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THE ROLE OF WILD ANIMALS IN DEATH RITUALS: FURS AND ANIMAL SKINS IN THE LATE IRON AGE INHUMATION BURIALS IN SOUTHEASTERN FENNOSCANDIA

Abstract

This paper presents unique animal hair material preserved in Late Iron Age (AD 800–1300) inhumation burials in southeastern Fennoscandia. The studied 110 graves in 22 cemeteries show that animal skins were commonly used for wrapping, clothing, and as grave goods. Contrary to expectations, the identification of specimens indicates the importance of meat-intensive wild mammals, especially of cervids, over domestic species and fur animals. The results are interpreted with the aid of ethnographic material to indicate the longevity of the hunting mentality in commemoration rituals. The research sheds new light on human-animal relationships at the edge of the cultivation zone in Europe.

Keywords: human-animal relationship, animal hair identification, furs, animism, Iron Age inhumation burials, wilderness

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INTRODUCTION

Today, in spite of the strong criticism by animal rights activists, Finland is one of the leading countries in the fur farming industry (e.g. Vento & Kyyriäinen 2013). The roots of this industry can be traced as far back as the Late Iron Age, mainly by using Tacitus's *Germania* and historical taxation records as source material (Tallgren 1929; 1931 referring to Europaeus 1927 and Hjärne 1917; Kivikoski 1961; Delort 1978; Martin 1986; Taavitsainen 1990: 48–52, 112–3; Edgren 1993; Lehikoinen 2008: 145–52). So far, the historical discussion on furs has concentrated mostly on their economic value and status, with only minimal consideration on the other meanings they probably held in past societies. In this study, archaeological animal-skin remains throw an intriguing light on the past human-animal relationship and the act of hunting; these remains also complete the picture sketched in previous studies, which has been constituted almost solely on the basis of osteological dwelling site assemblages.

The aim of this paper is to study the ritual uses of skins among the Southeast Fennoscandian populations by analysing the Late Iron Age (AD 800–1300) animal-hair remains found in inhumation burials. The study area covers southern, eastern, and western Finland, as well as the Karelian Isthmus, Russia, thus including all the major inhumation cemetery areas in southeastern Fennoscandia. With regard to the Russian burials, the study covers materials that can be found in Finnish collections – that is, those materials excavated before 1945 when Karelia was divided between Finland and the Soviet Union. As a perishable organic material, animal skins and furs have been a limited source material in archaeological assemblages. In this area the prehistoric fur finds are almost entirely limited to inhumations, where especially the closeness to metal artefacts has preserved organic soft tissues such as hairs and textiles. The study material consists of 214 samples from a total of 110 graves in 22 cemeteries (Fig. 1), in which furs and pelts were used for wrapping, clothing, and as grave goods.

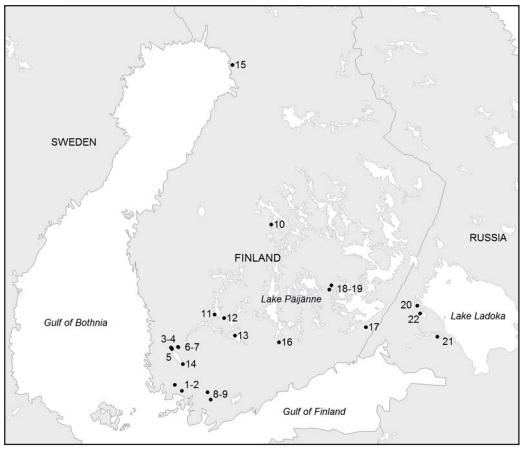

Fig. 1. Cemeteries with animal hairs: 1 – Kaarina Kirkkomäki; 2 – Masku Humikkala; 3 – Eura Osmanmäki; 4 – Eura Pappilanmäki; 5 – Eura Luistari; 6 – Köyliö Vanhakartano, Cemetery C; 7 – Köyliö Vanhakartano, Cemetery A; 8 – Perniö Yliskylä; 9 – Halikko Rikala; 10 – Konginkangas Kirkonkylä; 11 – Ylöjärvi Mikkola; 12 – Tampere Vilusenharju; 13 – Valkeakoski Toppolanmäki; 14 – Yläne Anivehmaanmäki; 15 – Ii Illinsaari; 16 – Hollola Kirkkailanmäki; 17 – Lappeenranta Kappelinmäki; 18 – Mikkeli Tuukkala; 19 – Mikkeli Visulahti; 20 – Kaukola Kekomäki; 21 – Sakkola Patja; 22 – Räisälä Tontinmäki. Illustration: T. Kirkinen.

The time period under consideration has usually been positioned in Finnish archaeology in relation to the concepts of colonialism, dwelling, and farming (see also e.g. Ingold 2000: 185–7; Olsen 2003: 231; Garrard 2004: 108) by neglecting the continuity of hunting and the enduring legacies of its accompanying traditions. The roots of this perspective can be found in nationalistic archaeology, which defined the concept of dwelling using the peasant way of life and its historical continuum. Politically, it depopulated the wilderness and underlined the colonialist viewpoint of the wilderness narratives, by defining the hunter-gatherer populations as 'wild' or 'the other' (see e.g. Buell 2005: 66–7; Wobst 2010: 20–2). From this perspective, hunting and the wilderness represented otherness, and were justified primarily as a source of material wealth. Although some recent studies on cultivation and animal husbandry date the beginning of the agricultural mode of life in Finland to the Early Neolithic (Alenius et al. 2013; for a different view see Lahtinen & Rowley-Conwy 2013), hunting is supposed to have continued as the main subsistence strategy in Finnish inland areas until the Early Iron Age (Bläuer & Kantanen 2013). In the coastal areas, the change towards productive economies took place earlier, which most probably led to a situation where different living strategies overlapped during the Late Iron Age in close contact with each other. In the eastern and northern parts of Finland, hunting and the hunting mentality retained their place up to the Modern Age (e.g. Talve 1980: 68–9; Lehikoinen 2008: 11, 145, 184; see also Puputti 2008; Herva & Salmi 2010). The longevity of hunting and the fur trade as supplementary economies, as such, is a natural outcome of the study area's location at the northernmost limits of the cultivation zone in Europe (Klemola 1937; Voionmaa 1947; Talve 1980: 68–9; Lehikoinen 2008: 11, 145, 184).

In the following, firstly, the taphonomy and identification of animal-hair remains and the uses of skins in Late Iron Age inhumation burials are presented. Secondly, the results are discussed in conjunction with ethnographic material that illustrates the ritual uses of animal skins among the communities living in the North. Finally, thirdly, the human-animal relationship and the longevity of animistic hunting traditions, in a time period when farming and animal husbandry had supposedly become the main subsistence strategies, is discussed.

MATERIAL AND METHODS

Fibre preparation and identification

The animal fibres analysed in this study were collected at the National Board of Antiquities by using excavation reports, find catalogues, conservation documents, and associated literature as reference material. The result must be regarded as a representative sample of the total number of hairs in Finnish collections, as hairs were not always either noticed or listed in the find catalogues.

