

# DECORATED ANTLER HAMMERS AND AXES FROM ESTONIA

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## Abstract

Finds of decorated hammers or axes made of elk antler are rather rare in Estonia. One axe comes from the River Pärnu, and another from the Otepää hill-fort and later episcopal castle site. In addition, there are two almost identical hammers: one was a stray find from Harju county, and another was found in the Medieval town of Tartu. The two stray finds have no connected items that would enable their dating. The other two examples originate from contexts that cannot be dated exactly. The aim of this research is to find parallels to help us date the Estonian items, to ascertain the material and tools used for producing these items, and to discuss on the basis of the former, and an analysis of the find contexts, the probable areas of usage and meanings of these items. Although it is not possible to date these antler objects precisely, they probably come from the end of the Estonian Prehistoric period or the Middle Ages: the 11th to the 15th centuries. The function of the items is also not definite. Tools in the shape of a hammer were probably used as hammers. It was not possible to use any axe-shaped object as an axe, so assumptions about their function are still just speculative.

Key words: antler, axe, hammer, function, meaning, Middle Ages, Estonia.

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## Introduction

Finds of decorated hammers or axes made from the antler of elk (*Alces alces*) are rather rare in Estonia (Fig. 1). One item decorated with small concentric circles and dots all over its surface was found at the River Pärnu between 1920 and 1926. Another object found in 1950 at the Otepää hill-fort and later episcopal castle site has a different pattern of scratched lines on both sides. In addition, there are two almost identical hammers decorated with small hollows. One was a stray find from Harju county, near Keila in the 1990s; and the other was found at 14 Ülikooli Street, in the centre of the Medieval town of Tartu, near the market place and town hall, in 2007. The aim of this research is to find parallels to help date the Estonian items, to ascertain the material and tools used for producing these items, and to discuss on the basis of the former, and an analysis of the find contexts, the dating, probable areas of usage, and the meanings of these items.

It is difficult to date Estonian hammers and axes, and to determine their period of use. The two stray finds do not have closely connected items that would enable us to reach a dating. The other two examples originate from contexts that allow us to establish a broader period of their usage, but which cannot be used for exact dating. In order to settle the issue, an AMS dating was made of one of the axe-shaped items (see below).

## Find contexts and co-finds

### Axe-shaped artefacts: from the River Pärnu and Otepää

The antler axe from the River Pärnu is decorated with dots and concentric circles (Fig. 2). Richard Indreko discussed this axe in the article 'Sculpture and Decoration on Estonian Stone Age Bone Tools' (Indreko 1931, 61ff., 65f., Fig. 29). The axe has also been treated as a Stone Age artefact in later publications (Loze 1983, 30, Fig. 8; Rimantienė 2005, 116). Even the exact find spot is uncertain: according to Indreko, the axe was found in the River Sauga, a tributary of the River Pärnu; while the find catalogue in the Pärnu Museum states that it was collected from the River Pärnu. The axe was brought to the museum in 1927, with other items found in the rivers Pärnu and Sauga between 1920 and 1926. Indreko probably dated this axe to the Stone Age because of the many Stone Age bone and antler tools that have been found in the River Pärnu. Nevertheless, there are some finds from later periods among the finds, for example, a bone object decorated with lines (Fig. 3.1), and some pottery sherds from the Medieval period (Fig. 3.2, 3). The shape and decoration of the bone item are similar to details of weapon decoration from the Netherlands dating from the 16th and 17th centuries (e.g. Rijkelijkhuisen 2013). Of course, it is not possible to guess if the axe was contemporaneous with these later finds, but their presence shows that far from all finds from the river are from the Stone Age.

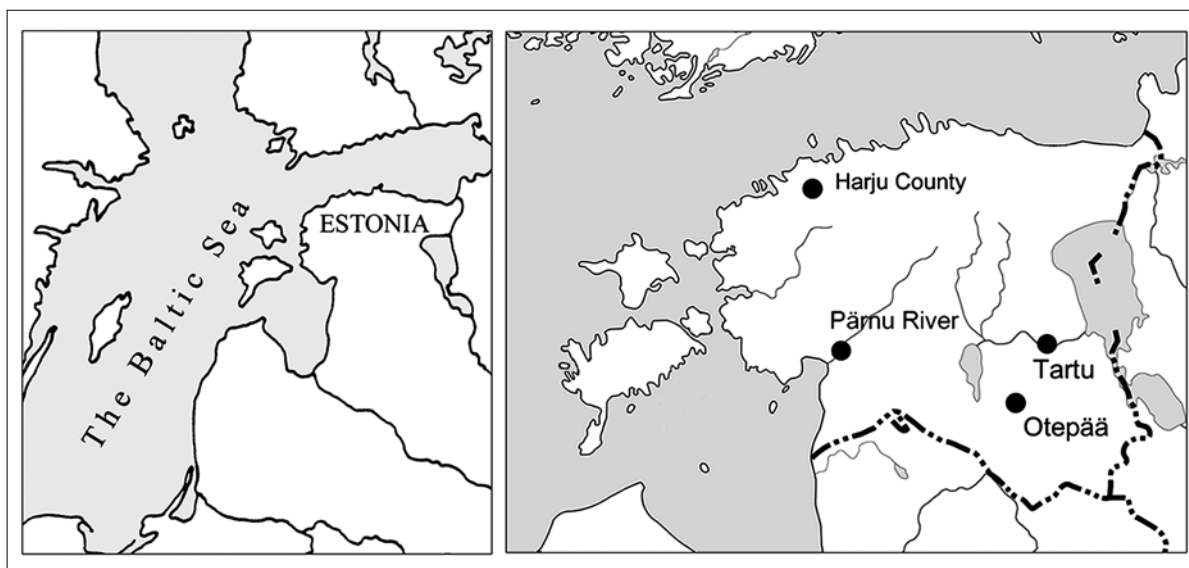


Fig. 1. Decorated antler axes and hammers found in Estonia (drawing by K. Siitan and H. Luik).



