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DISTRIBUTION OF CORDED WARE IN THE AREAS NORTH OF THE GULF OF FINLAND – AN UPDATE

Research of the Corded Ware phenomenon in the areas north of the Gulf of Finland has been scanty during the last several decades, and consequently outdated views, distribution maps, and numbers of finds still prevail. This paper aims to update data on the distribution of Corded Ware in Finland and Karelia (Russia), and to discuss the results in the context of the old research tradition, and to highlight some aspects of the northern Corded Ware. The current data shows that there are ca 360 Corded Ware settlement sites, 30 burial sites and over 1300 stray find locations of battle axes in the research area. Contrary to much of Europe the areas north of the Gulf of Finland accommodate a large amount of settlement sites but only a few burials. No singular reason for this can be pointed out but the most likely explanations include modest later land use at the locations, factors related to archaeological visibility and research methods, and also to local Corded Ware cultural practices. Despite certain shortcomings the northern Corded Ware material is exceptional and holds a great potential for further studies of the phenomenon, especially its domestic sphere and everyday practices.

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Introduction

Corded Ware was first recognized in Finland by Julius Ailio, who in his groundbreaking work on Finnish Stone Age called it ‘Alastaro pottery’ after Alastaro Kalamäki settlement site located in south-western Finland (Ailio 1909, 92 f.). However, the first archaeologist to really dwell upon the topic was Aarne Äyräpää (before 1930 Europaeus) who defined this pottery more closely and connected it with European Battle Axe cultures (Äyräpää 1915, 10 ff.; 1917, 47 f.). He developed ideas on ceramics and other aspects of Corded Ware culture in Finland and in Karelian Isthmus in many of his works (e.g. Äyräpää 1922; 1923;

1956; 1973), and wrote his doctoral dissertation on Battle Axe cultures of Russia (Äyräpää 1933a; 1933b).[1]

After Äyräpää, the most significant publications were written by Torsten Edgren (1959; 1970; see also Malmer 1962) but since then the discussion concerning Corded Ware has been fairly limited. Even though subsistence, origins and certain other aspects of Corded Ware phenomenon have occasionally attracted attention (Edgren 1984a; 1997; Meinander 1984; Torvinen 1984; Luoto 1986; 1987; Matiskainen 1994; Carpelan 2004), the decades-old views dominate the image of Finnish Corded Ware in many respects. Especially Edgren's (1970) work 'Studier över den snörkeramiska kulturens keramik i Finland' (Studies on the Corded Ware pottery in Finland) has remained the main work on the topic. The distribution maps and numbers of sites and finds published in this volume are still the most used and referred (see also general overviews of Finnish prehistory, Edgren 1984b; 1992). Moreover, information about Corded Ware in the North is limited in other languages than Finnish and Swedish; the few publications in other languages are mostly brief summaries made by foreign scholars (Bågenholm 1995; Nielsen 1997; also Malmer 1962; but see Matiskainen 1994; Häkälä in press; Halinen et al. in press; Nordqvist et al. in press).

The purpose of this paper is simply to update data on the distribution of Corded Ware in the areas north of the Gulf of Finland, i.e. present-day Finland, as well as Karelian Isthmus and Republic of Karelia in north-west Russia (Fig. 1).[2] The aim is to provide new distribution maps and numbers of the amount of Corded Ware finds in the North, and to highlight some aspects of Corded Ware in this region. The reasons for the abundance of settlement sites in the area will also be suggested, and some problems related to the material and its definition presented.

Material and site types

The main source material of this work is the Register of Ancient Monuments upheld by the National Board of Antiquities (Finland), which contains all ancient monuments located in continental Finland. In addition, the database of Finnish Stone Age ceramics (Pesonen 2008) has been utilized and this data added to information collected from literature, both scientific papers and local histories of

[1] In Finland the terms Corded Ware culture (Fi. nuorakeraaminen kulttuuri; Sw. snörkeramisk kultur) and Hammer, Battle or Boat Axe culture (Fi. vasarakirveskulttuuri, sotakirveskulttuuri, venekirveskulttuuri; Sw. båtyxkultur, stridsyxekultur) are used more or less interchangeably, albeit the term Boat or Hammer Axe culture is maybe more traditional (also Edgren 1992, 86; 1999, 286). As it is nowadays fairly clear that 'Corded Ware culture' should not be taken as the material expression of a singular group of people, but of several different peoples inhabiting different areas, we do not find the term 'culture' appropriate. Rather, we conceive Corded Ware as a 'phenomenon' with certain wide spread common or unifying features in the material culture and other aspects of life, but also with abundant local variation.

[2] Note that Corded Ware finds from northern Sweden and Norway (see Lundholm 1991; Olsen 1994) or areas east and south of Lake Ladoga and the Gulf of Finland (see Kriiska 2000; Nordqvist n.d.) are not visible in the distribution maps.

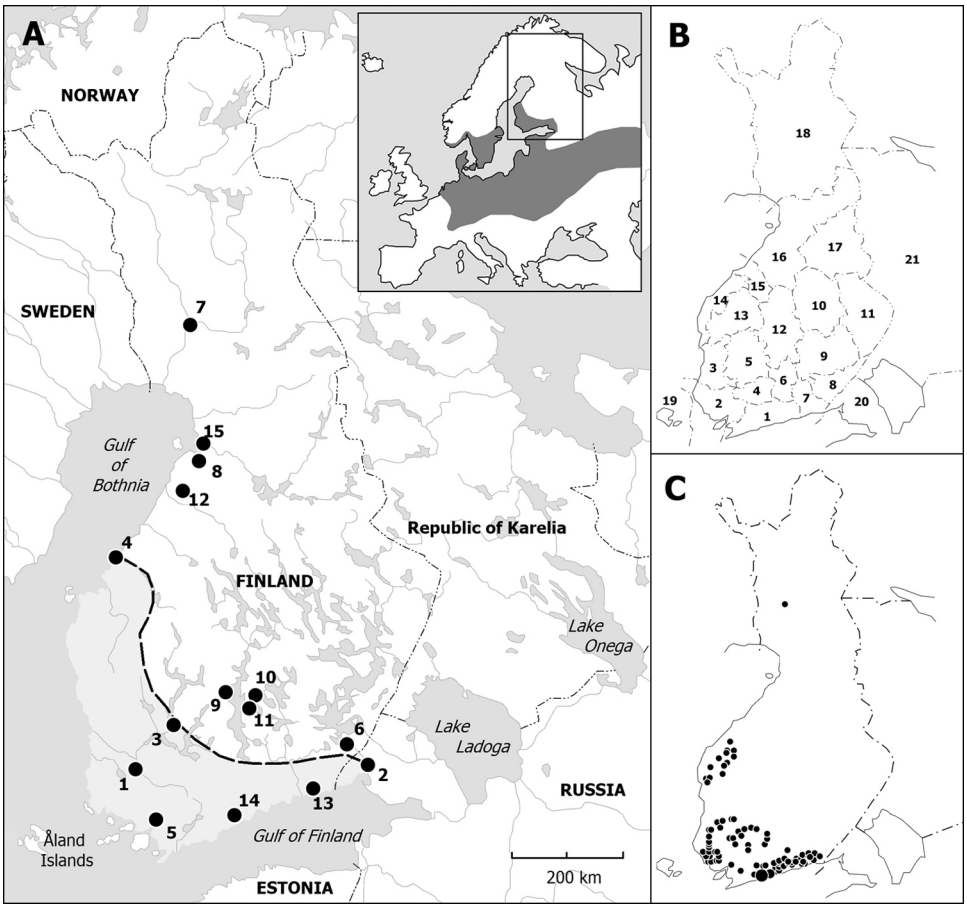

Fig. 1. A: Location of research area and the general distribution of Corded Ware in Europe (small map) and locations and geographical features mentioned in text. 1 Alastaro Kalamäki, 2 Viipuri, 3 Tampere, 4 Kokkola, 5 Salo, 6 Lappeenranta, 7 Rovaniemi Niskanperä, 8 Liminka Nähinmaa, 9 Kuhmoinen Hietamäki, 10 Joutsa Haukkala, 11 Sysmä Nuoramoinen, 12 Merijärvi Kuoppakangas, 13 Hamina Kylänpää, 14 Vantaa Jönsas, 15 Oulu. Dotted line marks the traditional northern border of Corded Ware. B: Provincial division used in text. 1 Uusimaa, 2 Varsinais-Suomi, 3 Satakunta, 4 Kanta-Häme, 5 Pirkanmaa, 6 Päijät-Häme, 7 Kymenlaakso, 8 South Karelia, 9 Etelä-Savo, 10 Pohjois-Savo, 11 North Karelia, 12 Central Finland, 13 South Ostrobothnia, 14 Ostrobothnia, 15 Central Ostrobothnia, 16 North Ostrobothnia, 17 Kainuu, 18 Lapland, 19 Åland, 20 Karelian Isthmus (Leningrad oblast), 21 Republic of Karelia. C: Distribution of dwelling sites published by Edgren (1970, 49, fig. 18).