In this reference material, 217 finds were reported to include animal hairs. However, in about 50 cases the hairs had totally disappeared, or had mineralised on the surface of a metal artefact with no possibility for sampling (Fig. 2). The final assemblage thus consists of 158 finds, from which 214 samples were produced. The sampled fibres were prepared for light microscopic examination

Fig. 2. Close-up of casts of animal hairs on the surface of a bronze penannular brooch (KM 10461:1). Toppolanmäki. National Board of Antiquities. Photo: T. Kirkinen.

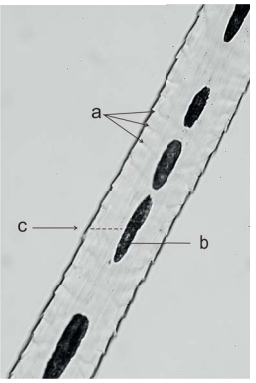

Fig. 3. Basic structure of a cow coarse hair: a – cuticular scales (seen on the surface of the hair); b – medulla; c – cortex. Photo: T. Kirkinen.

by mounting them in Entellan Neo after Greaves & Saville (1995: 7).

Because of the low number of sampled hairs per find, the fragmented and fragile nature of the fibres,[i] and the frequent loss of their cuticular scale pattern, fibres were identified using optical microscopes at the University of Helsinki, Department of Archaeology and at Aalto University, Nanomicroscopy Center. The morphology of the longitudinal hair shafts were thus examined without preparing cross-sections or producing scanning electron microscope (SEM) photos. The key features for identification were the diameter of the hair, the shape of the root section, the structures of the medulla and cuticular scales (if preserved), the width of the cortex, the presence of pigment granules, and the overall colouring of the hair. In some cases the length of the hair and the number of hairs in a follicle were also estimated (see Goodway 1987) (Fig. 3).

The identification of fibres was based on the identification keys in Appleyard (1978), Teerink (2003), and Furskin Co. (2011), and on website materials (Alaska Fur ID Project 2015). The reference material collected at the Finnish Museum of Natural History, University of Helsinki (wild species) was vital for the identification of Fennoscandian mammals. Hairs of native breeds were collected at the Falkulla domestic animal farm and donated by private farmers and dog owners.

The previous research on animal hair identification in Finland and in the Karelian Isthmus has been carried out as a part of an excavation's find material analysis, or that of textile research. The most thorough investigation has been made by textile archaeologist Jaana Riikonen, who has – together with conservator Ari Karhilahti and conservator Leena Tomanterä – analysed most of the animal hair material found in Kirkkomäki (Riikonen 1990; Asplund & Riikonen 2007) (for sites, see Fig. 1). Conservator Leena Tomanterä has analysed samples from Vilusenharju (Tomanterä 1978) and Luistari (Lehtosalo-Hilander 1982a: 109–10; 1982b: 68; 2000a: 197). Zoologist V.A. Korvenkontio (1927) has studied some samples in Vanhakartano Cemetery C. The exceptional material from Ketomäki has been analysed by Professor J.A. Palmen (Schwindt 1893: Foreword, 192). Conservator Anna Patteri (2011; 2012) has excavated a part of the Tuukkala grave 11 in a laboratory and analysed the accompanying hair material. Finally, Adjunct Professor Terttu Lempiäinen has analysed badger fibres attached to an Iron Age ski found in Mänttä (Vilkuna 1997: 25).

Taphonomy and preservation of fur finds

Animal furs and pelts, as organic soft tissues comprised mostly of collagen (skin) and keratin (hair), are prone to several pre- and post-depositional taphonomic processes (Cronyn 1990: 263–75; Cameron et al. 2006; Kite 2006: 159–60). The skin of an animal begins to decay soon after the killing and skinning. This process of decay is, however, prevented by removing extra fat and meat from the skin mechanically (scraping), and by tanning the end-product chemically (Angus 2002; Darke 2006; Thomson 2006; 2011; Harris 2011). In addition to the quality of skinning and skin processing, the animal's health and the time of year it was killed, as well as the usage and storage of the finalised furs might contribute to hair

Fig. 4. Hairs preserved in association with a bronze artefact. Kirkkomäki, grave 37. National Board of Antiquities. Photo: T. Kirkinen.

Fig. 5. A fragment of an iron artefact with attached animal hairs. Luistari, grave 348. National Board of Antiquities. Photo: T. Kirkinen.

loss and the discolouring of pelts (Lähdeoja 1934; Lahtinen 1964; Cameron et al. 2006).

In archaeological depositions, the preservation of animal fibres is often related to favourable conditions in anaerobic, wet, arid, or cold environments where bacterial and fungal activity is at its minimum and the humidity level is stable (e.g. Cameron 1991; Cameron et al. 2006). In Finland, these conditions could be met in theory, for instance in permafrost soils in northern Finland and in church crypts. Although animal skins have been found repeatedly along with bog bodies in northern Europe (Kite 2006: 142), in Finland the only known bog find originates from Mänttä, western Finland, where an Iron Age ski (KM 26590) with attached badger (*Meles meles*) fur remains were found (Vilkuna 1993; 1997).

The problem for the preservation of furs, and organic materials in general, is the acidic conditions (pH < 5) of most Finnish soils, which weaken skins' collagens chemically (Hyyppä et al. 1990; Arponen 2008a). Keratine hairs, however, endure acidic conditions better than, for example, cellulose-based plant fibres (Hurcombe 2014: 92–3; see also Bertrand et al. 2014), although they also begin to decompose when pH is below 6.5 (Lehto 1993: 11).

In Finland, and in the Karelian Isthmus the majority of Iron Age fur and animal hair finds originate from Viking Age and Early Medieval Period inhumations, where organic material has been preserved especially in association with metal artefacts. When in contact with silver (5% of items) and especially bronze artefacts (63%), the preservation of animal hairs is based on toxic copper and silver alloys that have been absorbed into the fibres (Fig. 4). This material is in most cases still organic, as the toxicity has inhibited the decaying of the hair (Edwards 1989; Cronyn 1990: 27–8; Arponen 2008b; Solazzo et al. 2014). Proximity to iron artefacts (7%) has in turn preserved animal hairs in corrosion crusts, and by forming a corrosion cast over the hair. Occasionally the inner part of the original fibre has been preserved within the cast, and occasionally the hair has been replaced by minerals[ii] (Fig. 5). In the most extreme cases the hair itself has disappeared totally and only an impression of it (a negative cast) can be found on the surface of an artefact (Fig. 6) (Edwards 1989; Turgoose 1989; Cronyn 1990: 28, 172; Arponen 2008b). The complex interaction between metal composition, air, soil moisture, soil pH, and the quality of the buried pelts and leathers in the preservation process have

Fig. 6. Close-up of hair casts on the surface of an iron artefact. Kirkkomäki, grave 16. National Board of Antiquities. Photo: T. Kirkinen.

been discussed by Solazzo et al. (2014 and the cited literature) and Janaway and Scott (1989).

In the case of archaeological fur finds, the preservation of fibres is largely dependent on the actions taken on-site, and later in the conservation laboratory (Edwards 1989; see also Cameron 1991). The mineralised fibres are particularly rigid and prone to damage from poor handling and storage (Cameron et al. 2006: 257–8), which needs to be taken into account during the excavation in sites that might contain fibres. In Finland, Iron Age inhumation graves have been traditionally excavated on-site, with only a few exceptions when parts of the grave contents were removed and excavated in a laboratory (Tuukkala and Kirkkailanmäki [Patteri 2012], and Kirkkomäki [Lehto 1993; Riikonen 2011]) (Fig. 1).

