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DIGGING DEEPER INTO AN IRON AGE CAIRN – RETHINKING ROISMALA RISTIMÄKI IN SASTAMALA, FINLAND

Abstract

Iron Age cairn sites often contain a variety of materials, including bones, pottery, burnt clay and iron slag. Many of these cairns have been interpreted as graves. In many cases, this has turned out to be true, like in the case of the earth and stone mixed cairn excavated in 1980 at Roismala Ristimäki (located in Sastamala, Finland). When examined closer, this monument – as well as probably other similar sites – reveals a more complex content. It is realised that chronology, formation as well as interpretation are not as straightforward as may have been previously anticipated. In the case of Roismala Ristimäki, the dating of an inhumation burial to the Late Roman Iron Age has been confirmed. Furthermore, one unburned human bone found above the main burial has been dated to the end of the Pre-Roman Iron Age or to the Early Roman Iron Age. From the cairn above the burial, which contains an abundance of pottery, burnt clay, animal bones, etc., radiocarbon dating places this material at a range that spans several centuries, from the Migration Period to the Merovingian Period. The results point to the probability of several stages of accumulation or construction, and that the cairn consists of mixed contents. The complex formation process is interpreted as involving ritualization of the site.

Keywords: burial, cairn, Iron Age, osteology, radiocarbon dating, ritual

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INTRODUCTION

Earth and stone mixed cairns (occasionally referred to as mounds) are common to the interior Lake District of the Tavastia (Fi. Häme) region and along the Kokemäki River in western Finland; cairns like this have generally been dated back to a period from the Late Roman Iron Age (AD 200–400) to the Viking Age (AD 800–1050) (e.g. Wessman 2010: 31; Raninen & Wessman 2015: 246–7, 255; cf. Salo 1984: 236–7). These cairns are usually c 4–15 m in diameter and 0.5–1.5 m in height (Wessman 2010: 31). They may form complexes that consist of several or even dozens of cairns. Sites with earth and stone mixed cairns have been excavated in, for example, Hattula Retulansaari, Tyrvää Kaukola Tyrväänkylä and Liekosaari as well as Lempäälä Naarankalmanmäki (Sarkamo 1970; 1984; Salmio 1982; Raike & Seppälä 2005). The majority of the burials are cremations, but occasionally they have contained inhumations as well. In some cases, it remains unclear whether the cairns are in fact burial sites at all – some have, for example, been characterised as refuse heaps or sacrificial cairns (e.g. Wessman 2010: 31–2).

Problems related to the identification, definition and interpretation of graves and cemeteries have been discussed in many ways. With regard to difficulties of interpretation, it has been noted that the characteristic of many Finnish Iron Age cremation cemeteries under level ground as well as cairns or mounds are 'their mixed nature, the small number of closed groups of finds, …, burnt bones in various places etc.' (Taavitsainen 1992: 7). In some cases, one could ask whether sites traditionally described as cemeteries are in fact 'what they appear to be – refuse heaps containing various kinds of material resulting from occupation' (Taavitsainen 1992: 10). However, this view has been later criticised (cf. Wessman 2010: 57).

The identification process is truly multifaceted, as burnt clay (daub), pottery fragments, iron slag as well as stone and metal artefacts are common finds in Finnish Iron Age sites, regardless of whether they are interpreted as settlement sites, refuse heaps, cemeteries or other ritual sites (Kivikoski 1969: 47; Sarkamo 1970; 1984: 306; Uino 1986; Taavitsainen 1992; Salo 2004: 206–10; Vuorinen 2009: 38–45; Wessman 2010: 87–90). It has been suggested that household waste, burnt clay and iron slag have been deliberately transported to cemeteries as part of burial or remembrance rituals (Svarvar 2002: 148; Wessman 2010: 87–90). Especially with regard to the so-called 'sacrificial cairns', different interpretations have been presented. In addition to classifying them as places of worship, some have been regarded simply as waste heaps, in a similar manner in which many other interpretations in archaeology have oscillated between the ritual and the secular (Muhonen 2009: 304–5; cf. Brück 1999). Interpretations of the dichotomy between the secular and ritual are, however, largely determined by our modern world view. It is possible that what we regard as functional vs. ritual were 'completely intertwined' in the prehistoric context of the sacrificial cairn (Muhonen 2009: 310).

One aspect that has been stressed is the possibility that sites could have served several purposes. Some burial sites could actually have included dwelling-like functions as well (Taavitsainen 1992: 9), or these sites may have been the location where different kinds of rituals – funerals, sacrifices, feasts, etc. – were carried out, separately or jointly, at different periods in time (Mäntylä-Asplund & Storå 2010: 65). Sites that have been classified with stereotypic labels may, in fact, be quite heterogeneous, containing different kinds of features and complex chronologies that cannot be recognised and interpreted without thorough, site-specific investigation (Mäntylä-Asplund & Storå 2010: 65–6; Bläuer & Kantanen 2011; Tourunen & Troy 2011).

Especially in the case of cremation cemeteries under level ground, the re-use of a site as a way of commemorating the dead has been emphasised. What is interesting is that ritual activities evidently could have been performed at later stages as well, when the cemeteries were no longer in active use, i.e. the ritual activities were not solely connected to funerals (Wessman 2010: 110). In many cases, particular emphasis has been placed on the idea that the interpretation of cemetery materials should always be based on osteological analysis as well as radiocarbon dating (e.g. Wessman 2009: 31; 2010: 112–3; Mäntylä-Asplund & Storå 2010).

The aim of this study was to re-evaluate the material from Roismala Ristimäki. At first, in connection with another project[1], special emphasis was put on a comprehensive osteological analysis. Later also other finds, such as the large pottery material, have been examined in closer detail and provided with a more detailed chronology through radiocarbon dating. The overall find distribution was re-examined, and the find catalogue was converted into a system fit for spatial analysis. The research questions focused on how a site categorised as an earth and stone mixed burial cairn can be understood in a deeper manner and how one can distinguish its formation processes as well as possibly recognise elements of ritual involved. With new data at hand, the discussion turns towards an examination of the chronological and spatial complexity of the monument as well as to a discourse that focuses on the interplay between ritual practise and domestic waste.

THE SITE

Altogether 20 verified cairns have been surveyed at the Roismala Ristimäki site (Fig. 1), as well as 19 uncertain ones (Pärssinen et al. 1981; Luoto et al. 1983: 5). There are also older men-

Fig. 1. Location of the site. Map: H. Asplund.

tions of mounds or cairns that were destroyed when the land was cleared for agricultural use, and in some cases only the largest boulders remain (Rinne 1903: 82). Three of the verified cairns have been investigated archaeologically.

One partially destroyed earth and stone mixed cairn was excavated in 1903, revealing a richly furnished cremation grave. Among the finds were a double-edged sword, a spearhead, a shield boss, neck ring fragments, a horn comb, and a crossbow brooch (Rinne 1903: 82–5; KM[2] 4301). The cremated bones and most of the grave items were found close to one another, but slag, burned stones and charcoal were found throughout the cairn (Rinne 1903: 84–5). In addition to these, a large quantity of clay daub was found between two large boulders, and this concentration was approximately 70 cm high (KM 4301:122). There were also some indications that the grave had been previously disturbed, as the blade of the sword was located in the top layer and the tang in the bottom layer of the cairn.

The finds were originally dated to the Migration Period (AD 400–550) (Rinne 1903: 86) and later to the Migration Period as well as the Merovingian Period (AD 550–800) (Luoto et al. 1983: 5). However, most of the artefacts are badly damaged, and only the crossbow fibula (KM 4301:99) and the horn comb (KM 4301:102, 120) can be securely dated. The crossbow brooch originates from the Dollkeim/Kovrovo culture, which has been dated to a period that spans the end of the 4th and the 5th century AD, but in Scandinavia these were still in use in the 6th century AD (Bitner-Wróblewska 2001: 50–3). Similar combs have been discovered in Sweden, and radiocarbon dating set their main phase of use to around AD 500 or slightly after (Brynja 1998: 45, 132).

The cairn that is the subject of the reanalysis in this current study was excavated in 1980. The size of the cairn is about 10 metres in diameter and over 1 metre in height (Fig. 2). It is considered to be one of the largest cairns in the area (Pärssinen et al. 1981; Luoto et al. 1983: 7; cf. Salo 1984: 236). The bottom layer of the cairn revealed an inhumation burial together with several metal artefacts. The burial was placed on the original soil surface (not dug into the ground) and the cairn was erected over the burial (Pärssinen et al. 1981; Luoto et al. 1983: 7).

