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Archaeological survey, rescue excavations and analysis of the Kuremäe burial complex

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INTRODUCTION

In August 2024, an archaeological survey and rescue excavations were carried out by OÜ Arheograator in Kuremäe village in Ida-Viru County, north of the Kuremäe Convent (Pühtitsa Dormition Convent; Fig. 1). The main aim of the survey was to clarify the extent of a burial site by means of fieldwalking, test pits, and archival research. The study was necessitated by the discovery of several inhumation burials during trench work for the central heating system of the local library in 2023, which were in turn documented by rescue excavations. The survey also included the study of three Votic-type burial mounds and another burial site located west of the discovered site, all of which are protected cultural monuments. In total, 27 test pits and two trenches were dug in the surveyed area, revealing thirteen 12th–14th-century burials. Eight burials discovered in the central heating trench were excavated. This article presents the results of the fieldwork, archival study, and osteological and isotope analysis of the remains.

SITE AND HISTORICAL BACKGROUND

Kuremäe Votic-type burial mounds, also known as *Koolja* graves, or Lähtepää (Lähtepea) mounds, were first excavated in 1869 by Illuka manor owner Oskar Nikolai von Dieckhoff (1844–1918). He studied two burial mounds and one 17th-century inhumation burial (Ligi 1993, 11).[1] The graves and mounds appear on copies of a map from 1887, where they are shown densely packed in an area north and northwest of the Kuremäe Convent graveyard (Fig. 2), marked with crosses. The legends of the maps describe this 1,430 square fathoms or 6,506.5 m² area as an ancient graveyard, which was used as a pasture.[2] The maps also show

[1] According to the catalogue entry of AI-922 for the skull from the inhumation burial, the coin found with the burial was from 1635, so Ligi's claim that the burial was medieval cannot be correct. https://talar.arheoloogia.ee/, last accessed: 29.04.2025.
[2] The explication reads: 'Подъ древнимъ кладбищемъ, обращеннымъ въ выгонъ'.

that the church in the convent graveyard sits on a potential mound. Apart from some chance finds, studies were continued only in 1892 by Pavel A. Viskovatov (1842–1905) and Aleksej Kharuzin (1864–1932). Although they published their results and studied at least 16 mounds (Kharuzin 1894; Viskovatov 1894a; Viskovatov 1894b), it is unclear how many mounds were

