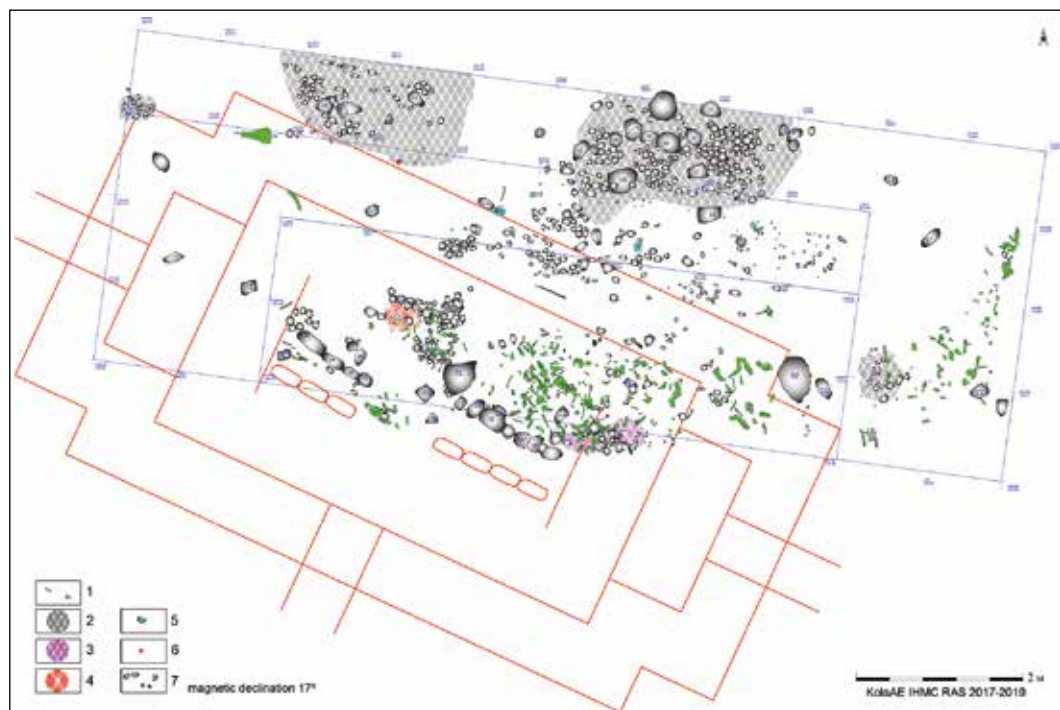


Figure 6. Plan of the excavated area at Kharlovka 1-6 and a supposed reconstruction of the house (red line). 1 – bones, 2 – charcoal-rich spots, 3 – shell-fragment-rich spots, 4 – burned soil, 5 – large artefacts, 6 – ochre, 7 – stones. Drawing: E. Kolpakov.

is impossible to estimate the precise depth of the house, though, as its uppermost portion was eroded. However, the remaining part of the structure was as deep as 60–70 cm. The double stone-bordered hearth and the chimney pipe were placed in the middle of the chamber. It seems that a raised platform had been constructed in the eastern part of the chamber. The southern and northern walls of the chamber were absent due to erosion or post-deposited disturbances.

There is also a possibility that the abandoned house was used as a deposit for animal remains and stone refuse. Many animal bones, quartz flakes and shell fragments were concentrated in the southern part of the dwelling above the hearth. It is notable that animal remains in the concentration were occasionally found in anatomical order.

3.4 Do the archaeological remains uncovered at Kharlovka 1-6 constitute a dwelling?

This question can most likely be answered in the affirmative, and for good reason. A double hearth or two hearths are represented in the dwelling site. Even if we dispute the existence of a second row of stones forming a hearth fence in the past, an undeniable black layer in the place of the hearth remains. Therefore, the hearth certainly exists. The eastern and western walls of the house pit, up to half a metre or more deep, have been uncovered and are beyond dispute. The southern wall, along with the entire southern half of the dwelling, has been completely destroyed. Therefore, the absence of the southern wall of the dwelling in the excavation is logical.

The problem is the absence of the proposed dwelling's northern wall in the excavation. We compared the dimensions of the structure with other excavated dwellings of different types and concluded that the northern wall should have been found within the limits of our excavation. However, no such wall has been found. It can be assumed that the dwelling was oriented with the long axis

in a north-south direction instead of an east-west one. However, in that case the double hearth would have been located across the dwelling, which is hardly possible, and such has not been found in previously studied dwellings.

The lowering of the dwelling floor via the ledge below the level of the hearth also represents a problem when interpreting the excavated site. Dwellings with such a constructive element are entirely unknown at other similar sites. Could the ledge have formed as a result of a post-deposition subsidence? Such a possibility cannot be ruled out, given the clear destruction and deformations observed at the site.

Could the ledge have formed as a result of one dwelling pit cutting into another pit? This option is extremely unlikely, since no traces of this activity have been found in the cultural layer.

Thus, we can conclude that while the remains of a deepened dwelling were uncovered in the excavation at Kharlovka 1-6, many of its structural elements remain unclear.

3.5 Is this a dwelling of the Gressbakken type?

It must be borne in mind that the type itself does not have an unequivocal definition.

Povl Simonsen first described Gressbakken dwellings in 1961 (Simonsen 1961: 510). His description included a combination of features such as a large rectangular or oval semi-subterranean chamber, a stone-framed double hearth placed along the longitudinal axis, raised platforms in each end of the chamber and multiple "entrance passages." The description of 1979 omitted one important feature, namely multiple "entrance passages" (Hood 2017: 14). In the following years, excavations of Gressbakken dwellings have continued (Helskog 1983; Hesjedal et al. 1996; Hesjedal et al. 2009; Schanche 1994), as has the discussion of the problems associated with the "Gressbakken phase" (Olsen 1994: 71–76; Hesjedal et al. 1996: 211–219; Hood 2017: 12–16, 26–28; Niemi

& Oppvang 2018: 75–78). But the concept of the “Gressbakken dwelling” was eroded. Dwellings with only one, two or three of the above-mentioned features were classified as this type (for example dwelling 21 from Gressbakken NØ (deep chamber and one hearth) (Schanche 1994: 54) and dwellings 82 and 83 from Slettnes 5C (large but shallow chamber, double (?) hearth, one entrance)) (Hesjedal et al. 1996: 123–126, 136, 214–218). In some cases, a reason for the classification was artefact types and radiocarbon dates. For example, Schanche considered dwellings 17–20 from Iversfjord to be Gressbakken dwellings (Schanche 1994: 60–62), though E. Helskog did not (Helskog 1983: 86). As a result, the “Gressbakken dwelling” type is used by most researchers of northern Fennoscandia, but each can use discrete features from a long list to define the type.