Fig. 2. An antler axe from the River Pärnu (PäMu 4 A 1335 Gl 717) (photograph by A. Haak).



Fig. 3. Bone item and sherds of ceramic vessels from the River Pärnu (PäMu 4 A 1336 Gl 752; 4 A 1400 Gl 801; 4 A 1411 Gl 812) (photograph by A. Haak).

Several antler axes have been found in Denmark and Germany (Lange 1926, 33-47, Figs. 1-9; Beltz 1932, 192f., Fig. 2; Gandert 1949, Figs. 1-3; Schrickel 2012, Figs. 1-6). Many of them are stray finds, and some were found in a similar context to the axe from Pärnu, in bogs which were formerly lakes or rivers. Many of these axes were made from the antlers of red deer (*Cervus elaphus*), and these axes have been dated to the Bronze Age (Lange 1926; Beltz 1932; Gandert 1949; Schrickel 2012). But although their decoration in dots and circles is similar to that on the axe from the River Pärnu, their shape is quite different, and follows the shape of the deer's antler (Lange 1926, Figs. 2, 6-9). Actually, Indreko was not quite sure about the dating of the Pärnu axe, and thought that it could also be from a later period, such as the Bronze Age or the Early Iron Age (Indreko 1931, 65f.).

It is worth mentioning that a few bone items decorated with dot and circle ornamentation are known from the east Baltic region which can be dated to the Neolithic. Examples include a harpoon head from the Neolithic settlement of Šventoji on the Lithuanian coast (Rimantienė 2005, Figs. 52, 276.1). A dagger decorated with oblique lines and dots and circles found at Lake Lubāna in Latvia is also considered to belong to the Neolithic (Loze 1983, Fig. 10; Vankina 1999, 117, Plate XLVII.11; Rimantienė 2005, 116), but as it is a stray find from the lake, this dating cannot be certain. Artefact types from both the Stone Age and the Bronze Age have been found at Lake Lubāna (Vankina 1999, 23).

Because of the uncertain dating of this form of bone axe, we decided to obtain a scientific dating of the Pärnu axe. AMS analysis carried out at the 14CHRONO Centre at Queen's University of Belfast gave the result  $523 \pm 27$  BP (UBA-29106), which corresponds with 95.4% certainty to 1326-1343, or 1394-1440 when calibrated with IntCal13 calibration curve (Reimer et al. 2013). Thus, the axe in all likelihood is from the 14th or the 15th century.

The axe from Otepää has a different decoration of scratched lines on both sides, and iron nails have been hammered into both ends of it (Fig. 4; Maldre 2001, 21, Fig. 9). The find from Otepää originates from a Viking Age site and Late Iron Age hill-fort, and Medieval episcopal castle (e.g. Aun 1992, 23f.; Mäesalu 1993, 144). We know the approximate find spot of the axe: it was found next to the castle gate, probably from a disturbed context. It is therefore impossible to offer a dating based on the stratigraphic situation; nearby finds include material from both the Late Iron Age and the Medieval period.

#### Hammer shaped artefacts: Harju county and Tartu

The items from Harju county and Tartu differ significantly from the above-mentioned finds. On the other hand, these two items are so similar they allow us to suggest they may have been produced by the same craftsman (Figs. 5, 6). The handles of the two items were attached in a different way to those from Otepää and Pärnu. The tools could be called hammers, and all three ends could have been used as a hammer. One side of the hammer found in Harju county is eroded (Fig. 5). The hammer is decorated with small hollows. It is a stray find, found while digging a hole for a house basement somewhere near Keila, but the exact location is not known, and it is not possible to date this object.

The hammer from Tartu is of a similar shape and decoration (Fig. 6). It was found at an urban excavation site at the foot of Toome Hill, the site of a prehistoric hill-fort and Medieval episcopal castle, but also very near the Medieval market place, on Town Hall Square (Piirits 2007). The hammer was collected from a fill layer, just next to a wooden revetment, with finds from the Viking Age (Fig. 7.2), and the Late Iron Age, probably as a result of erosion from the hill-fort, but including significant numbers of Medieval finds up to the 15th or early 16th century. A stoneware beaker from Siegburg (Fig. 7.6) originates from a stratigraphically undoubtedly earlier deposit. Thus, according to stratigraphic data, the Tartu item found in the place was deposited by the early 16th century at the latest, but because of erosion from earlier deposits, it may have been discarded much earlier. Most finds in these deposits are from the second half of the 13th or the 14th century, e.g. a bone spindle whorl decorated with parallel grooves (Fig. 7.1), the spout of a glazed redware dripping pan (Fig. 7.3), near-stoneware from Siegburg, southern Lower Saxony and Langerwehe, etc (Fig. 7.4, 5). A large amount of pieces of leather footwear and wooden vessels (stave dishes, but also turned cups) were also collected from these fills (Piirits 2007).

#### Comparative material from neighbouring and further areas

Objects of quite a similar shape to those from Otepää and Pärnu have been found in Poland, Lithuania, Latvia and Russia. These axes are published by Peter Paulsen in the book *Axt und Kreuz in Nord- und Ost-europa* (Paulsen 1939, 80ff., Figs. 36-39, 1956, 52ff., Figs. 19-22). They are also often decorated, and ornamentation consisting of scratched lines and hollows occurs. Some items have been covered with elaborate decoration all over the surface. The length of the axes



Fig. 4. The antler axe from Otepää castle (AI 3371: 289) (photograph by H. Luik).



Fig. 5. The hammer from Harju county (AI 4888) (photograph by H. Luik).