During the conservation process, the preservation of fur remains depends on the actions taken with the metal artefacts. In some early cases, especially with the iron-preserved hairs that have supposedly formed an organic part of an object, the hair evidence has been removed during the conservation process. In this research assemblage, such cases can be discerned in iron artefacts which today lack any signs of hairs, although their existence was documented in preliminary find catalogues. Today the conservation procedure stresses the careful selection of conservation and documentation methods so that a balance between emphasis on organic materials and the metal artefacts is obtained (P. Klaavu pers.comm.). However, maximal data gathering for the identification of species would demand sampling before removing the products of corrosion and stabilising an artefact (Edwards 1989; Turgoose 1989; Hovmand & Jones 2001; Cameron & Edwards 2004; Cameron et al. 2006: 259–60; see also Cameron 1991).

Finally, besides metal alloys, the tannines from leather (Cameron et al. 2006) and coffin timber, as well as the fats from the deformed body (*adipocere*), have also promoted the preservation of animal fibres (Arponen 2008a: 231). For example, in the Kirkkomäki inhumation graves, metal artefacts and associated organic find materials were found in a dark and sticky soil layer, consisting mostly of decomposed fungi (Asplund & Riikonen 2007: 27).

RESULTS

Identification of specimens

The research material consists of 214 samples and 227 specimens, of which 71% were identified (Fig. 7). About 32% of the identifications[iii] were made by species (e.g. *Ursus arctos*). Because of the poor preservation of the hairs, most specimens were identified only by family (e.g. Cervidae, 61% of identifications). The rest were identified by order (Carnivora, 6%) or by class (Aves, 2 samples). As in most cases, only fragments of hairs have survived; the identifications must therefore be understood as approximations of the best matches with the reference material. In order to deepen the picture, an aDNA analysis is needed from the hairs that still contain organic material (see Sinding et al. 2015). For archaeological material and identifications, see Appendix 1.

Zoogeographically, the study area is situated on the Palearctic Zone, having characteristics of Continental fauna (pine marten [*Martes martes*]) as well as Siberian species (elk [*Alces alces*], wild

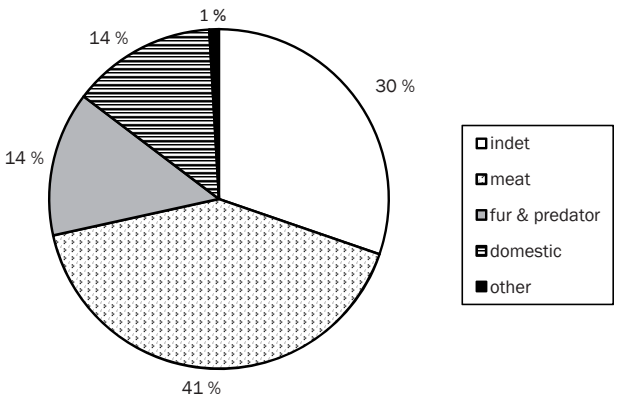

Fig. 7. Animal hair identifications (NISP): meat – animals hunted primarily for their meat (Cervidae, Phocidae, Lepus timidus); fur & predator – animals hunted primarily for their fur and large predators (Mustelidae, Sciurus vulgaris, Vulpes vulpes, Castor fiber, Ursus arctos, Lynx lynx); domestic – domestic animals (Bovidae, Sus scrofa).

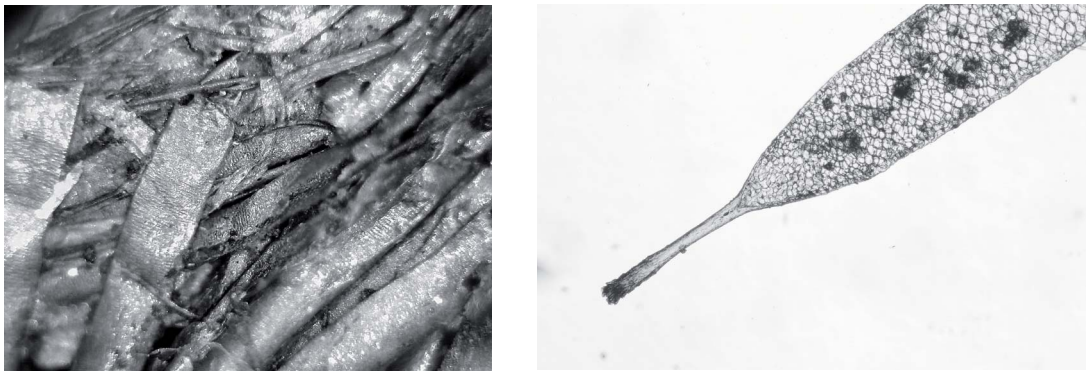

Fig. 8. Left: Cervid hairs, coarse and fine fibres. Kirkkomäki, grave 31. Right: Alces alces, coarse hair, root section. Kekomäki, grave 1. National Board of Antiquities. Photo: T. Kirkinen.

forest reindeer [*Rangifer tarandus fennicus*]) and maritime mammals (ringed seal [*Pusa hispida*], grey seal [*Halicoerus grypus*]) (Siivonen 1972; Ukkonen 2002). The majority of the identifications (79%) originated from wild species that were harvested in eastern Fennoscandia from the Stone Age onwards. Over 80% of these wild animal identifications were species that were hunted primarily for their meat, such as cervids (Cervidae), seals (Phocidae), and Arctic hare (*Lepus timidus*). The remaining 18% originated from species that were hunted primarily for their fur (weasel family [Mustelidae], red squirrel [*Sciurus vulgaris*], red fox [*Vulpes vulpes*], European beaver [*Castor fiber*]). This group also included large predators (brown bear [*Ursus arctos*], lynx [*Lynx lynx*]). Despite the above dualistic classification, the line between meat-intensive mammals and fur animals is vague, as many wild animals, especially *Castor fiber* and *Ursus arctos* but also Phocidae and probably even *Sciurus vulgaris*, were valued for both their meat and fur.

The rest of the identified specimens (20%) originated from domestic species (cattle [*Bos taurus*], sheep [*Ovis aries*], pig [*Sus scrofa*]). The identification of Iron Age domestic breeds was challenging, as the reference material that was collected for this study from the present day native breeds supposedly does not cover the heterogeneity of ancient animals. For sheep identifications the sheepskin fibres needed to be separated from woolen textile remains by the criteria that in textiles the wool has been selected to contain only woolly under hairs. Contributing expertise in this area, textile archaeologist Krista Vajanto kindly verified the sheep fur identifications (K. Vajanto pers. comm.).