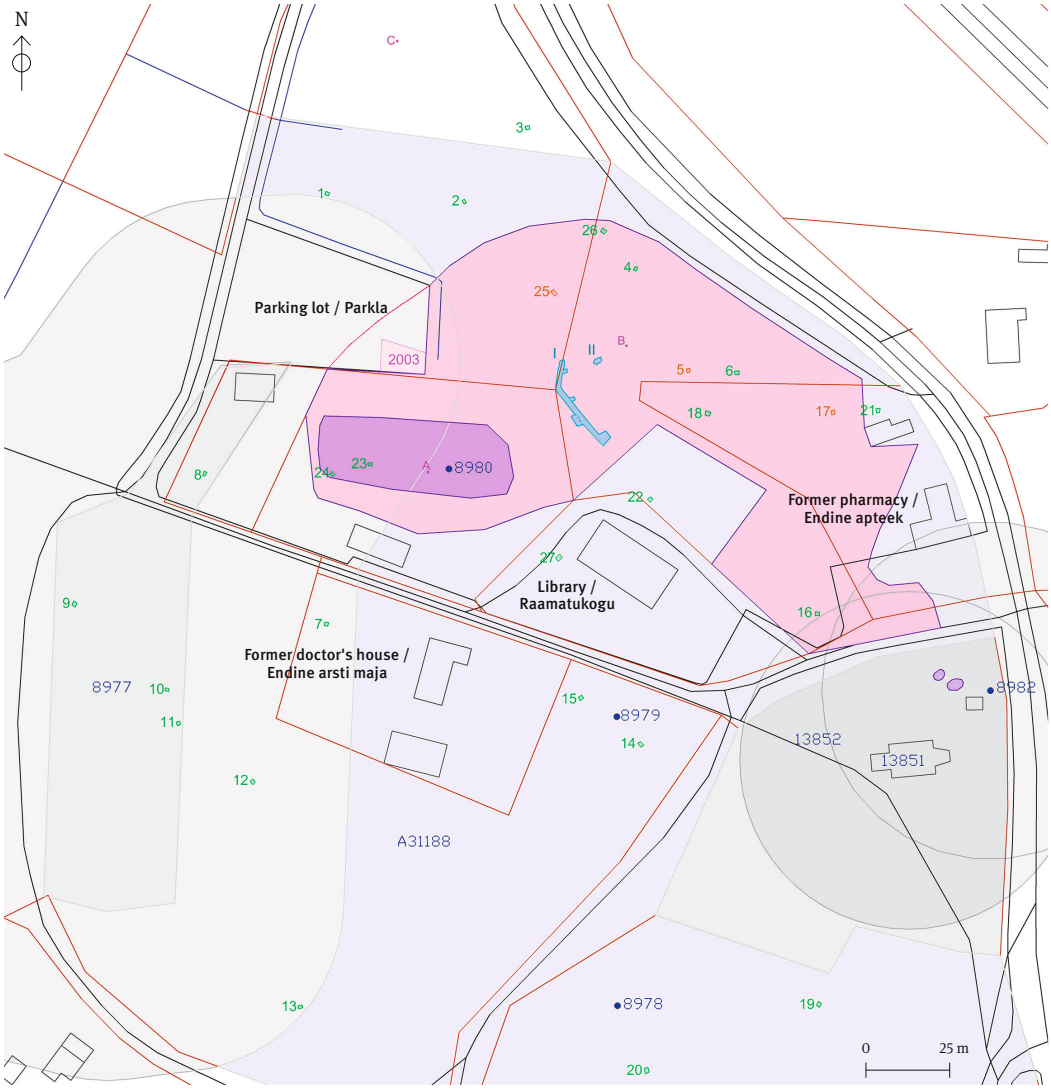

Fig. 1. *The surveyed area with test pits and trenches (2003, 2023, 2024).*
Jn 1. *Uuritud ala prooviaukude ja kaevanditega (2003, 2023, 2024).*
Drawing / Joonis: Monika Reppo

exactly explored before the cholera epidemic forced Viskovatov and Kharuzin to quit (Wiskowatov 1893). Studies were continued nearly a century later by Priit Ligi (1958–1994) when a skeleton was discovered during roadworks in 1984. Ligi excavated two subadult inhumation burials with no grave goods and a mound with a stone circle in 1985 (Ligi 1993, 13, 25). In 1988, he concluded that 22 mounds had been studied and 24 burials uncovered throughout the years; most of them were inhumation burials, and only two cremated burials had been found (Ligi 1988, 269, 272).

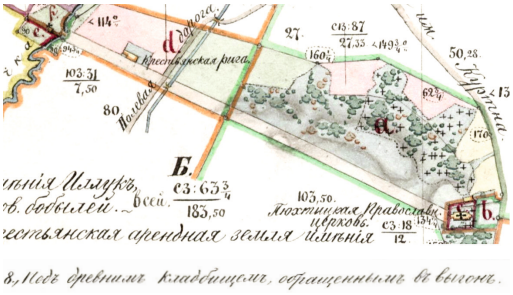

Fig. 2. *Kuremäe burial site in 1887.*
Jn 2. *Kuremäe matmisala 1887. aastal.*
Map / Kaart: RA, EAA.33.3.2522, f. 37

In 2003, a number of burials and mounds were disturbed during the construction of the convent's parking lot, west of the former hospital (Fig. 1). Archaeologists were able to excavate eleven 13th–14th-century burials, but the 11th–15th-century artefacts and bones discovered from the levelled area suggest at least ten more destroyed graves and mounds (Sokolovski 2004). Based on the presented studies, there may have originally been 50–100 mounds here, which have been up to 1.8 metres high and 7 metres in diameter; a stone circle has surrounded some of the mounds. Penannular brooches, bracelets, pendants, breast chains, neck rings, finger-rings, temple rings, glass beads, cowry shells, calcedon beads, buckles, belt loops, mounts, strap-ends, bar chains, bells, spearheads, axes, knives, knife sheath fragments, horse bits, and ceramic vessels as well as a single scythe and sword have been found as grave goods from Kuremäe. Viskovatov believed the burial site was used until the 16th century by the Karelians and Slavs and that the former were not buried with grave goods (Viskovatov 1894a). In 1993, Priit Ligi suggested that the burial mounds date from the beginning of the 11th century to the beginning of the 14th century (Ligi 1993, 83). He did not describe nor include the later burials in his work (Ligi 1993, 127–131).