individual municipalities. Literature has also been the main source for collecting data on Åland Islands and north-west Russia. We were able to use a list of battle axes compiled by C. F. Meinander in the 1960s, intended to be a basis of an article but never published (see also Edgren 1992, 86 map). Finally, the database of Finnish Stone Age finds collected within the Argeopop-project (University of Helsinki) was accessed.

The main source material presents some problems. First of all, the register is not totally systematic and, as a default, does not include other dating than Prehistoric/Stone Age, Bronze Age, etc. – more accurate information and determination of pottery types may or may not be present. Further, the classification of pottery types, as well as stone artefacts, is varying and far from uniform. As the register data is completed with a thorough overview of literature the results presented here can anyway be held representative and providing correct view on the density of finds on regional scale, at the very least.[3]

In this paper find locations have been divided into three main categories: burial sites, settlement sites and stray find locations of battle axes. In addition to definite burials, also the category of a *possible burial site* is introduced as the recognition of graves is complicated by the zero preservation of organic material in the acidic soils of research area. As definite burials we have included only the rare cases where graves have been properly excavated or find conditions adequately documented by archaeologists, or where whole or fairly intact ceramic vessels have been found (undamaged vessels are never encountered in settlement sites). Possible burials are localities (settlements or find locations), which have been designated in literature as possible burials based on a combination of finds – battle and work axes, at times also ceramic shards – allegedly found 50 to 200 cm below the present soil surface, and customarily accompanied by only older or non-Corded Ware signs of prehistoric habitation (see also e.g. Edgren 1970, 15 f.).

The second group of sites, settlements, are locations with Corded Ware pottery not classified as definite burial sites. Despite the generalizing term only a fraction of these has been identified as an actual settlement site through archaeological excavations. The majority of pottery finds are survey and, in few cases, even stray finds associated with a random selection of other, often non-datable material like chipped quartz. As even the excavated Corded Ware settlements are commonly found in mixed contexts of multi-period sites, no automatic connection can be assumed between Corded Ware pottery and other survey material.[4]

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[3] This study is completely based on published data and data present in databases – no finds have been checked or typological definitions presented in sources verified. The Register of Ancient Monuments is available through the Internet pages of the National Board of Antiquities (http://kulttuuriymparisto.nba.fi/netsovellus/rekisteriportaali/portti/default.aspx) (in Finnish only). Some of the above-mentioned problems derive from the fact that the register has been developed to meet the needs of cultural heritage management, not research. The reliability of local histories varies but on the average Corded Ware finds are well specified, especially in the case of beakers and short-wave moulded vessels. The classification of battle axes can be held fairly reliable, albeit at places imperfect and with variation in terminology, but the descriptions concerning other axe types are quite random and have only been used to a limited extent.

[4] Our definition of a settlement site differs slightly from the one employed by Edgren (1970, 15). According to him a settlement site is a location where one or more pieces of Corded Ware pottery are complemented with some other finds, like chipped lithics, stone tool fragments or burnt bones. However, as stated above, there is not an axiomatic connection between these (survey) finds. Still, the difference in definition is not too grave as the number of find locations with exclusively pottery was 10 in Edgren's study (1970, 45 f.; these locations were tentatively termed as *offerings*) and ca 20 in the present material (we are not employing the offerings-category because the existence of such features has not been proven convincingly; see also Siiriäinen 1974, 11).

The third category comprises of stray find locations of battle axes. In addition to these, the distributions of some other axe types customarily connected with Corded Ware are discussed in this connection (Figs 2 and 11).

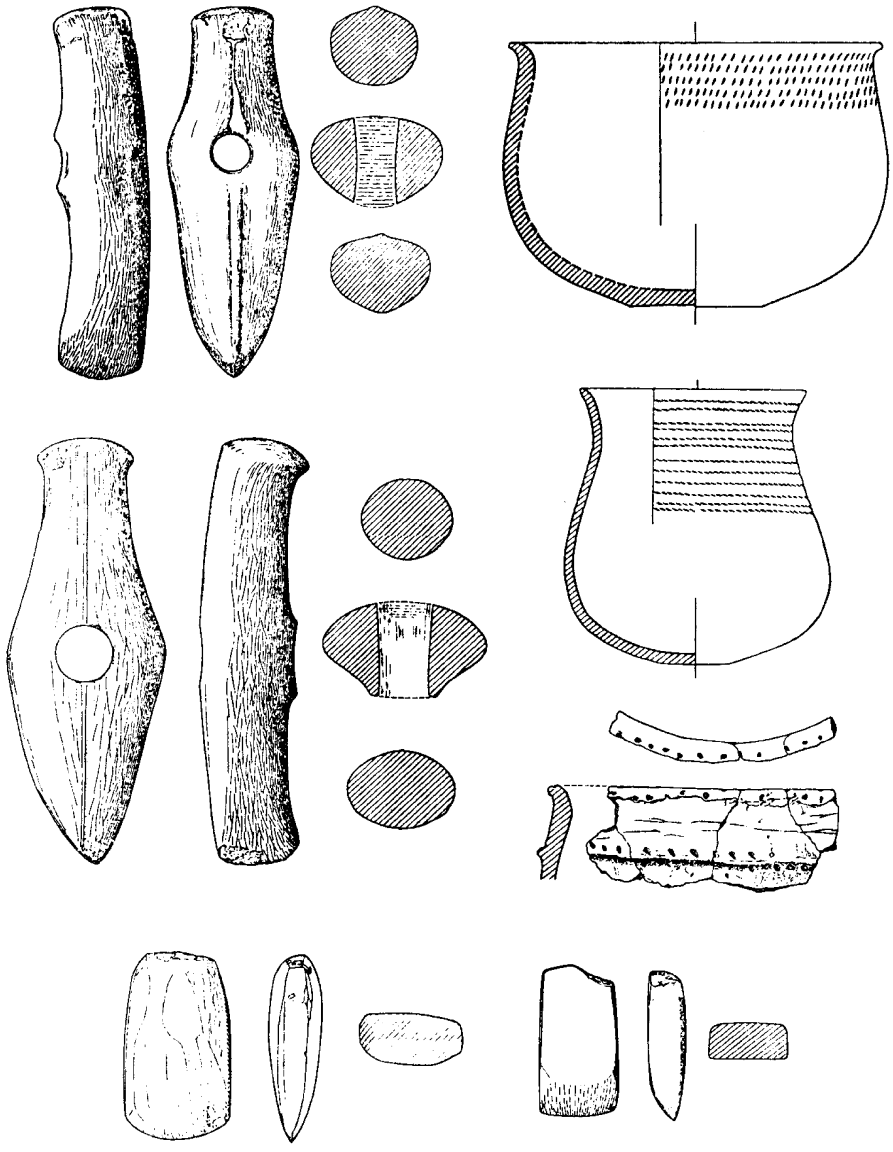

Fig. 2. Some common artefact types encountered at Corded Ware sites in north-eastern Europe: battle axes (Continental and Finnish types), pottery (beakers and a short-wave moulded pot) and four-sided axes (not to scale with each other; after Äyräpää 1973, 209 ff.).