The possibility of inner constructions – a stone circle as well as two stone cists – has been discussed (Pärssinen et al. 1981; Luoto et al. 1983: 7). However, the intentionality and meaning of these structures remain unclear. No finds were specifically associated with the cists. Instead bones and finds interpreted as burial remains were found elsewhere. Concerning the formation of the cairn, it has been suggested that its construction process first involved the transportation of larger stones to the site, and the cairn was then completed in a symmetric form by adding smaller stones and earth (Pärssinen et al. 1981). In addition to the identified burial, the cairn contained an abundance of pottery fragments, burnt clay, iron slag, unburned and burnt bone, etc., throughout the cairn.

A third cairn built from earth and stone was excavated in 1987 and 1988 (Ojala 1988; 1989; TYA 431, 458). Its finds featured objects that date back to the Iron Age and included a small iron knife, a glass bead, pottery fragments and

burnt clay (TYA 431; 458). The burnt bone material included fragments from a human skull (TYA 431:13), the first phalanx of horse (TYA 431:52) and the metapodial shaft of sheep or goat (TYA 458:25). Unburned mandible and teeth fragments from cattle (TYA 431:14–6) were also identified.

The cairn excavated in 1980 was selected for closer analysis because of its large and diverse find material as well as its complex structure. In addition to the inhumation burial also other organic materials had survived; furthermore the monument contained a high amount of pottery and other finds.

RESULTS

Re-examination of the grave goods from the inhumation grave

The buried individual was most likely placed in a supine position on top of the original soil surface with the head pointing towards the north (Pärssinen et al. 1981; Luoto et al. 1983: 7). Several metal objects can be interpreted as grave goods (Fig. 3).[3] A double-edged sword (TYA 177:1489) was placed on the left side of the body, and it was noted that the person's left hand could have originally clasped the hilt (Pärssinen et al. 1981). The tang (TYA 177:1447) has broken off and the edges of the blade are damaged by corrosion, but otherwise the sword has remained in one piece. It is a spatha-type sword, originally used by cavalrymen in the Roman legions, but during the Late Roman Iron Age it became the predominant weapon for all Roman troops (Bishop & Coulston 2006: 82, 154). A precise typological identification is impossible, but stylistically the blade differs from other spathae (complete or preserved in larger pieces) found in Finland (Laihia Mujanvainio, KM 10621:19; Laitila Soukainen, KM 13200:3, 13279:17, 34; Pälkäne Myttäälä, KM 17343:1; Oulu Välikangas, KM 23911:7) because it lacks fullers and its cross-section is a simple rhombus.

Most of the organic materials in the scabbard were decomposed, but there is a mention of preserved wood inside the chape (Luoto et al. 1983: 9). Surprisingly, a small piece of leather that featured thread remains in visible stitches (TYA 177:1489) had also been preserved, and originally it had probably served as a covering for the scabbard. The copper alloy chape (TYA 177:1489)[4] was also well-preserved, representing a Scandinavian/North Germanic form (*Flügelortband*), which came into use during the late 3rd century AD, but their main phase of use was during the 4th century AD (Miks 2007: 413).

Two spearheads had been placed to the upper right side of the body. Both are heavily corroded. The first one (TYA 177:1488) features a very short socket and its cross-section is a four-point star. It represents a Mollestad-type spearhead, which are mainly known from Sweden and

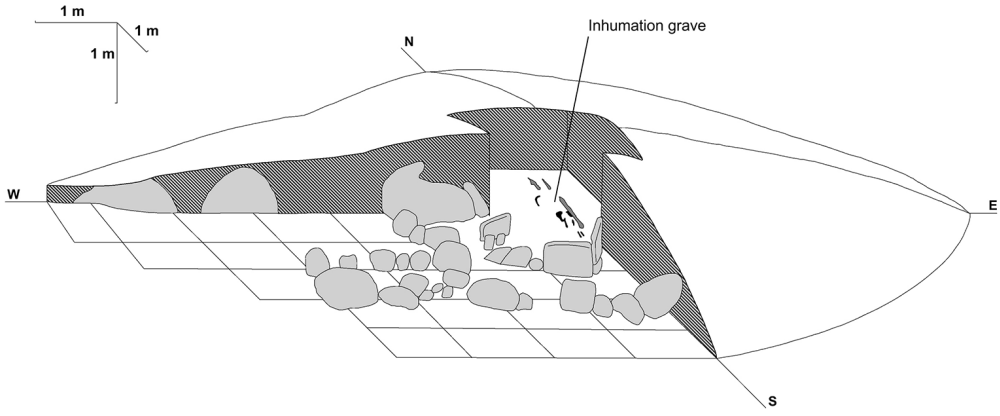

Fig. 2. The Roismala Ristimäki cairn. Slightly modified from a drawing by Luoto et al. (1983: Fig. 2). Illustration: J. Moisio.

Norway. Their main phase of use was during the 4th century AD and slightly after (Ilkjær 1990: 84, Tabelle 52). The second spearhead (TYA 177:1487) is a socketed javelin with an elongated shank, and originally it would have featured a barbed head. Due to damage caused by corrosion, no exact typological identification and dating can be made.

On the right side of the body, there was also a small area of soil that had been coloured green. The area contained only fragments of a rectangular belt buckle of iron (TYA 177:1457, 1481) (originally identified as rivets from a shield boss), but no other artefacts that could have caused this colouring. In the excavation report, it was suggested that a copper alloy vessel or a shield boss could have been located there, but that it had dissolved completely (Pärssinen et al. 1981). This seems unlikely, as the other copper alloy artefacts in the cairn were still preserved in relatively good condition. If the coloured soil is interpreted as a sign of a missing artefact, then its absence could possibly be connected to the opening of the grave.

There were also two other metal artefacts in the vicinity of the grave, but their discovery locations were above the grave, so their association with the burial itself is uncertain. The first one is a heavily corroded knife (TYA 177:1415) that has been broken into three pieces. The second find is a small and delicate copper alloy buckle (TYA 177:1196)[5]. The buckle and its fitting is made as one piece, and it is decorated with two rectangular apertures. Exact parallels of this buckle are unknown to the authors, but previously it was connected to buckles found from Gotland and Öland (Luoto et al. 1983: 10). However, buckles where the frame and fitting are made as a single piece are more widespread and known within the rest of the Barbaricum and the Roman

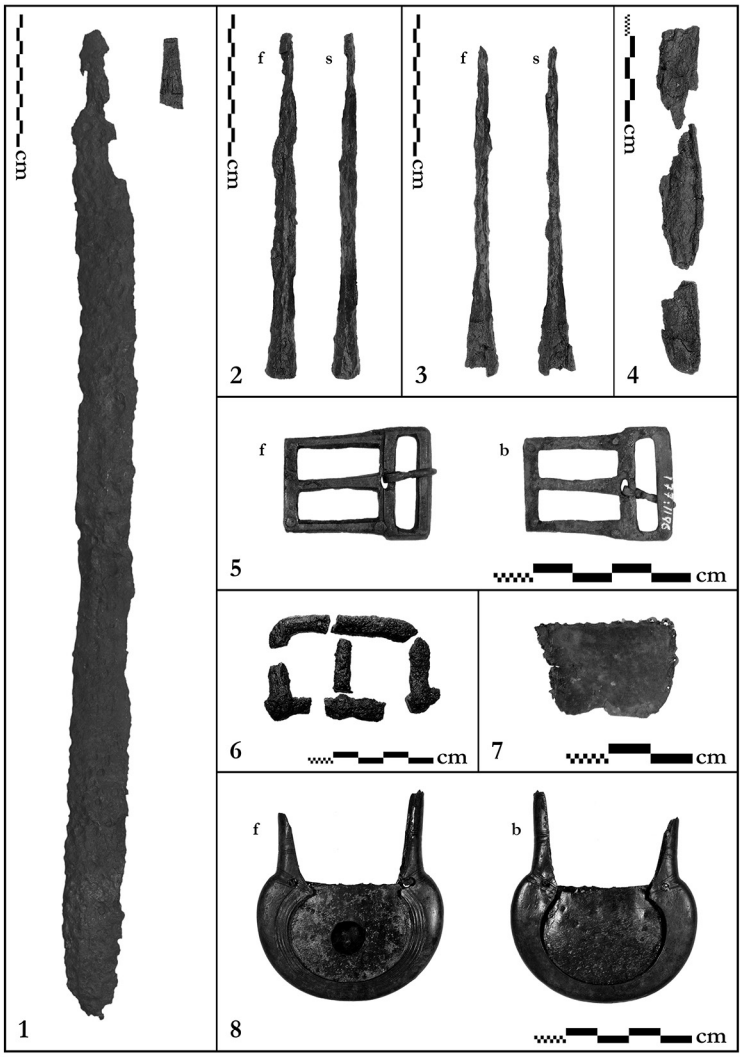

Fig. 3. Finds connected with the inhumation burial (1–3, 6–8) and its vicinity (4, 5); 1) double-edged sword and tang, 2) Mollestad-type spearhead, 3) javelin, 4) knife, 5) copper alloy buckle, 6) iron belt buckle, 7) leather from the scabbard, 8) copper alloy chape; abbreviations: f – front, s – side, b – back. Photo: J. Moisio.

