



Preliminary results of the research at Corded Ware sites in the Narva–Luga interfluvium, Estonian–Russian border area in 2008–2014

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INTRODUCTION

The Narva–Luga interfluvium, named after the two major rivers in the Estonian–Russian border area, is located on the south-eastern coast of the Gulf of Finland of the Baltic Sea (Fig. 1A & B). It consists of two large landscape regions: the coastal lowland in the north and the plateau (the Baltic Klint) in the south. The lowland, characterised by marine and fluvial sediments, is geologically an old Klint bay and sharply contoured to the south and east by the Cambrian/Ordovician Baltic Klint. The lowland is located in a sensitive coastal area, which has experienced a slow but uneven interplay of glacioisostatic land-uplift and eustatic changes of sea level. As a result, transgressions and regressions of the Baltic Sea have affected and reshaped the area several times in the past (for a detailed hydrological and geological history, see Rosentau *et al.* 2013).

Although a couple of stone axes had been discovered in the region already during the second half of the 19th century (Tallgren 1922, 54), substantial Stone and Bronze Age research began only in the 1930s with excavations conducted by Richard Indreko (1932; 1948). In the 1950s and 1960s several new sites were found and large-scale excavations, led by Nina Nikolaevna Gurina and Lembit Jaanits, were carried out at some of them (Jaanits 1955; 1965; Gurina 1967; for a detailed research history until 1995, see Kriiska 1996). During these

fieldwork campaigns the first Corded Ware period materials were unearthed at the settlement sites Riigiküla I and II, as well as at Narva Joaorg (Jaanimäe 1966).

The second phase of intensive research on the Estonian side of the Narva–Luga interfluvium started in the 1990s, when numerous sites were discovered and excavated, including two Corded Ware settlements (Riigiküla IV and XIV) (Kriiska 2000; Kriiska & Nordqvist 2007). Ten years ago (2005) research was further intensified, as the studies started anew also on the Russian side of the interfluvium. Since then research has been conducted in the Narva–Luga interfluvium annually by an international crew of archaeologists and natural scientists (geologists, marine geologists, limnologists, palaeogeographers, geomorphologists, geochemists, palynologists, geophysicists and other specialists), mainly from Tartu and St. Petersburg.

A brief overview of the main results of the investigations at the Corded Ware sites in the Narva–Luga interfluvium between 2008 and 2014 will be given in this article. The results presented here are an updated version of a parallel paper published in Russian (Kriiska *et al.* 2015).

RESEARCH OF CORDED WARE SITES IN 2008–2014

As a result of recent fieldwork, over 40 new sites have been discovered, which date between 5100–2000 cal BC (partly published in Gerasimov *et al.* 2012; 2013). The results show that the Narva–Luga region was densely inhabited at least throughout the later part of the Stone Age. In addition, the finds have given important insights into the local landscape and hydrological development (see Rosentau *et al.* 2013; Gerasimov *et al.* 2014).

The recent discoveries include altogether 19 Corded Ware settlement sites and one cemetery (partly published in Kriiska & Nordqvist 2010; 2012; Gerasimov *et al.* 2012; 2013; Kriiska *et al.* 2015) (Table 1). The sites are ¹⁴C-dated to ca. 2800–2000 cal BC (Table 2). The total number of Corded Ware sites – including the previously found locations – is 24 in this very small area (only ca. 1000 km²) (Fig. 1B). This concentration can be held significant considering that in the vast region between the Kaliningrad oblast and Finland altogether ca. 500 settlement sites and ca. 80 cemeteries are known (Nordqvist *et al.* subm.).

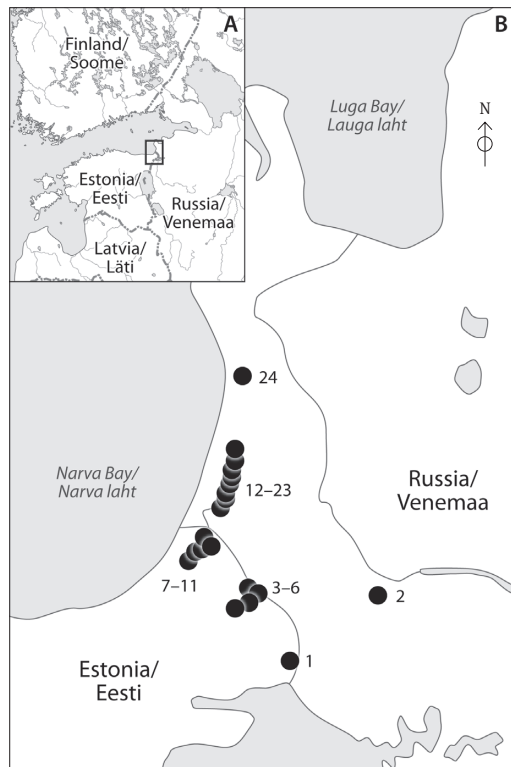


Fig. 1. The location of the Narva–Luga interfluvium in the eastern Baltic Sea region (A) and the currently known Corded Ware sites in this area (B). Sites: 1 – Narva Joaorg; 2 – Lommi I; 3–6 – Riigiküla I, II, IV and XIV; 7–11 – Narva-Jõesuu I, Ila, IIb, III, IV; 12–23 – Rosson, 1, 2, 3, 4, 5, 7, 8, 8b, 9, 10, 12; 24 – Väike-Ropsu 1.

Jn 1. Narva – Lauga jõgedevahe Läänemere piirkonna idaosas (A) ja praeguseks teadaolevad nööriajamika asulakohad seal (B). Asulakohad: 1 – Narva Joaorg; 2 – Lommi I; 3–6 – Riigiküla I, II, IV and XIV; 7–11 – Narva-Jõesuu I, Ila, IIb, III, IV; 12–23 – Rosson, 1, 2, 3, 4, 5, 7, 8, 8b, 9, 10, 12; 24 – Väike-Ropsu 1.