BURIAL SITES AND MOUNDS

Focusing solely on the mounds throughout the centuries has resulted in some confusion regarding heritage protection, as it is not only a Votic-type burial mound complex, but a larger burial complex with earlier mounds and also later inhumation burials, which may also feature low mounds (Reppo & Malve 2024, 12). Thus, whilst the rescue excavations concentrated on the burials exposed in 2023, the survey covered an area of more than 45,600 m², which was metal-detected. Based on historical maps, this survey, and photos[3] from 1970 to 1988, two of the scheduled mounds are located in the graveyard, not outside of it. One of the mounds (ca. 3.5 × 4.75 m) has been completely levelled and used for interments during the 20th and 21st centuries. A cremated, commingled cranium fragment was found at its location. A large tree has grown through the other mound (ca. 2.7 × 3.7 m in size). At least a dozen mounds were identified by the third protected mound by fieldwalking, which supports written records that state that there are more mounds than those currently under protection (Peterson 1926, 26–29). Their poor preservation and the fact that the area is partially levelled made it difficult to identify the final number by visual examination.

[3] https://register.muinas.ee/public.php?menuID=photolibrary&action=view&id=9172 (last accessed: 29.04.2025.)

Of the 27 test pits, burial cuts were identified in only three – test pits nos 5, 17, and 25. None of them were excavated, although some grave goods were collected (see below). The graves were 46, 37, and 70 cm from the ground, respectively. As the trench for the central heating (Fig. 3) was 1.5 metres deep, some of the identified burials had been significantly damaged. Of the seven identified burials (nos 1–5, 9), six were exhumed (Malve & Aguraiuja-Lätti 2025, tables 1–2). To determine if the planned layout of the central heating could be altered, a second trench was dug east of the original trench. Two burials were discovered (nos 6 and 8), and further construction plans in this area were abandoned (Malve & Reppo 2024). No burials were discovered whilst surveying the other burial site (reg. no. 8977) and its protection zone. Based on the archival research, test pits, and fieldwalking, it is highly likely that this burial site has also been mislocated. The information associated with this burial site in the past relates to those graves found under the parking lot of the convent and the area around the central heating trench described here.

Fig. 3. *Aerial view of the central heating trench. The small trial trench where burials no. 6 and 8 were discovered is on the left of the larger trench. Pühtitsa Convent is visible in the background.*
Jn 3. *Keskküttetorustiku kraavi pealtvaade. Väike proovikaevand, kust avastati matused 6 ja 8, paikneb suuremast kaevandist vasakul. Taustal paistab Pühtitsa klooster.*
Photo / Foto: Silver Jäger

In the eight examined *in situ* burials, the deceased were supine, with their heads towards the west (220°–250°). The burials were 60–100 cm below the present-day ground level, with burial no. 5 clearly standing out at a depth of 150 cm. The investigated part of the burial site is characterised by sparsely spaced graves, with some graves several metres apart. However, the graves of an adult man (no. 6) and woman (no. 8) were located close together (Fig. 4), which suggests contemporaneous inhumation. The commingled remains of a possible adult man (no. 7) were on the right side and partially on top of the skeleton in grave no. 4 (Fig. 5). The bones were likely disturbed during the inhumation of burial no. 4, and were pushed or placed aside. This may be the grave plot of a single family since burial no. 7 was so precisely over-buried. A few commingled bones were also recovered from burial no. 1, but overall, there were few mixed human remains. Possible fragments of decayed coffin wood were identified near three burials (nos 3–5). The burials in test pits 5, 17, and 25 were left unexcavated. In test pit 5, the layout of the burial was undetermined. In test pits 17 and 25, the burials were supine and oriented east-west. A bone sample was taken from the latter (skeleton no. 10).