Empire as well. These date from the 1st and 2nd centuries to the 5th century AD (Gaerte 1924: 118, Abb. 4:3; Sommer 1984: 38, 78–80, Taf. 16:3–6; von Carnap-Bornheim 1995: 67, Abb. 2:2; Heynowski 2017: 106–7).

Osteological results

A total of 1921 bone fragments were found in the Roismala Ristimäki cairn (TYA 177; Table 1). Most of the material, 1446 fragments, was unburned, but the assemblage also included 475 burnt bones.

Both human (*Homo sapiens*) and animal bones were identified from the material. The identified animal species include cattle (*Bos taurus*), sheep (*Ovis aries*), horse (*Equus caballus*), pig (*Sus scrofa*), cat (*Felis catus*), European beaver (*Castor fiber*), artic hare (*Lepus timidus*), water vole (*Arvicola amphibious*), unidentified duck species (Anas sp.), northern pike (*Esox lucius*), European perch (*Perca fluviatilis*), cyprinids (Cyprinidae), and members of the salmon family (Salmonidae). The water vole bones likely belong to animals living in a nest network inside the cairn, as was already observed during the excavations (Pärssinen et al. 1981). The cat bones originate from at least two infant animals from the same catalogue number (TYA 177:865). As water vole bones were identified from the same sample, it is possible that the cat bones also represent later intrusions to the cairn.

Human bones were found in 19 samples (catalogue numbers). The inhumation grave at the bottom of the cairn was already identified during the excavations (Luoto et al. 1983: 7–8). The bone material from the grave includes the fragmented remains of skull (TYA 177:1455, 1819), tooth (TYA 177:1456) vertebrates, clavicle, humerus, ulna, radius, metacarpal, pelvis, femur (TYA 177:1455), tibia, fibula and calcaneus (TYA 177:1819). Bones from the lower part of the skeleton were found in situ but some elements from the upper torso seem to be missing. These bones belong to an adult, most likely male (determined from the pelvic bone). A metacarpal bone from the burial was radiocarbon dated to the 3rd–4th centuries AD (see the section on spatial analysis and radiocarbon dates below). One cluster of unburned human bones was recovered from the NO profile in layer 6 (TYA 177:876),

Species	Unburned	Burned	Skeleton	Total
Human	62			62
?Human	1			1
Cattle	32	2		34
Sheep	2		2	4
Sheep/goat	35		56	91
Horse	8			8
Pig	5	2		7
Cat	4			4
Beaver	6			6
?Beaver	3			3
Hare	1			1
Water vole	44			44
Rodentia	4			4
Large ungulate	64	8		72
Small ungulate	46	3		49
Small animal		1		1
Unidentified duck	1			1
Bird	4			4
Pike	2	9		11
Cyprinidae	1	1		2
Perch	1			1
Percidae	1			1
Salmon family	1			1
Fish	3			3
Frog/toad	1			1
Not identified	1056	449		1505
Total	1388	475	58	1921

Table 1. Bone material from the Roismala Ristimäki cairn. Data are given as NISP (Number of Identified Specimens).

including cranium, shoulder blade, vertebrates and tooth. A thoracic vertebrate from the cluster was radiocarbon dated to the late 1st century BC or the 1st–2nd centuries AD. The disarticulated remains consist of fragments of skull, lower jaw, teeth, vertebrates, rib, metacarpal, femur and tibia, all unburned. They were found in layers 2, 5, 6, 8, 9 and 10 in the south-west, north-east and north-west sectors as well as from profiles WO and NO[6]. All the remains from the cairn could anatomically belong to the same individual, but the radiocarbon dates prove otherwise.

The bone material also included the partial, fragmented and unburned skeleton of a sheep (56 fragments) that was located in layers 9 and 10 (TYA 177:1263, 1450, 1819) and specified as an animal skeleton located 'about 1 metre west from the burial mound' in the original publication (Luoto et al. 1983: 9). In the excavation map, however, the skeleton is located c 1 metre west from the inhumation burial. According to the skeleton's dental development and epiphyseal fusion pattern (Silver 1969), the bones belong to a c 1–1.5-year-old sheep (mandibular M1 erupted and in wear, but pd4 still present, proximal radius fused, distal and proximal tibiae and proximal phalanx 1 unfused). The presence of horn core fragments indicates that the individual was horned. Radiocarbon dating of the pelvis bone dates the sheep to the 7th–8th centuries AD (see the section on spatial analysis and radiocarbon dates below).

The rest of the animal bone material was disarticulated. No epiphysis-metaphysic pairs indicating the primary deposition of the remains were observed. The animal bone material includes bones from all anatomical regions (head, trunk, front and hind limbs). The bones were distributed throughout the cairn and were found in all layers and sectors. One unburned 3rd phalanx of a pig from layer 9 in the north-east sector was radiocarbon dated to the 6th–7th century AD (see the section on spatial analysis and radiocarbon dates below).

Analysis of the pottery material

According to a recalculation, the ceramic material from the cairn in Roismala Ristimäki consists of 4242 potsherds, which is in line with the number presented earlier (cf. Luoto et al. 1983: 9). The material was shortly discussed in the previous article written by Luoto et al. (1983), but the main interest at the time was finding and identifying plant impressions and silicified seeds from pottery and clay daub. For the study at hand, the main objective was to estimate the minimum number of pots in the cairn as well as to describe the overall nature and stratigraphy of the material. For that purpose, the ceramic material was restudied, and the largest rim pieces were selected for a more precise study (Salomaa 2019).

According to the rim pieces present, the minimum number of pots in the cairn is 46. The previous article concluded that most of the ceramic material in the cairn originated from crudely tempered and undecorated pots that feature flat bottoms and straight necks (Luoto et al. 1983: 13). This kind of pottery was prevalent in Finland from the Late Roman Iron Age onwards and is referred to as common Iron Age ceramics (Enqvist 2005: 98–9). The type is connected to the everyday use of pots in cooking and storage (Carpelan 1980: 193). Although occurring frequently in Iron Age contexts, ceramics of this kind have not been studied thoroughly and cannot be typologically dated in a more precise manner. In the Roismala Ristimäki cairn, sherds from pots like these that have been tempered with coarse pieces of crushed stone are numerous; 35 of the 46 pots are crude tempered and undecorated. However, they differ from one another with regard to the amount of temper they contain, their clay paste composition and how they were fired. Due to the current research situation, we cannot conclusively state whether all the sherds in the cairn represent the same ceramic tradition and chronological phase.