It is more realistic to discuss the similarity of certain structural elements and their combination. As a whole, this combination includes a large rectangular-oval, semi-subterranean chamber, a stone-framed double hearth placed along the longitudinal axis, raised platforms in each end of the chamber and multiple “entrance passages.”

A double hearth (according to our reconstruction) is present in the excavation at Kharlovka 1-6. The dwelling also includes a deep chamber. There is a rise in the floor in the eastern part of the chamber, which is similar to the platforms at the ends of the chamber often found in other dwellings of the Gressbakken culture. Stones in large clusters to the north of the hearth are usual in Gressbakken houses as well. In fact, these are the only structural elements that can be associated with dwellings of the Gressbakken type in the excavated dwelling.

Thus, there are two reasons why the dwelling excavated at Kharlovka 1-6 cannot be unquestionably attributed to the Gressbakken type. First, the vagueness of the Gressbakken type itself. Second, the lack of structural elements and flaws in existing ones of the dwelling discovered in the excavations. At the same time, the types of collected arte-

facts correspond well with those associated with the last phase of the Young Stone Age and Early Metal Age (end of the 3rd – 2nd millennium calBC) and frequently found in Gressbakken dwellings (see below).

Therefore, we can conclude that the assemblage excavated at Kharlovka 1-6 is 1) a semi-subterranean dwelling, 2) belongs to the Gressbakken culture/phase and 3) has a number of structural features common to dwellings of this culture.

4 Artefact assemblage

The artefact assemblage from the Kharlovka 1-6 house includes a large quantity of lithic material (43 807 pcs.), a number of bone tools (48 pcs.), ceramic sherds (32 pcs.), an amber pendant and a copper tubular bead. A number of unmodified artefacts exist as well: quartz (2 pcs.), sandstone (1 pc.) and pumice (9 pcs.) pebbles, pieces of ochre (5 pcs.) and asbestos (16 pcs.). It also contains the bones of mammals, fish and birds. The majority of the material was found within the preserved house layer, but a fair quantity was also collected from the sandy surface next to the excavated area.

4.1 Lithics

Table 1 describes the general characteristics of the lithic assemblage. Local sources of raw materials were used for the manufacturing of quartz tools (pebbles and pieces of vein quartz). The knapping technique was aimed at obtaining flakes. Slate is also widely represented at the site. However, the small size of the flakes, the high percentage of debris from ground tools and a case of their refurbishing into bipolar cores might indicate a scarcity of this material. The number of chert and sandstone flakes in the assemblage is negligible.

The assemblage is dominated by quartz tools and debitage. Various types of scrapers are present: single-edged scrapers and double-edged scrapers with convex and concave edges (Fig. 7: 1–3). Knives (Fig. 7: 5), piercing tools (Fig. 7: 4) and a combination of

Techno-logical group	Type	Lithic material							Total
		quartz	slate	chert	soap-stone	sand-stone	granit	pum-ice	
Debitage	Precore, Core	397	2						399
	Chip	42							42
	Flake, blade (including biface trimming flakes)	10850	563	15		11			11439
	Micro-debitage	30655	354	4					31013
	Sawed-out fragment		4						4
Tools and preforms	Retouched flake, blade	206	7	2					215
	Scraper	390	1	1					392
	Piercing tool, point	21							21
	Knife	29							29
	Composite tool	4							4
	Retouched arrowhead	4							4
	Bifacial arrowhead, preforms	1	7						8
	Bifacial preform	1	5						6
	Slate plate preform		3						3
	Polished knife		14						14
	Polished arrowhead		23						23
	Polished rod		1						1
	Wood-chopping tool, preform		4						4
	Polished tool fragment		4						4
	Flake detached from a ground tool		114						114
	Plate with traces of grinding		2			1	1		4
	Abrasive tools	Grinding slab		4			4		
Saw						2			2
Grinding slab with a groove								5	5
Other	Hammer stone	1					12		13
	Anvil						1		1
	Notched club						1		1
	Weight-stone						1		1
Total		42601	1112	22	1	18	15	5	43774

Table 1. Kharlovka 1-6. Lithic artefact assemblage.

