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BURIAL PRACTICES IN NORTHERN SWEDEN, NORTHERN FINLAND AND THE WHITE SEA COAST BETWEEN THE 9TH AND 16TH CENTURIES AD: ADAPTATION OF PRACTICES IN A DECENTRALISED NETWORK

Abstract

This paper presents an overview of known burials and burial practises in the region comprising of present-day Northern Finland, Sweden, the Murmansk oblast and the White Sea coast in Northwest Russia during the study period, the Late Iron Age and Middle Ages (ca. 800–1600 AD). Burial sites offer a unique perspective on examining social structures and social change, as they are focused on the present of the community while still being rooted in tradition. We discuss how these burials represent the multicultural environment and the fluidity of adaptation of cultural features in the north, as well as the distinct similarities between the communities. We will also examine how the decentralised network, that the northern Fennoscandian communities formed, caused and maintained this multicultural environment during the Late Iron Age and the Middle Ages.

Keywords: Burials, Late Iron Age, Middle Ages, Northern Fennoscandia, adaptation, decentralised network

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Received: 18 March 2022; Revised: 27 May 2022; Accepted: 13 September 2022

Puolakka, H.-L. & Kuusela, J.-M. 2022. Burial practices in northern Sweden, northern Finland and the White Sea coast between the 9th and 16th centuries AD: Adaptation of practices in a decentralised network. *Fennoscandia archaeologica* XXXIX: 28–56.

INTRODUCTION

In this paper, we present an overview of the known burial practices in the region comprising present-day Northern Finland, Sweden, Murmansk oblast and the White Sea coast in Northwest Russia (Fig. 1; we will henceforward refer to this region with the term Northern Fennoscandia) between the 9th and 16th centuries AD. We discuss how they represent the culturally variable environment of the North and the fluidity of the adaptation of practices, on the one hand, and at the same time certain similarities between the communities, on the other hand. We will also examine how the decentralised network, which

the Northern Fennoscandian communities formed, caused and maintained this variable environment during the Late Iron Age and the Middle Ages.

The Late Iron Age and Middle Ages of Northern Fennoscandia (Fig. 1) – i.e., the period between the 9th and 16th centuries AD following the periodisation used in the present paper (see below) – have until recently been in many ways a problematic period to study mostly due to the scarce and fairly poorly understood archaeological record. In the past, scholarly studies have relied on a retrospective method where the situation of the Late Iron



Figure 1.
Study region.

Age and early medieval period has been reconstructed based on the few earliest literary sources, later 16th century sources and onomastic studies, and then applying archaeological – primary artefactual – evidence to the narrative (e.g., Vahtola 1980; Huurre 1983: 414–9; Julku 1986). To simplify this, all these enquiries have followed a general pattern of interpretation where Northern Fennoscandia has been utilised as a usufruct by people from the regions of Southern Finland, Sweden or Karelia now in Northwest Russia. Finally, the coastal regions – specifically the Bothnian Bay coast – were colonised by these southern communities, whereas the inland dwellers were either gradually pushed back or otherwise exploited by these southern colonists. Characteristic for these studies is the inherently passive role and the lack of agency ascribed to local northern communities.

In recent years, focused archaeological research has resulted in a need to revise conceptions regarding the period (see e.g., Kuusela 2015; 2018; 2020a; 2020b; Bergman & Edlund 2016; Hakamäki 2016; 2018; Kuusela et al. 2016; 2018; 2020; Ikäheimo et al. 2017; Bergman 2018; Bergman & Ramqvist 2018; Murashkin & Kolpakov 2019; Nurmi et al. 2020; Puolakka 2020). Specifically, the view of the Late Iron Age and Medieval North as a usufruct of southern agricultural communities with little significant cultural input from local communities has been severely criticised (e.g., Kuusela 2015; 2020b; Bergman & Edlund 2016; Kuusela et al. 2016; 2018; Hakamäki 2016; 2018; Ikäheimo et al. 2017; Puolakka 2020). As the local character of the northern communities has become evident, so has the

observation that, although they clearly differ from the southern communities, they also exhibit considerable local variation indicating that the northern communities did not form a homogeneous group (Kuusela 2020b). This is most evident in the burial forms in use in Northern Fennoscandia during the study period.

For this reason, we will also eschew the – what may be called a traditional – way of examining the North, meaning a comparison of the “cultural spheres”, often condensed into what in essence is a binary opposition between a farming society and a hunting society. To start with, there is scant evidence of a farming society present in the study area during much of the examined period (see Nurmi et al. 2020 for a detailed examination), but more importantly, we do not feel that this perspective is fruitful in the examination of the northern prehistoric and medieval communities precisely because these northern groups do not form a unified and homogeneous “culture group”. Instead, we will examine the archaeological evidence without predetermined premises of what cultural groups they should represent. In our view, this opens the most fruitful avenue of examination fully appreciating the variation evident in the North during the study period and shifts the focus of examination to the northern groups themselves and not to the external factors outside their purview.

Chronological notes

This paper is mostly concerned with the time period between the 9th and 16th centuries in the territories

of present-day Finland, Sweden, and Northwest Russia presenting terminological challenges in regard to chronology. The definition of the Viking Age is fairly uniform with the period beginning at the onset of the 9th century and lasting until the early 11th (e.g., Helle 2003). In Sweden, the 11th century marks the beginning of the Middle Ages (Helle 2003). In Northwest Russia, the Middle Ages are considered to begin at the end of 10th century and last until the late 16th century (Martin 1995; Karpov 2003).

In Southwest Finland, the Viking Age is followed by the Crusade Period lasting from the early 11th century until the mid-12th century after which the Early Middle Ages are conventionally set to begin (e.g., Haggrén 2015: 369–70). In Southeast Finland, the Crusade Period lasted until the early 14th century after which the Middle Ages began (Haggrén 2015: 370–5). In Northern Finland, the chronology is far more indistinct, and some scholars maintain that the very Northernmost regions did not have a medieval period at all but rather existed in a state of prehistory until the early modern period (Haggrén 2015: 370). However, at least the coastal regions of the Bothnian Bay area can be said to enter a medieval period by the 14th century from which time the earliest literary sources regarding ecclesiastical organisations in the area are known (Lavery 2006: 25–8).

As no unified chronological terminology conforming to the conventions of the study region as a whole exists, for reasons of convenience of presentation, we have chosen to follow the periodisation used for Southeast Finland, since the same conditions mostly apply in Northern Scandinavia. Thus, we will use the term Viking Age when referring to the period between the 9th and early 11th century, the Crusade Period when referring to the period between the early 11th century and 14th century, the Late Iron Age when referring to the whole period between the 9th and 14th century and, finally, the Middle Ages when referring to the time between the early 14th and 16th century. We acknowledge this as a shorthand but it is a necessary one for a fluid representation.

NORTHERN FENNOSCANDIAN COMMUNITIES IN THE LATE IRON AGE

If looking from the centres of Europe, Northern Fennoscandia is in a peripheral and difficult to reach

region. Nevertheless, due to the general intensification of trade and contacts in Europe beginning at the onset of the Viking Age in the 9th century, Northern Fennoscandia saw an increase in activity at the same time, which is archaeologically visible in the increasing number of sites and finds originating from the West, South and East during the period (e.g., Kuusela 2013a: 76–88; 2014). The interest in the North for Europe was due to the northern wildlife and its commercial value—fish increased in importance in Europe during the 9th century (e.g., Wallerström 1983: 33–44; 1995: 129; Martin 1986; 1995: 134–40; Makarov 1991: 73–8; Sawyer & Sawyer 1993: 158–9; Barrett et al. 2011; Star et al. 2017; Barrett 2018; Kuusela et al. 2020) and furs were also valued. In addition, reindeer meat, pelts and antlers have been northern trade commodities (e.g., Pilø et al. 2018; Salmi & Heino 2019; Kuusela et al. 2020). This increase in trade naturally caused an increase in the contacts between different areas. This in turn increased the influx of new ideas and practices which can be seen in the burials of the region.

BURIAL PRACTICES BETWEEN THE 9TH AND 16TH CENTURIES

Burials in the study region (Fig. 2) are divided into two basic types: cremations and inhumations. Most of the cremations have been found in the Finnish side of the study region with only three cremations in the period and region covered in this paper which are currently known to be outside of Finland – two in Sweden and one possible case in the Kola Peninsula in Russia. Although appearing on the Swedish side more frequently prior to the 9th century, cremations appear to be rare post-9th century (Hedman 2003: 93–4). Inhumations, in turn, have mostly been found on the Western – i.e., Swedish – side, but they do appear on the Eastern side of the Bothnian Bay as well as on the coast of the White Sea. In addition to these two, a third form of sorts are burial sites where both burial practices appear, and currently three such cases are known – Kyrkudden on the Swedish side of the Tornionjoki river as well as Valmarinniemi and Suutarinniemi on the Bothnian Bay coast, all being coeval with each other (Fig. 2).