Figure / Joonis: Kristel Roog

Table 1. Corded Ware sites found in the Narva–Luga interfluve in 2008–2014, and the main find categories present at these locations (burned bones are not marked in the table).**Tabel 1.** Narva – Luga vesikonnast aastatel 2008–2014 leitud nöörikeramikaga muistised ja nende peamised leiulüügid (tabelis pole märgitud põlenud luid).

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No. / Nr	Site / Muistis	Settlement / Asulakoht	Burial / Matus	Year of discovery / Avastamisaasta	Excavations / Väijakaevamised	Find material / Leiud				
						Pottery / Keraamika	Flint / Tulekiivi	Quartz / Kvarts	Other rocks / Teised kivimid	
1	Narva-Jõesuu I	+		2008	2009	+				
2	Narva-Jõesuu Ila	+	+	2009	2010	+				
3	Narva-Jõesuu IIb	+		2009	2011–2014	+	+	+	+	
4	Narva-Jõesuu III	+		2009		+				
5	Narva-Jõesuu IV	+		2009		+				
6	Väike-Ropsu 1	+		2010		+				+
7	Väike-Ropsu 6	+		2013		+	+	+		
8	Rosson 1	+		2011		+				
9	Rosson 2	+		2011		+				
10	Rosson 3	+		2011		+				
11	Rosson 4	+		2012		+				
12	Rosson 5	+		2012		+				
13	Rosson 7	+		2012		+	+	+		
14	Rosson 8	+		2012		+				
15	Rosson 8b	+		2012		+				
16	Rosson 9	+		2012		+	+	+	+	
17	Rosson 10	+		2013		+				
18	Rosson 12	+		2013		+				
19	Lommi I	+		2012		+				

Table 2. Radiocarbon dates from the Corded Ware sites in the Narva–Luga interfluve. Calibrated by OxCal v4.2 (Bronk Ramsey 2009a); r5; IntCal13 atmospheric curve (Reimer et al. 2013).**Tabel 2.** Narva – Luga vesikonna nöörikeramikaga muististe radiosüsinikudateeringud. Kalibreeritud arvutiprogrammiga OxCal v4.2 r5, kasutades IntCal13 kalibreerimiskõverat.

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No. / Nr	Site / Muistis	Lab. No. / Laboritähis	¹⁴ C age (BP) / ¹⁴ C vanus (BP)	Calibrated date (probability 95.4%) / cal BC / kalibreeritud vanus (95.4%)	δ ¹³ C values (‰) / δ ¹³ C väärtused (‰)	Material / Materjal	Method / Dateerimisviis
1	Riigiküla XIV	Ta-2680	3970±100	2865–2200	– ¹	Charcoal	Conventional
2	Väike-Ropsu 1	Hela-2516	3607±31	2111–1887	–	Burned animal bone	AMS
3	Narva-Jõesuu Ila	Hela-2740	3931±35	2562–2299	-30.5	Crust from a sherd of Corded Ware vessel	AMS
4	Rosson 1a	Hela-2744	3725±40	2284–2041	-28.2	Burned animal bone	AMS
5	Narva-Jõesuu IIb	Poz-58913	4215±35	2904–2678	–	Burned animal bone	AMS
6	Narva-Jõesuu IIb	Poz-58914	3755±30	2284–2041	–	Burned animal bone	AMS

¹ δ¹³C values for datings 1, 2, 5, and 6 are not available.

SITES, FINDS, AND DATINGS

The investigated Corded Ware settlement sites are diverse in terms of their location, as well as in their areal extent, thickness and intensity of cultural layer, and numbers of finds. Even if many of the sites are small and fairly compact, the sites in the Narva–Luga area seem to be somewhat larger and have more finds than the average Corded Ware sites in the eastern Baltic Sea region (cf. e.g. Jaanits 1966, 61–63; Kriiska 2000, 70; Girininkas 2002, 92). In the most extreme cases (Narva-Jõesuu I Ib, and the previously-discovered and -studied Riigiküla XIV) the sites are more than half a hectare in area, and in Rosson region, where extensive territories have been opened by ploughing a large logging area, the sizes of sites (i.e. surface collected find areas) vary between 80 m² and 4600 m² (Fig. 2).

The maximum thickness of cultural layers at settlement sites is usually max. 20–30 cm, although in some rare cases deposits of over 1.5 m have been encountered. The latter are connected to the two semi-subterranean pithouses found at the site Narva-Jõesuu I Ib. Both rectangular-shaped dwellings had been dug to the depth of almost one metre into the ground. Charcoal-rich zones observed by the walls of the structures suggest that the buildings had been founded on timber frames (Fig. 3). The sizes of the buildings are not yet totally clarified, but the walls have been at least 3–4 m long. A fireplace was found inside one of the pithouses.

The composition of find material from the settlement sites is relatively uniform. The assemblages consist mostly of pottery fragments, although in some cases quartz and flint flakes and artefacts, as well as a few whetstones have been found (Kriiska 2000, 63; Kriiska & Nordqvist 2007, 33–34) (Table 1). A fragment of a battle axe, found at the site Rosson 9, can be considered an exception. It is, of course, difficult to link the lithic material securely to Corded Ware if the contexts are



Fig. 2. Rosson 9 Corded Ware site near a small pond, view from the west.

Jn 2. Rosson 9 nõorkeraamika kompleksi asulakoht väikese järviku kaldal, vaade läänest.