In the following, the main results are discussed in detail. First, the number of identified cervid hides in the graves was greater than those from any other species, as 36 graves (33% of the graves) contained cervid hairs. Besides the obvious use of these animals in burial rituals, the size of their skins, the frequently good condition of their hairs, and the ease of identification (Fig. 8) even from very fragmented material, may have also increased their proportion in the research material. Among cervids, the shares of wild species of *Alces alces* and *Rangifer tarandus fennicus* (wild forest reindeer) and semi-domesticated reindeer (*Rangifer tarandus tarandus*) is of central interest, and needs to be clarified in future research using DNA tests. In this study, tentative identifications of Alces alces and Rangifer tarandus were made on the basis of hair diameter and of hairs' cuticular scale structure. As a result, both species appear to be represented in the study material. The distribution of cervids, and especially of Rangifer tarandus finds, in the southwestern parts of Finland is also interesting, as they are almost totally missing in the osteological assemblages of the region (Vuorinen 2009: 170–6) Possible explanations for this phenomenon, such as trade, are the subject of future research.

The group of fur animals is heterogeneous, consisting in Mustelidae, *Sciurus vulgaris*, *Vulpes vulpes*, and *Castor fiber* identifications, each from two or three graves. The low number (two graves) of squirrel identifications is especially interesting, as it has been suggested to be the main product

Fig. 9. Cattle skin remains from a funeral wrapping. Kirkkomäki, grave 40. National Board of Antiquities. Photo: T. Kirkinen.

of the Medieval fur trade in Finland (Voionmaa 1947; Pylkkänen 1955: 96–7, 102–3; Delort 1978: 246–52; Lehikoinen 2008: 104–6). It is also noteworthy that the number of bear skins is relative low, as they have been found in only three graves. This number is not comparable with the frequency of bear 3rd phalanges (i.e. claws supposedly attached to furs) found in the Iron Age cremation burials in Finland and the neighbouring regions (Kivikoski 1965; Petré 1980: 9–10; Schönfelder 1994: 217, 220–1; Mäntylä-Asplund & Storå 2010). In total, fur animals and large predators were found in 16 graves (15% of graves).

Remains of domestic animals were found in a total of 17 graves. Most of these were sheepskins, found in nine graves. One of the best preserved items is the remains of a funeral wrapping made of a cow skin (Fig. 9) found in a woman's grave, number 40 in Kirkkomäki, southwest Finland. The identification was made in 2001 by Ms. Penelope Walton Rogers, Textile Research Centre, York (Asplund & Riikonen 2007: 25, J. Riikonen pers.comm.). By contrast, horse has not been identified in the studied samples, although horsehair, interpreted as a charm, has been found in Kirkkomäki (Asplund & Riikonen 2007: 30). Finally, domesticated or wild *Sus scrofa* bristles were identified in four graves (see also Ukkonen et al. 2015). These items were supposedly remains of brushes, which are known from historical sources to have been used in processing flax.

The graves also contained single bird feathers, silk, and plant fibres. Bird feathers were found in two samples in a woman's grave, number 390 in Luistari, southwest Finland. Their function remains unknown, although their placement in association with a necklace might indicate the use of a feather pillow (see Kuokkanen & Lipkin 2011: 151; see also Waronen 1898: 61, 77).

Finally, the hairs that remained unidentified (29%) is a collection of samples the preservation of which can be described as poor or very poor. However, because cervid guard hairs are identifiable in even very decayed samples, it is safe to say that the unidentified hairs are mostly other-than-cervids. Compared to the diameters of identified fibres, the diameter range of unidentified hairs, 20–120 microns, most often 40–80 microns, points tentatively towards small fur animals such as red fox, Arctic hare, and bovids. The narrowest ones, 20–30 microns, are most certainly under hairs of whichever mammal. Finally, diameters typical for seals, cervids, beaver, wolverine (*Gulo gulo*), and badger (*Meles meles*) are found in only three samples, although also their under and intermediate furs might be included in the unidentified samples.

Wrapping the bodies

In the studied material, in most cases, the scarcity of find material and the excavation and documentation methods used makes it difficult to identify the original function of the skin. The most evident use of skins was their wearing as covers; in approximately 20–35 graves the remains of large animal skins originated from wrappings. In most cases wrappings were made of cervid hides; however, in addition bear and cattle skins were used in single graves (see Appendix 1).

Almost 80% of the wrappings have been identified in women's graves, where the hairs have been preserved most often in contact with the aprons' bronze spiral ornaments. Thus, it is difficult to conclude how much the different preservation conditions have affected the interpretations drawn from women's and men's graves. It is obvious that wrappings have been more common in men's graves, as part of the associated sparse cervid hair samples presumably originate from covers.

The practice of using pelts to wrap or cover the deceased was a widespread Eurasian phenomenon that lasted for centuries (e.g. Douny & Harris 2014; Harris 2014). In Finland the use of animal skins has been hypothesised already in Corded Ware graves, where the shape of the grave pit, together with its organic remains, has been

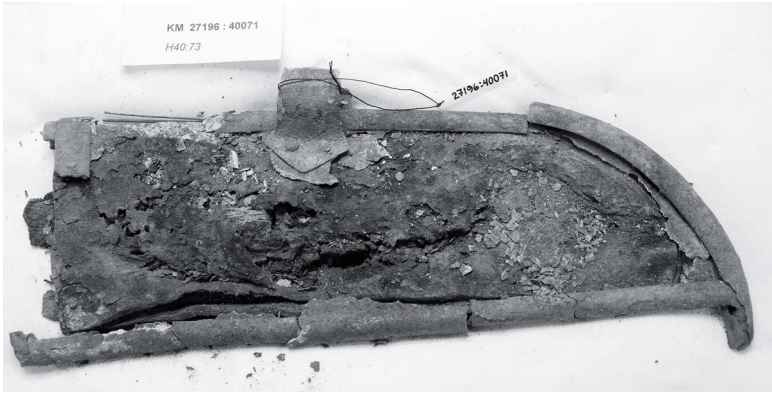

Fig. 10. A bronze sheath lined probably with squirrel fur. Kirkkomäki, grave 40. National Board of Antiquities. Photo: T. Kirkinen

interpreted as evidence for the wrapping of the corpse (Äyräpää 1931; Torvinen 1979; see also Koryakova & Epimakhov 2007: 100). Along with the advent of the cremation burial tradition during the Early and Middle Iron Age, the numbers of seal, lynx, and especially of bear claws, i.e. the 3rd phalanges, have been explained as originating from predator pelts burned with the deceased (Kivikoski 1965; Lahtiperä 1975; Lehtosalo-Hilander 2000b: 203–4; Mäntylä-Asplund & Storå 2010).

Susanna Harris (2014) has discussed the idea of multiple wrappings of corpses, consisting of layers of textiles, skins, stone settings, birch bark, and wood. The material under study in this case corroborates Harris's (2014) findings, insofar as wrapped corpses were often laid in wooden constructions, coffins, or carved wood. Sometimes they were also covered with birch bark. In Kekomäki, Theodor Schwindt (1893) reported the use of red ochre on the birch bark. The use of shrouds made of textiles has been hypothesised, for instance in Rikala grave number 7. Graves also contained stone settings, as well as fills consisting of leaves, grass, or moss.