Corded Ware north of the Gulf of Finland

Corded Ware materials known to us by the end of year 2012 are presented in Table 1. When compared with earlier accounts, the increase in the amount of settlement sites is especially large; their number has more than tripled from the 106 sites listed by Edgren in 1970. The amount of burials is almost three times bigger as well. There is also an increase in the number of battle axes but the rise is not as substantial as in the other categories. In the following the distributions of find classes are discussed in more detail (see also Figs 3–10).

Settlement sites

Settlement sites have been focal in the research of Corded Ware in Finland from the beginning. Already in the 1920s Aarne Äyräpää (1922, 153 f.) described the distribution of Corded Ware in the research area, and drew its northern limit running from Viipuri in Karelian Isthmus via Tampere in central Finland to Kokkola in Ostrobothnia (Fig. 1A). Like many later scholars, he saw this limit as a strict ethnic and cultural border against the native hunter-gatherer groups inhabiting the inland – reputedly this border survived for centuries and was rarely crossed (Äyräpää 1973, 199, 207; also e.g. Luho 1948, 57; Edgren 1992, 90; Carpelan 2004, 49). The border was also connected with the subsistence of Corded Ware groups as it supposedly followed certain temperature isotherms and limits of particular vegetation and soil zones (Äyräpää 1939, 120 f.; Edgren 1970, 49, fig. 18; 1984a, 12). Even though interpretations regarding temperature, soil and vegetation have later been questioned (e.g. Mökkönen 2010, 23), southern and western parts of Finland are, admittedly justifiably, pictured as the ‘core area’ of Corded Ware habitation.

Currently 357 Corded Ware settlement sites are known in the research area (Fig. 3; Table 1). Although their distribution has the same overall impression as presented earlier, site concentrations have become denser, and at the same time

Table 1. Numbers of the main Corded Ware and Corded Ware-related finds in the research area; figures in parenthesis present finds made in present-day Finland/north-west Russia

Site/find type	Number
Settlement sites	357 (340/17)
Burials	30 (29/1)
Possible burials	81 (81/0)
Battle axes (all types)	1434 (1383/51)
Finnish and Continental	1216 (1193/23)
Scandinavian	21 (20/1)
Russian	7 (4/3)
Estonian + Sharp-butted	12+178 (12 + 154/0 + 24)
Shouldered axes	79 (78/1)
Battle axe imitations	38 (27/11)

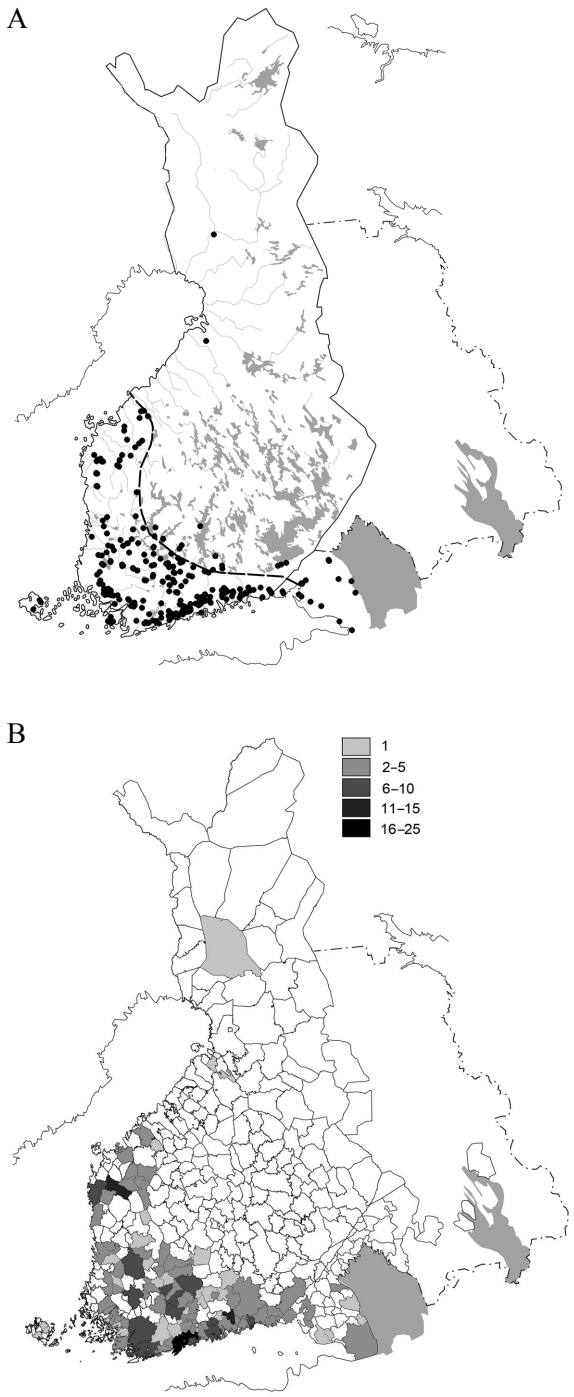

Fig. 3. Dot distribution (A) and choropleth (B) maps of dwelling sites, i.e. sites with Corded Ware pottery excluding definite burials; dotted line in map 3A marks the traditional northern border of Corded Ware.

sites are also distributed to a larger area. As before, areas with the largest clusters of sites are located in Uusimaa along the southern coast and in Varsinais-Suomi in south-western Finland. A new concentration of sites has yet appeared in the area between these regions (present-day Salo area). Notable centres are also located along the western coast in Satakunta and southern Ostrobothnia. The amount of known sites has increased in these areas and the find-empty zone between them has narrowed down. Corded Ware finds are clearly more numerous than before in Pirkanmaa, Häme and Päijät-Häme provinces in south-western inland area. In south-east Finland habitation continues dense along the coast of Kymenlaakso, and a new group of sites is present in southern Karelia (present-day Lappeenranta area). East of the Finno-Russian border numerous Corded Ware sites are found in Karelian Isthmus.[5]

While much of the interior and northern parts of the area are lacking Corded Ware settlement sites, a few interesting outposts are visible. The best known is the Niskanperä site in Rovaniemi where fragments of a Corded Ware vessel were found (Purhonen 1973; Carpelan 2004). This vessel has been interpreted as an import representing early southern Finnish Corded Ware influence in the North (Carpelan 2004, 52), but also (later) Scandinavian influence is present, as evidenced by a double-bladed axe-shaped amber pendant found in the site. New site of Nähinmaa in Liminka, northern Ostrobothnia, is also located at a distance from other Corded Ware sites. This site is identified only by a few fragments of pottery shards with cord impressions (Okkonen 2003, 227) but is located in an area with several finds of Corded Ware work axes. In the inland lake region the outliers are not so evident, maybe apart from the Hietamäki site in Kuhmoinen.

Burials

Definite burials are known in 30 locations, with the estimated total of ca 35 graves. The addition of possible burials, ca 80 locations, changes the settlement–burial ratio, but still settlement sites clearly dominate.[6] In general, burials and possible burials are located in the same areas as the densest clusters of Corded Ware settlement sites (Figs 4 and 5) but also include one or two outliers. The isolated definite burial in northern Ostrobothnia, the Merijärvi burial (Äyräpää 1952), contained two imitations or local copies of battle axes (see Fig. 11), and therefore its belonging to Corded Ware has been questioned (Carpelan 2004, 57 f.). Similarly, the two outlying possible burials in the inland lake area (Joutsa Haukkala and Sysmä Nuoramoinen; see Äyräpää 1952) have yielded imitations of battle axes. Even though similar arguments as above could be used in challenging their

[5] Due to previous standpoints Karelian Isthmus was considered irrelevant for the study of Corded Ware (Edgren 1970, 14; see also Äyräpää 1952, 22), and it is only recently its material has been acknowledged (Huurre 2003, 236; Nordqvist n.d.).