Photo / Foto: Aivar Kriiska



Fig. 3. Narva-Jõesuu I Ib, the pithouse partially studied in 2014; the area of the sunken floor is clearly visible against the lighter ground and the remains of timber frame bordering the walls are also visible, view from the west.

Jn 3. Narva-Jõesuu I Ib, 2014. aastal osaliselt uuritud maakoda, süvendatud põhi on selgelt näha heledama pinnase taustal, nagu ka seinte rõhtpalkide jäänused, vaade läänest.

Photo / Foto: Kerkko Nordqvist

mixed and contain several temporal components, albeit at least at Riigiküla XIV and Narva-Jõesuu IIb the artefacts have been found in solid, non-mixed contexts.

Corded Ware pottery sherds (partly published in Kriiska 1996, 64–69; Kriiska & Nordqvist 2007, 34–35; 2010, 20; Kriiska & Rappu 2008, 21; Gerasimov *et al.* 2013, 24; Kriiska *et al.* 2015) originate mostly from flat-bottomed pots (Fig. 4: 2–6), and only rarely from beakers (Fig. 4: 1). The pots are usually made of clay tempered with organic (crushed plant) admixtures, and seldom with mineral material (rock debris, sand, and grog). Also vessels tempered with combinations of organic and mineral admixtures are known. The beakers are generally mineral-tempered. The vessels are shaped by coiling technique and have N-type junctions. The pot surfaces are either smoothed (Fig. 4: 1, 6) or striated (Fig. 4: 2–5), and have often fibre-impressions on them. Decorative elements – pits, notches, cord impressions, grooves – are located only on the upper parts of the vessels, mostly at the neck and rim. Textile impression is encountered rarely on some of the vessels.

Currently, only six radiocarbon dates exist from five sites (Table 2). According to AMS dates of burned animal bones, the site Narva-Jõesuu IIb was used at least around 2800 cal BC and 2200 cal BC. Dated crusts on a Corded Ware sherd from Narva-Jõesuu IIa gave a median age of about 2400 cal BC. A burned animal bone from Rosson 1a was dated to *ca.* 2200 cal BC. According to the $\delta^{13}\text{C}$ values (Narva-Jõesuu IIa -30.5‰ and Rosson 1a -28.2‰) the last two dates may be affected by reservoir effect and give therefore too old ages, even if they are fairly young for Corded Ware datings as such. Nevertheless, the youngest Corded Ware date comes



Fig. 4. Corded Ware pottery found from settlements in the Narva–Luga area:

1 – Rosson 8, 2 – Rosson 7, 3–6 – Narva-Jõesuu IIb.

Jn 4. Nöörkeraamika killud Narva – Lauga piirkonnast: 1 – Rosson 8, 2 – Rosson 7, 3–6 – Narva-Jõesuu IIb.

Photos / Fotod: Aivar Kriiska

from the site Väike-Ropsu 1, with a median age of about 2000 cal BC. Thus, the datings from the Narva–Luga interfluvium basically cover the whole period of time proposed for Corded Ware in the eastern Baltic Sea region, although they also indicate quite late survival of Corded Ware in this area. Nevertheless, the data is too patchy for determining any internal chronologies or, for instance, temporal differences in pottery.

With regards to the Corded Ware settlement pattern, two major variants for locating the sites can be distinguished in the Narva–Luga interfluvium. The presence or absence of a watercourse or a waterbody near the settlement acts here as the separating factor. Several sites are located on the banks of large rivers, like River Narva (Riigiküla I and II, Narva Joaorg), or on the banks of smaller streams (Lommi I and possibly Narva-Jõesuu I, IIa, IIb, III and IV). Numerous sites lay also near small ponds (Rosson 1–10). However, there are also sites like Väike-Ropsu 1, which are situated on sandy ridges far away from ancient or present-day waterbodies.

THE FIRST CORDED WARE BURIALS IN THE NARVA–LUGA INTERFLUVE

At the site Narva-Jõesuu IIb two graves from the Corded Ware period have been discovered. They are located just a few metres apart, and both are oriented in the north-east–south-west direction. The graves are *ca.* 2 m long, 0.5–1 m wide, and dug into the depth of *ca.* 1.2–1.4 m (from the present-day soil surface). The human remains have decayed completely, but the presence of grave goods confirms the interpretation of these features as graves.

The first grave can be assumed to have been a double burial based on the existence of two sets of grave goods in it (further, the remains of the teeth of an infant were encountered in this grave). One of the deceased was equipped with a battle axe, a whetstone, a Corded Ware beaker and a possible (i.e. fragmented) amber pendant, and the other one (the infant) with a battle axe, a Corded Ware beaker and another small ceramic vessel (Fig. 5A). The second grave contained most likely only one person with grave goods consisting of a Corded Ware beaker, a four-sided adze made of flint and a whetstone (Fig. 5B).

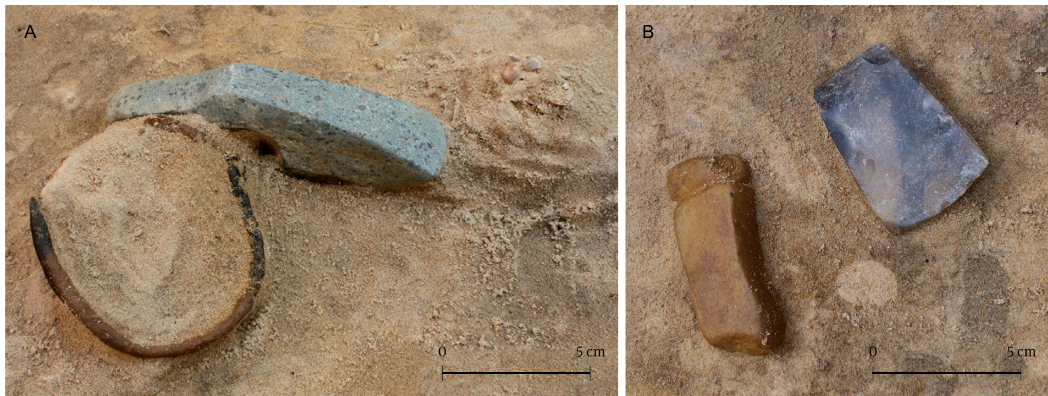


Fig. 5. Narva-Jõesuu IIb, a battle axe and a small ceramic vessel discovered from the double-burial in 2013 (A), and a four-sided flint adze and a whetstone found in the burial studied in 2014 (B).