The ceramic material also contains pieces from 11 different finer-tempered pots that feature sub-2-mm crushed stone in their paste. Five of the fine tempered pots are very thin walled and are probably small jars or drinking cups. Five fragments include possible decorations consisting of vague pits, cord or line impressions. Only one clearly decorated piece was found. This finely tempered piece features a horizontal zigzag decoration that seemingly forms a rhomboid-like pattern (Fig. 4, Pot 44). Similar finely tempered, smooth-surfaced pots were made since the end of the Merovingian period

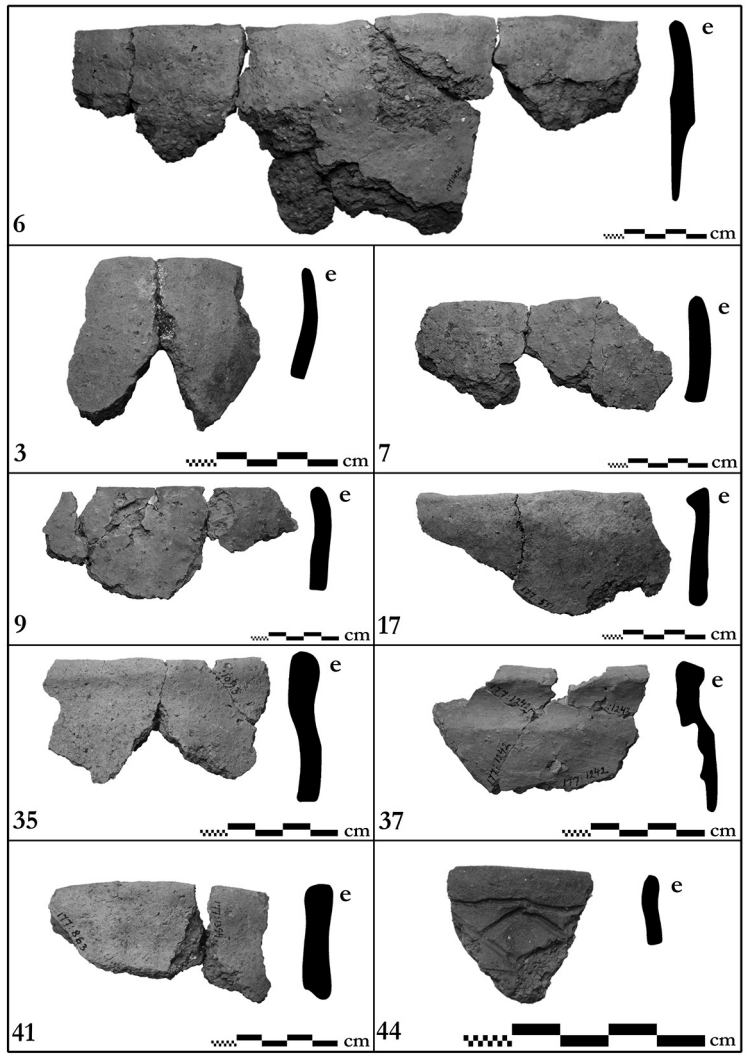

Fig. 4. Examples of different pots found from the Roismala Ristimäki cairn. Each identified pot has its own number that was given during the ceramic analysis. Pictures and descriptions of each identified pot can be found in the ceramic analysis report (Salomaa 2019). Photo: S. Salomaa.

(Lehtosalo-Hilander 1982: 79–80). This type of decoration is usually restricted to the upper part of the pot. Cord impressions and zigzag or wavy line decorations are common and can be typically dated to different periods (Lehtosalo-Hilander 1982: 79). However, in the Late Iron Age, these zigzags usually featured two or more contiguous lines and not just one, like in the rim piece from the Roismala Ristimäki cairn. In addition, the small size of the piece makes it difficult to determine whether the decoration really is simply a horizontal zigzag, as it appears to be, or whether it continues in a net-like pattern.

In addition, one sherd from the cairn has been tempered with asbestos, and one features textile impressions on its surface. These are estimated to originate from an earlier Stone Age cultural layer (Luoto et al. 1983: 13). A broader dating that encompasses the Early Metal Period is also possible. Numerous potsherds also featured impressions of plants and silicified seeds that ended up in the clay while the pots were made, meaning that they were not included intentionally as a temper (Luoto et al. 1983: 15).

The shape of the identified pots varies from s-profiled to pots whose rims turn inside, outside or remain relatively straight. The smallest pot whose orifice could be measured is only 8 cm in size (Fig. 4, Pot 3). The pot is barrel-shaped, thin-walled and finely tempered. The largest measured orifices were over 20 cm in two crudely tempered pots (Pots 6 and 17). There are obviously different kinds of pots in the cairn, and they probably served different functions as well. This is typical of Finnish pots made in the Late Iron Age, when some vessels were likely used for drinking and serving food, and some for cooking and storage (Lehtosalo-Hilander 1982: 76). The pots in the Roismala Ristimäki cairn resemble ordinary household ceramics more than fine, decorated pots for special occasions.

The size of the potsherds in the cairn varies from small pieces that are under 1 cm to ones over 15 cm. The cairn contained fragments from walls, bottoms and rims. Pottery sherds were found all over the cairn, from the surface to the ground. The excavation report and previous study concluded that the potsherds do not appear in specific locations in the cairn, but some concentrations with more potsherds can be seen (Pärssinen et al. 1981; Luoto et al. 1983: 13). It was interpreted that the potsherds were taken to the cairn as such, i.e. as broken fragments (Luoto et al. 1983: 13). This current study confirms that most of the identified pots were seemingly already broken when placed into the cairn, although some pots appear to possibly be located in the cairn in their entirety but dispersed to different layers. Some squares contain more ceramic material than others, but also in these cases the assemblages consist of broken pieces from different vessels. Only one clear concentration of sherds from one pot was detected during the excavation.

Pot number	TYA 177	Location	Dating
6	**:432**	3rd layer, north-east sector, square 2i	Ua-59661
	:436	3rd layer, north-east sector, square 2j	
	:618	4th layer, north-east sector, square 1h	
	:634	4th layer, north-east sector, square 1i	
	:1034	7th layer, south-east sector, square -1i	
7	**:814**	5th layer, profile WO	
	:1696	No location information	
9	:803	5th layer, south-west sector, square-3c	
	:964	7th layer, north-west sector, square 1d	
17	**:506**	1st layer, profile EO	Ua-59660
	:551	3rd layer, profile EO	
	:621	4th layer, north-east sector, square 1j	
	:762	5th layer, profile EO	
	:1028	7th layer, profile EO	
	:1174	8th layer, profile EO	
	:1297	9th layer, north-east sector, square -2i	
35	:519	2nd layer, profile NO	
	:538	3rd layer, profile NO, square 3h	
	:814	7th layer, north-west sector	
	:974	8th layer, north-west sector, square 1b	
	:1093	8th layer, north-west sector, square 3b	
	:1122	9th layer, north-west sector, square 2a	
	:1270	9th layer, north-east sector, square 1h	
	:1306	No information	
	:1738	No information	
	:1822	No information	
37	:652	4th layer, south-east sector, square -2l	
	:863	6th layer, profile NO	
	:870	6th layer, profile NO (next to the burial)	
	:1242	8th layer, profile WO	
	:1320	9th layer, north-east sector, square 2k	
	:1327	9th layer, profile EO	
	:1386	10th layer, north-east sector, square +1h	
	:1394	10th layer, north-west sector, square -1j	
41	**:823**	6th layer, north-west sector, square 1b	
	:1394	10th layer, north-west sector, square -1j	

Table 2. Examples of the vertical and horizontal dispersal of identified pots. The pieces that could be joined together are marked in bold and the radiocarbon dated pieces have been underlined.

The most obvious concentration of ceramics contained several potsherds within a 30 cm area in layer 3, square 2i; the rim pieces from one clearly identifiable pot were facing the ground, so it was interpreted that this pot may have been whole and placed upside down in the cairn (Pärssinen et al. 1981: 6). During our study, it was detected that rim pieces from this same pot were dispersed in the north-east sector, in the 3rd layer in square 2j and in the 4th layer in squares 1h and 1i as well as in the south-east sector, in the 7th layer in square -1i. The pot (Fig. 4, Pot 6) is large and crudely tempered, the top of its rim is round, and its walls turn slightly inward. The size of its orifice is 22 cm. This pot has been radiocarbon dated to a period that falls between the 6th and 7th centuries AD (Table 2; see also the section on spatial analysis and radiocarbon dates below).

The second pot (Fig. 4, Pot 17) that was radiocarbon dated is likely a low, bowl-

like pot, the orifice of which is 26 cm, although only part of the rim has been put together. It is crudely tempered, but its outer surface is smooth. The material is crumbling and burned a very dark colour, with carbonisation patches on the inner surface. The top of the rim is flat. Rim pieces from this pot have been found in profile EO in the 1st and 3rd layers. The pot has been dated to the 5th or the first half of the 6th century AD.