Fig. 6. The hammer from Tartu (TM A-133: 3819) (photograph by A. Haak).

is between 9.5 and 18.2 centimetres, and the width of their blades is between 8.0 and 13.5 centimetres. The richly decorated axe from Ełk in the Warmian-Masurian voivodeship of Poland (formerly Lyck in East Prussia) is dated to the 12th or 13th century by Paulsen (1956, 58, Fig. 22). Another axe-shaped antler item without a hole originates from East Prussia (formerly Hoppenbruch, currently Znamenka in Russia) (Paulsen 1939, 80, Fig. 36.3), but this item was not included in

the later publication by Paulsen (1956). According to Paulsen, there are four antler axes from present-day Poland. In addition to the already-mentioned item from the former East Prussia, one axe originates from Czeszewo, another from Tarnobrzeg, and the third from Bydgoszcz (formerly Bromberg) (Paulsen 1956, 52ff., Fig. 20.a, b, d). Paulsen also mentions three axes from Lithuania. Two of these were found in northeast Lithuania: one at Rokiškis (Rakischki bei Dünaburg),



Fig. 7. Items found near the Tartu hammer: 1 a bone spindle whorl; 2 a sherd of a local hand-made vessel from the Viking Age; 3 the spout of a glazed redware dripping pan (ca. 1250–1325); 4–5 near-stoneware vessels from Siegburg and Langerwehe (ca. 1275–1350); 6 a stoneware beaker from Siegburg (ca. 1375–1550) (TM A-133: 3709, 3690, 3673, 3694, 3425, 3667–3669) (photograph by A. Haak).

and one at the former Lake Jara in the district of Anykščiai (Jaras-See, Svedasai) (op. cit., 52ff., Figs. 19.b, 21.a). The find spot of the third axe is uncertain. The caption claims it was found near Vilnius; while in the text the location is stated as a hill-fort near Mścisław (op. cit. 54, Fig. 20.c). There is a place called Mścisław in the east of Belarus. In addition, three simple axes without decoration have been found in Lithuania, one at Gediminas Hill in Vilnius in 1982, and two at the fort and settlement complex of Jurgaičiai in 2011 (Mačiulis, Kuzmickas 2012, 85, 88, Figs. 14, 15, 18). Finds from this complex can be dated from the first millennium AD to the 14th century (Mačiulis, Kuzmickas 2012, 90). Although the published photo-

graph makes it hard to be certain, it still seems that the item from the hill-fort is not fully finished and has not been used. A find from Gulbene (in German Neuschwanenburg, in Latvian Jaungulbene) in present-day Latvia is known. Also, another find comes from the province of Livonia, without a more precise location, dated to the 18th century (Paulsen 1956, 53, 58, Fig. 21.b, c). Such axes are also known from areas of northwest Russia, from Novgorod, Pskov and Nizhny Novgorod, as well as from Tetyushi. The Novgorod axe is decorated with s-shaped motifs all over its surface; the axe is a stray find that cannot be precisely dated (Artem'ev 1994, 165, Fig. 5). Photographs of the axes from Pskov and Nizhny Novgorod have not been



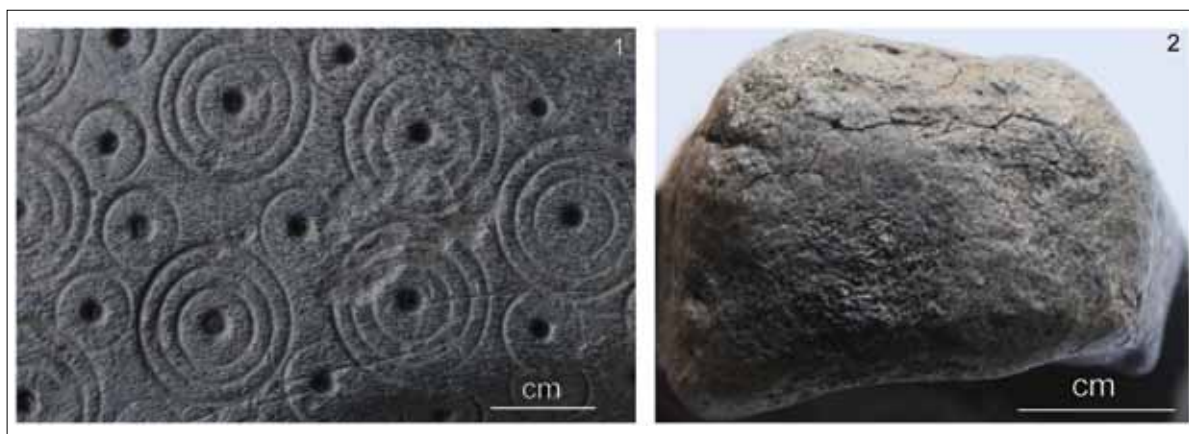


Fig. 8. Details of the axe from the River Pärnu (photograph by A. Haak).

published, but we can assume that they were also decorated, as Artem'ev claims that they were of the same type as the Novgorod axe but with different decoration (op. cit., 165). According to the schematic drawing of the Tetyushi axe, we can assume that it had no decoration (Paulsen 1956, 52, Fig. 19.d). The wider edge of these antler axes is usually not sharp, as would be expected from an axe, and it is certainly not possible to use them as an axe. The items from Vesterbygden in Greenland and Øster Egesborg in Zealand, Denmark, have a sharp blade, and thus resemble an axe (Paulsen 1956, Fig. 19.a, c). The axe from Greenland is made of whalebone, and resembles the iron axe from Eriksfjord in Greenland, dated to the tenth or 11th century (op. cit., 52). The Zealand axe was found next to a skeleton (ibid.); it is the only such axe known that was used as a grave good. The earliest and latest axes that can be dated for certain originate from a wide time span: an example from Greenland has been dated to the tenth or 11th century, and an axe from Livonia to the 18th century (Paulsen 1956, 52, 58).

There are no known close parallels with the items from Harju county and Tartu. Small antler hammers from the Viking Age are known, for example from Birka and Old Ladoga, but their shape, at least in the case of the published examples, is still different (Oldeberg 1966, Fig. 349; Davidan 1966, Fig. 2.12-14; MacGregor 1985, 171, Fig. 90. b). There is another item of a slightly similar shape from Tartu, but with significantly larger dimensions and a smaller hole (TM A-36: 7059). It most likely remained unfinished because of the porous ends. The find originates from a site at Lossi Street in Tartu, and was collected from a context with finds from the 17th and early 18th centuries.