Jn 5. Narva-Jõesuu IIb, 2013. aastal avastatud kaksikhauast leitud venekujuline kivikirves ja väike savinõu (A) ning 2014. aastal uuritud hauast leitud tulekivist neljatahuline talb ja lihvimiskivi (B).

Photos / Fotod: Aivar Kriiska

DISCUSSION AND CONCLUSIONS

The recently-found and -investigated Corded Ware sites and graves in the Narva–Luga interfluvium substantially expand our knowledge of the period, and also provide supporting – as well as contradicting – evidence for several existing ideas and views. Most of the previously-known Corded Ware settlement sites and assemblages in Estonia and in the eastern part of the Baltic Sea area are mixed with older and/or younger archaeological material (Kriiska 1996, 70). However, in the Narva–Luga area there is a unique possibility to investigate sites without or with very little artefacts from other prehistoric periods.

The find materials from settlement sites are relatively uniform, and characterized by a fairly modest amount of lithic material. This is in accordance with observations made at other sites around the Baltic Sea (Jaanits 1966, 61–63; Edgren 1970, 39–42; Girininkas 2002, 92). The excavations at Riigiküla and Narva-Jõesuu sites, as well as finds collected on the open soil surface in the Rosson region, show that the lack of lithic materials is a real phenomenon, and not just a result of insufficient investigations or limited excavations (Table 1). This may be due to various reasons, including the replacement of stone with other (organic) raw materials. The bone and antler objects (awls, knives, chisels, fish spears, fasteners of garments) from Estonian Corded Ware graves (Lõugas *et al.* 2007, table 2) confirm the big diversity in the usage of non-lithic artefacts. Unfortunately, bone and antler tools are rarely found at settlement sites and even then they are very poorly preserved – in many areas organic artefacts have not been preserved at all. The second factor possibly explaining the limited use of flint and quartz implements could be the replacement of different artefact types by multifunctional flint knives. Such knives, made from long flint blades, are typical artefacts of the period and a very common find from Corded Ware graves in Estonia (Kriiska & Tvaauri 2002, 81). Nevertheless, they are practically absent in the Narva–Luga area. Despite the small size of lithic assemblages, some knowledge has also been obtained of the lithic technology of Corded Ware people, which included at least the use of bipolar knapping technique (Kriiska & Nordqvist 2007, 34).

The pottery found in the Narva–Luga area, at least based on our current state of knowledge and regardless of absolute dates, seems to be very similar throughout the whole region. Organic admixtures in clay, fibre-impressions on the surfaces, as well as the shape of the vessels, connect it closely also with the neighbouring areas. The similarities in pottery provide even a possibility to distinguish a separate Corded Ware cultural area in Estonia, Latvia, Ingria and Karelian Isthmus (Russia) and south-eastern Finland. However, the details of, and reasons behind this development still need further clarification and research.

The remains of the two semi-subterranean pithouses found at the site Narva-Jõesuu IIB are fairly unique in the sphere of the Corded Ware phenomenon around the Baltic Sea. Thus far, no constructions have been unearthed in the neighbouring regions that could be unequivocally recognized as remains of houses. The closest possible building remains are known at the site Valma in central Estonia, where four stone hearths, found in pairs and located four to five metres apart, have been interpreted to mark the location of two parallel longhouses (Jaanits *et al.* 1982, 105–106). In southern Finland, at the settlement site of Malmbacken, two 4 m long and more than 1 m deep, narrow and oval depressions filled with cultural soil have been proposed to represent ‘dwelling pits’ (see Edgren 1970, 40–41). However, this interpretation is not convincing, and apparently the pits do not represent Corded Ware dwellings. Also the connection between the few Corded Ware period finds and the multi-room pithouse studied at the Meskäärty site in south-east Finland (Mökkönen 2008) remains

thus far unproven. The nearest clear remains of Corded Ware houses are known in Sweden and, if the so-called Rzucewo culture is also included within the Corded Ware phenomenon, in the south-eastern coast of the Baltic Sea – in Poland, Kaliningrad oblast and Lithuania. Like the house remains of Narva-Jõesuu IIB, also some of the Rzucewo and Swedish Battle Axe dwellings were semi-subterranean, although shallower and built using post- and wattle-and-daub structures (Rimantienė 1989, 29; Larsson 2009; Zal'tsman 2010, 30–41). According to our knowledge, the timber frames encountered at Narva-Jõesuu IIB find the only direct parallels among the antiquities of Balanovo group in the Vyatka and Oka River Basins of central Russia (Bader & Khalikov 1987, 78).