All in all, the ceramic material in the cairn is heterogeneous and highly fragmented. The rate of fragmentation was examined by calculating the average weight of the sherds. For the entire collection of pottery material, the average weight per sherd is around 4 g. Between the layers, only a slight amount of variation is present with figures ranging from 2.1 g (layer 2) to 5.3 g (layer 1) – most layers are close to the general average. If one looks at the overall horizontal distribution per square, no areas seem to stand out with regard to the size of their sherds; in only two squares (1d and 2d), the average weight is more than 5 g (7.7 g and 6.4 g, respectively). Layer 3 (where a concentration of sherds from the same pot were discovered in square 2i) contains two squares (1h and 2j) where the average is over 10 g (12.9 g and 12.5 g, respectively),which is possibly related to the breakage of a pot in situ or some other deposition of bigger pieces in this area of the cairn. Otherwise, the high degree of fragmentation seems to support the theory that previously broken pots or pieces of pots were brought to the cairn.

Because the cairn contains pieces of so many different pots that appear to have been collected after they had been broken and then brought to the cairn, the material in the cairn has probably been accumulated over a long period of time. The two radiocarbon dates confirm this conclusion, since the two dated pots were used 100 to 200 years apart from each other. It seems that already broken pots were scattered to the cairn as well as placed there in a specific concentration, at least in one case.

Spatial analysis and radiocarbon dates

In this study, the original measurements and documentation on the cairn were converted into a format fit for spatial analysis.[7] The find catalogue was digitised and the data converted into a metric scale in order to produce distribution maps. The database version of the catalogue enabled queries that could be used to present vertical and horizontal distributions of different find categories. An actual hands-on reanalysis and evaluation was performed only on the pottery and the osteological material, and the other find categories have been analysed only on the basis of the find catalogue. This poses some issues, as

Layer	Pottery (g)	Burnt clay (g)	Iron slag (g)	Loom weights (cat. num.)	Charcoal (cat. num.)	Human bone (frag.)	Unburnt animal bone (frag.)	Burnt animal bone (frag.)	Water vole bone (frag.)
1	184	629	3	1	5	0	9	0	0
2	457	3078	850	4	44	2	154	44	0
3	2784	5138	375	9	46	0	208	52	0
4	1893	3467	85	7	39	0	51	31	2
5	1645	4457	88	8	29	1	176	49	3
6	1585	3297	21	3	20	12	116	47	8
7	2137	2587	272	5	22	0	89	34	3
8	2321	835	81	2	24	2	185	88	15
9	2555	1361	28	5	18	14	177	99	12
10	899	129	2	0	9	4	120	24	1
No info	553	320	28	0	5	28	54	7	0
Sum	17014	25296	1832	44	261	63	1339	475	44

Table 3. Vertical distribution of the main find categories according to weight (g), catalogue numbers (cat. num.) and number of fragments (frag.).

not all catalogue numbers systematically contain numeric details concerning quantities (number of fragments and/or weight) or locations within the excavation grid. In the earlier study of the material, it was stated that no explicit horizontal or layer-specific find concentrations could be ascertained (Luoto et al. 1983: 13). In the new spatial analysis, the main observation is somewhat different, suggesting differing patterns of distribution for certain find groups.

Due to the reanalysis, the number of pottery and bone fragments can be presented in 100% of the catalogue numbers; in addition, when it comes to weight, information is available for pottery in 100% of the cases. In the case of other artefact categories, the situation is not as optimal. Burnt clay (including daub) as well as iron slag were, however, usually issued a number for weight in the original find catalogue, reaching 89% and 98%, respectively. In the case of other abundant find categories – for example, charcoal and fragments of loom weights made from clay – more than 50% lack any information about their quantity, which makes any interpretation on the basis of the find catalogue alone difficult.

When we look at the vertical distribution, it is assuring to note that the excavation layer is referenced systematically in the find catalogue (over 95% in the case of all of the most abundant find categories), human bones excluded (Table 3). With regard to the amount of pottery present (both the number of fragments and their weight) the distribution is quite even – only the top layers and the bottom layer stand out with fewer finds. Burnt clay (daub) and iron slag (both in regard to their weight) tend to be more prevalent in some of the uppermost layers (layer 7 and above), especially in the case of iron slag where over 66% was located in layers 2 and 3. Pieces of loom weights and charcoal can be examined only in respect to catalogue numbers per layer. The distribution suggests that loom weights might be vertically deposited like (other) finds of burnt clay, while charcoal might be more concentrated in layers 2 to 5 (61%). In the case of human bones that have a reference to a layer, the bottom layers (9 and 10) as well as layer 6 stand out. Unburned as well as burnt animal bone are more evenly distributed throughout the stratigraphy.

With regard to horizontal distribution, the only realistic way to proceed in the case of the Roismala Ristimäki cairn is to look at distribution per square. Fortunately, documentation during the excavation was based on a grid of 1 m^2 squares, and most of the important find groups reference a square. Pottery, burnt clay and iron slag have all been recorded with square information in over 80% of the catalogue numbers (86%, 89% and 82%, respectively). This should mean that mapped distributions are valuable for interpretations that focus on deposition patterns. The bone finds, on the other hand, do not contain as many references to squares. In the case of human bones, this information can be found in only 32% of the catalogued find numbers; this is evidently due to the fact that most of the human bones were assumed to belong to the primary burial, and thus no other spatial reference was considered important. For animal bones (excluding water vole), the percentages are 64% for unburned and 77% for burnt bone. All distributions were plotted during the analysis, but in the case of the spatial distribution of the bones, quite a lot of uncertainty remains present.

Pottery fragments were generally distributed to all parts of the cairn, but a larger concentration is visible in and adjacent to the north-east sector (Fig. 5a). This is also the case when specific layers are assessed separately. In layers 3 and 4, for example, the north-east sector (from where the radiocarbon dated pieces were found) stands out especially well (Fig. 5b). Burnt clay features a different type of distribution pattern. Find concentrations are visible in the north-west and south-west sectors, especially along the sector dividing line (Fig. 5c). In layers 3 and 4 (for comparison), the excavation squares in the same sectors are accentuated (Fig. 5d). As loom weights pose a problem both with regard to the referenced squares (73%) and especially the number of finds present, they are not shown on a map, but there seems to be some possible correlation present in the horizontal distribution when compared to burnt clay (daub).

In addition to featuring a different type of vertical distribution, iron slag also seems to differ when we look at distribution per square (Fig. 5e). One might see some indication of slag occurring at the outskirts of the cairn. In the lower layers (layers 3 and 4, in the example) slag is a minor