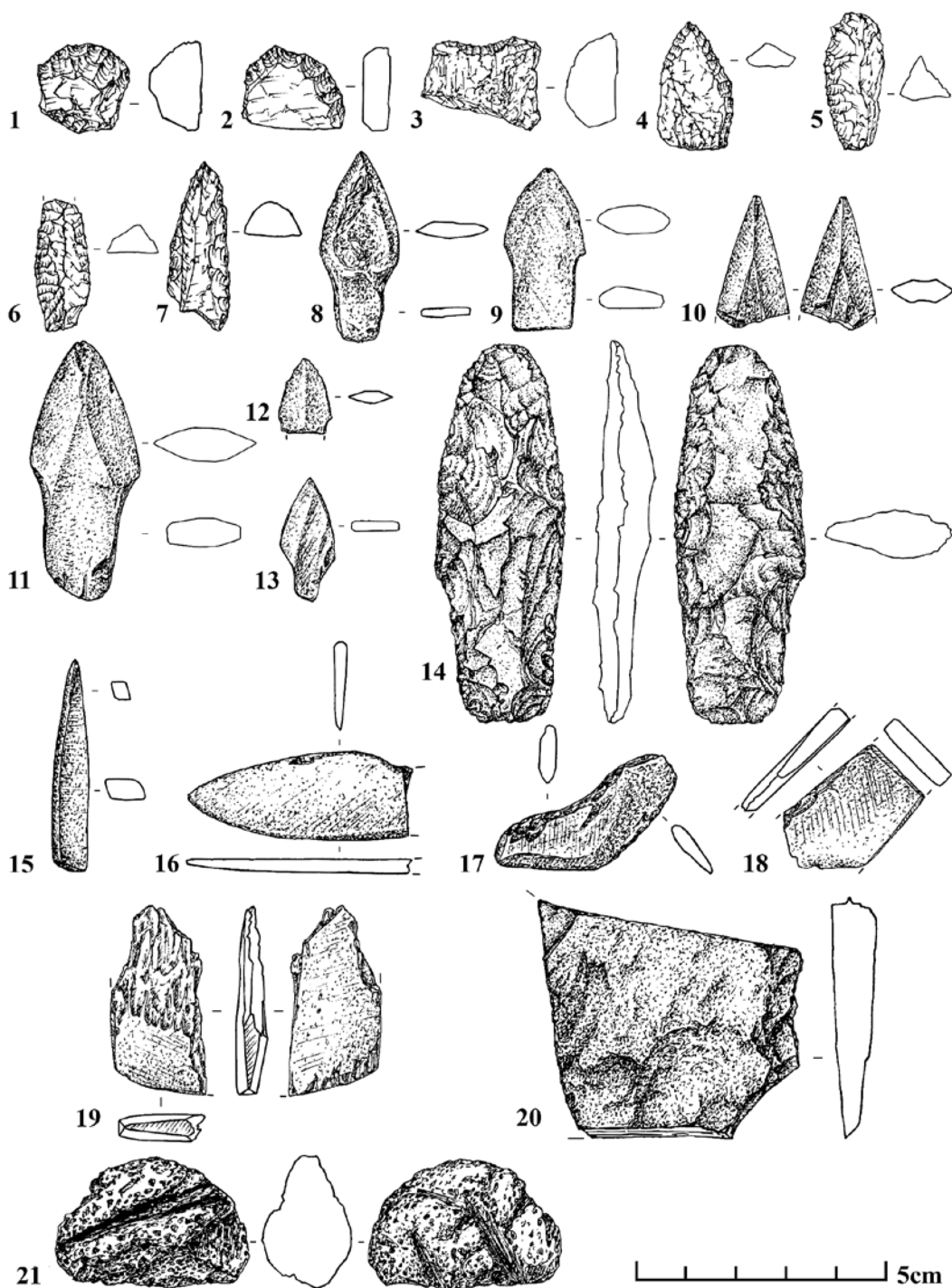


Figure 7. Lithic artefacts from the Kharlovka 1-6 site. 1-3 – scrapers, 4 – piercing tool, 5 – knife, 6-7 – re-touched arrowheads, 8-13 – polished arrowheads, 14 – bifacial preform, 15 – polished rod, 16-18 – polished single-edged knives, 19 – plate with traces of grinding, 20 – saw, 21 – grinding slab with grooves. 1-7 – quartz, 8-18 – slate, 19 – soapstone, 20 – sandstone, 21 – pumice. Drawing: A. Malutina.