The location of Corded Ware sites in the Narva–Luga interfluvium – as elsewhere – differs from the location of sites of earlier periods. The natural conditions in the area, of course, had also changed by the Corded Ware period. During the regression of the Litorina Sea, large semi-closed lagoons were isolated from the sea by sandy spits, and also small islands were formed in the Narva–Luga area. From the end of the 6th millennium cal BC onwards groups manufacturing Narva-type pottery, and from the beginning of the 4th millennium cal BC Comb Ware pottery, customarily established their settlements on the shores of these spits and lagoons (Kriiska 1999, 174; Rosentau *et al.* 2013, fig. 7: E–F). Over time the lagoons became totally isolated from the sea and gradually overgrew, and by the appearance of Corded Ware, the 3rd millennium cal BC, the landscape in the region was probably relatively similar to the present, comprising of sandy ridges alternating with rivers, small lakes, ponds and bogs (Rosentau *et al.* 2013, fig. 7: I). As stated above, during this time settlements were located on the banks of rivers and by the ponds, and no sites can be found along the sea shore.

However, changes in the Corded Ware settlement pattern cannot only be explained by changes in the natural environment. The changing settlement pattern seems to be a general tendency, as the coastal sites decrease and even disappear in all coastal areas of the eastern part of the Baltic Sea (Kriiska 2000, 71–72; Edgren 1984, 75; see also Mökkönen 2011 for inland examples). Most likely, the changes reflect modifications in the general mode of living, as well as in the subsistence. Despite the fact that Estonian Corded Ware burials include bones of domestic animals (sheep/goat, pig and bovine) (Lõugas *et al.* 2007), that *Cerealia* type pollens (barley and wheat) are recognized in Estonian bog and lake sediments of this time (Kriiska 2009 with references), and that there is even an imprint of a barley grain on a Corded Ware vessel from northern Estonia (Lang 1996, 165, 168–169), farming is not visible in the archaeological material collected from the Narva–Luga region and, unfortunately, high-resolution pollen analyses are not completed so far. Only some freshwater fish bones (pike, perch, and carp) and some tubular bird bones (Kriiska 2000, 74) have been recognized in the extremely fragmented assemblages of burned bones, albeit most of the osteological material is not yet analysed. Hopefully the ongoing archaeozoological and macrofossil analyses from the cultural deposits of Narva-Jõesuu IIB, as well as the analyses of pollen samples cored from ponds next to the Rosson sites will provide new material and information about the subsistence and economy of Corded Ware groups of this area.

Like in much of the eastern Baltic Sea area, Corded Ware settlement sites in the Narva–Luga interfluvium are usually small and have relatively thin cultural layers and scanty finds. Such sites seem to indicate that single family households were the basic unit of settlement (Lang 1996, 444; Kriiska 2000, 74). At the same time, sites like Riigiküla XIV, Rosson 9 and Narva-Jõesuu IIB show that also large sites, rich in finds and with thick cultural layer exist: at Riigiküla XIV test pitting revealed three large, individual activity areas and in Narva-Jõesuu IIB

the presence of at least two houses is confirmed. As the existing ¹⁴C-dates from Narva-Jõesuu IIB propose different use periods for different parts of the site, not all of the territory of the site was necessarily occupied simultaneously, and, consequently, the structures observed there may not be contemporary (the same applies to the activity areas at Riigiküla XIV and Rosson 9). Still, much more work and datings are needed to solve these questions.

Only one Corded Ware cemetery is currently known in the Narva–Luga region. Nevertheless, the burials at Narva-Jõesuu IIB exhibit special characteristics that differ from the other Estonian Corded Ware burials. The battle axes found in the double burial represent types not common in the eastern Baltic Sea area. On morphological grounds they have the best parallels in the Fatyanovo area of the Volga–Oka interfluvium in central Russia (Raushenbakh 1960, 54–55; Krajnov 1972, fig. 22–23). Before these finds, only a few examples of Fatyanovo axes were known in Estonia, of which one was even found in Narva area (Äyräpää 1952, 89), four axes were known in Finland and three axes on Karelian Isthmus (Nordqvist & Häkälä 2014, table 1). The small, oval bowl-like vessel found in the double burial is likewise a unique find in Estonian context. Good analogies also for this find can be found in the Fatyanovo material (Krajnov 1972, fig. 42; 1987, fig. 31). However, what kind of relationships these new finds indicate between the research area and the Fatyanovo region is a topic for more comprehensive studies in the future.