In the following, we will briefly examine the burials based on their various features when applicable. These include structural features, body placement, cremated bone distribution and grave

goods. Due to the highly variable nature of the material, the following may appear as a fairly confusing treatise and the reader is strongly encouraged to refer to Appendix 1 for a collated overview.

Structural features

The structural features of the burials vary considerably, and no clear pattern can be found. As we can see in Appendix 1, both cremations and inhumations occasionally include structures made out of stones or timber.

A relatively common but varied form of inhumation burial is a singular burial incorporating a stone structure of some form and these appear to have been common in the inland regions throughout the study period (see Schanche 2000; Hansen & Olsen 2014: 107–14). One such example is the Tärna 195:1 burial (Storuman, Västerbotten, Sweden) documented by the Swedish ethnologist

Ernst Manker (1961: 156–60) in 1950 when he conducted a small investigation of the site but it was properly excavated and radiocarbon dated in 2001 (Heinerud 2002). This burial is an inhumation where the deceased – together with grave goods – was laid in a cist constructed into a shallow bedrock hollow on the ground. Instead of soil, flat stone slabs were used to cover the body (Manker 1961: 157; Heinerud 2002: 7–8). Radiocarbon dating (Appendix 2) offers a wide margin placing the burial to between the 14th and early 17th centuries. The Skärán (officially Nysättra 240:1, located in Skellefteå, Västerbotten, Sweden) inhumation cemetery in turn consists of burial cairns or stone settings, where the deceased have been laid on top of the ground surface and covered with a burial cairn, with at least one burial also including a cist (Larsson & Rathje 2001; Rathje 2003).



Figure 2. The examined burials in the study region.

Some stone structure burials were made in natural boulder fields, such as the singular inhumation on Anzersky island (Martynov 2010) and the Viinivaara Itäpää cremation burial, in which the natural boulder field had been modified by building a low, but perceptible, stone setting on the site of the burial, becoming visible only after de-turfing (Hakamäki et al. 2013: 5). The Anzersky burial within the boulder field for its part seems to have been a preferred choice, since a nearby sandy beach could have been used instead like in the Kuzomen inhumation burials discussed later.

The Skellefteå stad 179:1 (Skellefteå, Västerbotten, Sweden) cremation cemetery consists of three low and difficult to perceive stone settings built on top of bedrock niches on a rocky hill (Östlund 1996). The burials were deposited below ground level in a concentration typically measuring a few dozen centimetres in diameter. Radiocarbon dating to the Viking Age implies contemporaneity with Arvidsjaur 2140:1 and several of the Finnish burials (Appendix 2).

The dating range of the burials using stone structures is wide, as most appear to belong to the Middle Ages – i.e., between the 14th and 16th centuries – a few cases are older. The Finnish part of the study region currently lacks known burials using stone structures. While it is possible this reflects a research lacuna rather than an actual phenomenon, this distinction is nevertheless notable. In 2021, a stone structure, which might be a burial, was inspected (Kuusela 2021) in Savukoski (Lapland, Finland) but the function and dating of the feature remains unknown at this time.

Timber burial structures are a rarer feature compared to stone structure burials, and they are found only within cemeteries of the study region: Kyrkudden, Kuzomen II and Vanha Kirkko. All these cemeteries date to the Crusade Period or after. In Kyrkudden (officially Hietaniemi 83:1 and 326:2, in Övertorneå, Norrbotten, Sweden), inhumations have been placed on the ground surface or in timber burial chambers and covered with a burial cairn (Wallerström 1995). Two out of the four cremations in Kyrkudden have been buried individually in chambers as described hereinabove, while two have been incorporated into inhumations. Only one of the cremations contained grave goods (Wallerström 1995: 155, 158). In Kuzomen II (on the bank of Varzuga river on Kola peninsula, Russia), the inhumations were made

in shallow graves containing timber burial structures (Ovsyannikov & Ryabinin 1989). The Vanha kirkko cemetery in Hailuoto, Finland diverges from the others in that it incorporates timber structures containing several inhumations (Paavola 1991: 24–31). In some cases, it is possible that wooden structures have not survived, which might be the case in Kuzomen I. This cemetery was found mostly destroyed with the burials and grave goods scattered along the sandy beach where the site was located. No signs of grave structures were recorded on the site. The grave goods and dating were similar to Kuzomen II with object typology as well as a coin dating the site to the Crusade Period, more specifically the 12th–13th centuries (Ovsyannikov & Ryabinin 1989; Gurina 1997).

Sotataival “ochre graves”

Perhaps the most curious case among the burials is the possible red ochre inhumation burials that seemingly date to the Late Iron Age. In 2021, a group of metal detectorists came upon a group of Late Iron Age artefacts 70 m South of the Sotataival 3 cremation in Savukoski (Lapland, Finland). A rescue excavation on the site later the same year revealed features that are somewhat reminiscent of red ochre burials (Mikkola 2021). This can be considered to be fairly curious as red ochre burials mostly date to the Stone Age yet the grave goods from these possible burials are from the Late Iron Age. The problem is that the detectorists very thoroughly disturbed the contexts of the site and during the excavation it could no longer be safely verified whether the artefacts found were actual burial deposits or, for example, deposits into earlier Stone Age burials. Considering that the artefacts can be established to have been found in the features, it does seem possible that they might truly be red ochre burials dating to the Late Iron Age. However, two of the iron artefacts, a fragmented knife and an arrowhead, exhibit clear fire patina and one of the glass beads also shows signs of minor fire-damage indicating they have been on a pyre or in contact with fire. No signs of a cremation nor cremated bones were found during the excavation, so a later deposit into Stone Age burials, or something else cannot be ruled out either. If the features are burials dating to the Late Iron Age, they would

represent at the moment a fairly unique form of inhumation burial in a Late Iron Age context.

Burial placement

In some cremation burials, covering the burial was apparently not done at all and there appears to have been very little – if any – structures associated with them. For example, the singular cremation burials in Heinisaari, Iso Märäntö, Sotataival 3 and Tyynelänranta in Finland seem to have been made directly on top of the ground, or very near the surface with no cover or discernible structures and/or markers. The use of wooden structures made on top of the ground, which would have left few observable traces, is possible but cannot be verified. Nevertheless, some burials might indicate the use of such – for example, the singular cremation of Heinisaari, where the grave goods were found scattered directly beneath the topsoil around the grave, perhaps implying that they might have been originally resting on a structure which had since deteriorated (Hakamäki 2018: 42–3).

Some of the singular burials were made beside a prominent boulder, such as the cremation in Kivisaari (Suomussalmi, Kainuu, Finland). This burial was found by two local boys while they were digging at the site and, as a result, the cremation was largely destroyed prior to the rescue excavation. The burial was deposited beside a large boulder into a depth of 15–20 cm with no structures observed (Huurre 1973: 82; 1983: 390). The burial contained a handful of cremated human bones, recovered from soot-stained pockets, and grave goods most of which had been damaged by fire (Huurre 1973: 85) and had thus been on the pyre. Based on artefact typology, this burial has been dated to the Crusade Period (Huurre 1973: 85; 1983: 390).

Body position

The Hiukka burial (Rovaniemi, Lapland, Finland) is a singular inhumation without visible structures. The buried individual was laid in a North-South-oriented grave in the flexed position (Jarva et al. 2001: 31–2). The grave had been partly destroyed during the historical period by a horse burial (likely dating to the 19th century), but roughly half of the burial was intact so the general layout of the grave could be reconstructed. Radiocarbon dating places the burial to the Crusade Period (Appendix 2). The

flexed position could also be verified in the case of the buried individual within the singular burial on Anzersky island (Martynov 2010). In other singular inhumation burials, the body position cannot be reconstructed so it is impossible to determine whether the flexed placement of the body within singular inhumations was common to some regions and uncommon for others. Some burials with individuals in flexed position are known from Southern Finland, though it is not common there either (Moilanen 2021: 49–50).