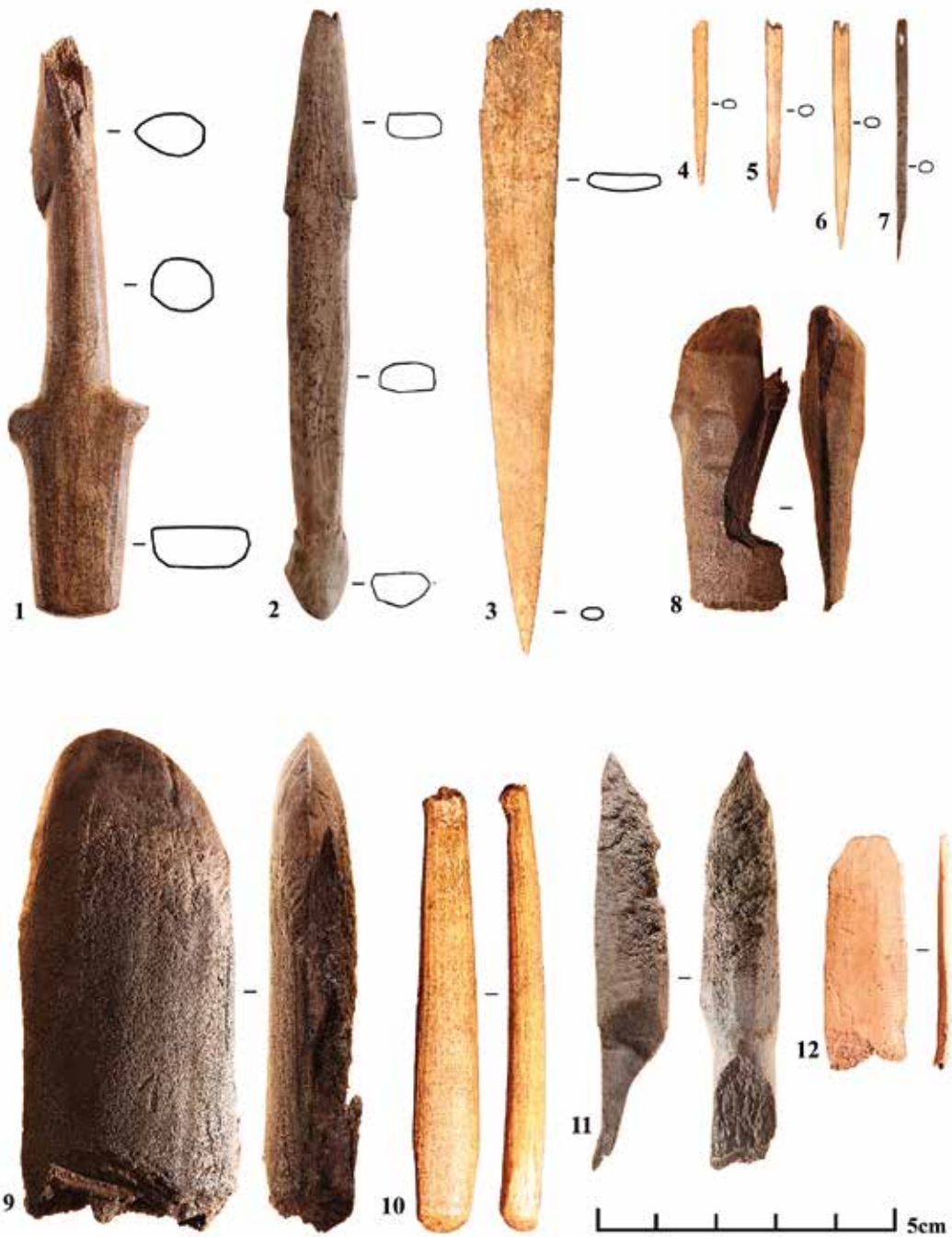


Figure 8. Bone and antler artefacts from the Kharlovka 1-6 site. 1 – barbed harpoon head, 2 – leister head, 3 – piercing tool, 4–7 – needles, 8–9 – chisels, 10 – crochet hook, 11 – preform for an arrowhead, 12 – fragment with traces of processing with metal tool. Photo: D. Shekhirev, A. Malutina.

tools (piercing tool–scraper) are also present in the assemblage. The quartz material also includes one blade and 205 retouched flakes. Most of them have an irregular retouch, which does not form a clear working edge and might be a result of usage. Other items with 2–3 retouch scars might obviously constitute tool fragments.

Four quartz tools are considered to be fragments of arrowheads. They have two parallel edges on the dorsal surface with an abrupt or semi-abrupt retouch (Fig. 7: 6); one of them has retained its sharp point (Fig. 7: 7). In addition, there is a base fragment of a bifacial arrowhead and a preform of a bifacial tool. Two implements classified as piercing tools and characterised by a regular semi-abrupt retouch at two edges that converge at an acute angle could also be fragments of quartz arrowheads.

The next largest component of the lithic assemblage is slate. Twenty-three ground slate arrowheads and their fragments exist, 11 of which are diagnostically complete (all tanged) (Fig. 7: 8, 9, 11–13), eight of which are tang fragments and four of which are point fragments. One of the fragments has longitudinal grooves on both surfaces, which is one of the main characteristics of the Sunderøy type (Fig. 7: 10), widespread throughout northern Fennoscandia during the Late Neolithic and Bronze Age (Gjessing 1942, p. 172–174; Rankama 1986). The assemblage contains six fragments (2 distal, 4 medial) and one complete preform of bifacial arrowheads. All of them have been treated with irregular retouching and have an asymmetrical cross section, while one preform has a tang (Fig. 7: 14). Most likely they are preforms for ground arrowheads.

Polished knives (14 pcs.) are the second largest group of slate tools. Only one intact knife exists in the assemblage (Fig. 7: 17), with the rest represented by fragments. All of them are single-edged knives, with the angle of convergence of blade and handle at approximately 40–50 degrees (Fig. 7: 16, 18). As far as can be observed from the fragments, all the knives are miniature in size.

Wood-chopping tools are represented by one miniature chisel, one small preform and two fragments of adzes (butt and blade). The assemblage also includes 114 flakes detached from ground tools, some of which were undoubtedly knapped off from massive wood-chopping tools. The slate material also includes one polished rod with a pointed tip (Fig. 7: 15), four undefined fragments of polished tools and two plate fragments with traces of grinding. Four fragments of bifacial preforms were left in the initial stage of manufacturing.

The technological group of abrasive tools includes grinding slabs made of slate (4 pcs.) and sandstone (4 pcs.) as well as two fragments of sandstone saws (Fig. 7: 20). The use of sawing is also exemplified by four slate sawed-out fragments. There are five small rounded pumice pebbles with narrow grooves from sharpening objects with small cross sections (needles, awls?) (Fig. 7: 21). Other finds include a miniature plate made of soapstone grounded on the flat and lateral side surfaces (Fig. 7: 19), with hammer stones made of granite (12 pcs.) and quartz (1 pc.) pebbles. The material also contains a granite anvil, a sinker and a notched club. The club has a transverse ring groove for tying, and the faces of the club show traces of smashing.

4.2 Bone tools

The bone and antler assemblage are relatively abundant. A total of 48 implements and fragments of worked bones were found, with 19 tools being finished and archaeologically complete and the rest consisting of small fragments or preforms. The technological and use-wear analysis has revealed that the tools and preforms made of reindeer antler outnumber those made of reindeer bone (Murashkin et al. 2019: 92). This corresponds with the ratio of such raw materials found at Ust-Drozdovka 3 and Gressbakken Nedre Vest (Hodgetts & Rahemtulla 2001).