### The manufacture of antler axes and hammers: materials and working methods

All four Estonian items were produced of elk antler palmate. They were carefully processed, but the elaboration of the decoration and the skill of the production are different. Were these items tools first, with some practical function, or did they have a symbolic or ritual meaning? Can conclusions be drawn about their function on the basis of traces of wear and/or damage? How can we interpret the fact that almost all the items were decorated? Is the decoration connected with the main function of the items, or perhaps with other meanings?

Most effort was put into producing the item found at the River Pärnu, as all of its surface is covered with dotted and concentric circles (Fig. 8.1), which can only be made with a specific tool. The axe was split lengthwise. There is some damage at the preserved ends of the axe, but it is not clear if this is connected with its use (Fig. 8.2).

The decoration of the Otepää item was scratched into the surface relatively carelessly with the sharp end of a knife blade. The decoration is slightly different on both sides (Fig. 9.1, 3). Diagonal cuts are visible around the shaft hole, probably left by the manufacturing process (Fig. 9.2). Iron nails with large heads have been hammered into the porous middle part from both ends of the item (Fig. 9.4, 5). Were these part of the original design, or do the nails testify to the repair of the item for continual use, or rather a change of function? It seems most probable that the nails were added later, when the porous part of the antler was eroded. Some fine engraved lines on the axe could be an owner's mark (Fig. 9.1). Similar owner's marks are known on other bone items, for example, on combs (Fig. 10).



Fig. 9. Details of the axe from Otepää castle (photograph by H. Luik).

Also, on some of the Lithuanian axes, namely the one from Gediminas Hill in Vilnius, and one of the items from the foot of Jurgaičiai hill-fort, similar ownership marks have been scratched (Mačiulis, Kuzmickas 2012, Figs. 14, 15).

As is mentioned above, the shape of antler hammers varies, and it definitely depends on which part of the antler, beam, tine or palmate, it was manufactured from. While the hammers from Birka and Old Ladoga are made of tine, the Estonian hammers are of palmate. One side of the hammer from Harju county is eroded (Fig. 11.1). The preserved end has a damaged middle part, suggesting that it was used for some purpose (Fig. 11.2). The simple hollows used for decoration might

have been impressed without a specific tool, probably with just a knife tip (Fig. 11.3).

The hammer from Tartu is better preserved. There are some diagonal traces around the shaft hole, but less than on the Otepää axe (Fig. 12.5). Small hollows have been drilled decorating the axe: traces of circular movement are visible in some hollows (Fig. 12.4). Some working traces, scratches, cut marks and chattermarks are visible on the surface of this hammer (Fig. 12.5, 6). Only one of its ends has a damaged middle part (Fig. 12.1). Although the other ends also show some use wear, these traces are different, and have not damaged the middle part of the ends (Fig. 12.2, 3).



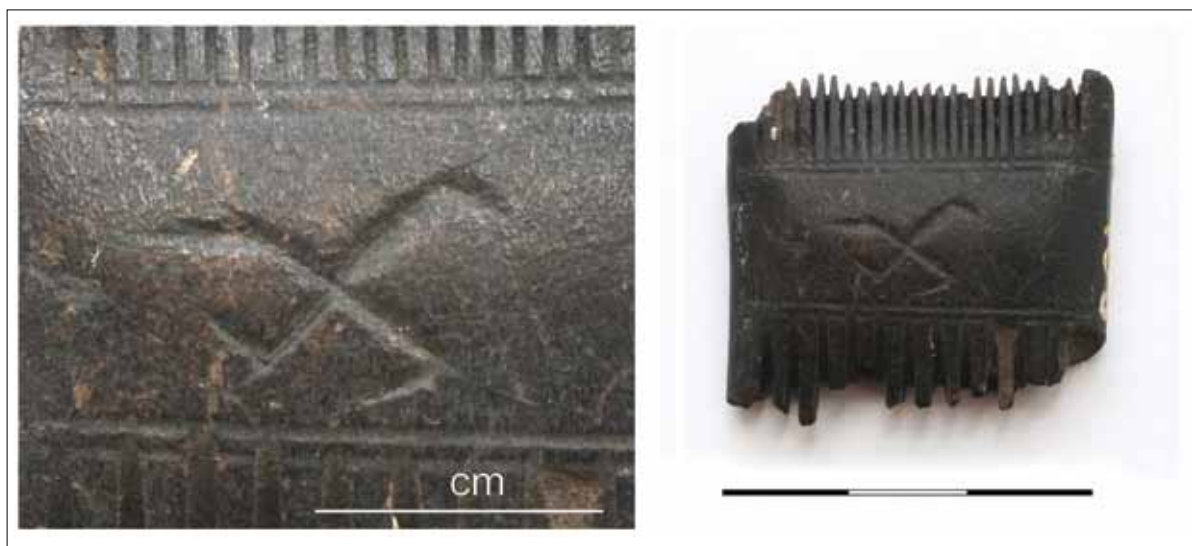


Fig. 10. Engraved symbol (owner's mark?) on a comb from Tartu (TM A-17: 151) (photograph by A. Haak).