The cemeteries of Ii Illinsaari Suutarinniemi (Ii, Northern Ostrobothnia, Finland), Keminmaan Valmarinniemi (Keminmaa, Lapland, Finland), Iin Hamina (Ii, Northern Ostrobothnia, Finland), Kuzomen II (Kuzomen, Murmansk Oblast, Russia) and Hailuoto Vanha kirkko (Hailuoto, Northern Ostrobothnia, Finland) are inhumation cemeteries where the dead have been laid in the supine position into mostly East–West-oriented graves, and their hands laid either on their mid-region or straight on their sides (Ovsyannikov & Ryabinin 1989; Paavola 1998; Kallio-Seppä et al. 2011; Kuusela 2015; Ikäheimo et al. 2017). The Vanha kirkko, Iin Hamina and Kuzomen II cemeteries lack the cremation burials that are present in both Suutarinniemi and Valmarinniemi. In Suutarinniemi and Valmarinniemi, the cremations appear to be inherently associated with inhumations as they are often either found directly integrated into inhumations, or otherwise in close proximity to them (see Kuusela 2015: 19–24; Ikäheimo et al. 2017: 104; Puolakka 2020: 20–2). Both the Vanha kirkko and Iin Hamina cemeteries are younger than Suutarinniemi and Valmarinniemi as Vanha kirkko should be dated to the early to mid-15th century (Ikäheimo 2018b: 115) and Iin Hamina to the late 14th to 16th century (Kallio-Seppä 2011) at the earliest by which time the cremation burial practice seems to have largely been abandoned.

Bone distribution within cremations

Bone distribution in cremation graves generally follows three different patterns: the cremated bones were scattered over an area, the cremated bones were laid in one clearly lined deposition indicating the use of a container for the cremated bones or the cremation was deposited in several smaller depositions. However, these types do not follow any periodical or geographical pattern. The amount of

bone material within the depositions also differs. Some of the cremations have only tens or hundreds of grams of bones, and some seemingly nearly all of the bone material as a human body, when cremated, is normally reduced to 1.2–3 kg of burnt bone (McKinley 1993).

For example, in Viinivaaran itäpää the excavation of the burial site revealed a cremation deposited near the rocky peak of the ridge with fragments of cremated bone and ashes from the pyre scattered in between the rocks in a loosely centralised manner (Hakamäki 2016: 36). The total amount of recovered cremated bone totalled 0.3 kg and, therefore, only a part of the remains had been deposited in the burial. Radiocarbon analyses indicate a dating between the 8th and 11th centuries (Table 2). Two cremations in the study area bear similarities to Viinivaaran itäpää. In the 12th century cremation of Iso Märäntö (Suomussalmi, Kainuu, Finland), the cremated bones (0.85 kg in total) were scattered over an area of several square metres. However, the Iso Märäntö burial was not deposited into a boulder field (Finnish Heritage Agency 2015; Hakamäki & Anttonen 2017). Likewise, the cremation of Sotataival 3 (Savukoski, Lapland, Finland) was not associated with a stone structure, but rather the bones were scattered over a few square metres of level ground with grave goods – most of which had apparently been on the pyre – either dug into a pit below the bone deposition or placed in their midst (Esa Mikkola pers.comm.).

The cremation on Heinisaari island in Lake Kiantajärvi (Suomussalmi, Kainuu, Finland), at a distance of 850 m from the previously mentioned Iso Märäntö, was deposited into a sandy and level ground patch near the shore and on the southern side of the island. It consisted of a concentration of 0.4 kg of cremated bone fragments and associated grave goods (Hakamäki 2018: 42–3). The bones had been placed on top of the ground in a relatively clear-bordered concentration indicating the use of an organic container, which would not have left archaeologically observable traces (Hakamäki 2018: 44).

The Arvidsjaur 2140:1 (Arvidsjaur, Norrbotten, Sweden) cremation was a structureless burial below ground level with bones of at least two individuals – an adult and a child between 5 and 14 years of age – identified (Hedman 2003: 92–3). The bones were found in small, concentrated pockets (Hedman 2003: 91 Fig. 3:36), but not in a single

concentration as in Heinisaari, nor scattered over a larger area, as in Viinivaara.

The cremations in the Suutarinniemi (Ii, Northern Ostrobothnia, Finland) and Valmarinniemi (Keminmaa, Lapland, Finland) cemeteries are similar to each other. All of the above-mentioned types of cremations (singular concentration, several deposits, scattered) were found within the inhumations. The cremations date primarily to the Crusade Period. Most of the cremations were deposited in graves alongside the inhumations, where the cremated bones, and occasionally associated grave goods, have been placed possibly in an organic container given the concentrated distribution of the cremated remains. The burials contain varied amounts of cremated remains, occasionally enough to make it plausible that most, if not all, of the bones have been buried. Cremation 1 in Suutarinniemi contained 0.7 kg of bones and Cremation 2 in turn 1.3 kg, whereas the Valmarinniemi burials contained only between 0.3 and 1.4 kg of cremated remains though mostly below 1 kg (Ikäheimo et al. 2017: 84). It is, however, notable that some burials in Valmarinniemi included the remains of several individuals (Kuusela 2013b: 6; Ikäheimo et al. 2017: 88–90, 94–6).

Other possible cases of cremation

A fairly large number of other likely cases of cremation, which have either not been excavated or which have been so severely damaged when the site was excavated that specific details can no longer be reconstructed, are known specifically on the Finnish side of the study region. A significant majority of these have been found by metal detectorists especially in the region of Kainuu and more are found each year.

One possible cremation is currently known in the Kola peninsula. The site Liva 1 is located on the northern bank of Lake Verkhneye Chalmozero near river Liva. Some of the archaeological structures had been disturbed by wartime features, such as trenches and dugouts. The site was originally found by a local resident who further disturbed the context. The site contains seven rectangular hearths as well as some destroyed, unclear features. It is possible that some of the personal objects found further away from the hearths were a part of a burial, disturbed by the wartime features (Murashkin & Kolpakov 2019).

Grave goods

Most of the studied graves and cemeteries include grave goods of some sort. Nevertheless, variation is evident; grave goods were rare in Kyrkudden and Valmarinniemi burials, and in Suutarinniemi, the inhumation graves did not include any objects, whereas at Kuzomen II, the graves had plenty of grave goods in every grave. It is also possible that especially within Northern Finland, a bias exists as most, if not all of the new burial sites have been found using a metal detector and possible burials without metal objects might still be left unfound.

When observing the grave good types (Appendix 1, 3, 4), we note that although the exact combinations in each grave may vary, the functional categories remain largely the same throughout the study period and within the studied region. The grave goods can be loosely categorised belonging to weapons, tools and utilities as well as ornaments. The number of different grave goods in the burials is not very extensive, in general.

Weapons that have been found in the burials are primarily limited to axe blades, spearheads and arrowheads, as there is only one sword found from a possible grave context in Marikkovaara, Rovaniemi (Appelgren 1899; Kuusela 2020d). The utilities are mostly small personal items or tools such as knives or fire steels with the greatest variation occurring in their ornamentation. The ornaments consist mostly of different kinds of pendants, brooches and occasional glass beads, but there are no full sets of Late Iron Age dress jewellery known from the southern contexts, consisting of two tortoise brooches and hangings, possibly indicating a differing style of wear compared to the southern regions. The origins of the finds also vary. There are ornaments with their origins as far East as the Beloozero area or the Northern Dvina River Basin (Makarov 1991: 75), round pendants with their apparent origins in Southern Finland (Huurre 1983: 360–1) – and objects from the Western Scandinavia, such as the disk brooches from Liva 1 and Mikonsärkkä (Huurre 1992: 52, Murashkin & Kolpakov 2019: 85). It is notable, however, that regarding weapon finds, a distinction seems to present itself between inland and Western coastal burials as no burial on the Bothnian Bay coast includes weapon finds. This distinction has been noted before (Kuusela 2014) and it may indicate a difference in societal organisation between the coastal communities, on the one hand, and

the inland communities, on the other hand, but this goes beyond the scope of the present paper. For future research, however, this distinction is intriguing.

It is important to note that the grave good assemblages do not indicate an agricultural livelihood as agricultural implements are completely missing in northern burials, as are ceramics. This is not surprising, as Iron Age and/or medieval agricultural implements in Northern Sweden, Finland and Russia are generally absent (Kuusela 2015: 16–8; Kuusela et al. 2016: 181–2; Nurmi et al. 2020: 7–11).

Variation as the norm in the North

Although many of the burials in the North bear similarities, most of them differ from each other with often only one identifying feature being a common denominator. There does not appear to be a very clear regional or chronological uniformity with the burial practises used. Importantly, there are no clear structures or other burial features limited only to inhumations or cremations. Although the differences in the burial forms used are evident, they mask behind them features that link the burials together in a shared cosmology.