[6] The amount of Corded Ware burials presented in publications differs between ca 10 (Edgren 1970, 35) and over 60 (Torvinen 1984, 22).

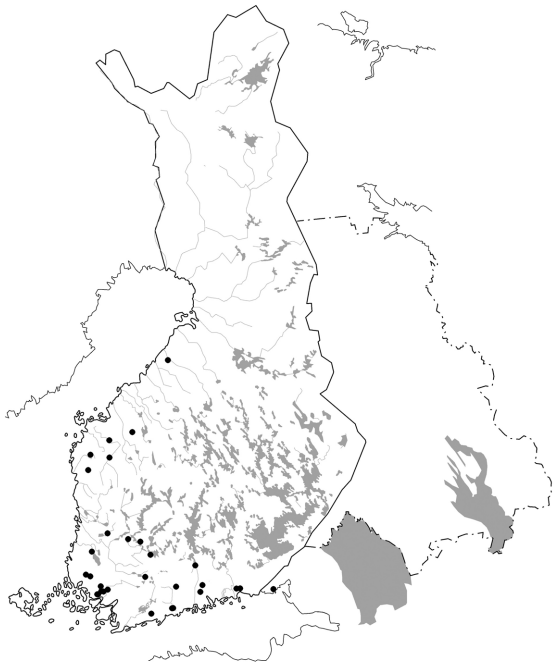

Fig. 4. Dot distribution map of definite Corded Ware burials.

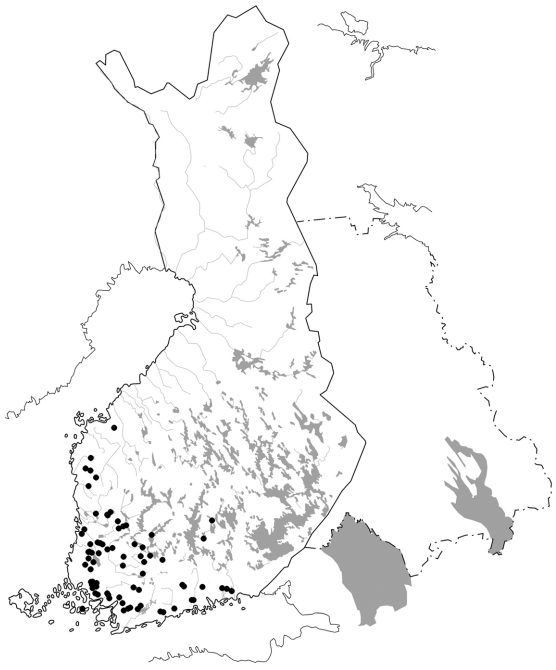

Fig. 5. Dot distribution map of possible Corded Ware burials.

connection with the 'actual' Corded Ware people we feel that they clearly show the Corded Ware influence beyond the main settlement area.

Eight of the definite burial sites are located at Corded Ware settlements. Most of the graves are either solitary burials with no signs of other prehistoric activities or located at older settlement sites without additional Corded Ware material. Possible burials have been reported from ca 15 Corded Ware settlement sites, but the rest are represented only by solitary stone artefact finds. Only at two sites (Hamina Kylänpää and Vantaa Jönsas) more than one burial has been identified for sure. Nevertheless, the numbers of battle and work axes discovered in possible burial sites indicate that it would not be exceptional for the burials to occur in concentrations of at least 2 to 4 graves. However, as the finds have almost always been made by lay persons, and in the absence of bones, this question remains unresolved.

Stray finds (battle axes)

Of the 1434 battle axes 1383 come from present-day Finland and 51 from north-west Russia. Of these 1333 axes are stray finds, 80 axes or axe fragments have been found in settlement sites, and 21 in definite burials (Table 1). Thus, even if the pottery-based definition of settlement site is acknowledged it is evident that battle axes are more rarely encountered in settlements than Corded Ware pottery. Consequently their distributions are seen to reflect different things: pottery is thought to define the 'core area' of Corded Ware settlement, whereas the axes represent the maximum extent of Corded Ware activities and explorations (Edgren 1970, 10; 1992, 86 f.; Huurre 1992, 4, map 4a; Carpelan 2004). As the information about find circumstances is often inadequate it is nonetheless impossible to say where the stone artefacts actually originate – it has been suggested that the bulk of battle axes would indicate destroyed graves (e.g. Äyräpää 1922, 104; Edgren 1992, 89).

Based on the information given in literature and find lists, battle axes can be typologically divided into Continental, Finnish, Scandinavian, Russian, and Estonian types (Fig. 2; Table 1).[7] Most of the *Continental and Finnish battle axes* are concentrated in the main Corded Ware area (Fig. 6), but these types are also found in central and eastern Finland where no Corded Ware settlements are known. Three specimens evidence Corded Ware influence as far as the Lake Onega area.

Continental and Finnish battle axes are found only up to the level of Oulu – all battle axes discovered more north are of Scandinavian (Swedish) origin (Fig. 7). *Scandinavian battle axes* have a bipolar distribution in northern Ostrobothnia and in southern and south-western Finland. The first of these, as proposed by

[7] Continental type is connected with the initial spread of Corded Ware all over Europe whereas other types are thought represent later local variants (Europaeus 1922, 104 ff.; Äyräpää 1973, 196; Edgren 1992, 92 f.). However, their actual temporal relationships and other differences are open to discussion (see e.g. Edgren 1992, 93; cf. Carpelan 2004, 56), and also the information given in sources about the types of particular battle axes is partially inconsistent.

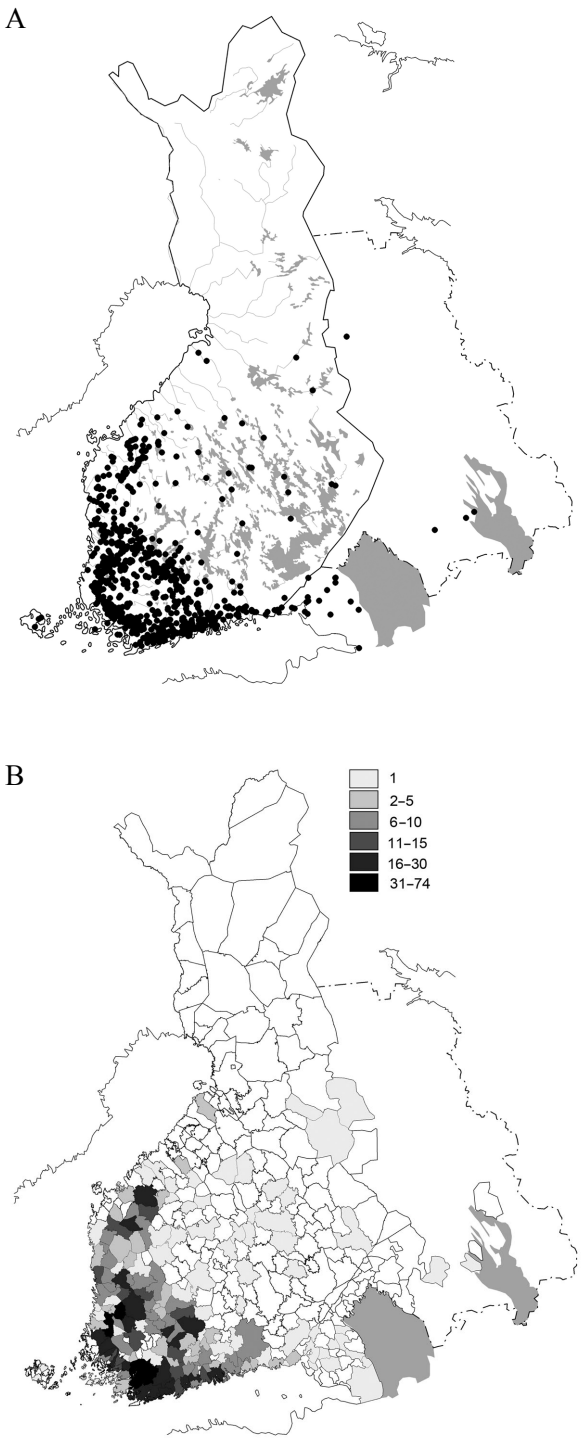

Fig. 6. Dot distribution (A) and choropleth (B) maps of Continental and Finnish battle axes.