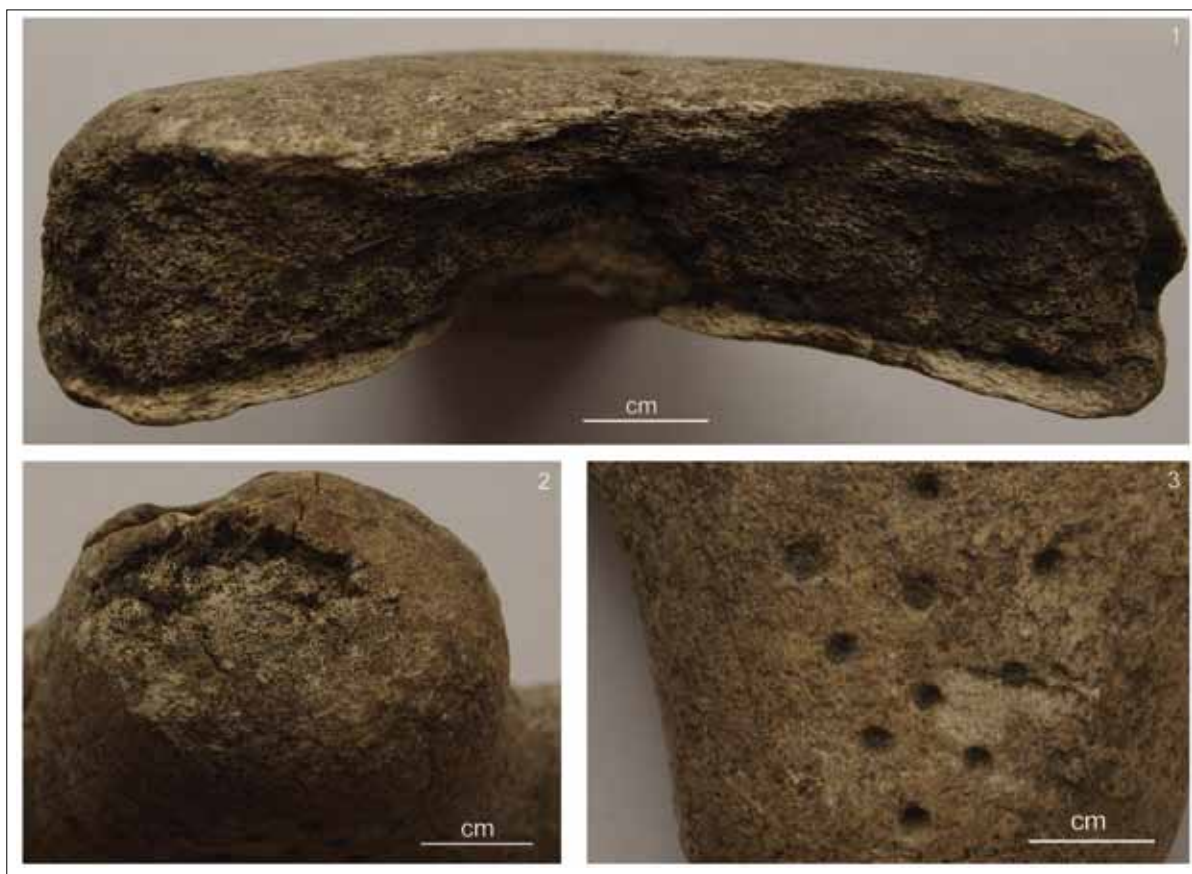


Fig. 11. Details of the hammer from Harju county (photograph by H. Luik).