Although the different types of burials within the studied area and the study period seem to cross all geographical and temporal lines, some regional trends are perhaps visible. Stone structures in inhumation burials are primarily found in the West, although the Anzersky Island site signifies its presence in the East as well. Cremation generally appears to be an Eastern feature but considering that a great majority of the Northern Finnish cremation burials were unknown only a few years ago before metal detectorists began making artefact finds and archaeological investigations resulted in the discovery of these burials, it is possible their absence in the West is an illusion as metal detecting is more regulated in Sweden than it is in Finland. Considering that some cremation burials are known in the West, the authors suspect this may well be the case. As for Russia, the situation may be similar. Very little research has been conducted in the vast, uninhabited areas of Kola Peninsula and it is possible cremation graves in the area simply have not yet been found.

The clearest difference seems to emerge at the start of the medieval period and 15th century onwards, as the cremations seem to cease, with the exception of one possible case of a late cremation from

the Kyrkudden cemetery. While there is no absolute dating available, based on stratigraphy, Wallerström (1995: 139–40) suggested this cremation could be as young as from the early 17th century. The occurrence of grave goods lasts even longer.

Most of the singular burials are not located in the vicinity of known settlement sites, but most cemeteries are. There are exceptions, however, e.g., Viinivaaran itäpää (Utajärvi, Northern Ostrobothnia, Finland) and Arvidsjaur 2140:1 are combined dwelling and burial sites.

NORTHERN FENNOSCANDIAN BURIALS IN A WIDER GEOGRAPHICAL CONTEXT

We put forward that Northern Fennoscandian communities should not perhaps be viewed through a conventional territorial/cultural perspective, but rather from the perspective of a communication network populated by individual and highly independent nodes. The nature of this network and how it functioned and facilitated trade, exchange and communication has been exhaustively examined in several previously published papers (Kuusela et al. 2016; 2018; 2020; Henriksen 2019; Kuusela 2020b; Nurmi et al. 2020) and the following is based on the premise established in the cited studies. In relation to the burials specifically, this approach requires a wider perspective and, therefore, we must contextualise the northern burials within a larger geographical scale. By comparing the northern burials with burial practices in use elsewhere at the time, it may be observed where they both differ, and where they utilise common elements.

The most notable difference is that the northern burials follow a different topographical logic than the southern burials. For example, the ubiquitous cremation cemeteries in the South are often located on a prominent hillock or ridge situated near an agricultural landscape (Wessman 2010: 23–4). Traditionally, singular burials in the North have been simply thought to be burials of hunters or travelling people who died far away from home, but there are other possible, intentional reasons for these burials since most, if not all of them, are situated near bodies of water and important waterways. The fact that these northern burials favour proximity to waterbodies and travelling routes indicates a different cosmology (Hakamäki & Kuusela 2013). For example, the Viinivaaran itäpää burial is located on a ridge system connecting two large rivers – the

Kiiminkijoki river in the North and the Oulujoki river in the South – and may have been used as an overland route between them (Hakamäki 2016: 42–3). The Sotataival burials in turn are located directly in the middle of a watershed connecting routes leading to diverging directions, the Kemijoki river system heading South and West as well as the Sotajoki river connecting to the East-bound water systems connecting the Bothnian Bay to the Kola Peninsula and the Barents Sea coast. The cremations and inhumations in the North do not differ much topographically from each other as both the inhumations and cremations favour locations close to water and routes of travel. The other notable difference between the southern and the northern burials is that an agricultural lifestyle is clearly not implied in the burials in the North as none of them include agricultural implements in their grave good assemblages (Appendix 1, 3, 4). The northern burials also do not include any ceramics.

A few excavated parallels for the northern-type cremations are known in the southern regions – in Southern Ostrobothnia, in Central Finland, in Karelian Isthmus, and in Jämtland in Sweden (Fig. 3). The burial or burials of Esse-Nådjärv (Pedersöre, Ostrobothnia, Finland) consisted of two burial deposits in a natural boulder field without any clear structural features, reminiscent of the Viinivaara burial in the North. The grave good assemblage consisted of jewellery and small utilities with no agricultural implements, corresponding well with the northern cremations. The find consisted of two deposits of bones, but as no analyses of the bones have been made, it is unknown whether the site consists of burials of two individuals or a burial of one individual in two deposits. There is no radiocarbon date available, but the artefactual typology indicates a Crusade Period dating (Miettinen 2001).

The Oravasaari Siilinranta site (Jyväskylä, Central Finland) excavated in 1981 (Vilkuna 1984) was much like the former – a cremation or cremations deposited into stony ground in between and under boulders together with various grave goods. No burial structures were observed. The cremated bones (~0.3 kg) were deposited into three clusters within a radius of one metre, and the grave goods had been placed around the clusters (Vilkuna 1984). The grave goods consisted of a spearhead, various pieces of jewellery, a fire steel and ceramics (Vilkuna 1984). Although, otherwise, this burial is much like the northern equivalents, the



Figure 3. Comparative burial sites outside the study region.

presence of ceramics is a divergence as none of the northern burial assemblages include ceramics. The burial has not been radiocarbon dated, but based on artefact typology, Vilkkuna (1984) dates it to the Viking Age.

Similar tradition of singular cremations near waterbodies, often situated at important travelling routes can be found in Karelia near the Lake Ladoga in Northwest Russia (Belskiy & Shmelev 2020: 154–5). The cremations of Pihlajamäki and Sänkinmäki are singular cremations very much reminiscent of the Heinisaari burial, with only part of the cremated remains of an individual deposited in the burial with assemblages comprising bronze jewellery and iron weapons, although like in the burial discussed previously, the assemblages also include ceramics (Belskiy & Laakso 2016: 218–9). One of these burials is radiocarbon dated to the Crusade Period with artefactual dating of the other cremation indicating a similar age (Belskiy & Laakso 2016: 213–4). A burial in Kalmaniemi in Karelia, Northwest Russia is especially very similar to the Heinisaari cremation burial. The Kalmaniemi burial included a small deposition of burnt bones as well as an assemblage of grave goods around the burial. The Kalmaniemi burial

likely had a boat laid over the burial (Belskiy & Shmelev 2020: 141–56). Although there is no evidence of a boat from the Heinisaari site, the possibility of some sort of structure, on top of or next to which the grave goods in Heinisaari were deposited, has been discussed (Hakamäki 2018: 42–3). The deposition of the burnt bones near the surface or on top of the ground as well as the placement of the grave goods on both sites (possibly on top of or next to the boat or a burial structure) and the prominent location near an important waterway bear strong similarities to the northern burials. Kalmaniemi has been dated to the Viking age (Belskiy & Shmelev 2020: 146–7).

In Sweden, in the Jämtland region, four singular cremations all dating to the Viking Age were found and excavated in the 1990s (Hansson 1994). The Lunnödörsspasset burial was found to be a very low stone setting (some 5 to 10 cm in height) under which the cremated bones and grave goods had been deposited. The Dalsvallen burial is seemingly like the Northern Finnish ones in that both the cremated bones and burial goods were deposited on the ground surface with the bones being concentrated on a roughly 80 x 30 cm area with no visible structure discernible on the site (Hansson 1994:

1–4). The Sylsjön burial was severely damaged by water erosion caused by water level regulation and no details of the burial could be reconstructed, but based on the patina on the finds, the site is assumed to be a cremation (Hansson 1994: 4–6). The fourth case, Burvattnet, was also damaged by erosion, but excavation revealed the burial to have likely been a structureless cremation deposited on the ground surface with finds and cremated bones found on an area roughly 2 x 1.5 m wide (Ingers 2013: 3). The Jämtland burials all differ from each other slightly but find good equivalents from the northern cases and are roughly contemporaneous with them. Notably the burial assemblages of all of these burials are similar to the northern cases in that in none of them contain agricultural implements – instead the grave good assemblages are composed of weapons, arrowheads, knives, fire steels etc. (Hansson 1994; Ingers 2013). Interestingly, however, three of the four Jämtland burials include a sword, which is a rare find in the North, as only the possible Marikkovaara burial contains a sword.

Cases of combining cremations and inhumations akin to Valmarinniemi and Suutarinniemi are known within a fairly wide region. Examples exist in Southern and Eastern inland Finland, Karelian Isthmus and Scania in Southern Sweden (Schwindt 1897: 1–11; Uino 1997: 68–9; Mikkola 2009; Taavitsainen et al. 2009: 205; Kuusela 2015: 18–9; Satalecki 2016; Puolakka 2019; Moilanen 2021: 69–70). Furthermore, at the end of the Viking Age, inhumation burials begin to appear in cremation cemeteries under level ground in Southern Finland prior to inhumation cemeteries becoming common (Wessman 2010: 27–8; see also Fahlander 2018; Moilanen 2021: 70–1). Thus, the relationship between inhumations and cremations during the Late Iron Age and Middle Ages finds several variations in various regions around the Baltic Sea, and whereas there are divergences in how this feature is exhibited, the idea itself seems to have a fairly wide geographical distribution.