Fig. 4. *Complete burials of an adult man (no. 6) and a woman (no. 8), most likely contemporaneous.*
Jn 4. *Täiskasvanud mehe (nr 6) ja naise (nr 8) terviklikud matused, mis suure tõenäosusega on üheaegsed.*
Photo / Foto: Martin Malve

Fig. 5. *Commingled bones of an adult (no. 7) were on the right side and on top of the non-adult burial no. 4, probably due to overburial.*
Jn 5. *Täiskasvanu segatud luud (nr 7) paiknesid alaealise (nr 4) paremal küljel ja peal tõenäoliselt ülematmise tulemusel.*
Photo / Foto: Martin Malve

HUMAN REMAINS

The osteological analysis (Malve & Aguraiuja-Lätti 2025, table 1)[4] included six partially destroyed skeletons and numerous fragmented human remains disturbed during the construction work in 2023, and two *in situ* skeletons discovered in 2024 (AI 8927). The collected commingled bones were matched with intact burials that were almost completely (no. 1–2), half (no. 3–4), or partially (no. 5) excavated. The skeletons found in 1985 and previously collected cremated bone fragments were also studied (AI 5348). The skeletons had been severely damaged by earthworks, and many bones had mechanical injuries. Skeletons nos 1–4 and 7 showed erosion of the outer surface of the bones, but in the case of skeleton no. 5, all smaller fragments and the ends of the long bones had decayed entirely, and the outer surface of the skeletal parts had completely disintegrated. Altogether, eleven skeletons – nine adults and two non-adults – were examined (Malve & Aguraiuja-Lätti 2025, table 1). Of the adults, three were males, one was possibly male, four were females, and one adult was of undetermined sex.

[4] The results are published as an Open Access dataset. All references regarding the analysis can be found with the dataset alongside a description of the research process.

Most skeletons displayed pathologies typical of bone material from medieval burial grounds. The most common teeth problems were dental calculus, caries, periapical cavities, and *ante mortem* tooth loss. In addition, some individuals had dental hypoplasia, alveolar reduction, and falsely erupted teeth. There were also numerous age-related problems in the joints of the limbs (osteoarthritis), wear and tear of the vertebral bodies (spondylosis), and degeneration of the upper and lower articular surfaces of the vertebrae (spondyloarthrosis). Among the possible physical stress-related diseases, herniated intervertebral discs (Schmorl's nodes) were identified. An adult male (no. 3) had a healed rib fracture in the angle of the 10th rib.

Several healed depressed traumas on the neurocranial bones indicated possible accidents or interpersonal violence, typical of injuries caused by blunt objects (e.g. stones) or falling against objects. Healed depressed fractures with round edges, 6–38.55 mm in diameter were identified on either side of the cranium on the frontal and parietal bones of an adult woman (no. 1) and a man (no. 6). Also notable, the left side of the maxilla and mandible of the adult woman (no. 1) were severely deformed and thinned (Fig. 6). Most of the teeth in the left jaws had fallen out during her lifetime. The alveolar processes of the left maxilla and mandible had dissolved from the second premolar to the third molar, with the alveolar bone no longer visible. An osteophyte had formed at the location of the second molar of the left maxilla and mandible, which had partially begun to fuse (Fig. 7). Another osteophyte had formed at the location of the left second premolar and first molar of the mandible, which had not fused with the maxilla. The partially fused jaws prevented the woman from eating and performing daily activities, so she needed help with nutrition and recovery. It is noteworthy that such a severe injury had healed, and the person had lived with it for some time, although it is difficult to estimate how long. New bone formation could be seen by the first and second molars of the left maxilla and mandible, but it is unclear if it related to the trauma. New non-specific bone formation was also identified on the dorsal aspect of the angle of the left V rib of this skeleton.