The presence of preforms and manufacturing debris apparently indicates that the

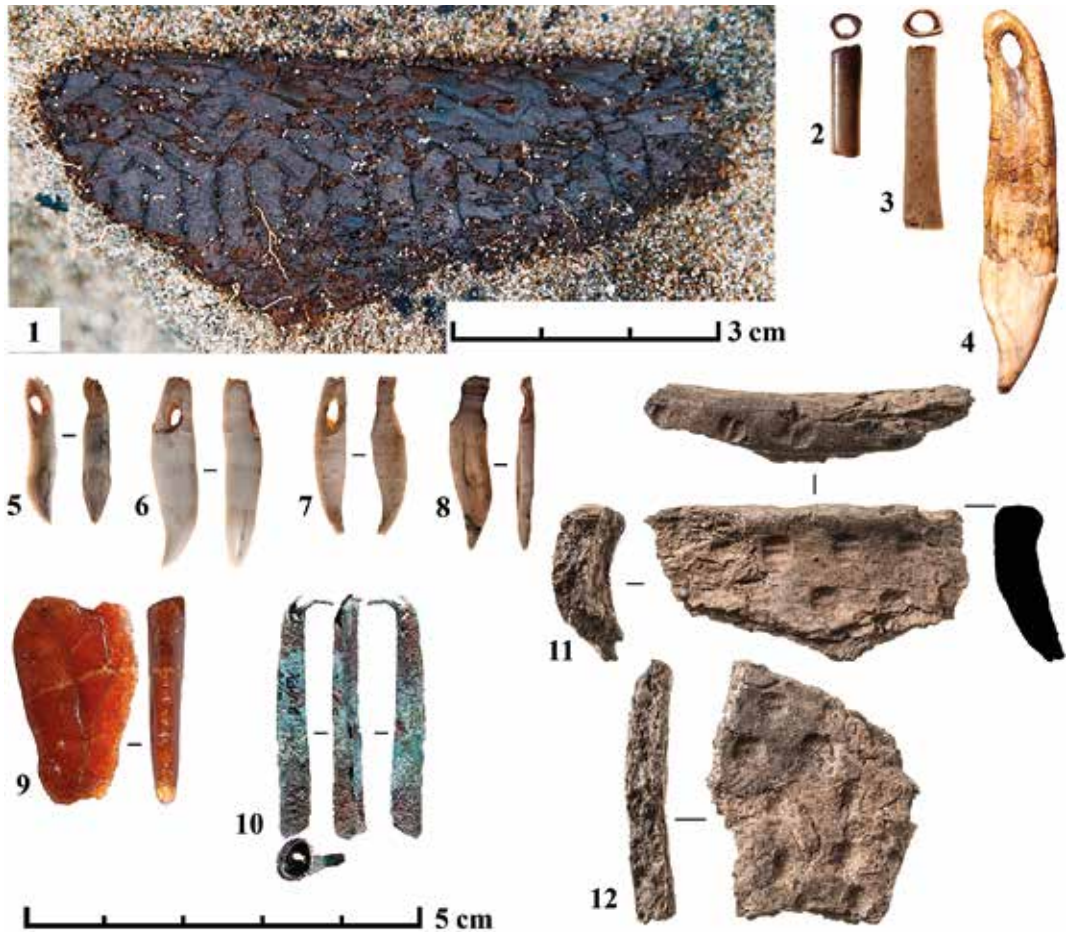


Figure 9. Artefacts from the Kharlovka 1-6 site. 1 – decorated bone plate, 2–3 – bone tubular spacer beads, 4 – pendant made of elk tooth, 5–8 – pendants made of seal teeth, 9 – amber pendant, 10 – copper tubular bead, 11–12 – ceramic fragments. Photo: E. Kolpakov, D. Shekhirev, Yu. Rumiantsev.

production of implements took place at the site. The preforms were predominantly produced using the method of longitudinal and transverse splitting and breaking along pre-cut grooves or cracks. The implements were manufactured by planing, scraping and cutting. The final processing included grinding and polishing (Murashkin et al. 2019: 92).

The fishing and hunting equipment includes a barbed harpoon head (Fig. 8: 1), a leister (Fig. 8: 2) and a preform of an arrow-head (Fig. 8: 11). The leister is characterised by two small barbs and an expanded round-

ed base. The harpoon head has one barb and a rectangular base and, according to the typological system of Murashkin and Kiseleva (2018: 113–117), it belongs to a time-diagnostic type hG2. Harpoons of this type were widespread during the Gressbakken phase in northeastern Norway (Murashkin et al. 2019: 89–91).

Other tools include five needles (Fig. 8: 4–7), three chisels (Fig. 8: 8, 9), a crochet hook (Fig. 8: 10) and two awls. All the needles are characterised by a rectangular cross section and the presence of a cut and pierced

eye. The surface of the needles bears polishing and linear traces associated with leather processing (Murashkin et al. 2019: 93–95). The traces on the rounded chisel edge also relate to leather processing (probably to fleshing) (Murashkin et al. 2019: 97–99). The crochet hook with a small projection on the stem has clear analogies with finds from houses at Gressbakken Nedre Vest (Simonsen 1961: Fig. 142: a) and Mayak 2 (Gurina 1997: Fig. 62: 23–26, 28).

Adornments comprise the most numerous category. They include five teeth pendants with holes made by cutting and piercing (four from seal canine teeth (Fig. 9: 5–8) and one from an elk's incisor tooth (Fig. 9: 4)). Three tubular spacer beads made of bone (probably bird bone) were also found (Fig. 9: 2, 3). An interesting find is a bone plate with geometric patterns. Unfortunately, it was in very bad condition (Fig. 9: 1). Artefacts with a similar pattern were found at Mayak 2 (Gurina 1997: Fig. 54: 3, 4, 14), Ust-Drozdovka 3 (Murashkin et al. 2019: Fig. 4: 37) and Gressbakken Nedre Vest (Simonsen 1961: Fig. 143: 1).

Use-wear analysis showed that virtually all bone/antler implements were produced with stone tools. However, one small fragment of an artefact made of antler (?) bears traces of planing with a metal instrument (Fig. 8: 12), which is unique evidence from the period.

4.3 Ceramics

The assemblage includes 32 small pottery sherds, most of which do not have an outer or inner surface. The colour of the pottery is light brown or grey, and the thickness ranges from 4 to 9 mm. All the fragments are tempered with asbestos, while one of them also has mica as an admixture (Fig. 9: 11, 12).

Only one rim was found in the house (Fig. 9: 11). This sherd is 6 mm thick and slightly profiled. Decoration consists solely of short comb-like impressions running in horizontal rows on the outer surface and the

rim edge. Similar vessels have been found at different sites in Karelia. They belong to pottery of the Palayguba type dated from 2500 to 1750 calBC (Nordqvist 2018: Fig. 19: e–h; Zhul'nikov 1999: 53–55, Fig. 37–39; 2005; Zhul'nikov in press). Vessels from Sumozero XV (Zhul'nikov 2005: Fig. 89: 2), Bohta II (Zhul'nikov 2005: Fig. 88: 8) and Sulgu III (Zhul'nikov 1999: Fig. 37: 4, 8) have an almost identical ornamentation and rim shape. On the Kola Peninsula, pottery of this type was also collected from the Mayak 2 site (Zhul'nikov 2005: 29–31; Zhul'nikov in press).