Two inhumations in Southern Finland bear similarities to specifically the northern singular inhumation burials. The first, Lautamäki (Teuva, Southern Ostrobothnia, Finland), was located on a swamp-surrounded sandy ridge and consisted of a richly furnished North-South-oriented inhumation and was excavated in 1958 (Paloniemi 1959). The skeleton had decomposed completely, so its position in the grave cannot be reconstructed, but based on the

artefact distribution, with the brooches and other ornaments being located in the north-end of the burial, it is possible the head of the deceased has been in the north. The assemblage included various pieces of ornaments, an axe blade, utilities, a bronze vessel and a scythe blade. Based on artefactual typology, the burial has been dated to the Crusade Period (Paloniemi 1959). The following year, another excavation was conducted on the site and another grave was discovered, but it was completely empty with neither a sign of a skeleton nor grave goods (Luh 1959). The Lautamäki burial is reminiscent of the singular inhumations present in the North with two distinctive differences – firstly, the assemblage included an agricultural implement but those are missing in the northern burials and, secondly, the burial was accompanied by another burial. However, being completely empty, its nature could not reliably be discerned. The other case, Elomäki Kalliokoski (Nurmes, North Karelia, Finland), was found in the late 19th century and consisted of a human skeleton and a sword dated to the Crusade Period (Lönngberg 1972: 24). The site was not excavated so no further details of the burial can be reconstructed.

Different but similar

With this contextualisation of the northern burial material, we note that although the Northern Fennoscandian burial practices do diverge from the prevalent burial practices in use in the South, they still find counterparts sometimes far in the Baltic Sea region. Yet certain nuances – for example in burial assemblages – still set the northern burials apart from their southern equivalents.

When we closely observe all the burials in the North, we note that the variation between the burials becomes evident, but the differences between the burial practices do not exclude similarities, even when inhumations are compared with cremations. This extensive variation within and between burials can be seen in burials also in Southern Finland (Moilanen 2021: 79–81).

The burials examined in the present paper span across a large geographical region encompassing a wide variety of topographical landscapes ranging from coastal lowlands and river valleys to inland lake districts and fell-dominated high grounds. However, if we exclude the different landscapes of the burials, resulting from the geographic preconditions of the regions they are in, similarities surface.

Most notably, although especially the inland burials often appear to be somewhat remote, they are closely related to waterbodies and routes of travel (e.g., Bergman et al. 2014).

NORTHERN FENNOSCANDIAN COMMUNITIES – A DECENTRALISED NETWORK

As already noted, the Northern Fennoscandian network and the manner in which it functioned have been studied previously in several publications (Kuusela et al. 2016; 2018; 2020; Henriksen 2019; Kuusela 2020b; Nurmi et al. 2020), but it will be examined here briefly, as it is of relevance for the present discussion. The network was composed of coastal and inland gateway communities forming a system of independent but interlinked hubs. Key in the formation of the network were two factors acting in synergy – the natural conditions imposing cyclical restrictions on travel, and the absolute dependence of the network on information. The so-called ice winter phenomenon is a natural condition that affected northern trade on the coast of the Bothnian Bay and its neighbouring areas. During winter, due to pack ice, maritime access to the coast was cut off for roughly six months of the year, while at the same time inland travel was convenient when frozen waterways, swamps and lakes could be utilised as travelling routes (Okkonen 2012; Bergman et al. 2014; Kuusela et al. 2018: 770). During summer, the situation was reversed as the roadless swamp-riddled and heavily forested landscapes made an overland trek difficult, funnelling summertime traffic to the most traversable waterways, which also were of limited utility due to frequent and at times energetic rapids making travel by boat arduous. The situation along the White Sea coast and the inland was likely similar.

In addition to the difficult terrain and the restrictions on travel caused by natural conditions, the vast distances of the inland made it necessary for anyone who wanted to trade with the inland communities to know where they would be at a given time and have suitable contacts among them. The Swedish Priest Olaus Magnus Gothus (2010 [1555]: 4:3) in his 16th century work *Historia de Gentibus Septentrionalibus* (the History of the Northern Peoples), comments how the inland dwellers could not be found without their consent, being able to easily avoid unwanted visitors. Considering that,

especially in the inland, the most opportune time of travel would have been winter – during which not only the weather but also the distinct lack of daylight would have caused severe complications – travellers in the inland likely followed well-set and known paths to set destinations at more or less predetermined schedules.

The same kind of network of coastal hubs could plausibly have existed in the Eastern part of Northern Fennoscandia on the coasts of the White Sea and the Lake Ladoga. The Kola peninsula and the coast of the White Sea have been of great interest to researchers who have been debating the location of Bjarmia. A recollection in Ohthere's tales mentions sailors of the northern sea route reaching a mouth of a big river, beyond which the inhabited land was said to be situated, indicating perhaps a coastal hub. Because of the virtual absence of archaeological finds in the area between the Varanger Fjord and Kuzomen, however, it has been proposed that this northern sea route may not have been of as much use or interest to the traders as the river routes through the inland, and the sea route in the Gulf of Bothnia, which allowed travel and trade from Karelia and the Northern Dvina basin to the very northern parts of present-day Finland, Sweden and Norway, were of greater utility (Makarov 1991: 75–8; 2007: 142–9).

Thus, the coastal communities held a gateway position where they could supervise traffic along the network on the sea-coast axis. On the one hand, they occupied geographical key locations where the main river routes towards the inland began, and where overseas traders arrived during the sailing season and, on the other hand, they possessed information regarding the inland dwellers and knowledge of where they would be at a given time (for an in-depth analysis of the system, see Kuusela et al. 2016; 2018). The inland communities for their part possessed a gateway position based on the knowledge of inland travelling routes and where and when they would meet their trading partners and on what conditions – thus they controlled the network along its coast–inland axis (see Henriksen 2019). Therefore, every node along a trading route was a potential lockdown point of the network and its function was dependent on the goodwill of whoever controlled the node. These lockdown points, or gateways, can also be called constriction points or bottlenecks (see Earle & Spriggs 2015) creating a considerable

comparative advantage (Ling et al. 2018) for the community holding a respective gateway.

Essentially, the northern network was an information network – information of travelling routes and personal acquaintances were necessary in facilitating contact. Due to the gateway position all parties held, the nature of the network was such that it effectively prevented centralisation; in a situation where all the parties hold the information required for a system to function, the creation of a centralised structure within the system becomes unlikely (see Kuusela et al. 2018; Nurmi et al. 2020). This implies that, while the northern communities were resistant towards control from outside the network, they were equally resistant to control from within as in an information network-based system, members can only exert influence over their immediate links and the system does not easily develop a hierarchical structure where one party gains dominance over the others. Furthermore, as contact in general relied on personal acquaintances and relations, and trust between the individual partners (Kallioinen 2012; Hermanson 2013), the relationships in the network were highly individual. From the perspective of transmission, adaptation and exhibition of practices, a decentralised network lacking hegemonic structures, and reliant on individual contacts, may have a high level of variation. In a position of comparative advantage, a seemingly weaker party can prevent the birth of an asymmetrical power relationship and maintain peer interaction, even when at the outset the power balance between the interacting parties would appear to heavily favour another party (see Kuusela et al. 2018).

This has important implications for the spread and adaptation of practices, as the comparative advantage held by communities holding their respective gateways caused a situation where centralised structures that could facilitate the spread of homogeneous practices was unlikely to form and would have been difficult to enforce in any case. Such homogeneous structures would include, for example, dogmatic Christian burial practices. Each gateway, or node, maintained independence due to their respective comparative advantage. Accordingly, and largely irrespective of others in the network, they could choose and adapt various practices into their lives in a manner of their choosing without pressure from centralised oversight. This variability is discernible in the northern burials.

DISCUSSION – ADAPTATION OF PRACTICES IN A DECENTRALISED NETWORK

Ville Hakamäki (2016) has argued in his examination of the Viinivaaran itäpää burial that the northern cremation burial zone should be viewed as a transcultural space where cultural hybridity results in an archaeological record that appears as a “hybrid” of different practices formed in a northern cultural context. In the present paper, this view is developed further, and it is suggested that all of Northern Fennoscandia was a zone where experimentation was practised relatively readily and the social orders and practices that created the various burial forms were not subjected to high levels of conformity. This is more than simply a combination of “Southern” and “Northern” or “Western” and “Eastern” traits and thus more than a hybrid – rather the whole region should be viewed as a dynamic area where the fluctuation and variation of practices have been the norm. Accordingly, although enough similarities between the burials in the North exist to suggest that there was a common base to the cosmologies that resulted in the burials, i.e., a common superstructure, the variation suggests that, to a fairly significant degree, these cosmologies were fluid and in flux.