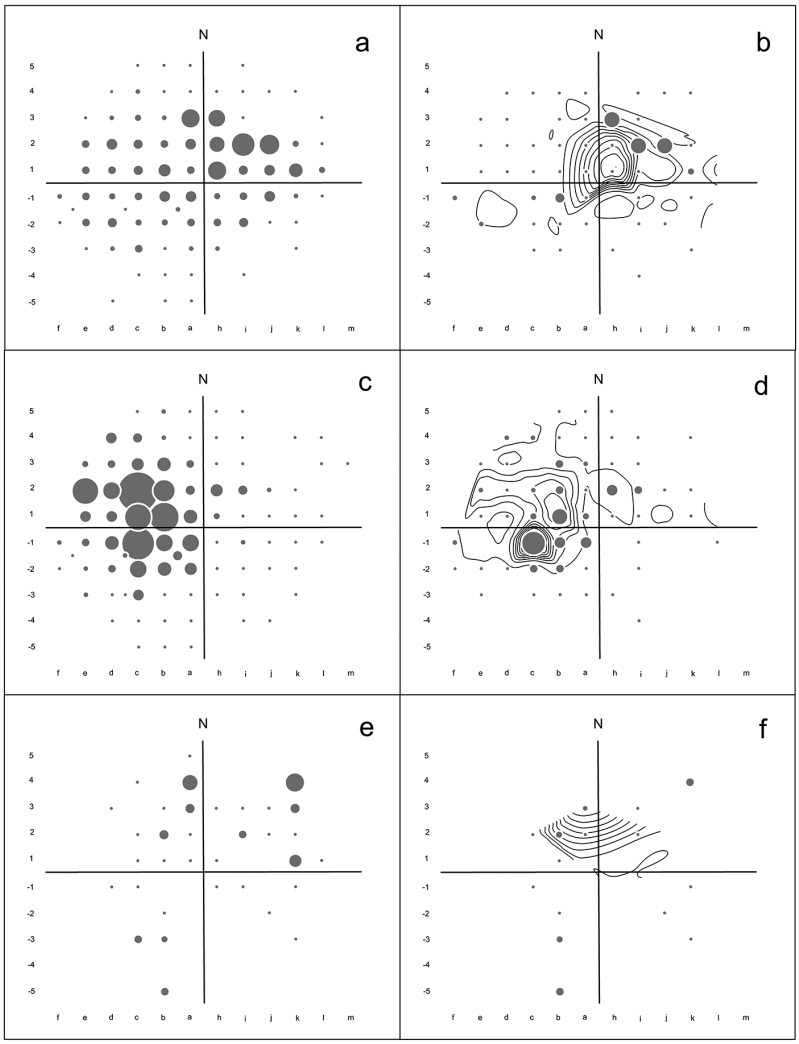

Fig. 5. Horizontal distribution of main find categories per excavation square. Distribution according to weight of the total amount of pottery (a) and pottery from layers 3 (b, dots) and 4 (b, isarithms) compared to those of burnt clay (c, d) and iron slag (e, f), where the dots of the latter are presented using a different (doubled) scale. Map: H. Asplund.

component (in terms of weight) compared to other major find categories (Fig. 5f). Unburned and burnt animal bone are problematic, as the catalogue numbers for these materials contain fewer references to excavation squares. When plotted, the evidence suggests that unburned bones are concentrated in the centre of the cairn, while burned bones feature a more even distribution, although they can also be found slightly more towards the core parts of the monument.

Six samples were chosen for radiocarbon dating (Fig. 6). One is a sample of unburned human bone, representing the supposed primary burial. The result 1742±33 BP (Ua-57270), i.e. calAD 220–390 dates the event to the 3rd or 4th century.[8] Another sample of unburned human bone was selected from a layer above the previous. The result is older, 1947±30 BP (Hela-4265), i.e. 20 calBC–calAD 130, meaning it belongs to the very end of the Pre-Roman Iron Age (500 BC–AD 50) or the Early Roman Iron Age (AD 50–200). All the other dates are younger and do not overlap with the date of the human bones. Crust from the fragments of two separate ceramic pots yielded the dates 1585±29 BP (Ua-59660), i.e. calAD 400–550, and 1468±28 BP (Ua-59661), i.e. calAD 545–645, respectively. The pots evidently originate from different ages, the former representing the Migration Period and the latter the Merovingian Period. In addition, two samples from unburned animal bone were dated. The sample from a pig bone provided the result 1404±32 BP (Ua-57269), i.e. calAD 585–670, demonstrating a probable overlap with the later date of the pots. This represents the oldest radiocarbon dated domestic pig (*Sus scrofa*) bone from mainland Finland so far. The youngest date was obtained from a sheep bone

(*Ovis aries*), with the result 1294±32 BP (Ua-57268), i.e. calAD 660–770.

DISCUSSION

Chronology

With regard to dating, there has been some inconsistency in how the age of the supposed primary burial has been presented. The fourth century is the main option, but a range of 400–500 AD has also been presented (Luoto et al. 1983: 5, 27, 29). Salo (1984: 236) dates the burial to the end of the Late Roman Iron Age. Based on the current typological analysis of the finds from the grave, they most likely date to the 4th century AD. Both the typological date and the radiocarbon date of the human bone (calAD 220–390) indicate the same period, more or less; however, the error margins of the radiocarbon date also permit a slightly older date. The late Pre-Roman or Early Roman Iron Age human bone found higher up in the cairn may indicate an earlier use of the site for burial, the bones of which later being mixed in other processes affecting the cairn. On the other hand, it is quite possible that the old bone higher up has been taken to the cairn from somewhere else and deposited later.

What is even more interesting than the dating of the human bones is that other radiocarbon dates clearly indicate an even longer multi-period use and stratigraphic inconsistency of the site.[9] This result challenges the idea of using the date of one burial for the entire cairn, in the way the Roismala Ristimäki cairn has been presented before (e.g. Salo 2004: 198). Previously, the cairn has – more or less – been regarded as a kind of chronologically closed find context, which has affected the dating of other finds and features as well. One example is the clay daub with a triangular cross-section, most likely originating from a burnt log house or some similar structure, as well as the macrofossil study of plant impressions in ceramics – a pioneering work in Finnish paleoethnobotany (Luoto et al. 1983). The archaeobotanical data have been considered to indicate the nature of local fourth-century agriculture (Luoto et al. 1983: 30). The new dating results point to the possibility that the daub (and the log structure) and the ceramics with plant impressions could also date to a later period.[10]

Previously, animal bones, pottery and daub were considered to 'probably have some connection with the burial' (Luoto et al. 1983: 29). The connection between the burial and the layers on top of it has also been discussed in terms of status. In addition to the inhumation burial with precious gifts, the size of the cairn has been interpreted as an indication of the wealth of the deceased (Salo 1984: 236). Current evidence suggests that the cairn is a result of a more complex formation process, i.e. this interpretation is no longer valid as such.

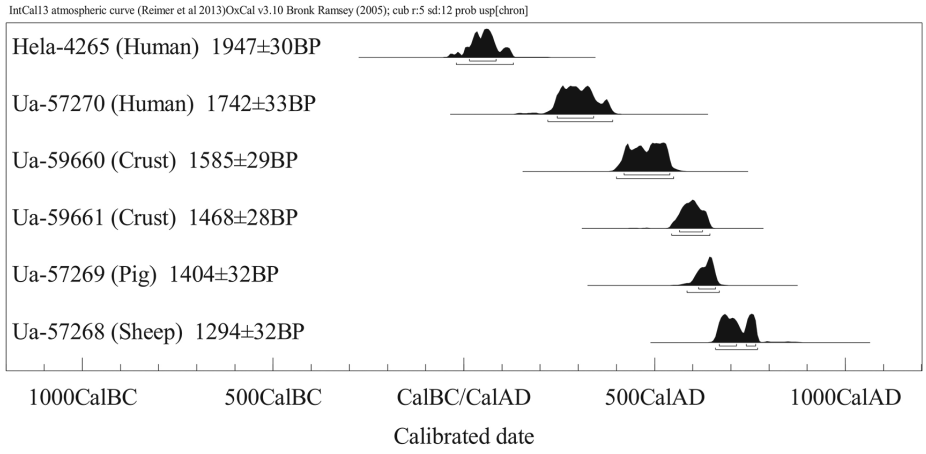

Fig. 6. Radiocarbon dates.

Find type	Roismala Ristimäki	Salo Ketohaka 1	Salo Ketohaka 2	Laitila Palttila Kylämäki
Burnt clay	25.3 kg	26450 frag. / 48.65 kg	21500 frag. / 35.26 kg	35 kg burnt clay, 9 kg clay slag
Pottery	4242 frag. / 17 kg	4200 frag. / 11.9 kg	730 frag. / 2.75 kg	2446 frag.
Stone artefacts and flakes (nr)	46	87	8	5
Iron slag	1832 g	5 frag.	2 frag.	57 frag.
Burnt bone (frag.)	475	304	48	14
Unburnt bone (frag.)	1325			164 (modern?)
Iron artefacts or frag. (nr)	3		3	1
Pieces of bone comb			6	
Bronze (nr)	1			

Table 4. Find material from Iron Age settlement sites with house remains (Salo Ketohaka, Uino 1986; Laitila Palttila Kylämäki, Lehtosalo 1964; items found in burial contexts excluded) compared with finds from Roismala Ristimäki (cf. Luoto et al. 1983: 9).

Based on the evidence provided by radiocarbon dating and the finds, the first identifiable feature of the site was the inhumation burial dating to the 4th century AD. Later, during the 5th–8th centuries, the grave site was used for other depositions. The earth and stone mixed cairn covering the grave is evidently to a large extent the result of this activity and not part of the original burial. At some stage, the original inhumation was disturbed.

