



Transition from hunting to animal husbandry in Southern, Western and Eastern Finland: new dated osteological evidence

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ABSTRACT

The beginning of animal husbandry in Finland is one of the most debated topics in Finnish archaeology. For this study a total of 69 bone materials from archaeological sites in Southern, Western and Eastern Finland, dating from the Middle Neolithic to the Early Metal Period, were analysed: 52 represented identifiable animal bones. These data were complemented with those from previously analysed bone materials. A total of 19 domestic animal bones were radiocarbon-dated to determine their connection with a particular cultural period. However, 13 of them proved to belong to the historical and not the prehistoric period, emphasizing the importance of radiocarbon-dating and context awareness when interpreting prehistoric bone materials. Among the radiocarbon-dated material were the oldest dated sheep, cattle and horse bones in Finland. The oldest radiocarbon-dated domestic animal bone in Finland, from sheep or goat, derives from the Late Stone Age Kiukainen Culture site, while cattle and horse bones date to the Bronze Age. This is later than expected. However, the available material does not exclude the possibility that some animal husbandry was practised in Finland earlier. Nevertheless, domestic animal bones are rare in samples dated to the cultural periods studied, while hunting and fishing represented important subsistence activities.

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1. Introduction

Farming and animal husbandry in Western Eurasia originated around 10,000 years ago along the Fertile Crescent in the Near East and spread across Europe, reaching the Southern Baltic area and Scandinavia approximately 6000 years ago (e.g. Price, 2000a; Bellwood, 2005; Barker, 2006). In Middle Sweden and Estonia, areas adjacent to Finland, animal husbandry was practised at least ca. 4000 BC and 2900 BC, respectively (Maldre, 1996; Price, 2000b: 284; Lõugas et al., 2007; Hallgren, 2008: 123). In Åland, an archipelago between Sweden and Finland, the earliest domestic animal bones date to the Late Neolithic Period, ca. 2000 BC (Storå, 2000: 70–1).¹

Neolithization was a complex process, not only involving changes in people's subsistence but also in the social structure and

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¹ Even though Åland is part of modern Finland, it is excluded from this study as during prehistory it was culturally closely connected with Sweden (Drejfer, 1983).

modes of thought – the way they saw the world (e.g. Barker, 2006: 379–85; Barnard, 2007; Finlayson, 2009). To define the Mesolithic–Neolithic border is difficult, especially in Northern countries like Finland, where the change from mobile hunting and gathering to sedentary agricultural societies took thousands of years. The transition from Mesolithic to Neolithic in Finland was a process that started with adoption of pottery making by local hunter–gatherers ca. 5100 BC (so-called Sub-Neolithic Period) (Meinander, 1961; Carpelan, 1999: 253; Huurre, 1998: 14; Taavitsainen et al., 1998). It is possible that already during the Sub-Neolithic Period some hunter–gatherer peoples in the more favourable habitats were, at least partly, sedentary (Edgren, 1998: 71; Lavento, 2001: 141–143; Mökkönen, 2010). On the other hand, hunting and fishing as a component of subsistence had economical importance in certain parts of Finland still during the post-medieval period (Talve, 1997: 72–3). Burnt animal bone material from Mesolithic and Early Neolithic sites consists mainly of bones of seal (*Phocidae* sp. in coastal region), European elk (*Alces alces*), European beaver (*Castor fiber*) and wild reindeer (*Rangifer tarandus*) (Ukkonen, 1993d).

How, when and from where animal husbandry and cereal cultivation spread into Finland is one of the most debated topics in

Finnish prehistory. Despite accumulating evidence about the past economy through osteological analysis of bone materials in Finnish prehistory, domestic animal bones are scarce and their interpretation is difficult without radiocarbon-dating (Mannermaa and Deckwirth, 2010; Tourunen, 2011). The introduction of animal husbandry into Finland has often been connected with the Corded Ware culture (3200/2900–2350 BC),² though recently older dates have been suggested based on pollen evidence alone (Mökkönen, 2010). As Corded Ware culture was agricultural and/or pastoralist elsewhere in Europe, this has been assumed to be the case also in Finland, even in the absence of dated environmental evidence (domestic animal bones, macrofossil grain, cereal pollen, grain impressions in pottery) to support this view (e.g. Kivikoski, 1961: 71–2; Carpelan, 1999; Nunez, 1999: 137–8; Huurre, 2003: 27; Mökkönen, 2010). Some researchers have adopted a more critical view of possible animal husbandry among the local Corded Ware groups (e.g. Zvelebil, 1981: 162–3; Edgren, 1984; Matiskainen, 1994; Purhonen and Ruonavaara, 1994: 92).