We put forward the suggestion that it was the way in which the interaction network in Northern Fennoscandia worked that facilitated a situation where high levels of uniformity of practices were not prone to be born. The archaeological remains of the study period in the North have a tendency to be located near or along travelling routes (Hakamäki & Kuusela 2013). Because the communities living in the North quite likely had multiple directions of contact, and as the region was subjected to a fair amount of traffic during the study period (see Kuusela et al. 2016; 2018; Hakamäki 2018), members of the northern communities met and interacted with visitors from several directions regularly and became familiar with different practices. This facilitated a situation where the northern communities adapted different practices to their specific circumstances on what effectively could be considered a case-by-case basis. Different practices and influences were merged to form new ones in a persistent state of fluidity. These communities constantly renegotiated parts of their cosmologies, creating practices which were distinctly their own in the process (Puolakka 2020). As the interactions

in the North were strongly based on personal contacts and were thus not under centralised supervision (Kuusela et al. 2018), a situation was created where the communities individually decided how practices would be adapted into their cultural context if they were adapted at all (see Kuusela 2020b).

It appears that, while some of the burial forms examined in the present paper, namely singular cremations and inhumations, appear as a distinctively Northern Fennoscandian practice, they also appear in southern regions. This further highlights the role of networks and networking in the study region. The southern parallels to the northern burials are in many ways similar to their northern counterparts, but there are also differences specifically in the functional categories of the grave good assemblages. For example, the singular inhumation burial of Lautamäki, although otherwise similar to the northern singular inhumations, includes a scythe blade indicating an agricultural lifestyle, which the northern burials lack. Furthermore, two of the three southern cremation parallels examined herein include ceramics in an assemblage that would otherwise be identical to the northern burials.

While some inhumation cemeteries in the South also have singular cremations within inhumation cemeteries, their grave good assemblages differ from the northern cemeteries. While only the Karelian counterparts include agricultural implements and ceramics, the Southern and Eastern Finnish cemeteries with both inhumations and cremations have richer assemblages, with more ornaments and weapons, such as axe blades. Therefore, although it appears that these southern burials have taken influences from northern practices, they still include adaptations born in a southern context. These southern parallels indicate contacts towards the North, on the one hand, and that burial forms in the South may also not necessarily have been subject to a high level of conformity, on the other hand. In other words, each community in the North had independent contacts and, therefore, the adaptations of practices of these communities were not wholly dependent on each other. This would have resulted in a level of variation in practices such as burials and burial rituals.

The results demonstrate that local northern communities had an active role in negotiating their cosmologies and burial practices. Local-born variation and resilience of local customs were likely to be high in the decentralised network these northern

communities were a part of. This may be demonstrated in the relatively wide range of variation in the burial practices in use in Northern Fennoscandia during the Late Iron Age and Medieval Period.

ACKNOWLEDGEMENTS

Our deepest thanks are due to Kerikko Nordqvist, for providing resources and support.

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APPENDICES

Appendix 1. Burials in Northern Fennoscandia, displayed chronologically.

Viking age, ca. 700-1000									
Country	Site (Finnish site ID# in parenthesis when applicable)	Singular	Cemetery	Structures	Burial placement	Bone distribution/body position	Grave goods	Dating	References
Cremations									
Finland	Heinisaari (1000028151)	x	No	No	Ground surface	Concentrated, possibly deposited in a container	Weapons, ornaments, coin	8th-10th century	Hakamäki 2018: 42-50
Finland	Mikonsärkkä (777010056)	x	No	No	Unknown (badly damaged)	Unknown (badly damaged)	Ornaments	10th century	Huurte 1983: 359-61
Finland	Sotataival 3 (1000039032)	x	No	No	Ground surface	Scattered in an arc-like shape	Weapons, tools and utilities	9th-10th century	Esa Mikkola, pers comm.
Finland	Viinivaaran itäpää (1000022658)	x	No	Stone setting	Between boulder cracks	Scattered	Weapons, tools and utilities	9th-10th century	Hakamäki 2016
Sweden	Arvidsjaur 2140:1	x	No	No	Below ground	In scattered pockets	Weapons, ornaments	9th-11th century	Hedman 2003: 92-4
Sweden	Skellefteå stad 179:1	x	x	Stone setting	Below stone cover and below ground	Concentrated	None	10th-11th century	Östlund 1996
Inhumations									
Sweden	Arjeplog 3135	x	No	No	Grave pit	Unknown	Ornaments, coin	9th-11th century	Serning 1960: 117
Sweden	Byske 67:2	x	Cairn & cist	Cairn & cist	Ground surface, below stone cover & in a cist	Unknown	Ornaments, coin	9th-11th century	Serning 1960: 122-3
Sweden	Vilhelmina 1:1	x	Cairn	Cairn	Ground surface, below stone cover	Unknown	Weapons, ornaments	7th-11th century	Serning 1960: 154; Manker 1961: 99-100

Crusade Period, ca. 1100-1300

Country	Site (Finnish site ID# in parenthesis when applicable)	Singular	Cemetery	Structures	Burial placement	Bone distribution/body position	Grave goods	Dating	References
Cremations									
Finland	Iso Määräntö 1000027140	x		No	Ground surface	Scattered on a wide area	Weapons, ornaments	12th century	FHA 2015, Hakamäki & Anttonen 2017
Finland	Kivisaari (777010073)	x		No	Below the ground	In scattered pockets (assumedly, badly damaged)	Weapons, ornaments, tools and utilities	12th century	Huurte 1973
Finland	Ii Ilinsaari Suutarinniemi (1000019094)		x	No	Pit	Concentrated	Ornaments	11th-12th century	Kuusela 2015
Finland	Tyynelänranta(*)	x		No	Ground surface	Unknown (badly damaged)	Arrowheads, ornaments	12th-13th century	Taskinen 1998
Finland	Valmarinniemi (241010037)		x	No	Pit	Concentrated	Ornaments, tools and utilities	11th-13th century	Taavitsainen et al. 2009; Ikäheimo et al. 2017
Sweden	Kyrkudden		x	Burial cairn, timber burial chamber	Below stone cover	Concentrated	Tools and utilities	10th-13th centuries	Wallerström 1995
Inhumations									
Finland	Hluikka (699010411)	x		No	Grave pit	Foetal position	Tools and utilities	11th-14th century	Jarva et al. 2001
Finland	Ii Ilinsaari Suutarinniemi (1000019094)		x	No	Grave pit	Supine	None	14th-15th century	Kuusela 2015
Finland	Sotataival 3 (1000039032)**		x (two, possibly three, graves)	No	Grave pits filled with red ochre	Unknown	Arrowhead, ornaments, tools and utilities	9th-13th century (artefacts)	Kuusela 2021: 2-4; Esa Mikkola pers comm.

*) This burial was badly destroyed by water erosion by the time it was investigated by an archaeologist, Helena Taskinen (1998) interprets the Tyynelänranta burial as an inhumation burial as the majority of the grave goods show no signs of being burnt. However, as this is not at all an uncommon trait in the northern cremation burials - and because a fragment of burnt bone was found nearby the artefacts - Tyynelänranta should be classified as being a cremation burial rather than an inhumation. The site is destroyed and is no longer in the database of the Finnish Heritage Agency.

***) The nature of the Sotataival 3 red ochre burials remain ambiguous as the relationship between the artefact finds and the burials could not be verified. Nevertheless, the site is listed here with this caveat being made known.

Crusade Period, ca. 1100-1300

Country	Site (Finnish site ID# in parenthesis when applicable)	Singular	Cemetery	Structures	Burial placement	Bone distribution/body position	Grave goods	Dating	References
Inhumations									
Finland	Valmarinniemi (241010037)		x	No	Grave pit	Supine	Ornaments, coins	12th-15th century	Taavitsainen et al. 2009; Koponen & Peittari 2016; Ikkäheimo et al. 2017; Ikkäheimo 2018a
Sweden	Jokkmokk 24:1	x		No	Grave pit	Unknown	Weapons, ornaments	11th-14th century	Serning 1960: 128-9
Sweden	Jukkasjärvi 533:1	x		Stone setting	Ground surface, below stone cover	Unknown	Weapons, ornaments, tools and utilities	11th-14th century	Schanche 2000: 407
Sweden	Skäran			Cairn & cist	Ground surface, below stone cover and in a cist	Unknown	None	10th-15th centuries	Larsson & Rathje 2001; Rathje 2003
Sweden	Övertuleå 436:1	x		No	Grave pit	Unknown	Ornaments, tools and utilities	11th-14th century	Serning 1960: 160-1
Russia	Kuzomen 1		x	No (possibly destroyed)	Grave pit	Unknown	Arrowhead, ornaments, tools and utilities	11th-12th century	Gurina 1997: 127-1, Ovsyannikov & Ryabinin 1989: 201-4
Russia	Kuzomen 2		x	Timber burial structures	Grave pit	Supine	Weapons, jewellery	12th-13th century	Ovsyannikov & Ryabinin 1989: 201-10
Russia	Anzersky Island		x	Cairn	Grave pit	Foetal position	Ornaments	12th-14th century	Martynov 2010: 338-41