Formation processes

Previously, the possibility of later processes affecting the cairn had been anticipated with regard to the bone finds. Unburned animal bones have been considered as the possible remains of later sacrificial meals, and one human molar found outside the primary burial has been suggested to indicate partial destruction at a later stage (Luoto et al. 1983: 9). The distribution of human bones alongside the knife and buckle, which were found in the vicinity of the grave, support the interpretation of the occurrence of later disturbances. Furthermore, if the green soil patch is interpreted as the sign of a missing artefact, then it would also indicate that the grave had been opened deliberately. Such actions could explain why the finds and bones were spread to different parts of the cairn. However, there is not only evidence of disturbance but also repositioning. The date of the human bone found in an upper layer supports the idea that material originating from outside the cairn was added there later.

The majority of the find material from the Roismala Ristimäki cairn – burnt clay (including daub), pottery fragments, iron slag, stone and metal artefacts (excluding metal objects from the actual burial), and animal bones – would, if found in a different context, likely be interpreted as refuse from a settlement site. Indeed, waste found from sites with Iron Age building remains resembles the material from the cairn (Table 4). The major difference between the material in Roismala Ristimäki and the building sites is the abundance of unburned bone and iron slag in the former.

Settlement debris in cemetery contexts can be approached from different angles. One explanation is that it represents the refuse from an earlier or later settlement. Other interpretations focus on burial rituals. As Wessman (2010: 88) states, ‘material that resemble settlement debris might have had a completely different meaning for prehistoric people.’ Burnt clay, pottery fragments, iron slag and animal bones found in burial contexts or cairns is not a phenomenon

typical only to Finland (cf. Hodder 1994: 72–3; Kaliff 1997: 104; Lang 2000: 8–9). Deliberately burned houses found above graves have been interpreted as houses for the dead – homes of the ancestors (Hodder 1994: 73). Depositing household waste on a grave could have been used to symbolize the transformation from the world of the living to death's realm, or to prevent the dead from returning home (Kaliff 1997: 102). Houses could also have been deliberately burnt at the end of their use or after their occupant's death, thus 'killing' the house (Tringham 1991: 119–24)[11]. It has also been suggested that soil from a settlement site was transported to the cemetery for ritual purposes, bringing occupational debris with it (Svarvar 2002: 148).

Clay daub has typically been interpreted to be related to settlement activity in the vicinity of the burial site or the remains from funerary pyres; pieces of pottery mostly to remains of commemoration rituals (e.g. Wessman 2010: 89–90). Iron slag can be explained as either grave goods or as settlement and smithy waste; in the former case, slag has been suggested to have been a ritual agent of iron, wealth and prestige or, for example, related to the metaphoric connection between cremation and iron production (e.g. Shepherd 1997; Wessman 2010: 90–1). In addition, some ethnographic evidence points to ritual meaning being attached to burnt clay and slag, and slag is even known to have been sacrificed (Muhonen 2009: 308).

With regard to the occurrence of iron slag in cemetery contexts, it has often been referenced in relation to myths of metal, the special position of the smith in Finnish folklore, etc. (e.g. Shepherd 1997). On the other hand, Taavitsainen (1992: 7–8; cf. Salo 2003: 57, endnote 215) states that there is no need for the slag to be 'explained as relating to supernatural beliefs' but instead to the operation of a smithy or iron making activities at the site. These represent two different interpretative extremes. Perhaps both are true, in a way – the slag could have ended up in the cairn not as a specific mythical material but due to its role as one form of domestic waste, which in some circumstances was considered important to deposit in a special place. In the case of Roismala Ristimäki, slag features a slightly different spatial and stratigraphic distribution, but it is unclear whether this can be interpreted in a way that suggests that iron slag had a different meaning than, for example, potsherds and daub.

With regard to animal bones found in cemeteries, burned bones in cremation contexts have often been interpreted as the remains of goods or offerings that have been placed on funerary pyres, whereas unburned bones have been regarded as remains from commemorative meals or sacrifices (cf. Wessman 2010: 93). However, the possibility that these bones are settlement waste cannot be excluded. Fragmentary and isolated burned and unburned bones from various species and elements are typically found in waste material from settlement sites.

Vessels are often thought to be located in the context of burials and sacrificial places because they were used to transport ritual meals or offerings to the place in question (Muhonen 2008: 122; Wessman 2010: 56). In that case, the ceramic material should likely be found together with bones from sacrificial meals, for example (Muhonen 2008: 122). There should also be whole vessels present, and not just fragments from several vessels. Finds from cairns and Finnish cremation cemeteries located under level ground suggest that, in some of these sites, whole vessels were intentionally broken as a form of sacrifice, maybe after they had served their purpose as means of storage for ritual meals or offerings (Söyrinki-Harmo 1996: 78–9; Muhonen 2008: 151–3; Wessman 2010: 57). However, in some situations, potsherds occur as broken pieces from several different vessels, as is the case in the Roismala Ristimäki cairn. There has been a tendency in Finnish archaeology to interpret potsherds in a secondary context as waste from earlier/previous settlements and not as part of burial rituals (Wessman 2010: 89). On the other hand, discoveries made in Scandinavia suggest that ceramic fragments could have been intentionally placed in burial contexts, which means that sometimes ceramic waste could have served a ritual purpose as well (Diinhoff 1997: 112–4; Larsson 2005).

Apart from the presence of an inhumation, the Roismala Ristimäki cairn resembles a type of site that is occasionally referred to as a 'sacrificial cairn'.[12] Typical finds for such sites include unburned animal bones and teeth, potsherds, burnt clay and iron slag – however, the main criterion is the absence of human bones and grave

goods (Muhonen 2009: 295). Another concept used in the case of such sites is that of 'structured depositions', sometimes involving waste deposited in odd locations suggesting intentional placement and defying functional explanation (Muhonen 2009: 306–7, 310).[13]

The simplest explanation for the majority of the find material found in the Roismala Ristimäki cairn is that the soil used for the construction of the cairn was brought from a settlement site (or sites), bringing the material with it. The fact that some of the major find categories seem to feature differing types of distribution both vertically and horizontally may be related to how and when the material was deposited. Perhaps the long-term formation indicated by radiocarbon dates is also visible in the heterogeneous content present in the layers and squares.

However, the cairn includes two deposits that could be interpreted as formal sacrifices: an unburned partial skeleton of a sheep at the bottom of the cairn and a pottery vessel located higher in the cairn. The vessel fragments were found placed upside down in a single concentration, but pieces belonging to it were also found in adjacent squares and lower down in the cairn. Radiocarbon dates indicate that the sheep and vessel were placed in the cairn at different occasions and later than some of the material that formed the cairn above them (see the chronology above). These finds can perhaps be considered the result of rituals relating to the burial in the middle of the cairn. Ancestors were regarded important in Finnish Iron Age rituals (Muhonen 2009: 295; Wessman 2010: 89). Digging through the already-existing cairn to be able to place new elements near the original burial may indicate deliberate action that was aimed towards the buried person, who was probably considered an ancestor.

The sheep skeleton was partial and apparently disarticulated when found, and thus it is possible that these are the remains of a ritual meal (cf. Hukantaival & Bläuer 2017). However, as the cairn was apparently dug open on occasion, the fragmented state of the skeleton might also be related to later disturbances. When the vessel (Pot 6) was placed in the cairn, it probably caused the potsherds that had already been placed in the cairn to spread, since fragments older than the vessel (from Pot 17) were found in higher-level layers. The same might have occurred later, since not all the pieces of the pot are located in the same concentration. These vessels and the remains of the sheep indicate that the material in the cairn was highly mixed by later intrusions. The mixing of elements is further articulated by the older date from human bone in a layer above the archaeologically identified main burial.

Since the ceramic fragments and bones in the Roismala Ristimäki cairn do not seem to correlate in detail, and the ceramic material consist of fragmented pottery, it is not likely that the bones were brought to the cairn in these vessels, but separately. This means that most of the material in the cairn resembles waste, and no clear concentrations suggesting 'structured depositions' can be detected. However, the cairn was originally a burial place, and the two possible ritual depositions – the partial sheep and the vessel – were made to it later, at different times.

Burials and later rituals

The re-use or extended ritual usage of burial sites is documented for several periods, cemetery types and areas (cf. Wickholm 2008; Wessman 2010; Holmblad 2013; Hakamäki 2018: 44–5). In Finland, cairns or stone settings were commonly used as burial sites during the entire Early Iron Age; the sites probably became special places, and this made them optimal for later rituals as well. Also in Sweden, it has been indicated that Early Iron Age cairn burials were, in some places, taken into use again in the Merovingian period, but now animal bones, ceramic material, slag, beads, etc. were buried instead of human remains in a manner that has been interpreted as ritualistic (Larsson 2005: 115).