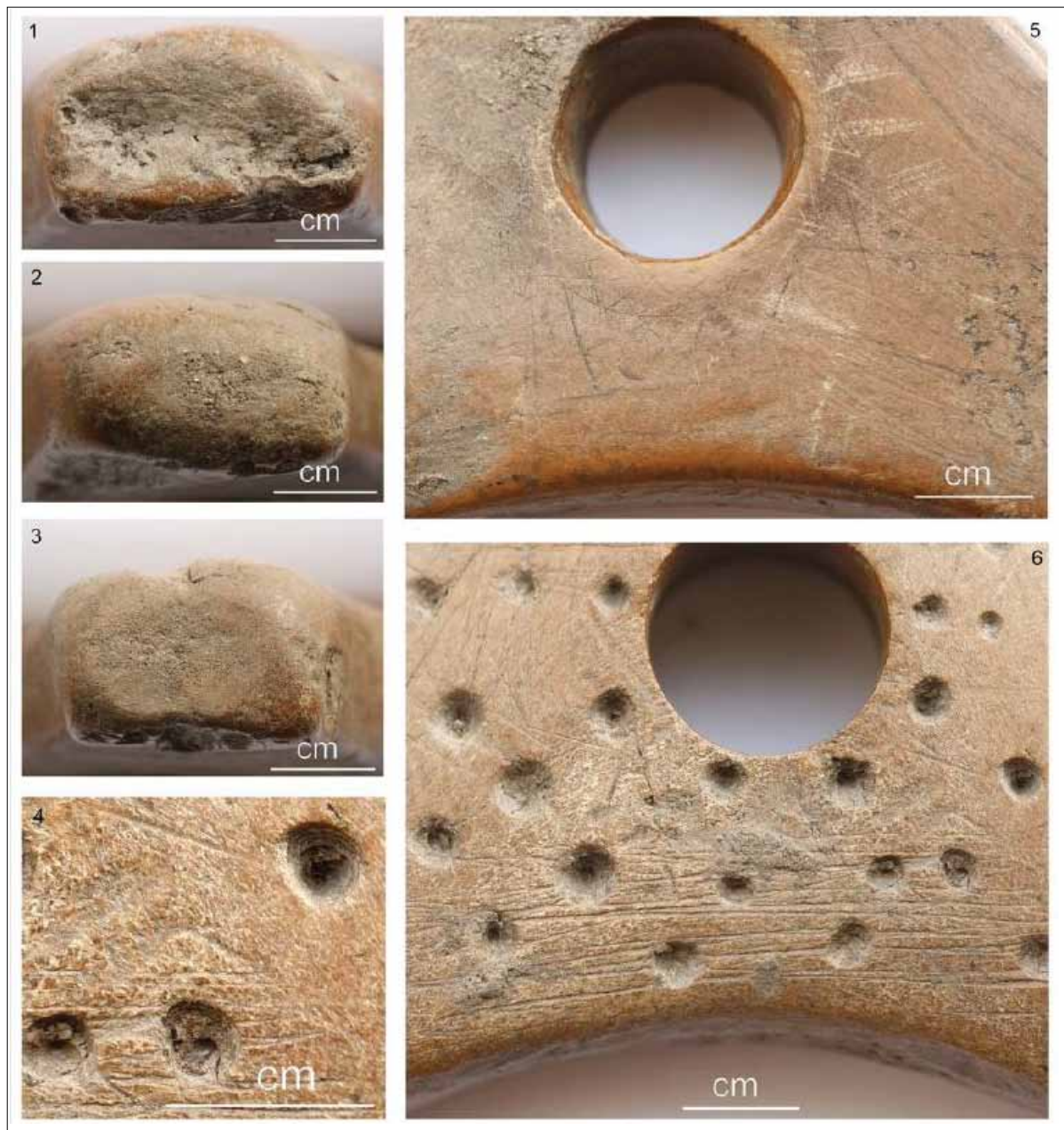


Fig. 12. Details of the hammer from Tartu (photograph by A. Haak).

### Possible functions and meanings of antler hammers and axes

What was the function of these antler tools? The worn and damaged ends of hammers prove that they were actually used for some kind of hammering. While working with a specific material, it may have been important that the hammer was not made of metal, but of antler, which is remarkably softer as a material. For example, Andreas Oldeberg (1966, 120) and Arthur MacGregor (1985, 172) have suggested that antler hammers may have been used in jewellery work, for processing sheets of metal. Antler or horn hammers are sometimes even nowadays used in jewellery work (Lewton-Brain 1996). Olga Davidan (1966, 110) as-

sumed that in Old Ladoga, antler hammers were used for riveting composite bone combs and handles. The damaged middle part at the ends of the hammers from Harju county and Tartu also suggest that some stiff object, small in size, could have been hammered with it. Nevertheless, these two antler hammers found in Estonia seem to be a little too large and inconvenient for using in comb manufacturing. Two less damaged ends of the hammer from Tartu could probably have been used for processing sheets of metal. A simple antler hammer found at Roosikrantsi Street in Tallinn could probably also have been a jeweller's or a comb maker's tool (Tamla et al. 2002, 11; Luik, Maldre 2003, 106, Fig. 8.2). But hammer-shaped items might also have had other meanings: for example, a bone hammer from

Turku is interpreted as ‘a witch hammer’ that could have been used for keeping evil spirits away from the house (Seppänen 2012, 413f., 416, Fig. 129), or as a musical instrument, as a drumstick (Rainio 2013). The shape of the items from Tallinn and Turku is different to the hammers discussed in this paper: both their heads and the hafts were made of antler. In spite of this similarity, the two hammers are rather different in several other respects. The item from Turku is most likely made from the antler of reindeer (*Rangifer tarandus*), it is very thin, meticulously worked, and decorated with s-shapes or acanthus motifs, and has specific use-wear marks (Rainio 2013, 313, 315, Fig. 3). The hammer from Tallinn is rather coarsely made, and remained unpolished and undecorated.

In order to obtain additional data on the use of these items, we made an XRF-analysis of their ends, to ascertain if any traces of metal treatment were present. An analysis carried out by a portable XRF-device in the laboratory of the Department of Archaeology at the University of Tartu could be made on the three ends of the Tartu hammer, the only fully preserved end of the hammer from Harju county, and the side of the Pärnu hammer, while the sides of the other items that could not be used for direct metal processing were also analysed (see Haak 2015). A filter most suitable for detecting metals was used: the results showed a slightly higher concentration of Cu, Zn and Sn on the ends of the Tartu hammer compared to its side surface, but the differences are near the margin of error of the device, they may be the result of the remains of soil present on the ends compared to the side, and thus do not allow us to make a positive identification of processing bronze with these ends.

It is clear that the axe-shaped items are unsuitable for use as an axe. Although their shape resembles an axe, they may be better suited for use as a hammer. Some axes published by Paulsen also have damaged ends (Paulsen 1956, Figs. 21, 22), but it is hard to draw any conclusions about their use based on drawings only. The axe from the River Pärnu could have been split as the result of a heavy blow (Fig. 2). The iron nails were probably only added to the Otepää axe later, when the porous part was damaged during use (Fig. 9). But if the reason for using such a tool was that antler, as a softer material than metal, would not damage the worked object, this tool would not be suitable for the same purpose after adding iron nails to it.

Paulsen also stresses that antler axes were unsuitable for use as an axe. Using sources from later periods, Paulsen suggests they were ‘walking sticks’ with an axe-shaped upper part as a possible function for these items; such sticks were used in Lithuania, Latvia and

Russia (Paulsen 1956, 59, Fig. 38). Paulsen also mentions a tradition that was widespread in some parishes in Sweden and Norway whereby young men were given a *Stockaxt* (stick axe) on becoming married men, to ensure fertility and to symbolise dignity as the head of a family. According to Paulsen, this tradition might originate from the old tradition of so-called kin axes; these were not weapons, but symbolic items used in concluding treaties. The example he gives comes from a 15th-century written source (Paulsen 1956, 59). The owner’s or family marks scratched on the Otepää axe and the axes from Gediminas Hill and the foot of Jurgaičiai hill-fort in Lithuania (Mačiulis, Kuzmickas 2012, Figs. 14, 15) might perhaps fit this interpretation.

One possibility would be to use antler axes as mace heads, like faceted metal mace heads. In such cases, the iron nails in the axe from Otepää would probably make it more effective. Maces made from reindeer and elk antler have been used by the indigenous population of North America, in Alaska, the Northwest Coast and the Plains, both as hunting weapons and as weapons for close combat. Sometimes, such maces may have had stone or metal points (Varjola 1990, 16, Fig. 18; King 1999, 223, Fig. 238). An item from the eastern Plains is especially interesting, as screws were driven into it (King 1999, Fig. 269), thus making it similar to the Otepää axe. It might be mentioned here that a Bronze Age antler axe from Haldesleben in Germany, decorated with dot and circle decoration, has five bronze pins in its butt, it has been suggested that a larger bronze application may have been fitted with these (Schrickel 2012, 101, Figs. 3, 4).