The subsequent Kiukainen Culture (2400–1900/1500 BC) has been seen as comprising a mixed foraging–farming community (Huurre, 2003: 28–29; Asplund, 2008: 67; Leskinen and Pesonen, 2008: 218). Pollen data indicate that some cereal cultivation was practised during this period in Finland (Vuorela, 1999: 146–7; Asplund, 2008: 190), but no domestic animal bones dating to this period have been found. The oldest dated cereal grains in Finland derive from a Kiukainen Culture site, but they date to the Early Bronze Age (1900–1000 calBC, 3200 ± 170 years BP (Ua-338); Pihlman and Seppä-Heikka, 1985; Vuorela and Lempiäinen, 1988; Asplund et al., 1989; Asplund 2008: 292). The subsequent Western Finnish Bronze Age (1700–500 BC) has been considered increasingly agrarian (Edgren, 1998: 138–9; Carpelan, 1999: 271–2; Holmblad, 2010: 138). Domestic animal bones of cattle (*Bos taurus*) and sheep or goat (*Ovis aries/Capra hircus*) were found at a Bronze Age settlement site, Rieskaronmäki in Nakkila, and from burial cairns in the same area, but none of the bones were radiocarbon-dated and some were interpreted as being modern intrusions (Lahtiperä, 1970: 203; Vormisto, 1985: 152). The earliest radiocarbon-dated domestic animal bone (cattle) belongs to the Early Iron Age (460–310 calBC, 2339 ± 35 years BP, (Hela-1228); Lesell, 2007: 72). During the Pre-Roman Period (500 BC–0 AD) signs of farming were becoming common in Southern Finland (Edgren, 1999: 326). All these cultures were limited to Western and Southern Finland and, especially Kiukainen and Bronze Age culture, near the coastline. In the Finnish inland areas different asbestos-tempered and textile ceramics cultures continued hunting and gathering from the Late Stone Age to the Early Metal Period,³ but pollen data indicate that there was also some sporadic cereal cultivation (Carpelan, 1999: 266–71; Vuorela, 1999: 147; Lavento, 2001; Taavitsainen et al., 2007).

These cultures had different cultural networks and contacts to the neighbouring areas. The Finnish Corded Ware culture spread to Finland from the Baltic area (Carpelan, 1999: 261–2), the Kiukainen Culture and the western Finnish Bronze Age were mainly influenced by Scandinavian cultures (Edgren, 1998: 110, 141; Carpelan, 1999: 266–7, 271) and the Finnish inland Bronze Age had connections to the eastern areas in modern Russia (Edgren, 1998:



Fig. 1. The location of the study area.

148; Carpelan, 1999: 268–271). Thus, if animal husbandry started in Finland during the Corded Ware Period, the origin and genetic composition of the domestic animals would be different than if animal husbandry were initially introduced to Finland at a later date.

The aim of this article is to examine the origin and development of animal husbandry in Southern, Western and Eastern Finland⁴ from the Middle Neolithic to the Early Metal Period through osteological material. For this study, a total of 69 bone assemblages were analysed (Appendix A, Figs. 1 and 2) from archaeological sites across Finland associated with Corded Ware, Kiukainen or Early Metal Period material. During analysis species and anatomical elements were identified. A total of 52 assemblages provided identifiable bone fragments. In addition, a total of 54 previously analysed bone materials were included in the study (Appendix B, Fig. 2). The stratigraphic context of the bones was also evaluated. A total of 19 bones were radiocarbon-dated to link the domestic animal bones securely to a specific cultural period (Table 1).

2. Previous work

Several bone materials relevant to this study were analysed previously. Numerous (mostly unpublished) Osteological Reports have been written by Finnish osteologists⁵ and were used during this study (full list in Appendix B). Published studies are scarce. Lahtiperä (1970) analysed Early Metal Period burial and settlement material from Satakunta. Ukkonen (1996) reviewed Eastern Finnish domestic animal bone finds. Deckwirth (2008) analysed several Early Metal Period bone samples. Mannermaa and Deckwirth (2010) presented data on domestic animal bones in unpublished Osteological Reports. Domestic animal bones have been found from several archaeological sites dating to the period of interest and also from one site dating to the Mesolithic and Early Comb Ceramic Period (7300–3200 BC) (Pälsi, 1913; Fortelius, 1980k). None of these bones were previously radiocarbon-dated and their connection to the main period of use of the site remains uncertain

² Stone Age chronology according to Asplund (2008) and Carpelan (1999) in calBC.

³ Early Metal Period is a term often used in Finland for the Bronze Age and Pre-Roman Iron Age (ca. 1700 BC–1 BC) (e.g. Asplund, 2008: 69). However, in this study the term Early Metal Period is used for both the Bronze Age and Early Iron Age period (until ca. 500 AD). This makes it possible to compare coastal (western) and inland material, with different cultural development and chronology, and to include sites of uncertain date generally dating to this period.

⁴ Geographical area covered here consists of provinces of Southern, Eastern and Western Finland. One site, aah, is located in the province of Oulu.

⁵ Mikael Fortelius, Tarja Vormisto, Ann Forsten, Jukka Jernvall, Pirkko Ukkonen, Kristiina Mannermaa, Kati Salo and Niklas Söderholm.

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