Fur as a raw material for clothes and artefacts

The use of pelts and furs for clothing is self-evident in a region at the edge of the taiga (see e.g. Ingold 2000: 124), although their use in funerary rites is difficult to confirm. In only a few cases do the remains of stitching in pelt pieces indicate that they were most probably used for clothing. In Tuukkala, eastern Finland, the remains of a stitched reindeer pelt (KM 2481:309), found near the deceased's right brachium, might indicate the use of a reindeer fur coat. In ethnographic material, these kinds of clothes were known to have been widely used in the northern regions. For example, in Finland the Sami fur coat (Fi. peski; a reindeer fur coat in which the hair side is turned outwards) is known as a traditional piece of clothing of the Sami, but there is evidence that these type of coats were also used in other parts of Sweden-Finland as late as the 17th–18th centuries (Kannisto et al. 1928: 250; Pylkkänen 1970: 310–1; 1982: 320). In Kekomäki, grave number 3, stitches in a fur animal skin (KM 2489:318) and the identifications of red squirrel/weasel family skins might indicate the use of a coat, an anorak or a parka that was fashioned from different fur edgings or linings (see Schwindt 1893: 145). Additionally, several remains of sheepskins might indicate the use of fur coats, insofar as sheep is known to have been used as a common material for fur coats in the southern parts of Finland during the 16th–17th centuries (Pylkkänen 1955: 98–9). For a summary of the results, see Appendix 1.

The skins found around hand bones have been interpreted as mittens in Vilusenharju (*Lepus timidus*, KM 17208:184/52), and in Luistari grave 90 (Cervidae, KM 18000:2044–6; Lehtosalo-Hilander 2000a: 197). Moreover, Arctic hare hairs found near the deceased's waist in Kekomäki might have originated from mittens carried from the belt. Beaver hairs found near the neck of the deceased in Kekomäki, as well as in Luistari in grave 35 (KM 18000:1446), might indicate the use of a traditional neck wrapping (Fi. sieppuri) usually made of beaver or a bear skin (Schwindt 1893: 145; Itkonen 1948a: 339). In Vilusenharju, western Finland, conservator Leena Tomanterä (1978: 22, 24) has suggested the remains of clothes as being made of seal skin.

Sometimes stitched pieces – as well as the Phocidae, Cervidae, and Mustelidae skins occasionally found in connection with silver coins, weights, or balances – have been interpreted to be the remains of purses, bags, or containers (KM 2489:15; Schwindt 1893: 145–8; Lehtosalo-Hilander 1982b: 68–72; Asplund & Riikonen 2007). Furs and skins were also used for sheaths (Fig. 10) and scabbards, or perhaps simply for wrapping the weapons (see also Gleba 2014: 141–3). The special characteristics of hairs[iv] were also efficiently utilised in items such as flax brushes made of stiff pig bristles.

Generally, all fur animal skins must have originated from clothes or fur artefacts, as they cannot have been used for wrapping. However, they could also have been laid in graves as offerings, or as grave goods. In Finland there is one possible example of this from Konnevesi Majakangas, central Finland, where the Migration Period (AD 400–600) cremation burial contained the head (*cranium, mandibula*), limbs (*ulna, tibia, entocuneiforme*), and tail bones of a pine marten, interpreted as remains of a raw hide (Vanhatalo 2003; 2005). This grave, identified as the grave of a hunter, also contained skin processing and hunting items, as well as dog bones.

DISCUSSION: THE LONGEVITY OF THE HUNTING MENTALITY AMONG LATE IRON AGE FARMING SOCIETIES

During the Late Iron Age in southeastern Fennoscandia, osteological settlement site assemblages underline the importance of domestic animals in the every-day living. This is substantiated by the very low proportion of wild specimens in these assemblages (e.g. Vuorinen 2009: 170–6; Bläuer & Kantanen 2013). Analyses made from animal bones excavated from inhumation burials also confirm this view (Tupala 1999; Mannermaa 2011; Kivikero 2015). Taking all this into consideration, it is nevertheless apparent that the analysed animal hair samples emphasise the importance of wild animals, especially cervids. Animal hairs contribute valuable information about human-animal relationships and about the animals' roles in Iron Age death rituals.

The analysed hairs originated from clothes, artefacts and especially from wrappings, illustrating the several different uses of skins. Mentally, the role of animal skin is manifold, as it binds humans and animals together by enabling humans to survive in the North (Ingold 2000: 124–5; Wachowich 2014). Among the Finno-Ugric tribes in the Volga region, and among the peoples in the subarctic culture area in general, the role of animal skins in rituals, especially the hanging of skins in trees with their horns, skulls, hooves, and legs still attached, was widely recorded by early explorers, travellers, and ethnographers (Krohn 2008 [1894]; Waronen 1898: 120; Harva 1933: 201–2; see also Willerslev 2007: 143). There is also information about the use of skins in death rituals; e.g. among the Sami, the deceased's sled reindeer was slaughtered for commemorative feasting and, after that, the skin was hung in a tree or laid in the grave (Wardrop 1892: 324; Waronen 1898: 82, 84–5; Itkonen 1948b: 353, 357; see also Balzer 1980: 82). Susanna Harris (2014: 124), who has studied cow-skin remains in Scandinavian Bronze Age burials, states that because the cow-hides were skinned off just before using them in funerals, they most probably originated from animals which were slaughtered for commemorative meals.

In the following, the number of cervid identifications, which stress the role of elk and wild forest reindeer in Late Iron Age death rituals, is discussed. The phenomenon is analysed by using the concept of animism, which can be seen among the circumpolar northern communities a vital force in human exchange with the animal world (see Ingold 2000: 121; Willerslev 2007; Boric 2013: 52). The emphasis here is placed on acts that were ritually mediated in material culture by incorporating animal body parts such as skins (see Conneller 2004; McNiven 2013: 98).

According to recent research, animist ontologies are constituted by relations of identity between humans and non-human animals in social practices (Bird-David 1999; Ingold 2000; Harvey 2005: 110; Puputti 2008; Herva & Ylimaunu 2009; Herva & Salmi 2010; Losey 2010; see also Alberti & Bray 2009 and the cited literature). In order to locate these relationships in the archaeological record, Amy Groleau (2009) has highlighted: depositional patterns in ritual contexts; the critical use of ethnographic analogies; and the entanglement with economic and domestic activities (see also Mills & Ferguson 2008; Alberti & Bray 2009). Groleau criticises the automatic interpretation of certain exotic and rare find categories as animistic; instead, she discusses the importance of object biographies as a

means of attributing agency to objects. However, animal remains such as skins, shells, and claws, which once belonged to living organisms, have often been interpreted as being animated by the prey animal's soul.

The special deposition of cervid skins in burials is tentatively interpreted here as an enduring tradition of hunting cultures, and especially of ritualistic big-game hunting. For their part, Mills and Ferguson (2008: 356) have criticised the idea of rituals being automatically conservative. However, according to Graham Harvey, the longevity of hunting rituals among farming and pastoral groups was not exceptional; instead, 'hunting retained its sacramental dimension…far beyond its economic role in subsistence' (Harvey 2005: 116–7; Morris 2000: 22–3).

In Finland this phenomenon is supported by numerous references in epic poetry that tell about the ritual hunting of elk and especially of bear (e.g. Siikala 2012: 380–94). Moreover, in Finland the ritual killing of bear is known to have been practiced as late as at the turn of the 18th century (Krohn 2008 [1915]: 45; Pentikäinen 2007: 63–4; Sarmela 2009: 87; see also Siikala 2012: 388–9).