Ain Mäesalu and Jüri Peets (2010, 13ff.) believe, in the case of maces with faceted metal heads, that their role as symbols of power could probably have been more important than their value as weapons. The function of the symbol of power could presumably be applied to antler axes also, especially in the case of richly decorated ones. Although undecorated antler axes exist (Paulsen 1956, Figs. 19, 20a; Mačiulis, Kuzmickas 2012, Figs. 14, 15, 18), many of these axes are decorated, but only a few axes had all their surface decorated. Dots and circles, pits, diagonal and zig-zag lines, lattices, rhomboids, crosses, plaited and s-shaped motifs, and acanthus-like motifs exist (Paulsen 1939, Figs. 37-39; 1956, Figs. 20-22; Artem’ev 1994, Fig. 5). In some cases, the decoration has been scratched rather carelessly. Carefully and skilfully decorated items also exist: the item from the River Pärnu is one, while the item from Elk (Paulsen 1939, Fig. 39, 1956, Fig. 22) has especially beautiful decoration.

It is worth mentioning that some iron axes were also decorated, and could have had a supplementary mean-

ing in addition to their function as weapons. Axes decorated with simple ornamentation, as well as examples with plentiful and sophisticated motifs, are known. The dating for several kinds of decorated iron axes is relatively broad, from the seventh/eighth to the 17th century (Paulsen 1939, 87ff., Figs. 41ff., 1956, 85ff., Figs. 31ff.; Mandel 2003, 227ff.). The decorated iron axes from Novgorod can be dated to the period between the end of the tenth and the 14th century (Artem'ev 1994, 156–154, Figs. 1–4). A decorated bronze axe is also known from Novgorod: it has been dated to the last quarter of the 14th century (Artem'ev 1994, 164ff., Fig. 4.3).

The decoration on the axes might also have had symbolic meanings. For example, on the axe found at Lake Jara, a motif was scratched resembling an axe with a similar shape (Paulsen 1939, Fig. 38.1; 1956, Fig. 21.a). The spots on the Gulbene axe may depict a cross hanging from a ring, or perhaps a Thor's hammer; the remaining spots may show the chain on which the item was fastened (Paulsen 1939, Fig. 38.2; 1956, Fig. 21.b). Hilda Ellis Davidson (1965, 10) claims that the early crucifixes of Denmark are very similar in shape to the Thor's hammer. According to Ellis Davidson, the chain on which the Thor's hammer hung could have had a symbolic meaning as well: it may have depicted the archenemy of Thor, the World Serpent or Jörmungandr (ibid.). The s-shaped decorations on the Novgorod axe and the acanthus motif on the Elk axe may also depict the heads of snakes or dragons. Among archaeological finds from Estonia, s-shaped pendants of both bronze and bone are known (Luik 1999a); one of the bronze s-shaped pendants from Linnamäe stone grave, with three-pronged terminals (op. cit. Fig. 7.2), resembles the acanthus motif on the Elk axe. An s-shaped decoration motif has sometimes also been used on bone handles (Luik 2009, Fig. 38), and even an acanthus motif sometimes occurs on bone items (e.g. Cnotliwy 1999, Fig. 5.9).

It is possible that the presumed owner's marks on the Estonian antler hammers and axes had a symbolic meaning. The marks are similar to the swastika in their shape, and the swastika has been connected with Thor and his hammer, lightning, light and fire, as well as the rotating wheel of the Sun. It is believed to have the function of protective magic (Ellis Davidson 1965, 12f.). The swastika has also been used on decoration; for example, a finger-ring from the 13th or 14th-century cemetery at Kernavė is decorated with a swastika (Vėlius 2012, 185). Other ornamental motifs used in decorating axes may have had symbolic meanings as well. The dot and circle motif is often seen as a symbol of the Sun. This motif has been widely used for decorating bone items in all times (e.g. Lange 1926,

Figs. 1-9; Ulbricht 1978, Fig. 31; 34.9; 38.1-4; 49.1; Cnotliwy 1999, Figs. 4.5-9, 12, 13, 15; 5.1-3, 13, 16, 22; Smirnova 2002, Figs. 2.1, 3.2, 4.11-7; Luik 2009, Figs. 36-40). Similar motifs have also been used on other materials, such as clay vessels or bronze decorations (e.g. Lang 1996, Plate XXI.1; Luik 1999b, Figs. 8-14). According to Heiki Valk, the lattice motif carries an understanding of the cross as a protective symbol (Valk 2004, 285f.), while the plait motif is also connected with protective magic (Piho 2006, 362). Both lattice and plait motifs are quite common on bone items (e.g. Ulbricht 1978, Plates 29, 32, 33, 38.6, 43.3, 44.1; Smirnova 2002, Figs. 2.3-5, 3.1, 6, 4.1, 2, 4, 5; Luik 2009, Figs. 33.3, 38).

### Find contexts of the Estonian and other finds

The find contexts of the Estonian items vary: they come from hill-forts and/or castles, and towns, but also from the countryside, so we cannot connect them only to known central places. The small number of finds from Estonia does not allow a far-reaching analysis of their find contexts, so other finds from northern Europe, the contexts of which have been published, have been included in the following discussion.