Medieval period, ca. 1300-1600

Country	Site (Finnish site ID# in parenthesis when applicable)	Singular	Cemetery	Structures	Burial placement	Bone distribution / body position	Grave goods	Dating	References
Inhumations									
Finland	Iin Hamina (1000011507)		x	No	Grave pit	supine	Ornaments, coins	15th-16th century	Kallio-Seppä et al. 2011
Finland	Vanha kirkko (72010005)		x	Timber burial chambers	Grave pit	Supine	Ornaments, tools and utilities, coins	15th-17th century	Paavola 1991; 1998
Sweden	Arjeplog 301:1	x		Cairn (possibly, badly damaged)	Ground surface and below stone cover	Unknown	Weapons	14th-16th century	Liedgren & Backman 2006
Sweden	Godejaure	x		Cairn & cist	Ground surface, under stone cover and in a cist	Unknown	Tools and utilities	15th-17th century	Manker 1961: 138-41
Sweden	Gutuberget nära Forsbäck	x		Cist	Ground surface, under stone cover and in a cist	Unknown	Ornaments, tools and utilities	14th-16th century	Manker 1961:97; Schanche 2000: 408
Sweden	Kyrkudden		x	Cairn	Ground surface, below stone cover	Unknown	Tools and utilities	13th-17th century	Wallerström 1995
Sweden	Tärna 195:1	x		Cist	Ground surface, in a cist	Unknown	Weapons	14th-16th century	Manker 1961: 156-60; Schanche 2000: 408; Heinerud 2002

Appendix 2. Radiocarbon datings (* of the sites discussed in the text.

Site	Laboratory ID#	14C age BP	Cal AD (2σ)	Reference
Arvidsjaur 2140:1	Beta-100079	1080 ± 40	890–1040 (0,979) 1100–1120 (0,021)	Östlund 1996
Heinisaari	Ua-52340	1177 ± 28	770–900 (0,919) 920–960 (0,161)	Hakamäki 2018: 44, footnote 17
	Ua-52341	1168 ± 29	770–900 (0,839) 920–960 (0,161)	
Hiukka	Hel-2337	830 ± 100	1010–1310 (0,979) 1360–1390 (0,021)	Jarva et al. 2001: 31
Ii Illinsaari Suutarinniemi	Ua-50693 (cremation 1)	926 ± 40	1020–1190	Kuusela 2015: 10, footnote 19
	Beta-382690 (cremation 2)	940 ± 30	1030–1160	
	Ua-50694 (inhumation 2)(***	563 ± 36	1320–1350 (0,05) 1390–1460 (0,95)	Kuusela 2015: 10, footnote 20
	Ua-50695 (inhumation 2, cervid skull)	554 ± 34	1310–1360 (0,48) 1390–1430 (0,52)	Kuusela 2015: 10, footnote 21
	Beta-382691 (inhumation 3)(***	610 ± 30	1300–1400 (uncorrected) 1510–1870 (corrected)	Kuusela 2015: 10, footnote 20
	Ua-50696 (inhumation 3, additional human skull)	588 ± 36	1300–1370 (0,693) 1380–1420 (0,307)	Kuusela 2015: 10, footnote 21
Kyrkudden(**	St 7973 (Grave A18)	945 ± 80	900–910 (0,004) 970–1260 (0,996)	Wallerström 1995: 158
	Ua-3522 (Grave A25)	395 ± 50	1430–1530 (0,607) 1540–1640 (0,393)	Wallerström 1995: 177
Skellefteå stad 179:1	Beta-100079	1080 ± 40	890–1020	Östlund 1996
Tärna 195:1	Ua-18196	460 ± 55	1320–1350 (0,036) 1390–1520 (0,856) 1560 (0,003) 1571–1630 (0,106)	Heinerud 2002
Valmarinniemi(****	Hela-2010 (cremation G)	934 ± 32	1020–1160	Taavitsainen et al. 2009
	Hela-2006 (cremation A)	680 ± 30	1270–1320 (0,635) 1350–1390 (0,365)	
	Beta-451054 (inhumation 128)	910 ± 30	1070–1080 (0,009) 1150–1270 (0,967)	Ikäheimo 2018a
	Beta-451053 (inhumation 123)	730 ± 30	1220–1240 (0,033) 1240–1300 (0,967)	
	Beta-451050 (inhumation 39)	630 ± 30	1320–1350 (0,078) 1390–1450 (0,922)	
Vanha kirkko(*****	Hel-2480 (grave 182)	540 ± 80	1320–1350 (0,046) 1390–1640 (0,954)	Paavola 1998; Ikäheimo 2018b
	Hel-2991 (grave 110)	370 ± 100	1520–1600 (0,111) 1610–1950 (0,889)	
Viinivaara E	Beta-375718	1200 ± 30	715–743 (0,061) 765–895 (0,925) 929–940 (0,014)	Hakamäki 2016: 36–8
	Beta-375719	1080 ± 30	894–930 (0,284) 940–1020 (0,716)	
Kuzomen II	Ua-3522 (Grave A25)	750 ± 10	1200–1210	Ovsyannikov & Ryabinin 1989

*) All dates calibrated using the Calib ¹⁴C online calibration program (Stuiver et al. 2018), which includes tools for applying a marine reservoir correction (see note ***) when necessary.

**) Kyrkudden has a very extensive radiocarbon sequence available that has been fully published in Wallerström 1995. The ones listed here are chosen as representative of the dating range.

***) These samples contain high δ¹³N levels indicating that they may be subject to the marine reservoir effect (see Ikäheimo 2018a, b). However, the extent to which the marine reservoir effect could affect the radiocarbon dates of the Bothnian Bay region – as the bay is both shallow and fed by multiple major rivers increasing the freshwater content – is unknown in lieu of an extensive study (Ikäheimo 2018b: 111). That the marine reservoir effect correction – when

applied with the available data – exaggerates the results is evident in the corrected date of inhumation 3 (Beta-382691). The uncorrected date of this burial is in line with the other radiocarbon datings from the cemetery, and in general agrees with the archaeological features of the site, whereas the corrected date pushes the burial to the 16th century or beyond. Based on archaeological, historical and cartographic evidence available for the site, such a dating is very unlikely (see Kuusela 2020b for more discussion). It is likely that the marine reservoir correction – which is based on insufficient data as the Bothnian Bay region currently lacks the accurate ΔR values necessary for the correction (Ikäheimo 2018b: 111–2) – overexaggerates the age difference between the uncorrected and corrected dates. The correction is likely detrimental in the case of inhumation 3 as the $\delta^{13}\text{N}$ level in this sample was particularly high, possibly aggravating the correction effect. In Table 3, marine reservoir correction has nevertheless been applied (following Ikäheimo 2018a: 9–12), but in the case of inhumation 3, both the corrected and uncorrected dates are displayed. For the other corrected datings, the age differences between the corrected and uncorrected datings are not significant which is likely due to much lower $\delta^{13}\text{N}$ levels.

****) The Valmarinniemi cemetery has a wide radiocarbon dating sequence made and published in multiple publications (referred to in the table). Due to multiple problematic – with some possibly contaminated – samples (see Ikäheimo 2018a), it will not be reproduced here in its entirety, but the datings selected represent the range of the sequence.

*****) The Vanha kirkko sequence has been fully published previously, and subsequently re-examined due to the marine reservoir effect possibly affecting the datings (see note *** above). The full radiocarbon sequence will not be reproduced here, but the selected datings represent the dating range of the cemetery. The datings presented here are ones where the marine reservoir effect correction has been applied.

*****) The article does not include the Laboratory ID for these datings, but the analysis was done in the Leningrad branch of the Institute of Archaeology (LOIA) of the USSR Academy of Sciences.