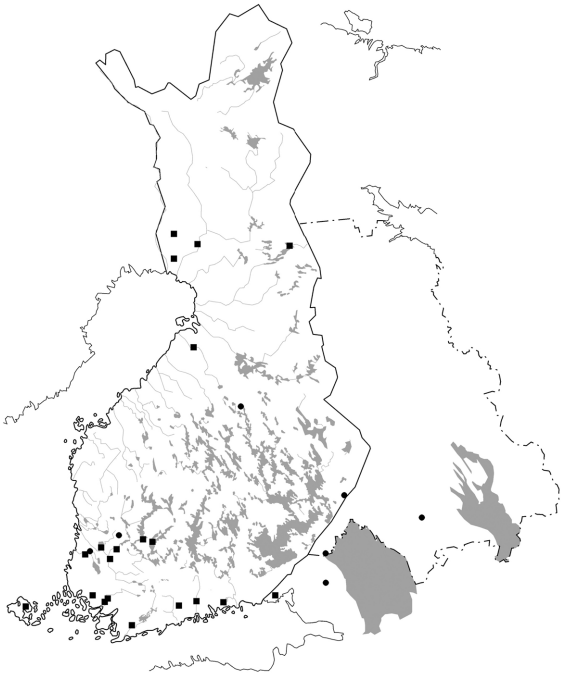

Fig. 7. Dot distribution map of Scandinavian (squares) and Russian (dots) battle axes.

Carpelan (2004, 59), reflects the influence of Swedish Corded Ware in northern Scandinavia and Finland. The latter evidence the connections between Finnish and Swedish Corded Ware groups directly across the Baltic Sea, as also demonstrated by pottery finds (Kivikoski 1935, 39; Äyräpää 1973, 200; Edgren 1992, 90; Larsson 2009a, 409 f.; Holmqvist-Saukkonen pers. comm. 13.12.2013). Still, the Scandinavian battle axes are not numerous: only 21 exemplars are included in our material, all but one stray find.

Just a handful of *Russian battle axes* are known in the research area: four in Finland and three in the Karelian Isthmus and the Republic of Karelia (Fig. 7). The Russian axes found in the eastern Baltic Sea region are seen to represent the connections between Corded Ware groups of this area and Fatyanovo groups of central European Russia (e.g. Jaanits et al. 1982, 113; Loze 1992, 316) although Finnish research has seen these connections quite negligible and indirect (e.g. Äyräpää 1952, 7). All Russian axes are stray finds, albeit two samples derive from possible burials.

Estonian battle axes are represented in the current data by 12 samples from Varsinais-Suomi, Pirkanmaa and eastern Uusimaa–Kymenlaakso area, and their possibly slightly later variant, the so-called *sharp-butted axe*, is represented by 178 specimens (Fig. 8). The latter, at times also called Estonian battle axe, has been connected with the '2nd wave of Corded Ware', which would have reached the

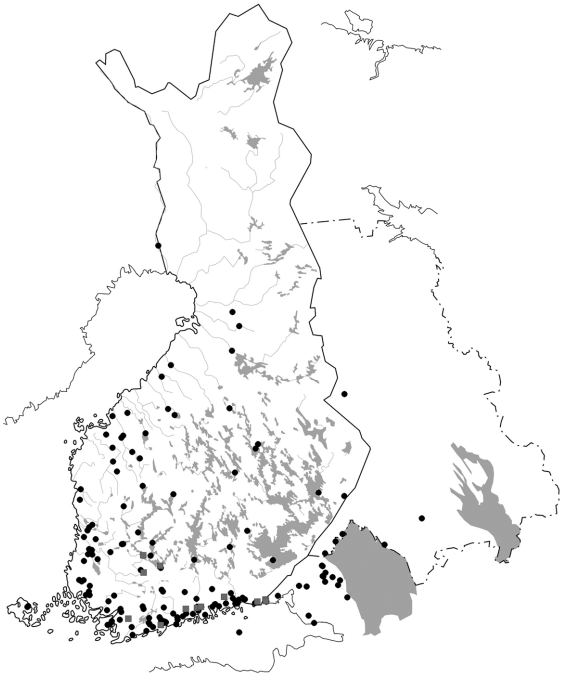

Fig. 8. Dot distribution map of Estonian battle axes (squares) and sharp-butted axes (dots).

northern shores of the Gulf of Finland from Estonia in the later 3rd millennium BC. In the research area sharp-butted axes have not been considered proper battle axes and seen later than Corded Ware (e.g. Meinander 1954, 78; Carpelan 1999, 265; 2004, 56 f.), but recent dating has shown that their use overlaps with 'proper' battle axes (Kriiska et al. 2007; Mökkönen 2008, 128). The distribution of sharp-butted axes resembles the distribution of Finnish and Continental types but they are present in the inland in relatively large numbers as well (also Huurre 2003, 229; Mökkönen 2008, 127, fig. 8). The vast majority of sharp-butted axes, like all the 'proper' Estonian battle axes, are stray finds but some objects have been recovered in settlement sites and a few specimens in definite or possible burials. Previously no pottery was securely connected with these artefacts (Huurre 2003, 232; Carpelan et al. 2008, 206), but recently Estonian Corded Ware has been identified in Karelian Isthmus and south-east Finland (Mökkönen 2008, 128; Nordqvist n.d.).

Stray finds (other axe types)

The most numerous work axe type connected with Corded Ware is the *four-sided axe* (or west Finnish even-bladed axe). These, like battle axes, are usually made of crystalline rocks and finely finished with piquetage and polishing,

although there is large variation (Fig. 2). At present, there are no studies of this axe type or its distribution but four-sided axe has been referred to as the most common Corded Ware artefact and clearly outnumbering the battle axes (Edgren 1992, 91; Carpelan 2004, 49; due to deficient sources it was not possible to produce up-to-date maps for this paper either). Four-sided axes are quite a rare in settlement sites, but are present in several graves. They are found all over the Corded Ware main area, and according to some scholars occur outside it more often than battle axes (Carpelan 2004, 49 f.): there is, for example, a clear concentration of four-sided axes in northern Ostrobothnia.

Another work axe type associated with Corded Ware is the *shouldered axe,* i.e. an even-bladed axe with shoulder-like protrusions in the body. Its distribution resembles that of Continental and Finnish battle axes, but is much more sparse due to a smaller number of finds (79 pieces; Figs 9 and 11; Table 1). Almost all shouldered axes are stray finds.

Imitations of battle axes are represented by 27 artefacts in Finland and 11 in Karelia (Figs 10 and 11). These artefacts, customarily called 'barbaric battle axes' in Finnish research, ordinarily imitate Finnish or Continental battle axes but also some copies of Russian axes are known, and possibly also one copy of a Swedish axe is present in the material. The imitations are generally attributed to the non-Corded Ware groups: as these did not have the right know-how to produce battle

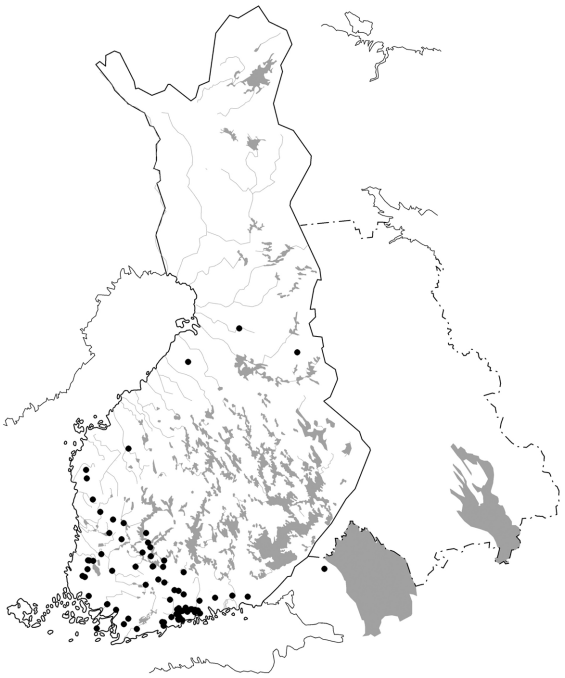

Fig. 9. Dot distribution map of shouldered axes.