Starting with the hammers, the item from Tartu was found in the Medieval town area, near the Medieval market place, Town Hall Square, at the foot of Toome Hill. A hill-fort from the Middle and Late Iron Age, and the Medieval episcopal castle were located at Toome, just above the site. It remains unclear if the item originates from the castle area or an urban household. The antler hammers from Old Ladoga and Birka were found in central Viking Age places, where there is evidence that crafts played a significant role. These find places support the idea that antler hammers were used by artisans as tools. Regarding the hammer from Harju county, we only know that it was found in the vicinity of Keila. The road from Tallinn to Haapsalu passed through Keila, but without data on the exact find spot, it remains unclear if it was found somewhere near the road. If the latter is the case, it could be that it once belonged to an itinerant artisan. The existence of itinerant artisans in Europe during the Viking Age and the Middle Ages has been proposed by several archaeologists studying crafts (e.g. Christophersen 1980, 225ff.; Ambrosiani 1981, 40ff, 161ff.; MacGregor 1985, 49f.; MacGregor et al. 1999; Heidi 2005; Smirnova 2002, 96; Hansen 2005, 157-203, 2015; Ashby 2006, 273ff.; 2015; Linaa 2015, 84ff.; Pedersen 2015, 61ff.), and an itinerant lifestyle may also be presumed among the bone workers of Medieval Livonia (Haak 2007; Luik 2015; Luik et al. 2015).



Of the Estonian axes, one was found on the site of Otepää hill-fort and later episcopal castle. Otepää was an important centre in southern Estonia, and the castle was a dominant power centre, although handicrafts were practised in such castles. The second axe was found at the River Pärnu. This find spot may also be connected with the road network, as the River Pärnu was an important waterway during the entire Prehistoric period in Estonia, as well as the Middle Ages. It is also possible that the find spot has ritual connotations. The item may simply have been thrown away after it broke, but breaking it into two and then throwing it into the river could have been a meaningful act. Over long periods of time, people have sometimes broken items and thrown the pieces in different places, sometimes a long distance from each other. The reasons for this behaviour can differ significantly (e.g. Chapman 2000; Jones 2005; Brück 2006; Chapman, Gaydarska 2007; Brittain, Harris 2010). One more axe was also found in a water body: one of the Lithuanian axes originates from Lake Jara (Paulsen 1956, 54). The tradition of throwing or depositing items in water or in wetland areas has also occurred in all periods of Prehistory (e.g. Oras, Kriiska 2014; Vandkilde 2014, 621; Raffield 2014, and references).

In a few cases, a hill-fort or a castle has been mentioned as the find spot. One of the axes originates from Gediminas Hill in Vilnius, two from the hill-fort of Jurgaičiai and at its foot, and one from the vicinity of the hill-fort near Mścislaw. A few of the axes also originate from towns, as the Bromberg axe was found in a market square. The Russian axes originate from towns that were important centres for trade and crafts, such as Novgorod, Pskov and Nizhny Novgorod. As more detailed data on the find circumstances has not been published, it remains unclear if these were obtained in quarters connected with crafts activities, or from or near castles. The significant number of finds in power centres and water bodies supports the suggestion that the axes had a symbolic meaning, either as symbols of power or another symbol unknown to us. As the size, shape, elaboration and decoration of the items differs, they were very likely to have had different meanings for their users.

## Conclusions

In conclusion, we have to admit that it is not possible to date these antler objects precisely, but they probably belong to the end of the Estonian Prehistoric period or to the Middle Ages, period from the eleventh until fifteenth centuries. The axe from Pärnu is shown conclusively as not belonging to the Stone Age, according to the <sup>14</sup>C dating. The function of these items is also

not definite. Tools in the shape of a hammer were probably used as hammers, but it could not be ascertained on what objects or materials. It is clear that it was not possible to use an axe-shaped object as an axe, but assumptions about their functions are still just speculative. It is also worth mentioning that they were found at hill-forts, castles and towns, but also in the countryside, so we cannot connect them only with known central places. In addition to the utilitarian interpretation, the richly decorated objects especially could also have had symbolic meanings. Of course, the scarce existing data does not allow us to exclude anything, so the actual meaning and functions of these peculiar items has to be left open.

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## Abbreviations

AI – Archaeological research collection of Tallinn University

PäMu – Museum of Pärnu

TM – Tartu City Museum

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## DEKORUOTI RAGINIAI PLAKTUKAI IR KIRVIAI IŠ ESTIJOS

**HEIDI LUIK, ARVI HAAK**

### Santrauka

Dekoruoti elnio rago kirvukai ir plaktukai nėra dažnas radinys Estijoje (1 pav.), dėl to šio straipsnio tikslas – rasti analogiškų radinių, siekiant patikslinti jų gamybai naudotas medžiagas ir įrankius, aptarti datavimą, naudojimo būdus ir reikšmę, išnagrinėti radimo aplinkybes.

Straipsnyje aptariami keturi žinomi radiniai iš skirtingų Estijos vietovių: du kirviai ir du plaktukai. Visi jie rūpestingai dekoruoti įrėžtomis linijomis, įdubomis ar žiedeliais (2–6, 8–12 pav.). Dailus apdirbimas ir faktas, kad jie pagaminti iš palyginti minkštos medžiagos, t. y. plokščiosios elnio rago dalies, kelia abejonių dėl jų naudojimo. Naudojimo žymės ant plaktukų galų rodo, kad jie iš tikrųjų buvo naudojami kalant, tačiau faktas, jog naudotasi minkštais raginiais, o ne, kaip įprasta, metaliniais plaktukais, sufleruoja specifinę funkciją. Kalbant apie raginius kirvukus, aišku tai, kad nors jie ir atrodo kaip kirviai, tačiau negalėjo būti taip naudojami. Jie galėjo būti naudojami kalant, o galbūt kaip ceremoninės buožės (panašiai kaip briaunuotosios buožės). Tokiu atveju jų vertė būtų ne kaip ginklo, o kaip galios simbolio. Neskaitant praktiško naudojimo galimybės, negalima atmesti ir simbolinės ar ritualinės reikšmės. Turimi duomenys negausūs, todėl negalima daryti galutinės išvados. Šiuo atveju būtina atsižvelgti į visas interpretacijas, taigi funkcijos klausimas lieka atviras. Autoriai taip pat pripažįsta, jog tiksliai datuoti šiuos rago dirbinius sudėtinga, bet manytina, kad greičiausiai juos derėtų priskirti Estijos priešistorės laikotarpiui.