4.4 Exotic goods

Both the amber pendant and the copper tubular bead were derived from the eroded slope area. The amber adornment is characterised by an oblong drop-shape form and circular perforations on the broader side (Fig. 9: 9). On the Kola Peninsula, amber artefacts were found at Mys Semerka (Gurina 1997: Fig. 45: 7) and Mayak 2 (Gurina 1997: Fig. 62: 3). Both were found in cultural layers that contain finds from the Neolithic to the Iron Age, so their dating is difficult. Several amber artefacts are known to exist in northern Norway; these mostly date back to the 4th millennium calBC (Ramstad 2006). However, in Karelia the flow of amber greatly increases from the second half of the 3rd millennium calBC onwards (Zhul'nikov 2008). Overall, we believe the find from Kharlovka 1-6 is typologically unrepresentative and does not provide a reference for dating. The small tubular bead is 32 mm long and 5 mm in diameter, rolled up with a thin sheet of copper in one and a half turns (Fig. 9: 10) and with traces of bending and breaking at one end. XRF analysis has shown that the tubular bead is made of pure copper. This find is unique for the Kola Peninsula. A similar product was found at the Lillberget settlement in northern Sweden (Halén 1994: Fig. 183, 188). It was originally dated to 3900 calBC, but current analysis suggests that the settlement was inhabited for a long time

and the narrow dating of the tubular bead is questioned (Nordqvist et al. 2011). Tubular beads and bracelets were also found in some burial grounds of the Fat'yanovo culture on the Upper Volga (Krainov 1987: Fig. 35: 4, 20–21), which dated back to the 3rd millennium calBC (Krenke 2019).

5 Faunal remains

The osteological analysis is preliminary. Animal bones were found in most of the investigated area. Their level of preservation varies greatly: from almost perfect condition to complete decomposition. Therefore, the number of unidentifiable bones is large. In total, 10,678 bones or their fragments were investigated, of which 3,953 have been identified at the level of species, genus or family. The analysed materials include all mammal remains and bird bones excavated during the years 2017 and 2018, while the rest of the bird and fish bones have not been properly analysed yet. Also, most of the small, burned bone fragments have not been counted and examined. Osteological analysis of the mammal bones was carried out by Ekaterina Petrova (Zoological Institute RAS, Saint Petersburg), while the bird bones were identified by Natalia Volkova (Paleontological Institute RAS, Moscow) and Kristiina Mannermaa (University of Helsinki). The distribution of animal bones by species is represented in Table 2.

The mammal assemblage is dominated by marine fauna, especially harp seal (*Phoca groenlandica*) bones, which comprised 96,4% of the identifiable mammal bones. The remains are represented by all parts of the skeleton, but carpals, tarsals and phalanges predominate in number. Some of the bones were burned. The examined remains belong to adults, sub-adults and juvenile seals. However, the bone remains of sub-adult and juvenile animals outnumber those of the adults. The presence of juveniles indicates that at least some of the harp seals were killed in the spring and early summer.

The next largest marine mammal species is walrus, consisting of 37 pieces. Most of the walrus bones belong to an adult animal, while one bone belongs to a juvenile. There are also cetaceans, represented by two fragmented bones.

Of the terrestrial mammals, wild reindeer and red fox (*Vulpes vulpes*)/arctic fox (*Vulpes lagopus*) are dominant, though a few Eurasian elk (*Alces alces*), mountain hare (*Lepus timidus*) and Eurasian beaver (*Castor fiber*) bones also occur. The bones of these species belong to adults.

Bird remains are represented by marine birds, shore birds, forest birds and predator birds. They belong to ten families, of which gulls (Laridae), ducks (Anatidae) and auks (Alcidae) are most numerous. Other aquatic bird species include cormorants (*Phalacrocorax* sp) and pomarine jaeger (*Stercorarius pomarinus*). Forest and predator birds consist of hazel grouse (*Bonasa bonasia*), ptarmigan (*Lagopus* sp), common curlew (*Numenius arquata*) and peregrine falcon (*Falco peregrinus*). Wing bones are the most common anatomic elements for all material, but significant differences exist between most common families (legs are more common in auks than in ducks and gulls). In the 2017 assemblage, approximately 20% of the bones were also burned.

Most of the identified species are migratory and live along the shoreline of the Kola Peninsula only during spring, summer and autumn. Three juvenile birds – two subadults and one pullus – were identified in the material. Two of them represent the common guillemot (*Uria aalge*)/razorbill (*Alca torda*) and peregrine falcon. These species are late breeders and demonstrate a late summer hunting season. One humerus of a large gull most likely contains a medullary bone that is present inside bones only during breeding (during egg formation). The presence of the medullary bone and young birds indicate that these birds were caught during the summertime. Hazel grouse and unspecified ptarmigan are local birds in the material, and they could be hunted year round.