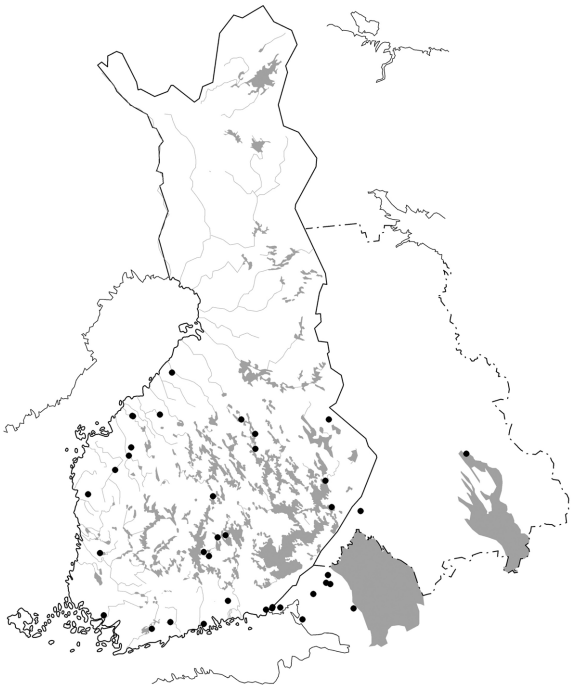

Fig. 10. Dot distribution map of battle axe imitations.

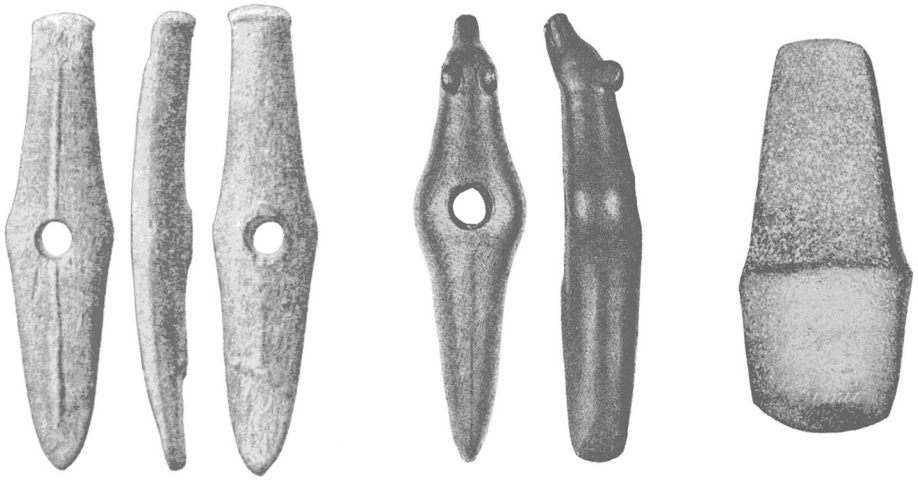

Fig. 11. Examples of battle axe imitation, animal head axe, and shouldered axe (not to scale with each other; after Nordman 1944, 79, fig. 27; Äyräpää 1952, 7, fig. 2; Kivikoski 1961, 67, fig. 70).

axes, the end products usually differ in their proportions and finishing as well as in the utilized raw material. Apart from the four specimens discussed above (burials), imitations are stray finds or found in connection with non-Corded Ware materials. Also their distribution supports the idea of belonging to the non-Corded Ware groups, as imitations are found only to a limited extent inside the main Corded Ware area. This is the case also with the so-called *animal head axes*, which resemble sharp-butted axes in shape but have animal heads (as a rule elk or bear) carved on the peen (Fig. 11); tens of such artefacts are currently known (Nordman 1944; Carpelan 1974; 1975; Edgren 1997). Both artefact types are sporadically encountered also in Sweden and are thought to reflect connections and interaction between the Corded Ware and other contemporary groups (see Äyräpää 1952, 22 ff.; Edgren 1970, 61; 1997; Carpelan 1999, 262; Mökkönen 2011, 53).

Discussion

An eye-striking feature in north-east Europe is the abundance of Corded Ware settlement or domestic sites and the scarcity of burials – a situation completely contrary to the material from much of Europe. Can this difference be explained by some special or deviant nature of northern Corded Ware groups or are there other explanations for the prevailing situation?

Archaeological definitions and recognition of Corded Ware sites

How a settlement site is defined is of course essential for the whole discussion. Traditionally in Finnish archaeology sites termed as 'dwelling sites' (Fi. asuinpaikka; Sw. boplats) are seen to include not only the locations people resided (i.e. actual settlement sites), but also other activity areas and locations (short-term camp sites, hunting stations, procurement sites, etc.). The definition employed in this paper is admittedly simplified but in the current situation, in which the material is dominated by meagre survey finds and surface scatters, almost the only viable option. As the properly investigated Corded Ware settlement sites are few – and the encountered structures and features even fewer – more strict definitions are difficult to employ (see Edgren 1970, 39 ff.; Nordqvist et al. in press). Because material culture clearly related to Corded Ware is not well known the centrality of pottery as the marker of Corded Ware presence is emphasized: the living is represented by the ceramics.

Connecting sites to Corded Ware totally depends on what kinds of materials are associated with the Corded Ware phenomenon and how well archaeologists recognize these materials. Even if the existence of two main types of Corded Ware pottery (fine and coarse) was noticed already at the early stage of research (Äyräpää 1922, 127 ff.; Edgren 1970, 9, 11) the detection of Corded Ware sites is

still mainly based on the fine, thin-walled, and often cord- or incision-decorated pottery (beakers; Fig. 2). Instead, the coarser, thick-walled, and undecorated pottery (pots) is not easily recognized (see Edgren 1970, 18; also Larsson 2009a, 352 for Sweden and Kriiska 2000 for Estonia). The inability to recognize different technological choices and (regional) variants of Corded Ware pottery has led to the assumption that it remained homogeneous and virtually unchanged, i.e. retained its archaic appearance throughout its existence in the North (see e.g. Äyräpää 1922, 140; 1973, 207; Edgren 1970, 60; Carpelan 1999, 265). However, recent studies have shown that for example organic tempers, before thought practically non-existent (Edgren 1970, 33; Korkeakoski-Väisänen 1993, 15), were used in substantial amounts in some areas (Häkälä 2011; in press). Similarly, the recognition of Estonian Corded Ware ceramics in south-east Finland and Karelian Isthmus (Mökkönen 2008; Nordqvist n.d.) adds to the diversity of the Corded Ware phenomenon. These observations are still based on little data but point out the limited scope of traditional views and the need to redefine what the Corded Ware material culture is seen to incorporate. This is essential not only in regards to pottery but to other find categories, like lithics, too.

Regardless of problems related to the recognition of Corded Ware finds, the large amount of settlements in the research area is an inescapable fact. While discussing the concept of Corded Ware settlement site and considering why there are so few in Sweden vis-à-vis Finland, Åsa Larsson (2009b) came into the conclusion that in Finland Corded Ware represents often the youngest settlement phase at the sites. This is not the case in Sweden, or in central Europe, where destructive human activities have continued at the sites afterwards as well (Larsson 2009b, 125 f.; also Malmer 1975, 53). The abundance of Corded Ware sites in north-east Europe would thus be explained by changing settlement patterns after Corded Ware, into which one could add sparse habitation and light land use even during the Historical period and up to the 20th century.