The wearing of a prey animal's skin was a multifaceted act that mixed the identities of humans and animals. In Scandinavian tradition the word *fylgja* (etymologically related to 'skin', 'animal clothing') derived from the dual nature of a person's soul, which facilitated the change of shape between an animal and a human (Hedeager 2011: 82–4; see also Itkonen 1948b: 349–50). By clothing oneself in a real animal skin, a man acquired not only its warmth but embodied the animal's attributes in a shared relation of identity (Ingold 2000: 124–5; Willerslev 2007: 97–8; see also Tarkka 2005: 262). Among the Inuits, the binding of a caribou's spirit to its skin after its death was secured by the respectful method of skin and garment processing. The wearing of this kind of clothing helped, in part, the hunter to kill the physical body of a reincarnated caribou and its fellow creatures, thus securing the cycle of regeneration (Wachowich 2014). Conversely, in Finnish folk tradition the disrespectful treatment of a skin obliterated any chances of catching the animal (Tarkka 2005: 265).

Among Siberian Yukaghirs, the dressing of men in elk-hide coats was an expression of mimetic sameness (Willerslev 2007: 2, 6, 9; see also Itkonen 1948b: 18–9). By wearing a fur coat, the hunter became both a man and an elk, whereby the elk should see the man as kin and so give itself over willingly to the hunter (Willerslev 2007: 97–8; see also Harvey 2005: 117; Losey 2010). In Finnish ritual bear hunt, a hunter symbolically changed his coat with a bear's skin (Tarkka 2005: 264). The change of identities could also be dangerous, insofar as Yukaghirs spoke of the 'hairy ones' or 'wild men', who were the metamorphosis of humans and animals, covered with hairs. To prevent this, men had to leave their fur coats outside when they returned from hunting, otherwise they would 'go wild' (Willerslev 2007: 165–5). In Sami folk tradition there are several stories about men who wandered in the wilderness as reindeer and then took on their human shape, when entering their hut upon their return (Itkonen 1948b: 527).

This special relationship between humans and a cervid, or a bear has been interpreted to have originated from the act of big-game hunting, which demanded close contact with the hunted animal. This was seen to have contrasted with the trapping of small fur animals, which depended mostly on chance and could be regarded as gifts from spirits (Willerslev 2007: 75–6, 109). Moreover, in eastern Fennoscandia, as well as in the circumpolar north in general, the relationship between a man and his prey has been interpreted to be sexual in nature; in such a context, prey and wilderness together represented femininity, while the hunter represented masculinity (Tarkka 2005: 263–85; Willerslev 2007: 110–4 and the cited literature). In Finnish epic poetry, the poem known as the *Hunting of Elk* relates a story about a hunter, who was pursuing a mythical elk from the underworld on skis, when he saw this elk transform into a woman (Siikala 2012: 393). This interaction might be represented in the archaeological record by the use of cervid skins in Fennoscandian women's graves. In men's graves, the role of a hunter was expressed not only by cervid hides but was also indicated with spears, arrowheads, and other hunting equipment.

CONCLUSIONS

In this paper an overview of animal-hair remains found in the Late Iron Age inhumation burials in southeastern Fennoscandia was presented. In total, over 214 hair samples from 110 graves were analysed, more 70% of which could be identified to some degree. In most cases, identifying the

purpose of the skin or fur artefact (i.e. did it belong to clothing, funeral wrappings, or something else), was impossible because of the poor preservation of the organic materials and – in the case of some early excavations – the incompleteness of documentation. In general, pelt and fur as raw material share some characteristics and uses with other elastic soft tissues such as leather, textile, and even birch bark, all of which constitute excellent materials for wrapping things and bodies and for making containers, such as purses, bags, and sheaths.

The high degree of meat-intensive wild species, especially of cervids, compared to domestic species and fur animals, is of special interest. The deposition of cervid hides in graves is here interpreted as an enduring cultural tradition which had its roots in ritualistic big-game hunting, and in the role that animal skins played in this ritual. The crucial point here is the conservative nature of ritual practices in a changing economic environment, where Finnish Late Iron Age societies were transforming from hunting societies into agricultural ones. According to Harvey (2005: 117), hunting is seen to have retained its sacrificial role in farming and pastoral communities for a long time. In the Fennoscandian case, this hypothesis finds support in epic poetry and ethnography, which are both loaded with descriptions of ritualistic big-game hunting.

One example of the longevity of rituals is the use of skins, textiles, and birch bark to keep the body parts of the deceased attached (see the section *Wrapping the bodies* above; see also Douny & Harris 2014; Harris 2014). In Finland this tradition continued up to the 16th–18th centuries, at least in northern Finland, where the use of reindeer skins has been documented, for example, at the churchyards of the Oulu Cathedral (Kuokkanen & Lipkin 2011: 150) and the Rounala Church (Ruohonen 2012: 65), as well as Sami graves in the 17th-century cemetery at Savukoski Mukkala (Leppäaho 1937; A. Arponen pers.comm.; see also Wardrop 1892: 326; Itkonen 1948b: 352–4). Although the use of reindeer skins has been especially associated in Fennoscandia with the ethnicity of the Sami, the practice was actually widely known in an area reaching from Norway in the west to eastern Siberia and central Asia (Waronen 1898: 65; Harva 1933: 206, 209), as well as in northern America (e.g. Pritzker 2000).

In Finnish archaeology, the guiding narrative for Iron Age communities has been that of domestication and cultivation, assuming the sharp separation between settled areas and the wilderness. In Finland, and in the Karelian Isthmus this juxtaposition seems not to have been that straightforward. Indeed, the importance of hunting continued in this area late into historical times. Judging by the archaeologically recovered animal skin material, the wilderness continued to play a special role in the worldview of the inhabitants of southeastern Fennoscandia well into the Medieval Period.

NOTES

[i] To get an overview of the preservation of the fibres, the samples were classified according to their quality by using a scale from 1 to 5. As a result, in about 45% of the items the preservation can be classified as poor or very poor (4–5), and only in 20% as excellent or good (1–2).

[ii] According to Gillard et al. (1994), the term 'mineralisation' is defined as the combination and/or replacement of the organic matrix of the fibre with an inorganic one. This is in contrast to the term 'pseudomorph,' which is commonly applied to mineralised fibres, and is defined as the total replacement of the organic matrix with an inorganic one.

[iii] These numbers exclude identifications of both Homo sapiens and Ovis aries interpreted as textile remains

[iv] Another interesting example is a traditional ski, in which badger skin was used at the bottom of the ski and as a strap for binding the boot (a bog find from Mänttä, central Finland, see Vilkuna 1993; 1997).

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Appendix 1 (1/3)

The identification of animal hair fibres. Find ID -column: find numbers refer to the collections of the National Museum of Finland (KM); * – includes other wooden structures as well; (-) – unidentified specimen; question mark before identified specimen – collection sub-number unknown.