Appendix 3. Artefact finds, cremations & possible cremations (*)

Country	Site	Finds	Unburnt	Burnt	References
Finland	Heinisaari länsi (1000028151)	Axe blade x 2	x		Hakamäki 2018: 42–50; Hakamäki & Majanen forthcoming
		Penannular silver brooch	x		
		Silver coin (perforated) x 3	x		
		Knife	x		
		Spearhead x 2	x		
		Fire steel	x		
		Bronze strap tag	x		
Finland	Ii Illinsaari Suutarinniemi (1000019094)	Oval bronze tortoise brooch x 2		x	Kuusela et al. 2013, Mujunen 2014
		Silver necklace		x	
		Bronze chain divider		x	
Finland	Iso Märäntö (1000027140)	Axe blade x 3		x	FHA 2015, Hakamäki & Anttonen 2017
		Glass beads		x	
		Bronze curb chain links		x	
		Knives		x	
		Bronze belt mountings		x	
		Bronze neck ring fragments		x	
		Round bronze pendant		x	
		Iron pot handle		x	
		Bronze knife sheath mountings		x	
		Fire steel x 2		x	
		Finland	Jysmänniemi (1000028683)	Spearhead x 2	
Knife	x				
Finland	Järvenpää (1000034809)	Penannular bronze brooch		x	Kuusela 2020c
		Arrowhead	x		
		Knife x 2	x		
		Fire steel		x	
Finland	Kannusniemi (1000031097)	Axe blade x 2	Unknown		FHA 2021
Finland	Kivisaari (777010073)	Axe blade x 2	x		Huurre 1973
		Bone comb fragments		x	
		Penannular bronze brooch		x	
		Penannular bronze brooch	x		
		Penannular silver brooch	x		
		Fragmented bronze chain		x	
		Fragmented bronze curb		x	
		Fragmented knife		x	
		Bone knife hilt		x	
		Fragmented bronze knife sheath mountings		x	
		Bone spoon fragments		x	
		Fire steel		x	
Finland	Lehtolampi lounas (1000032888)	Axe blade	x		
		Unidentified bronze artefact	x		
Finland	Luukkosenlahti (1000036690)	Arrowhead	Unknown		FHA 2021
		Axe blade			
		Bronze belt buckle			
Finland	Marikkovaara (1000016629)	Arrowheads	Unknown		Appelgren 1898, Kuusela 2020d, FHA 2021
		Axe blade		x	
		Knives	Unknown		
		Spearhead x 2		x	
		Sword		x	

Country	Site	Finds	Unburnt	Burnt	References
Finland	Mikonsärkkä (777010056)	Round bronze pendant x3		x	Huurre 1983: 359-61
		Melted glass beads		x	
Finland	Määrännönkangas (1000030868)	This site has been excavated in 2020 and verified to have been a cremation burial. As of the writing of this article, the report is not yet available.			YLE 2020, FHA 2021
Finland	Onnela 2 (1000040739)	Temporal ring	x		YLE 2020, Tapani Rostedt pers. comm.
		Silver bracelet	x		
Finland	Pieni Määräntö	Bronze pendant (a so-called "ear-spoon")	x		Hakamäki 2015b
Finland	Sotataival 3 (1000039032)	Axe blade		x	Esa Mikkola pers.comm.
		Arrowheads		x	
		Fire steel		x	
		Bronze belt mounting		x	
		Bronze chain		x	
Finland	Tyynelänranta (777010281)	Arrowhead x 2	x		Taskinen 1998
		Bronze belt buckle x 2	x		
		Bronze belt mountings	x		
		Bronze bird pendant	x		
		Fragmented penannular bronze brooch	x		
		Fragmented penannular silver brooch	x		
		Iron ring		x	
		Knife	x		
		Bronze strap divider x 2	x		
Finland	Valmarinniemi (241010037)	Silver coin x 6		x	Ikäheimo et al. 2017
		Glass bead		x	
		Iron purse mounting		x	
		Bone artefact		x	
Finland	Viinivaaran itäpää (1000022658)	Axe blade	x		Hakamäki 2016
		Bronze belt mounting	x		
		Knife	x		
		Fire steel	x		
Sweden	Arvidsjaur 2140:1	Axe blade	x		Hedman 2003: 92-4
		Penannular bronze brooch	x		
		Silver coin x 4	x		
Sweden	Kyrkudden	Knife		x	Wallerström 1995: 155-6
Sweden	Skellefteå stad 179:1	No grave goods	N/A	N/A	Östlund 1996
Russia	Liva 1	Bronze pendant			Murashkin & Kolpakov 2019: 75-84
		Bronze penannular brooch			
		Arrow heads			
		Axe			
		Copper sheet fragments			
		Bronze convex brooch			

*) Cemetery assemblages are not presented grave by grave but rather by artefact types

Appendix 4. Artefact finds, inhumations (*)

Country	Site	Finds	References
Finland	Iin Hamina (1000011507)	Copper pendant	Kallio-Seppä et al. 2011
		Silver coins	
		Bronze mountings	
		Textile fragments	
		Seal tooth pendant	
Finland	Hiukka (699010411)	Knife	Jarva et al. 2001
Finland	Ii Illinsaari Suutarinniemi (1000019094)	No artefact finds	FHA 2015, Hakamäki & Anttonen 2017
Finland	Sotataival 3 (1000039032)	Knife (burnt)	Artefacts examined by the authors
		Arrowhead (burnt)	
		Bronze chain divider	
		Bronze bird pendant	
		Fragmented bronze chain	
		Glass beads (at least one exhibiting fire damage)	
		Iron pot handle	
		Fire steel	
		Iron hook	
Finland	Valmarinniemi (241010037)	Bronze brooch	Koponen & Pelttari 2016
		Silver coins (some perforated)	
		Silver buttons	
		Silver finger-ring	
		Silver ring	
		Bronze finger-rings	
		Tin mountings (fragments)	
		Circlet (bronze & glass beads)	
		Iron artefacts	
		Textile fragments	
		Leather fragments	
		Finland	
Copper coins			
Silver coin			
Textile fragments			
Bronze circlet			
Bronze hair jewellery			
Bronze needles			
Glass bead necklace			
Iron artefacts			
Sweden	Arjeplog 301:1	Axe blade	Manker 1961: 128; Liedgren & Backman 2002
		Spearhead	
Sweden	Arjeplog 3135	Bronze oval tortoise brooch	Serning 1960: 117
		Silver coin (Arab)	
Sweden	Byske 67:2	Bronze oval tortoise brooch	Serning 1960: 122-3
Sweden	Godejaure	Iron belt buckle	Manker 1961: 138-41
		Knife	
		Leather knife sheath	

Country	Site	Finds	References
Sweden	Gutuberget nära Forsbäck	Birch-bark artefact Bone artefacts Bronze plate fragment Bronze ring brooch Antler comb Iron mounting Iron artefact	Manker 1961:97; Schanche 2000: 408
Sweden	Jokkmokk 24:1	Silver arm-ring Axe blade Bead fragment (possibly tin) Bronze mounting Spearhead (barbed) Fragmented leather strap, several bronze mountings & bronze strap tag attached Bronze strap buckle Bronze strap divider x 3 Unidentified fragmented iron artefact	Serning 1960: 128-9
Sweden	Jukkasjärvi 533:1	Axe blade Penannular bronze brooch x 2 Bronze chain fragment Copper kettle rim Bronze neck ring	Schanche 2000: 407
Sweden	Kyrkudden	Copper sheet Bronze wire Bronze mountings Knife Iron fragments Whetstone	Wallerström 1995: 118, 140
Sweden	Skäran	No finds	Larsson & Rathje 2001, Rathje 2003
Sweden	Tärna 195:1	Axe blade Knife	Manker 1961: 156-60; Schanche 2000: 408; Heinerud 2002
Sweden	Vilhelmina 1:1	Axe blade Glass bead x 15 Oval bronze tortoise brooch Knife Flint flake	Serning 1960: 154; Manker 1961: 99-100
Sweden	Överluleå 436:1	Glass bead Copper sheet fragments Fragmented silver finger-ring Bronze mounting x 46 Bronze strap buckle Bronze strap divider x4 Leather strap fragments Textile fragments Whetstone	Serning 1960: 160-1

Country	Site	Findings	References
Russia	Anzersky Island	Penannular brooch bronze/silver	Martynov 2010: 338-41
Russia	Kuzomen 1	Large Iron chain	Manker 1961: 138-41
		Arrowhead	
		Bronze penannular brooch	
		Fragments of an iron object, possibly a kettle	
		Zoomorphic bronze pendants	
		Bronze chain holders	
		Bronze chain fragments	
		Bronze belt buckles	
		Iron Buckle	
		Coin	
		Round bronze brooch	
		Bronze rings strung on a strap	
		Glass bead	
Russia	Kuzomen 2	Temporal ring	Ovsyannikov & Ryabinin 1989: 201-11
		Bronze penannular brooch	
		Round bronze pendants x 15	
		Flipper shaped bronze pendant	
		Glass beads	
		Lyre-shaped bronze belt buckle	
		Bronze rings	
		Bronze strap dividers	
		Axe blade	
		Knife	
		Textile fragments, some including bronze spiral decoration	
		Leather and fur fragments	