Even if the number of Corded Ware settlements is large our knowledge of them is rather limited. This is not the result of poor preservation or slender land use, but of the small number of studied sites and the way these studies have been conducted. Changes in archaeological methodology and thinking are well-illustrated in the accumulation of Corded Ware materials through time. Earlier stone artefacts prevailed in the collections as they are easier to spot for the lay person, and it is only after systematic surveys became more common from the 1960s and 1970s on that the amount of pottery and lithic find locations has increased. Thus intensified land use and community planning and the consequent surveys have stoked up the amount of known sites – this is especially true within the main Corded Ware area, which is even today the most populated part of Finland.

Changes in research methods and premises have revised the situation in many other regions as well. In central Europe, for example, Corded Ware settlement sites have been gradually recognized over the recent years (e.g. Drenth et al. 2008; Müller et al. 2009; Włodarczak 2013). In Sweden Corded Ware longhouses have

been discovered only during the last two or three decades, again due to changed excavation methods, in this case machine-stripping of topsoil from large areas (Larsson 1989; 2009b; Hallgren 2000). Extensive excavations have also revealed differences in the spatial arrangement of activities performed at different parts of the site (Larsson 2009b, 127 with references; Müller et al. 2009, 130). Such large-scale studies performed according to modern methodology are practically non-existent in Finland. Therefore our knowledge of structural remains and ways of using and organizing space is insufficient, and also our understanding of production, use and discard sequences remains limited. Nevertheless, indications of intra-site differences have been recently presented in connection with stone knapping (Häkälä 2011), and it has also been proposed that some sites could have been specialized in certain activities, like pottery or battle axe production (Edgren 1970, 41, 92 ff.; 1992, 88; Carpelan 1999, 264).

The role of cultural practices

Different human groups have varying cultural practices and express themselves differently through material culture, which eventually leads to divergent archaeological records. With regards to Corded Ware, the (non-burial) record is often termed as meagre or non-existent – this applies both to artefacts and structures present at the sites. In Finland there is, for example, a marked difference between the visibility of Corded Ware and earlier Comb Ware sites. The latter are characterized by enormous amounts of material culture, especially pottery, and thick cultural layers with numerous features. This difference is hardly explicable only in terms of inadequate research but must be seen to correspond to reality at least partially: the general scarcity of Corded Ware non-pottery find material, very evident in the whole eastern Baltic Sea area (also Kriiska 2000), reflects the fact that people behind Corded Ware produced and used material culture in a different manner.

Diminished archaeological visibility of Corded Ware has also been recorded elsewhere in comparison with other preceding or contemporary groups, like Pitted Ware in Sweden (Larsson 2009b), Linear Pottery in Poland (Włodarczak 2013), and Bell Beakers in central and southern Europe (Heyd 2007). Various explanations for this lack or invisibility of Corded Ware settlements have been put forth. Apart from the destruction caused by later land use, it has been proposed that Corded Ware groups did not deposit their material culture or waste in sub-surface features (pits) (Drenth et al. 2008, 152), or even that they had strict cultural norms, which prohibited the construction of any sub-surface features and resulted in archaeologically less visible above-ground constructions and settlements (Neustupný 1997, 322; Krutová & Turek 2004, 49). Nevertheless, contradicting evidence has been unearthed in recent studies (see Hallgren 2000; Drenth et al. 2008; Müller et al. 2009; Larsson 2009b).

Another approach to the question has been the mode of settlement and subsistence. In parts of central Europe increased mobility – in this case due to herding and pastoralism – has been put forward as the reason for the lack of settlement sites (e.g. Kruk 1980, 59 f.; Vencl 1994; see also Neustupný 1997; Kadrow 2008 for overviews), a view also partially challenged by recent discoveries (e.g. Włodarczak 2013). In the research area the situation has been more or less reverse, as the abundance of sites has been specifically accounted for mobile lifestyle. Many archaeologists have supported the view that Corded Ware groups did not practice productive livelihoods (e.g. Edgren 1970, 53 ff.; 1992, 94 f.; Meinander 1984; but see Siiriäinen 1981, 24; Carpelan 1999, 264 f.; Núñez 2004, 365; Nordqvist et al. in press), as no positive evidence of cultivation or animal husbandry have been identified thus far (but see Cramp et al. 2013). Consequently, an interpretation was put forth that the mobile Finnish Corded Ware groups subsisting on hunting, fishing and gathering would have produced more – and more extensive – settlement sites than sedentary agriculturalists inhabiting the neighbouring areas (Malmer 1975, 53 f.; Kritz 1989, 144). However, the claim that Corded Ware sites are large and extensive does not find support in the current archaeological material, even if the number of known sites is big. Further, while many Corded Ware settlements have clearly aquatic settings, i.e. are located close to water bodies, even by seacoasts and in archipelago (e.g. Miettinen 1986, 107; Carpelan 2004, 51; Asplund 2008, 58, 61 f.), they do not follow the traditional hunter-gatherer settlement pattern (also e.g. Äyräpää 1922, 162; Kylli 2001). In other words, anomalous subsistence cannot solely explain the large number of settlement sites in the North, especially considering that mixed economy, in which hunting, fishing, and gathering still had a significant role, has lately been recognized also among more southern Corded Ware groups (e.g. Lõugas et al. 2007; Kadrow 2008, 249; Müller et al. 2009, 135 ff.).

Who left the sites behind and why?

The question remains what the 360 Corded Ware settlement sites represent. In our opinion most of them are some sort of residential, recurrent activity or camp sites – there simply are no reasons to explain the majority of them otherwise but at the same time there are no grounds to classify them more accurately either. The material certainly contains some pottery from destroyed graves, and the find locations probably include also sites, which were never inhabited by Corded Ware people at all. Corded Ware pottery may have found its way to such places as a result of socio-economical interaction, either directly brought there by members of a Corded Ware group or indirectly through members of a non-Corded Ware group (see also Carpelan 2004, 50 ff.; Asplund 2008, 60). This kind of give-away of Corded Ware pottery could be related to gift giving, reciprocity or trade, and represents a big deviation from the earlier ideas advocating strict segregation between different groups.

Contacts and interaction have been traditionally – and from the current point of view partly anachronistically – recognized in some loans in pottery (Edgren 1970, 60; Zhul´nikov 1999, 53 f.; Mökkönen 2011, 53, 62 f.) and in the few non-Corded Ware artefacts found in Corded Ware burials (Edgren 1970, 59; also Jaanits et al. 1982, 108). Nevertheless, inter-group relations are thus far inadequately studied, as is the whole cultural milieu where these contacts took place. The traditional view of Corded Ware and its relations with other contemporary groups is – explicitly or implicitly – based on the generally accepted idea that Corded Ware represents migration (Äyräpää 1973, 206 ff.; Edgren 1992, 96; Matiskainen 1994, 14; Carpelan 1999, 262; but see Luoto 1986; 1987; Asplund 1995). This idea also strongly subscribes to the concept of A-horizon, lately largely criticized or rejected in Europe (e.g. Behrens 1997; Lang 1998; Furholt 2003; Ebbesen 2006; Larsson 2009a). Further, the beginning of Corded Ware north of the Gulf of Finland was previously dated to around 3200 BC, but recently it has been proposed that the questionable early dates should be excluded and the beginning – in concert with the rest of Europe – be placed around 2900–2800 BC (Mökkönen 2011, 17; Nordqvist et al. in press). This consequently introduces three of four unknown centuries into the chronology, and also means that previous schemes of cultural development and sequences of pottery-defined 'cultures' partially unravel.

On general level the distribution of Corded Ware pottery may be taken to indicate the main area of Corded Ware habitation – or more correctly, the area of such activities, which involved pottery. Naturally, the central position attributed to ceramics in the very definition of settlement sites may distort the image; it has been stated that Corded Ware sites without pottery are a rarity (Edgren 1970, 18), but this can partially result from the inability to recognize non-pottery material. On the other hand, the current pottery distribution is in line with the distribution of other artefact types customarily connected with Corded Ware, which reinforces the image of 'core area'. The distribution of (battle) axes complements the total sphere of activities by filling in the empty areas between the settlement sites and pointing towards off-site (or non-pottery-involving) activities – as well as the destroyed sites. However, the distribution of Corded Ware axes – plus Corded Ware-influenced axes – outside the main area shows that these regions were not foreign to the members of Corded Ware groups either. Contrary to many earlier views there are indications of interaction with the non-Corded Ware groups, and that the latter may have played a much bigger role in the development of Corded Ware in the North than previously thought. Unfortunately, the study of these connections, like the questions of migration vs. local development and general cultural development and chronology, are outside the scope of this paper, but we hope data presented here underline the topicality of such research.