Cemetery	Grave ID	Sex	Constructions			Find ID	Function				References
			Coffin*	Stone settings	Birch bark		Wrapping	Artefact	Clothing	Description	
Eura Luistari	10	?	?	?	?	18000:1046 (indet.)					
Eura Luistari	21	F		x		18000:1240 (indet.), 18000:1242 (*Ovis aries* [textile?], indet./Bovidae)					
Eura Luistari	23	F	x			18000:1301 (Cervidae)					
Eura Luistari	35	F	x	x		18000:1446 (indet., *Castor fiber*)			?		
Eura Luistari	55	F	x	x		18000: 1595 (-)					
Eura Luistari	56	F	x		x	18000:1721 (Cervidae, Bovidae?), 18000:1743 (Cervidae), 18000:1750 (Cervidae), 18000:1706, 1749 (-)		x		knife sheath	Lehtosalo-Hilander 1982b: 48; 1982c: 68
Eura Luistari	90	M	x			18000:2044–6 (Cervidae)			x	mittens	Lehtosalo-Hilander 1982a: 109–10; 1982c: 68; 2000a: 197
Eura Luistari	95	F				18000:2075, 2089 (*Ursus arctos?, Ursus arctos/Castor fiber*)	?				
Eura Luistari	118	F	x			18000:2290 (Carnivora, Canidae?, *Ovis aries* [textile?], indet.)	?				
Eura Luistari	139	F	x			18000:2435 (Felidae/Canidae)	?				
Eura Luistari	191	F	x			18000:2750 (*Homo sapiens*, indet.)					
Eura Luistari	195	M	x	x		18000:2777 (Cervidae)					
Eura Luistari	283	M	x			18000:3219 (*Vulpes vulpes*)					
Eura Luistari	294	F	x	x		18000:3388 (indet.)					
Eura Luistari	348	M	x	x		18000:3927 (indet.), 18000: 3879 (-)		x		pouch, scabbard	Lehtosalo-Hilander 1982a: 237–40; 1982b: 67
Eura Luistari	349	M	x			18000:3989 (indet.)					
Eura Luistari	365	?				18000:4156 (-)					
Eura Luistari	377	F	x			18000:4272, 4273 (*Ursus arctos*, *Castor fiber/Meles meles*?, *Ovis aries*, Cervidae)					Lehtosalo-Hilander 1982c: 68
Eura Luistari	381	M	x			18000:4300, 4319 (Cervidae, indet.)	?				Lehtosalo-Hilander 1982a: 33
Eura Luistari	385	M	x	x		18000:4360 (Bovidae?)		x		pouch	Lehtosalo-Hilander 1982b: 67
Eura Luistari	390	F	x			18000:4426 (Aves)		x		pillow?	
Eura Luistari	400	M				18000:4478 (Cervidae)					
Eura Luistari	404	F	x	x		18000:4552, 4556 (Cervidae, indet.) 18000:4555, 4565 (-)	?				
Eura Osmanmäki	A/1890	F			x	2700:59, 62–5 (-), 2700:60?, 58 (*Ovis aries?*, indet.)	?	x		knife sheath	Appelgren-Kivalo 1907: 11-2, Tafel II
Eura Osmanmäki	?	F			x	4386:7–8, 11 (*Ovis aries,* indet.)	?				Appelgren-Kivalo 1907: 59–60, Tafel XV
Eura Osmanmäki	site 16	F				4633:91 (indet.)					
Eura Pappilanmäki	?	M				9164:3 (-)		x		scabbard	
Eura Pappilanmäki	3/1934	M, F				9855:17 (*Sus scrofa*, indet.)		x		flax brush	
Eura Pappilanmäki	4/1934	M, F				9855:23 (*Sus scrofa*, indet.)		x		flax brush	
Eura Pappilanmäki	?	?				11063:85 (indet.)					
Eura Pappilanmäki	XIV/1939	F	x		x	11063:508 (Cervidae)	?				
Halikko Rikala	?	?	?	?	?	12690:33 (*Vulpes vulpes*?/Mustelidae)					
Halikko Rikala	V	M		x		12690:304 (-)		x		pouch	
Halikko Rikala	7	F	x			13298:144, 147 (Cervidae)	x				

Hollola Kirkkailanmäki	14	M				21112:15 (Cervidae)						
Ii Illinsaari	?	F	?	?	?	38884:1 (Phocidae)						
Kaarina Kirkkomäki	F/1950	F	?	?	?	12687:9 (Carnivora)			x	knife sheath		
Kaarina Kirkkomäki	1	F	x			15807:16, 19 (Cervidae, indet.), 15807:9, 17, 20 (-), 12687:9 (Phocidae?)	x	x		knife sheath		Riikonen 1990: 25–6
Kaarina Kirkkomäki	3	F	?	?	?	? (Cervidae)	x					Asplund & Riikonen 2007: 25
Kaarina Kirkkomäki	16	M	x			27025(/A):16051, 16056c, 16064, 16065, 16070b, 16077, 16081d, 16085, 16086 (Cervidae, *Ovis aries* [textile?]), 27025(/A):16056d, 16064 (Cervidae, *Meles meles*?, indet.)	x	x	x	pouch		Asplund & Riikonen 2007: 25
Kaarina Kirkkomäki	19	M	x			27025:19031 (indet.), ? (*Meles meles)*			x	pouch or bag		Asplund & Riikonen 2007: 29
Kaarina Kirkkomäki	21	F	x			27025:21008a (indet.)			x	knife sheath		
Kaarina Kirkkomäki	23	F	x			27025:23109 (*Ovis aries*?)			x	knife sheath		
Kaarina Kirkkomäki	24	M	x			27025:24008a–b, 24016b–c, 24018 (Cervidae, indet.)	x					Asplund & Riikonen 2007: 25
Kaarina Kirkkomäki	27	F	x			27025:27121b, 27134a, 27154a, 27176, 27231, 27232 (Cervidae, indet.), 27025:27095, 27145, 27156, 27219, 27240 (-)	x					Asplund & Riikonen 2007: 25
Kaarina Kirkkomäki	28	M	x			27025:28009 (Cervidae), 27025:28012 (indet.), 27025:28013 (Carnivora/Felidae?)	x					Asplund & Riikonen 2007: 25
Kaarina Kirkkomäki	30	M	x			27196:30016a (Cervidae)			x			Asplund & Riikonen 2007: 25
Kaarina Kirkkomäki	31	F	?	?	?	27196:31064, 31064d, 31066, 31087, 31089, 31104, 31115, 31116 (Cervidae, indet.), 27196:31070, 31089 (-)	x					Asplund & Riikonen 2007: 25
Kaarina Kirkkomäki	37	M	?	?	?	27196:37006 (indet., undefinied fur animal)						
Kaarina Kirkkomäki	38	F	?	?	?	27196:38020a–d (Cervidae),27196:38020 (-)	x					
Kaarina Kirkkomäki	40	F	x			27196:40069a–i, 40075, 40082, 40086, 40088a, 40103, 40113 (*Bos taurus*, indet.), 27196:40071 (*Sciurus vulgaris*, *Bos taurus*). 27196:40061, 40081, 40110, 40091, 40093, 40120, 40123, 40124, 40127 (-)	x	x		knife sheath		
Kaarina Kirkkomäki	43	?	?	?	?	27196:43011 (-), ? (*Equus caballus* [horsehair])			x	amulet		Asplund & Riikonen 2007: 30
Kaarina Kirkkomäki	44	M	?	?	?	27196:44019, 44022 (Cervidae)	x					Asplund & Riikonen 2007: 25
Kaarina Kirkkomäki	D	M	x	x		22631:60b (indet.)						
Kaukola Kekomäki	1	M, F	x		x	2489:53 (*Vulpes vulpes ?*/Carnivora, Cervidae), 2489:42–52 (Cervidae?, Carnivora/*Vulpes vulpes*?, Bovidae/*Ovis aries*? [textile?], indet.), 2489:55 (Cervidae, indet.), 2489:4, 6 (*Ursus arctos*, Phocidae, Cervidae, undefinied fur animal), 2489:14 (*Ursus arctos/Castor fiber*, Cervidae), 2489:67-98, 107 (Phocidae, Cervidae, indet.)	x	?	?			Schwindt 1893: 181–2
Kaukola Kekomäki	3	M, F	x		x	2489:360 (Phocidae), 2489:350-5 (*Lepus timidus*, indet.), 2489:282-4 (*Sciurus vulgaris*/Mustelidae), 2489:329, 333?, 335?, 340-2, (*Sciurus vulgaris*/Mustelidae, *Castor fiber*?), 2489:292, 324, 318, 319, 326 (-)			?			Schwindt 1893: 181–2
Konginkangas Kirkonkylä	?	?	?	?	?	6709:6 (Cervidae)						
Köyliö Cemetery C	?	?	?	?	?	8602:25 (-)						
Köyliö Cemetery C	A	M	x		x	8602:57, 59, 60 (indet.)						
Köyliö Cemetery C	I	M	x		x	8602:135 (indet.), 8602:130 (-)			x	scabbard		
Köyliö Cemetery C	1	F				8602A:75 (indet.)	x					Cleve 1978: 82
Köyliö Cemetery C	2	M	x			8602A:115 (indet.), 8602A:110 (-)	x					Cleve 1978: 82
Köyliö Cemetery C	3	M	x		x	8602A:116, 117 (-)	x	x		scabbard		Cleve 1978: 82
Köyliö Cemetery C	?	M	?	?	?	8613:18 (-)						