The reason for the re-use of burial sites is in many cases probably linked to remembrance in one form or another. Due to memories and narratives, the same place could have been chosen repeatedly for ritual activities. Not all rituals are, however, strictly formal or ceremonial in nature – instead, they may take on forms that are closely related to those of daily life. One could ask whether some parts of the formation of the Roismala Ristimäki cairn had, in fact, more to do with 'the theatre of the everyday' (Bradley 2005) than with formal burial customs.

When one interprets Iron Age ritual behaviour from the perspective of archaeology, one starting point could be that ritual contexts do not necessarily contain specialised materials but often the same kind of artefacts used in other contexts as well. As Bradley (2005: 35) states, there seems to be an overlap between the contents of prehistoric rituals and those of domestic life. Within the Roismala Ristimäki cairn, the ritual seems to involve material which in another context could be described simply as waste. When analysing such a case, it may be important to remember that not all rituals are connected to religious beliefs or related to the supernatural, but that secular rituals exist as well (Brück 1999; Bradley 2005; cf. Clarke 1997: 80–1; Berggren 2006: 304). Nor are rituals necessarily intimately connected to agency or power (cf. Swenson 2015).

Burial rituals may convey many meanings and incentives but, among other aspects, they may also be used to commemorate past lives. In the same way, the ritual treatment of waste may relate not only to rites of disposal (or some ritually powerful content of the materials) but also to the commemoration of the domestic contexts – lives – in which the waste was formed. One interesting idea discussed by Muhonen (2009: 308–9) is that waste may have ended up in cairns as a depositional practice which was not ritual as such but may have followed formalised procedures when, for example, a dwelling site was renewed or abandoned. Such a practice could, in some cases, have included a link to the 'ritual closing', or rite of termination, of a formerly important site or construction (cf. Hukantaival 2016: 10). This may be related to the idea of a symbolic relationship between a settlement and the kinship group that inhabits it – the lifecycle of the house being a metaphorical representation of that of its inhabitants (Brück 1999: 333–4).

In Finnish folklore, the house and especially the oven are given primacy with regard to rituals (offerings) related to the well-being of the house, its guardian spirit and its inhabitants. When moving to a new place, some soot from the previous fireplace as well as soil from under the house could be taken and transported to the new dwelling place – furthermore, the site of the old house (even after its structure had been removed) may have still carried a link between the soil and the old spirit or the inhabitants (Harva 1948: 327–32). It might be far-fetched, but in a similar way, some materials used in the house, or especially at the fireplace (or even soil containing such materials), may have been disposed of in a way that placed special emphasis on the place of deposition.

In such a scenario, the Roismala Ristimäki cairn may have been one agent – one specific place of importance – used for remembrance and rituals where the remains from past lives, in a broad material sense, could be properly disposed of. This would add a third element to the site, the first of which is a burial site and the second a site for general (maybe formal) ritual activities, probably involving offerings. The trigger for the importance of the site must have been the primary burial. At some point, people in the past opened the (by then most likely decayed) burial and also added old human bones from at least one other burial to the upper layers of the cairn. It is possible that the missing bone elements in the primary burial have been deliberately taken to be re-buried elsewhere (cf. Pihlman 1999; Wessman 2010: 110). These actions seem to imply the importance and potent power of ancestors, real or mythical (cf. Wessman 2010: 96). Based on the various depositions of materials, the burial site of the past was reclaimed as a site of communication and commemoration, probably involving ceremonial elements, but also rituals related to everyday life.

CONCLUSIONS

This study has revealed the complexity of the formation processes that created the Roismala Ristimäki cairn. Because of the extensive disturbance and later depositions, the structure of the original burial site cannot be reconstructed. According to current dating evidence, the first ritual deposition at the site occurred later than the original inhumation burial. However, due to the margin of error in the dating results, the exact chronology of the site is challenging to interpret. Furthermore, even if ritual activities would date later than the burial in this particular cairn, the site complex itself might have been continuously used. The ritual activity went on for ten or more generations and the material accumulated little by little.

The importance of radiocarbon dating for interpreting chronology is evident, as well as the benefits of osteological analysis and the distribution mapping of the finds. The find material in the cairn is the result of different activities, including at least one burial, later offerings and the ritual deposition of domestic waste material. Detailed study of the find material, especially the pottery, and the chronology demonstrate that already fragmented materials were at times brought to the site and that the cairn and the original burial were disturbed several times during the formation of the monument, depositing older material higher up in the layers. These results call for more detailed chronological and spatial analyses of Finnish Iron Age earth and stone mixed cairns, as well as for consideration of the possibility that everyday rituals may also have played a part in site formation.

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NOTES

[1] *BoNe: Borrowing from the neighbour. Animal husbandry methods and cultural contacts in the Northern Baltic Sea region during prehistoric and historical periods*, SA286499.

[2] Abbreviations used from the collections studied in this article: KM – Kansallismuseo (the National Museum of Finland), Helsinki; TYA – Turun yliopisto, Arkeologia (University of Turku, Department of Archaeology), Turku.

[3] There were also two other metal artefacts from the cairn that are not associated with the inhumation burial. The first one is a knife (TYA 177:1888) and the other is an iron mounting (TYA 177:1873). The latter has been dated to the Merovingian Period (Luoto et al. 1983: 13).

[4] A pXRF (portable X-Ray Fluorescence) analysis was performed on both the circular middle-piece as well as the edge of the chape. Both showed a classic metallic composition of copper and tin. The percentages were Cu 63%, Sn 24% and Cu 56%, Sn 27%, respectively.

[5] A pXRF analysis of the belt-buckle provided main readings of Cu 75% and Pb 6%, meaning that this item could not have originated from the same alloy as the chape.

[6] In the find catalogue, sectors are referred to as NOE, NOW, etc., where O evidently stands for origin (the center of the cairn). In this article, they have been changed to north-east, north-west, etc. With regard to the profiles (the sector dividing lines) the original terms NO, WO, etc. have been retained.

[7] The cairn was excavated in four sectors. The location of excavated squares and finds were not given as standard metric coordinates but as a combination of alphabetic letters and numbers, including negative figures. While the system is not in line with modern standards, it is logical, at least in principle. Although problematic to recalculate, the main problem proved not to be the system itself but the inconsistency of its execution; some catalogued finds reference squares, some the metric distance from the origin (or some other reference point), and some focus on sectors or profiles alone. Some of the main features of the distribution of finds can be presented, but an exact model of the location of individual artefacts and find concentrations is impossible to achieve.

[8] All the calibrated dates are given with a 95.4% probability. They were calculated with the OxCal v3.10 program (Bronk Ramsey 1995; 2001) using the IntCal13 calibration dataset (Reimer et al. 2013).

[9] In addition to the Iron Age dates, it must be noted that at least one Stone Age artefact was recovered during the excavation (in addition to

several quartz flakes and a couple of porphyritic flakes). It is possible that the stone axe found in the fifth layer (Pärssinen et al. 1981; cf. Luoto et al. 1983: 9, 13) has nothing to do with the burial and later rituals, but it is also well known that items like this have been used in ritual contexts during the Iron Age as well as the historical period. The interpretation of the stone axe as an offering has, in fact, been suggested (Luoto et al. 1983: 13). With regard to the possible existence of an earlier cultural layer, a couple of potsherds found in the cairn have also been interpreted as possibly belonging to the Stone Age (Luoto et al. 1983: 7, 13).

[10] In the palaeoetnobotanical material especially the occurrence of lentil (*Lens esculenta*) is surprising. This is the only archaeobotanical find of the species in Finland. It is not present in the archaeobotanical material from the historical period, either (Lempiäinen 2007) and should thus be treated cautiously.

[11] The idea of 'ritual killing' of material objects is present also in the case of deliberately broken artefacts in various Iron Age cemeteries (e.g. Karvonen 1998; cf. Wessman 2010: 62).

[12] For a definition and thorough description of the concept, see Muhonen (2009).

[13] With regard to criticism of the concept of ritual deposition as 'structured deposition', see Swenson (2015: 335); for an alternative view, see e.g. Berggren (2006).

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