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REFERENCES

- Äyräpää, A. 1952.** Estnische Bootäxte. – Acta Archaeologica, XXIII, 81–96.
- Bader, O. N. & Khalikov, A. Kh. 1987** = Бадер О. Н., Халиков А. Х. 1987. Балановская культура. – Эпоха бронзы лесной полосы СССР. Ed. by O. N. Bader, D. A. Krajinov & M. F. Kosarev. Археология СССР. Москва, 76–84.
- Bronk Ramsey C. 2009.** Bayesian analysis of radiocarbon dates. – Radiocarbon, 51: 1, 337–360.
- Edgren, T. 1970.** Studier over den snörkeramiska kulturens keramik i Finland. *Suomen Muinaismuistoyhdistyksen Aikakauskirja, LXXII.* Helsinki.
- Edgren, T. 1984.** Kivikausi. – Suomen historia 1. Ed. by Y. Blomstedt. Espoo, 9–112.
- Gerasimov et al. 2012** = Герасимов Д. В., Крийска А. & Лисицын С. Н. 2012. Памятники каменного века юго-восточного побережья Финского залива: хронология и геоморфология. – Краткие сообщения Института археологии РАН, 227, 241–247.
- Gerasimov et al. 2013** = Герасимов Д. В., Крийска А. & Холкина М. А. 2013. Археологические исследования 2012 г. на Кудрукюльской палеокосе в нарвско–лужском междуречье. – Научные исследования и музейные проекты МАЭ РАН в 2012 г. Радловский сборник. Санкт-Петербург, 21–27.
- Gerasimov et al. 2014** = Герасимов Д. В., Крийска А. & Нордквист К. 2014. Изменения береговых линий Финского залива по археологическим данным: современное состояние проблемы. – Труды IV (XX) Всероссийского археологического съезда в Казани 2014 г. Казань, 329–332.
- Girininkas, A. 2002.** Migraciniai procesai Rytų Pabaltijyje vėlyvajame neolite. Virvelinės keramikos kultūra. – Lietuvos Archeologija, 23, 73–92.
- Gurina, N. N. 1967** = Гурина Н. Н. 1967. Из истории древних племен западных областей СССР (по материалам Нарвской экспедиции). *Материалы и исследования по археологии СССР, 144.* Москва-Ленинград.
- Indreko, R. 1932.** Kiviaja võrgujäänuste leid Narvas. – Eesti Rahva Muuseumi Aastaraamat, VII. Tartu, 48–67.
- Indreko, R. 1948.** Bemerkungen über die wichtigsten steinzeitlichen Funde in Estland in den Jahren 1937–1943. – Antikvariska Studier, III. Kungliga Vitterhets Historie och Antikvitets Akademiens Handlingar.
- Jaanits, L. 1955.** Neoliitilised asulad Eesti NSV territooriumil. – Muistsed asulad ja linnused. Ed. by H. Moora & L. Jaanits. Tallinn, 176–201.
- Jaanits, L. 1965.** Über die Ergebnisse der Steinzeitforschung in Sowjetestland. – Finskt Museum, LXXII, 5–46.
- Jaanits, L. 1966.** Venekirveste kultuuri asulatest Eestis. – Pronksiajast varase feodalismiini. Uurimusi Baltimaade ja naaberlalde arheoloogiat. Ed. by H. Moora & J. Selirand. Tallinn, 60–66.
- Jaanits, L., Laul, S., Lõugas, V. & Tõnisson, E. 1982.** Eesti esiajalugu. Tallinn.
- Krajinov, D. A. 1972** = Крайнов Д. А. 1972. Древнейшая история Волго-Окского междуречья. Фатьяновская культура. Москва.
- Krajinov, D. A. 1987** = Крайнов Д. А. 1987. Фатьяновская культура. – Эпоха бронзы лесной полосы СССР. Ed. by O. N. Bader, D. A. Krajinov & M. F. Kosarev. Археология СССР. Москва, 58–76.
- Kriiska, A. 1996.** Stone Age settlements in the lower reaches of the Narva River, North-Eastern Estonia. – Coastal Estonia: Recent Advances in Environmental and Cultural History. Ed. by T. Hackens, S. Hicks, V. Lang, U. Miller & L. Saarse. *PACT, 51.* Rixensart, 359–369.
- Kriiska, A. 1999.** Formation and development of the Stone Age settlement at Riigiküla, Northeastern Estonia. – Environmental and Cultural History of the Eastern Baltic Region. Ed. by U. Miller, T. Hackens, V. Lang, A. Raukas & S. Hicks. *PACT, 57.* Rixensart, 173–183.
- Kriiska, A. 2000.** Corded Ware culture sites in North-Eastern Estonia. – De temporibus antiquissimis ad honorem Lembit Jaanits. Ed. by V. Lang & A. Kriiska. *Muinasaja teadus, 8.* Tallinn, 59–79.
- Kriiska A. 2009.** The beginning of farming in the Eastern Baltic. – The East European Plain in the Eve of Agriculture. Ed. by P. M. Dolukhanov, G. R. Sarson & A. M. Shukurov. *BAR International Series, 1964.* Oxford, 159–179.
- Kriiska, A. & Nordqvist, K. 2007.** Archaeological fieldwork at Stone Age settlement sites in Riigiküla, North-Eastern Estonia. – AVE, 2006, 31–44.
- Kriiska, A. & Nordqvist, K. 2010.** Results of archaeological fieldwork in Narva-Jõesuu in 2009. – Minevikupäränd tänases päevas. Uurimusi Narva piirkonna ajalooost. *Narva Muuseumi toimetised, 10.* Narva, 12–30.
- Kriiska, A. & Nordqvist, K. 2012.** Arheoloogilised väljakaevamised Narva-Jõesuu Ila neoliitilisel asulakohal 2010. aastal. – Märgilised mälestised. Uurimusi Narva piirkonna ajalooost. *Narva Muuseumi toimetised, 12.* Narva, 15–37.
- Kriiska, A. & Rappu, M. 2008.** Riigiküla II asulakoha 2006.–2007. aasta arheoloogiliste päästekaevamiste tulemused. – Maal, linnas ja linnuses. Uurimusi Narva piirkonna ajalooost. *Narva Muuseumi toimetised, 8.* Narva, 8–45.
- Kriiska, A. & Tvauri, A. 2002.** Eesti muinasaeg. Tallinn.