Species	NISP	MNI
MAMMALS (2017, 2018, 2019)		
Harp seal (<i>Pagophilus groenlandicus</i>)	3718	25
Walrus (<i>Odobenus rosmarus</i>)	37	2
Cataceans (<i>Cetacea indet.</i>)	2	1
Reindeer (<i>Rangifer tarandus</i>)	32	2
Elk (<i>Alces alces</i>)	2	1
Fox/arctic fox (<i>Vulpes sp.</i>)	44	2
White hare (<i>Lepus timidus</i>)	1	1
Hare (<i>Lepus sp.</i>)	8	1
European beaver (<i>Castor fiber</i>)	1	1
Red-backed mouse (<i>Clethrionomys sp.</i>)	1	1
Red-backed lemming (<i>Myopus schisticolor</i>)	3	1
Bank vole (<i>Arvicola amphibia</i>)	3	1
Field vole (<i>Microtus sp.</i>)	1	1
Indeterminate bones of small mammals	9	
Indeterminate bones of large mammals	417	
Indeterminate bones	6234	
BIRDS (2017, 2018)		
Mallard (<i>Anas platyrhynchos</i>)?	1	
Velvet scoter/ goosander (<i>Melanitta fusca/Mergus merganser</i>)	1	
Goosander/ red-breasted merganser (<i>Mergus merganser/Mergus serrator</i>)	1	
Common eider (<i>Somateria mollissima</i>)	6	
King eider (<i>Somateria spectabilis</i>)	7	
Eider (<i>Somateria sp.</i>)	1	
Ducks (<i>Anatidae</i>)	5	
Hazel grouse (<i>Bonasa bonasia</i>)	4	
Willow/rock ptarmigan (<i>Lagopus lagopus/L. muta</i>)	1	
Black-throated loon (<i>Gavia arctica</i>)	1	
Great cormorant (<i>Phalacrocorax carbo</i>)	2	
Peregrine falcon (<i>Falco peregrinus</i>)	1	
Eurasian oystercatcher (<i>Haematopus ostralegus</i>)?	1	
Common curlew (<i>Numenius arquata</i>)	2	
Pomarine skua (<i>Stercorarius pomarinus</i>)	5	
Common gull (<i>Larus canus</i>)?	1	
Lesser black-backed gull (<i>Larus fuscus</i>)	6	
European herring gull (<i>Larus argentatus</i>)	1	
Great black-backed gull (<i>Larus marinus</i>)	11	
European herring gull/ Lesser black-backed gull (<i>Larus argentatus/L. fuscus</i>)	10	
European herring gull/Great black-backed gull (<i>Larus argentatus/L. marinus</i>)	7	
Great black-backed gull/glaucous gull (<i>Larus marinus/L. hyperboreus</i>)	2	
Brünnich's guillemot (<i>Uria lomvia</i>)	1	
Common guillemot/Brünnich's guillemot (<i>Uria aalge/Uria lomvia</i>)	7	
Razorbill (<i>Alca torda</i>)	1	
Razorbill (<i>Alca torda</i>)?	1	
Common guillemot/Brünnich's guillemot/ razorbill (<i>Uria aalge/U. Lomvia/Alca torda</i>)	11	
White wagtail (<i>Motacilla alba</i>)?	1	
Atlantic puffin (<i>Fratercula arctica</i>)	1	
Indeterminate bird bones	65	
Total	10678	

Table 2. Kharlovka 1-6. Faunal assemblage.

Preliminary analysis of the fish bone assemblage from the 2017 excavation shows bones from small Atlantic cod (*Gadus morhua*) and large unidentified codfish (*Gadiformes*). At least one bone from a very large flatfish (*Pleuronectiformes*) is present. The fish bones are mainly ribs and fin bones, vertebrae, upper and lower jaws, and some other head bones. Additionally, several unspecified shell fragments were found in the material.

Overall, the species reflect a typical coastal Arctic environment and certainly indicate the exploitation of marine resources. Moreover, particular species of birds and sea mammals indicate that the dwelling could have been inhabited most of the year.

6 Dating

Besides the date for the seal bones, 2940–2570 calBC (4209±80, SPb-1561), we also obtained two conventional radiocarbon dates from the charcoal samples¹. These reliable dates indicate the middle of the 3rd millennium calBC: 2570–2330 calBC (3950±45, SPb-2410) and 2620–2330 calBC (3972±50, SPb-2409)². The first sample was procured from the floor area and the second one from the eastern part of the hearth.

The house site assemblage contains some diagnostic artefacts in terms of dating. First, it contains pottery sherds of the Palayguba type; this type was radiocarbon dated from 2500 to 1750 calBC (Zhul'nikov in press). Second, it contains polished slate arrowhead of the Sunderøy type. The earliest of these points dates back to approximately 2500–2100 calBC (Hesjedal et al. 2009: 418). Additionally, the type of antler harpoon head (hG2) points to the second half of the 3rd millennium calBC (Murashkin & Kiseleva 2018). In general, the types of artefacts indicate a period not earlier than 2500 calBC.

The house is situated at an elevation of 14,3–15,3 m in the Baltic elevation system. The relative sea level curve closest to the site was plotted for the Yarnyshnaya and Dalnezelenetskaya bays (Snyder et al. 1997).

The relative sea level curve shows that the 15-metre level was exposed at around 5000 calBC, while the sea level in 2500 calBC was approximately 9–10 m above present levels.

7 Discussion

Due to the structural features revealed in the excavation, the dwelling at Kharlovka 1-6 is most similar to the so-called Gressbakken-type houses. Such houses are spread out along the Barents Sea coast and usually located in bays or fjords, though a few houses have been found on inland rivers in Norway (Simonsen 1963: 135–137, 162–168). Simonsen first described these dwellings as a specific type after extensive excavation work in Varangerfjord in the 1950s. Since then, such dwellings have been of much archaeological interest in Norway and later in Russia. However, this type of house has still not been clearly defined with a clear set of features. Common features of note include a large rectangular semi-subterranean chamber, a stone-framed double hearth placed along the longitudinal axis and multiple entrance passages. Frequently, the houses have wall-mounds containing refuse and raised platforms or annexes at both ends (Hood 2017; Schanche 1994: 3). The remains of chimney pipes have been recorded for several houses (Kolpakov et al. 2016: 180).

The vague definition of the “Gressbakken type” arises, among other things, from the small scale of excavations for most of the dwellings. In most cases, the excavation was limited to the floor area of the central chamber (or a part of it). Raised platforms and entrances/annexes were usually left outside the excavation areas and wall mounds were investigated via narrow trenches (for example Simonsen 1961: Fig. 114, 122; Schanche 1989: Fig. 3). Only a few houses at Gressbakken Nedre Vest (houses 3–4), Advik (houses b, j), Leirpollen, Bergeby, Bugøyfjord, Kalkillebukta and Høybukt can be regarded as more or less completely excavated (Fig. 1).