Köyliö Cemetery C	17	M	x			8723:200, archived samples (Bovidae?, indet.)	x				Korvenkontio 1927: Appendix 8
Köyliö Cemetery C	28	F	x		x	8723:318 (indet.).	?				Cleve 1978: 82
Köyliö Cemetery C	39	F	x			8723:441 (Cervidae)					
Köyliö Cemetery A?	4 and 5?	M	?	?	?	8723:1190 (-)		x	scabbard		
Lappeenranta Kappelinmäki	?	F	?	?	?	13365:32 (-)					
Lappeenranta Kappelinmäki	90	?	x			34738:146–51 (-)		?	pouch		
Lappeenranta Kappelinmäki	11	?	x			31928:11 (*Bos taurus*? *Ovis aries*)	?	?	pouch		
Lappeenranta Kappelinmäki	17	?				Coin Cabinet 99043:4 (Carnivora/Canidae?)		?	pouch		
Masku Humikkala	7	M				8656: grave 7:1, grave 7:3c (*Ovis aries/Capra hircus*, indet.)					
Masku Humikkala	9	F				8656: grave 9:16 (indet.)					
Masku Humikkala	11	F				8656: grave 11:14 (*Sus scrofa*, *Ovis aries*)		x	flax brush		
Masku Humikkala	30	F	x			8656: grave 30:8, 15 (Cervidae)	x				
Masku Humikkala	32	F				8656: grave 32:4, grave 32:5a, grave 32:10, grave 32:13 (Cervidae)	?				
Masku Humikkala	33	F				8656: grave 33:12, 8656: grave 33:21 (Cervidae)					
Masku Humikkala	43	F				8656: grave 43:6 (*Sus scrofa*, indet.)					
Masku Humikkala	44	F				8656: grave 44:16 (indet.)					
Mikkeli Tuukkala	1/1933	M	?	?	?	9795:3 (Cervidae)					
Mikkeli Tuukkala	11	F	x			38090:821 (indet./Phocidae?), ? (Cervidae)					Patteri 2011; 2012
Mikkeli Tuukkala	13	M	x			2481:182, 309 (-)					
Mikkeli Tuukkala	36	F	x			2481:288 (Cervidae, *Ovis aries/Capra hircus*, *Homo sapiens*)					
Mikkeli Tuukkala	39	M	x			2481:309 (Cervidae)			x		Lehtosalo-Hilander 1988: 204
Mikkeli Tuukkala	?	F	?	?		9969:14 (-)					
Mikkeli Visulahti	3	F				13441:37 (-)					
Mikkeli Visulahti	4	M				13769:13 (*Homo sapiens*)					
Perniö Yliskylä	1	F	x			2912:55b (Phocidae)	?				
Perniö Yliskylä	2	F	x			2912:61-3 (indet.)	?				
Perniö Yliskylä	3	F	x			2912:72 (Carnivora/Felidae?)	?				
Perniö Yliskylä	5	F				2912:88 (-)	?				
Räisälä Tontinmäki	3	F				2491:52 (-)		?			
Räisälä Tontinmäki	13	F				2592:247-53 (-)					
Sakkola Patja	?	M	?	?	?	10710:2 (-)					
Sakkola Patja	16	?				10817:6 (indet.)	x				
Sakkola Patja	21	F	x			10817:14 (Cervidae), 10817:16 (-)					
Tampere Vilusenharju	?	?	?	?	?	17208:105 (Cervidae)					
Tampere Vilusenharju	?	?	?	?	?	17208:52, 184? (*Lepus timidus*, indet.)			x	mittens	
Tampere Vilusenharju	2	F	?	?	?	17208:645 (Cervidae, *Ovis aries*)					
Tampere Vilusenharju	15	M/F	x			17208:616 (Cervidae)					Tomanterä 1978: 18
Tampere Vilusenharju	29	M?				17208:158 (indet.)		x	pouch		Nallinmaa-Luoto 1978: 236
Tampere Vilusenharju	31	F				17208:187 (*Homo sapiens),* 178–98? (Cervidae)	x				Tomanterä 1978: 20
Tampere Vilusenharju	42	M	x			17208:340 (Phocidae?)			?		Nallinmaa-Luoto 1978: 236; Tomanterä 1978: 22
Tampere Vilusenharju	43	M				17208:367 (*Ovis aries*?)		x	pouch		Nallinmaa-Luoto 1978: 236; Tomanterä 1978: 23
Tampere Vilusenharju	49	M				17208:695 (Cervidae)					
Valkeakoski Toppolanmäki	?	F	?	?	?	10461:1 (-)					
Valkeakoski Toppolanmäki	?	F	?	?	?	10461:5 (*Homo sapiens*)					
Yläne Anivehmaanmäki	XII	M				13839:220 (-)					
Yläne Anivehmaanmäki	XLI	F				13962:483 (-)					
Ylöjärvi Mikkola	1	?				19162:352 (Cervidae)					
Ylöjärvi Mikkola	2	M				19162:364, 366, 372 (*Bos taurus*?, indet.), 19162:371 (-)					