- Kriiska et al. 2015** = Крийска А., Нордквист К., Герасимов Д. В., Санделл С. 2015. Новые исследования памятников со шнуровой керамикой в Нарвско–Лужском междуречье, в пограничье России и Эстонии. – Тверской археологический сборник, 10, 39–48.
- Lang, V. 1996.** Muistne Rävala. Muistised, kronoloogია ja maaviljelusliku majanduse kujunemine Loode-Eestis, eriti Piritajõe alamjooksu piirkonnas. *Muinasaja teadus*, 4. Tallinn.
- Larsson, Å. M. 2009.** Taking out the trash. On excavating settlements in general, and houses of the Battle Axe Culture in particular. – *Current Swedish Archaeology*, 15–16, 111–136.
- Lõugas, L., Kriiska, A. & Maldre, L. 2007.** New dates for the Late Neolithic Corded Ware Culture burials and early husbandry in the East Baltic region. – *Archaeofauna*, 16, 21–31.
- Mökkönen, T. 2008.** A review of Neolithic multi-room housepits as seen from the Meskäärty site in Virolahti parish, extreme south-eastern Finland. – *EJA*, 12, 2, 114–151.
- Mökkönen, T. 2011.** Studies on Stone Age Housepits in Fennoscandia (4000 – 2000 cal BC): Changes in Ground plan, Site Location and Degree of Sedentism. Helsinki.
- Nordqvist, K. & Häkälä, P. 2014.** Distribution of Corded Ware in the areas north of the Gulf of Finland – an update. – *EJA*, 18, 1, 3–29.
- Nordqvist, K., Kriiska A. & Mökkönen, T. subm.** The Corded Ware phenomenon in the eastern part of the Baltic Sea. Manuscript submitted to *Corded World: Proceedings of the international conference “Corded Days in Kraków” 1st–3rd December 2011*. Ed. P. Włodarczak. Kraków.
- Raushenbakh, V. M. 1960** = Раушенбах, В. М. 1960. Фатьяновское погребение на неолитической стоянке Николо-Перевос. – *Археологический сборник. Труды Государственного Исторического Музея*, 37. Москва, 28–37.
- Reimer, P. J., Bard, E., Bayliss, A., Beck, J. W., Blackwell, P. G., Bronk Ramsey, C., Grootes, P. M., Guilderson, T. P., Hafliðason, H., Hajdas, I., Hatté, C., Heaton, T. J., Hoffmann, D. L., Hogg, A. G., Hughen, K. A., Kaiser, K. F., Kromer, B., Manning, S. W., Niu, M., Reimer, R. W., Richards, D. A., Scott, E. M., Southon, J. R., Staff, R. A., Turney, C. S. M. & van der Plicht, J. 2013.** IntCal13 and Marine13 Radiocarbon Age Calibration Curves 0–50,000 Years cal BP. – *Radiocarbon*, 55: 4, 1869–1887.
- Rimantienė, R. 1989.** Nida. Senųjų baltų gyvenvietė. Mokslas, Vilnius.
- Rosentau, A., Muru, M., Kriiska, A., Subetto, D., Vassiljev, J., Hang, T., Gerasimov, D., Nordqvist, K., Ludikova, A., Lõugas, L., Raig, H., Kihno, K., Aunap, R. & Letyka, N. 2013.** Stone Age settlement and Holocene shore displacement in the Narva–Luga Klint Bay area, eastern Gulf of Finland. – *Boreas*, 42: 4, 912–931.
- Tallgren, A. M. 1922.** Zur Archäologie Eestis, I. Vom Anfang der Besiedlung bis etwa 500 n. Chr. *Acta Commentationes Universitatis Tartuensis (Dorpatensis)*, B III: 6. Dorpat.
- Zal'tsman, E. B. 2010** = Зальцман, Э. Б. 2010. Поселения культуры шнуровой керамики на территории Юго-Восточной Прибалтики. *Материалы охранных археологических исследований*, 14. Тверь.

EESTI JA VENEMAA PIIRIALAL NARVA – LAUGA JÕGEDE VAHELISES PIIRKONNAS AASTATEL 2008–2014 TEOSTATUD NÖÖRKERAAMIKA MUISTISTE UURIMISE ESIALGSEID TULEMUSI

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Narva – Lauga jõgedevahe asetseb Eesti ja Venemaa piirialal Läänemere kagurannikul (jn 1). See hõlmab kahte maastikuregiooni – omaaegses klindilahes paiknevat rannikumadalikku ja lavamaad. Tegemist on nii iso- kui ka eustaatilistest protsessidest tugevasti mõjutatud rannikupiirkonnaga, kus on jälgitavad kiviajal Läänemere nõos paiknenud veekogu nii transgressiivsed kui ka regressiivsed staadiumid.

Nöörkeraamika komplekside uurimine algas piirkonnas 1950. aastatel Nina Gurina ja Lembit Jaanitsa väljakaevamistega Riigiküla (I ja II) ja Narva Joaoru asulakohtadel. Uus etapp algas 1990. aastatel, mil leiti ja uuriti kahte Riigikülas paiknevat nöörkeraamika asulakohta (Riigiküla IV ja XIV). Kümme aastat tagasi (2005) alustati intensiivsemaid uuringuid ka Venemaa poolel ja sellest ajast alates on toimunud Narva – Lauga piirkonnas igal vältitööde hooajal ühised rahvusvahelised ja interdistsiplinaarsed uurimistööd. Aastatel 2008–2014 aset leidnud vältitööde käigus on avastatud u 1000 km² suuruselt alalt üle 40 uue kinnismuistise dateeringuga 5100–2000 eKr,

sh 19 nöörkeraamika kompleksi asulakohta ja üks matmispaik. Alates 2008. aastast on üheks fookuseks olnud nöörkeraamika kompleksi asula- ja matmiskohad.

Uurimispiirkonna nöörkeraamika kompleksi asulakohtade paiknemises on näha mitu erinevat süsteemi. Need võivad asetseada (1) suure Narva jõe (Riigiküla I and II, Narva Joaorg) ja (2) väikejõgede (Lommi I ning arvatavasti Narva-Jõesuu I, IIa, IIb, III ja IV) kallastel, (3) väikeste järvikute kallastel (Rosson 1–10) või (4) kohtades (Väike-Ropsu 1) mille läheduses ei ole vähemalt tänapäevani säilinud veekogu.