Conclusions

A major difference between previous distribution maps and the new data is the sheer volume of known sites: the number of Corded Ware settlement sites has more than tripled from the figures presented some decades ago. Though at first glance the main area of Corded Ware habitation seems the same, a more accurate look reveals differences. The sites are now distributed more evenly within the main area, and even if certain old central regions still stand out, also new concentrations emerge. In some regions such as Häme and Pirkanmaa, settlements can be found further inland and also in eastern Kymenlaakso and Karelian Isthmus Corded Ware sites are more clearly present. Thus, the classical northern border of Corded Ware needs to be re-drawn at places, and it is also evident that the border is 'leaking'. This observation is validated by the distribution of axes: apart from imitations and animal head axes, battle axes of different types are clearly present in inland areas – these finds outline the total extent of Corded Ware activities and influence.

The big number of sites shows that the presence of Corded Ware in the research area was both extensive and intensive. This is even more striking if we accept the proposition that Corded Ware sites have lessened archaeological visibility due to different ways of using material culture and to issues related to recognizing its materials (preservation-related questions, however, affect most gravely the burials). Still, no single reason can be presented to explain why there are so many Corded Ware settlement sites in the North. No doubt, one notable reason is the moderate or non-existent later land use at the sites. On the other hand, recent community planning and subsequent modern surveys have added to the number of known sites. Local circumstances, cultural traditions, and ways of living – such as the strong aquatic orientation of some sites – probably have an effect, but at the same time we should not forget the cultural ideas and mental concepts common to many groups within the Corded Ware phenomenon. Therefore, it is impossible to subscribe to the propositions which attribute the large amount of sites simply to differing environment or mode of subsistence alone. Correct explanation for the situation probably lies in the combination of the above-mentioned factors but answering this question in essence requires also more settlement studies in other regions.

A lot remains to be done with the research of Corded Ware phenomenon in the areas north of the Gulf of Finland. Lack of basic studies result in problems of identification and classification of material, and small-scale excavations restrict our understanding of Corded Ware sites. The continuing debate about Corded Ware subsistence and the recently raised questions related to its chronology are other questions to be solved. However, despite the shortcomings the available material is exceptional as it allows studying the domestic sphere and everyday practices in detail and in a way not necessarily possible everywhere. Well-focused research with up-to-date methods and approaches could enrich the image of Corded Ware even fairly rapidly. The material also enables studying the connections with other groups and the mechanism of spread, assimilation and adaptation – aspects, which cannot be studied through the mortuary culture alone.

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NÖÖRKERAAMIKA LEVIK PÕHJA POOL SOOME LAHTE – HETKESEIS

Resümee

Kuigi nöörkeraamika kultuurinähtusena avastati sada aastat tagasi, on selle uurimine põhja pool Soome lahte jäänud mitme viimase aastakümne jooksul tagaplaanile: endiselt domineerivad vananenud vaated, levikukaardid ja leidude arvud. Käesolevas artiklis on ajakohastatud andmed nöörkeraamikaleidudest ja asulakohtadest tänapäeva Soomes ning Loode-Venemaal (joon 1). Samuti on esile tõstetud põhjapoolse nöörkeraamika mõningaid teisi aspekte. Uurimuse peamiseks allikaliseks baasiks on Museovirasto hallatav Soome muististe register, mida täiendavad teated teistest kättesaadavatest andmebaasidest ja kirjandusest. Kuigi mainitud peamise allikabaasiga on teatud probleeme, võib siin esitatavaid tulemusi siiski esinduslikeks ja pilti nöörkeraamikaleidude paiknemisest ning tihedusest korrektseks pidada.

Leiukohad jagatakse kolme peamisse rühma: matuse- ja asulakohad ning venekirveste juhuleiukohad. Lisaks kindlatele matustele eristatakse ka võimalike matuste kategooriat, kuna orgaanilise ainese halva säilivuse tõttu on matuste tuvastamine keeruline. Vaatlusaluses piirkonnas kõnelevad olemasolevad andmed 360 nöörkeraamikaga asulakohast, 30 kindlast ja 80 võimalikust matusekohast ning rohkem kui 1300 venekirve juhuleiukohast (kaasa arvatud nende kõik variandid ja kohalikud imitatsioonid). Lisaks on veel sadu teisi nöörkeraamikaga suhestatavaid kirveleide (joon 2–11, tabel 1).

Varasemate levikukaartidega võrreldes on nöörkeraamikaga asulakohtade arv enam kui kolmekordistunud. Kuigi esmapilgul näib nöörkeraamikaga seotud asustuse peamine levikuala olevat endine, toob lähem vaatlus siiski välja nii mõnegi erinevuse. Nöörkeraamika leiukohti teatakse nüüd ka teisel pool klassikalist põhjapiiri, mistõttu nöörkeraamika leviku põhjapiir vajab mõnes kohas korrigeerimist. See piir on ühtlasi olnud "lekkiv", kuivõrd nöörkeraamikat teatakse ka mittenöörkeraamika aladel. Kuna enamik materjalist koosneb nappidest inspektsioonileidudest, ei ole võimalik avastatud asulakohti lähemalt määratleda; nähtavasti on tegu nii püsiasulate, ajutiste laagrite kui ka teatud korduvtegevuste paikadega. Üldises plaanis võib nöörkeraamika levikut käsitleda seda keraamikat kasutanud inimeste peamise asustusalana (või keraamikaga seotud tegevuste alana), kusjuures venekirveste levikut saab vaadelda selliste tegevuste kajastusena, mis toimusid väljaspool asulakohti või ei olnud keraamikaga seotud; kirved võivad pärineda ka hävinenud muististest.

Erinevalt suuremast osast Euroopast paistavad Soome lahest põhja poole jäävad alad silma rohkete asulakohtade ja väheste kalmistutega. Seda nähtust pole võimalik seletada üheainsa põhjusega. Asulakohtade rohkust Kirde-Euroopas võib osaliselt põhjendada asustusnihkega pärast nöörkeraamikaperioodi ja tagasihoidliku

või lausa olematu maakasutusega nendes kohtades kuni ajaloolise ajani välja. Tänapäevane planeerimistegevus ja selle esile kutsutud maastiku arheoloogiline inspekteerimine on viinud suure hulga asulakohtade avastamiseni, kuid teisalt tuleb arvestada ka tegureid ning piiranguid, mis on seotud arheoloogilise nähtavuse, uurimismeetodite ja -situatsiooniga. Kohalikud asjaolud, kultuuritraditsioonid ja eluviisid on rohkete asulakohtade üheks põhjuseks, kuid samuti ei saa unustada paljudele nöörkeraamikat kasutanud inimrühmadele omaseid kultuurilisi tõekspidamisi ning ideid. Seetõttu ei saa toetada varasemaid seisukohti, mille järgi tulenes asulakohtade arvukus lihtsalt erinevast keskkonnast või elatusviisist.

Muististe suur arv tõestab vaieldamatult, et nöörkeraamikanähtuse kohalolu vaatlusaluses piirkonnas oli ühtaegu nii ekstensiivne kui ka intensiivne. Teatud vajakajäämistest hoolimata on põhjapoolne nöörkeraamikaaines edasisteks uurimistöödeks erakordne ja suure potentsiaaliga, eriti majapidamiste ning argipäevategevuste vallas. Samuti on võimalik analüüsida ühendusi teiste rühmadega ja leviku, segunemise ning kohandumise mehhanisme: aspekte, mida pole võimalik uurida üksnes surmakultuurimuististe kaudu.