The most important features of Gressbakken houses (hearth structure, large size and depth of the chamber, platform at the end of the chamber) are represented in the Kharlovka 1-6 dwelling. In addition, the artefact assemblage is similar to the set of artefact types from the Gressbakken culture (phase). Thus, the dwelling at Kharlovka 1-6 is the seventh “classic Gressbakken” type house studied in Russia. Others include dwellings at the settlements of Grottug, Dvorovaya, Ust-Drozdovka 3 and Zavalishina 5 (Kolpakov et al. 2020; Carpelan & Ovsianikov 2013; Seitsonen 2006) (Fig. 1).

The majority of the Gressbakken-related ^{14}C dates in northern Norway fall between 2400/2200 and 1600 calBC, meaning they fall at the end of the Late Stone Age and Early Metal Period in the Norwegian chronological framework (Hood & Helama 2010; Olsen 1994; Schanche 1994). Radiocarbon dates for the Gressbakken-type houses on the Kola Peninsula were obtained from Ust-Drozdovka 3, Zavalishina 5 and Kharlovka 1-6. The large set of ^{14}C dates from house 5 at Ust-Drozdovka 3 fall between 2300 and 1500 calBC (Helskog et al. in press). Four ^{14}C dates were obtained from house 6 at Zavalishina 5 (Kolpakov et al. 2020: Table 2). Two of them are from the layers that filled the house chamber: 3490–2500 calBC (4327 \pm 150 BP, SPb-297) and 2470–1930 calBC (3754 \pm 100 BP, SPb-298). They were obtained from charred organic residues (food crusts) on ceramic sherds. However, they contradict each other. The first sample originates from horizon 6, and the second one from horizon 15. The second lies 60 cm lower than the first, but its dating is earlier than the first one. Therefore, the radiocarbon dates from Zavalishina 5 are not sufficiently reliable. At the same time, they date back to near the beginning of the Gressbakken tradition.

The Kharlovka 1-6 dates indicate a period from 2600 to 2300 calBC. They are earlier than the current dating for Gressbakken houses in northern Norway. It can be assumed that the Gressbakken-type dwellings in the eastern part of their distribution area, on the

Murmansk coast, appeared several centuries earlier than in northeastern Norway. It should be noted that large semi-subterranean dwellings from the Late Neolithic period, with two (sometimes more) fireplaces situated along the long axis and entrances and/or annexes at the long ends of houses, have been found in Karelia (Zhul'nikov 2003: 59–63, 81; 2005: 85–96), Finland (Mökönen 2011: 24–29; Pesonen 2002) and the Komi Republic (Karmanov 2017; Stokolos 1986, 1988). The similarities between the Late Neolithic ceramics of the Kola Peninsula and Karelia and the emergence of exotic materials (copper, amber) seem to reflect the direction of cultural influences from south to north. Perhaps some features of Gressbakken dwellings may reflect the influence of house-building traditions that existed in the vast taiga zone of Eastern Europe.

The faunal remains assemblage from the Kharlovka 1-6 house is quite similar to that from the Gressbakken-type houses in northern Norway (Hodgetts 1999; Olsen 1967; Renouf 1989; Schanche 1994). Osteological analysis of other faunal assemblages from the Kola Peninsula was conducted for Ust-Drozdovka 3 (Helskog et al. in press) and Zavalishina 5 (Kolpakov et al. 2016: 180–182). However, the data from Zavalishina 5 does not contain any identification of fish and bird bones. All three assemblages are dominated by marine mammal bones: harp seal, ringed seal, white whale, white-beaked dolphin and walrus. A small number of terrestrial mammal bones (wild reindeer, red fox/arctic fox, brown bear, Eurasian elk and Eurasian beaver) are represented. Just as with the Gressbakken-type houses in northern Norway, evidence exists of possible year-round residence (or for most of the year) at Ust-Drozdovka 3 and Kharlovka 1-6. The large number of harp seal bones (with a predominance of pups and juvenile animals) indicates active sea hunting in late winter and spring. Evidence of summer and autumn habitats is less abundant. The presence of migratory bird bones supports this conclusion.

The similarity between faunal materials and hunting equipments in most Gressbakken-type houses indicates that a common culture of sea hunter-gatherers has spread along the coast of the Norwegian Sea and Barents Sea, from Porsanger Fjord (Schanche 1994: 68–70) to St. Nose Cape (Kiseleva & Murashkin 2019; Kolpakov et al. 2016: 182–183).

8 Conclusion

In 2017–2019, the Kola Archaeological Expedition of the Institute for the History of Material Culture of RAS studied the remains of a house at Kharlovka 1-6 on the northern coast of the Kola Peninsula. The revealed construction has a number of features that are typical of so-called Gressbakken-type dwellings. According to the results of the excavations done on the Murmansk coast and in northern Norway, the area of distribution of such houses (and, in general, the Gressbakken culture) is approximately from Porsanger Fjord to St. Nose Cape. The radiocarbon dating, diagnostic types of stone and bone tools, and ceramics show that the house at Kharlovka 1-6 is one of the earliest houses of this type, dating to 2600–2300 calBC. Therefore, it may be that the tradition of Gressbakken-type houses emerged around

the middle of the 3rd millennium calBC on the Kola Peninsula.

The faunal remains, which are dominated by marine mammals (especially harp seals) and seabirds, clearly indicate marine adaptation of the population living at the Kharlovka 1-6 site. This is also evidenced by fishing and hunting tools (harpoon and leister heads). The osteological analysis indicates that the site was exploited for most of the year, which is a consequence of the effective adaptation of the ancient population to life in the high Arctic.

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Notes

- 1 Wood species was not identified.
- 2 All dates were calibrated by OxCal v4.4.2 (Bronk Ramsay 2009); r5; IntCal 2020 curve; Atmospheric data from Reimer et al. 2020.