Asulakohad on erineva suurusega. Rossoni asulakohad, mis on avatud ulatuslikule metsapõlengule järgnenud künniga ja nii hästi dokumenteeritavad, on suuruses 80 m² kuni 4600 m² (jn 2). Narva-Jõesuu IIb ja Riigiküla XIV asulakohas lasub kultuurkiht aga isegi üle poole hektari suurusel alal. Kultuurkihi paksus on üldjuhul maksimaalselt 20–30 cm, erandina Narva-Jõesuu IIb süvendpõhjaliste hoonete alal isegi üle 1,5 m. Need kaks osaliselt uuritud hoonejäänust olid nelinurkse kujuga ja ehitatud rõhtpalkidest (jn 3). Ehitiste mõõtmed ei ole selged, kuid seinad on olnud algselt vähemalt 3–4 m pikkused. Ühest elamujäänusest kaevati välja ka kivideta tulease.

Asulakohtade leiumaterjal on suhteliselt ühekülgne, peamiselt savinõukillud ning vähesed kvartsid ja tulekivi killud ja neist valmistatud esemed, mõned lihvimiskivid ja erandina silmaga kivikirve katke Rosson 9 asulakohalt (tabel 1). Savinõukillud pärinevad lamedapõhjalistest pottidest, mõnel juhul ka peekritest (jn 4). Nõud on enamasti valmistatud orgaanilise (purustatud taimed), harvem mineraalse (kivipurd, liiv, šamott) või kombineeritud lisandiga segatud savist linttehnika (N-tüüpi ühenduspinnad). Pinnad on silutud või riibitud. Ornamentelementidest esineb lohke, tækkeid, nööriavutisi ja sooni, mis paiknevad üldjuhul vaid nõu ülaosas – kaelal või serval. Esineb ka tekstiilijäljendiga kaetud kilde.

Praeguseks on tehtud kuus radiosüsiniku dateeringut viiest asulakohast (tabel 2), kusjuures osa neist on arvatavasti reservuaarefektiga tõttu andnud tegelikkusest vanema tulemuse. Usaldusväärsed vanusemäärangud jäävad keskmistatult vahemikku 2800–2000 eKr, mis osutab nöörkeraamika kompleksi nii suhteliselt varasele algusele kui hilisele lõpule Narva – Lauga piirkonnas.

Narva-Jõesuu IIb asulakohast on välja kaevatud kaks nöörkeraamika kompleksi hauda. Need asetsevad vaid mõne meetri kaugusel teineteisest ja mõlemad on orienteeritud kirde–kagu-suunaliselt. Hauad on u 2 m pikkused ja 0,5–1 m laiused ning haudade põhi tänapäevasesst maapinnast 1,2–1,4 m sügavusel. Inimsäilmed on peaaegu täielikult kõdunenud, kuid leiukogumid ei jäta kahtlust, et tegemist on haudadega. Otsustades kahe leiukogumi põhjal, oli ühte hauda maetud kaks inimest. Ühele neist oli kaasa pandud venekirves, lihvimiskivi, nöörkeraamiline peeker ja arvatavasti merevaigust ripats; teisele venekirves, nöörkeraamiline peeker ja väike savinõu (jn 5A). Teise hauda oli tõenäoliselt maetud üks inimene, kaasas nöörkeraamiline peeker, neljatahke tulekivist talb ja lihvimiskivi (jn 5B).

Avastatud ja uuritud asulakohad ja matmispaik lisavad olulist teavet nöörkeraamika kompleksi kohta. Kui enamik seni Ida-Baltikumist tuntud nöörkeraamika asulakohti on segatud varasema või hilisema leiumaterjaliga, siis Narva – Lauga piirkonnas on osa muististest segamata või vaid väheste teiste esiajaloo perioodide leidudega. Muuhulgas osutab see, et elupaikadesse jäänud esemelise materjali ühekülgsus ja ennekõike kivist tööriistade vähesus ei johtu uuringute ulatusest või meetoditest, vaid kajastab tegelikkust (tabel 1). See võib tuleneda nii orgaanilisest materjalist tööriistade enamkasutusest kui ka multifunktsionaalsest tulekivist noatüübist, mis asendas teistele kiviaja kompleksidele omaseid erinevaid väikesi kaape- ja lõikeriistu.

Savinõude sarnasus osutab Narva – Lauga piirkonna ühtsele keraamikatradsioonile ning seob selle laiemalt Eesti, Läti, Ingerimaa, Karjala maakitsuse ja Kagu-Soome alal levinud omanäolise keraamika lokaalrühmaga.

Kahe süvendpõhjalise rõhtpalkelamu jäänused Narva-Jõesuu IIb asulakohal on unikaalsed Läänemere piirkonna nöörkeraamika kompleksides. Kuigi osaliselt maapinda süvendatud põrandaosaga hoonepõhju teatakse meile lähimatelt aladelt Rootsist, Poolast, Leedust ja Kaliningradi piirkonnast, on need olnud püstpostkonstruktsioonis. Ainsad autoritele teadaolevad paralleelid süvendpõhjalistele rõhtpalkelamutele on nöörkeraamika Balanovo rühma alalt Vjatka ja Okaa jõgede vesikonnast Venemaalt.

Erijoontega on samuti Narva-Jõesuu IIb matmispaik. Kaksikhauast leitud venekirved ei ole ei Eesti ega vahe-tutele naaberladele tüüpilised, neid on seni leitud Läänemere piirkonnast vaid üksikeksplaridena. Vormilt on need analoogsed Venemaa Volga–Okaa jõgedevahe nöörkeraamika Fatjanovo rühma kirvestele. Samast kultuurirühmast on teada ka parimad paralleelid kaksikhauast leitud väikesele savinõule.

Milline on idapoolsete nöörkeraamika komplekside mõju ja mis on selle põhjused Narva – Lauga piirkonnas, vajab edasisi ja senisest mahukamaid uuringuid.