Fig. 6. *The severely deformed left side of the maxilla and mandibula discovered in skeleton no. 1.*
Jn 6. *Luustiku nr 1 tugevalt deformeerunud üla- ja alalõualuu vasak külg.*
Photo / Foto: Martin Malve

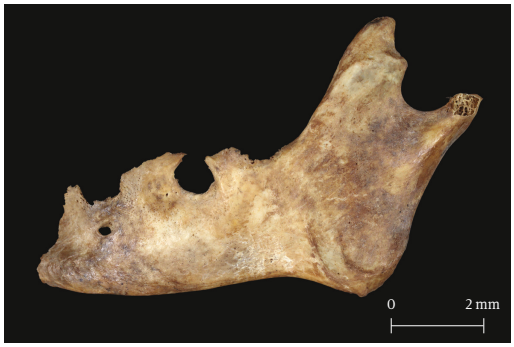

Fig. 7. *An osteophyte has formed at the location of the second molar of the left maxilla and mandible (burial no. 1).*
Jn 7. *Vasaku alalõualuu teise molaari asukohale oli moodustunud osteofüüt (matus nr 1).*
Photo / Foto: Marie Anna Blehner

New bone tissue in an active stage that had developed on the dorsal surface of the angles of the right ribs IV–XI of an adult male

(Malve & Aguraiuja-Lätti 2025, table 1, Barrow no. 1) indicated a possible non-specific chronic lung disease (e.g. tuberculosis, pneumonia). Active new bone formation was found on the lateral and posterior sides of the iliac bones, the lateral side of the right pubic bone, the medial sides of the calcanei, the diaphyses of the femur, tibia, and fibula, and the left fifth metatarsal of one adult male (no. 6). The locations of the bone changes in the body and the involvement of so many skeletal elements suggest that it was a systemic disease but is difficult to determine the exact cause due to the non-specific nature of the lesions. Of the 22 commingled human bones or fragments and 11 permanent teeth found during fieldwork, caries, dental calculus, and periapical cavities were again identified as pathologies. A total of eight burnt human bone fragments were analysed, including fragments of skulls and long bones.

STABLE ISOTOPE ANALYSIS

To study the diet of these individuals, stable carbon, nitrogen, and sulphur isotope analyses were conducted on eight skeletons (no. 1–8). Samples were taken either from ribs, metatarsals, or clavicles (Malve & Aguraiuja-Lätti 2025, table 2). Sample preparation and analysis followed the methodology outlined in Aguraiuja-Lätti *et al.* (2022); the biomolecular integrity of all samples was preserved.[5] Kuremäe burials have average values of –21.25±0.14‰ (1SD) for δ^{13}C, 10.73±1.15‰ for δ^{15}N, and 6.43±1.86‰ for δ^{34}S. The results indicate a predominantly terrestrial diet with a strong focus on vegetables, grains, and products of domestic livestock. There is no indication of any significant consumption of marine resources, which is typically seen in historical period coastal populations around the Baltic Sea. The relatively wide variation in δ^{15}N values (from 8.61‰ to 12.43‰) suggests differences in access to higher trophic level protein. Since nitrogen isotope ratios reflect trophic level, the lowest values are associated with consumption of plant protein, whereas the highest (over 12‰) are seen in aquatic resources, which have longer food chains compared to terrestrial food webs. The lowest δ^{15}N value at Kuremäe belongs to an adolescent (burial no. 4); the others are adults. Non-adults commonly have lower δ^{15}N values than adults, likely due to a smaller proportion of animal protein in their diets.

Compared to contemporaneous populations in northern and eastern Estonia, Kuremäe results overlap completely with burials from the conversion period cemetery at Kukruse (Oras *et al.* 2018) and are clearly distinct from other observed medieval populations (Fig. 8). This stark distinction is unlikely to be caused by temporal differences between the sites. Kukruse burials date from the 12th–13th century (Oras *et al.* 2018), two burials from Viru-Nigula have been radiocarbon dated to the 13th–14th century (Malve *et al.* 2024). Both St Michael's churchyard in Rakvere and Kaberla cemetery contain, among later burials, some that are dated to the 12th–13th century (Aguraiuja-Lätti *et al.* 2025). This range overlaps with the period of use suggested for the Kuremäe burial complex.

Since the Kuremäe burial complex is associated with Votic-type burials, the distinction in carbon and nitrogen isotope ratios likely reflects differences in dietary habits caused by cultural and/or ethnic factors. Low consumption of marine resources (such as cod and herring), which have more positive δ^{13}C values than terrestrial (and freshwater) resources, is typically associated with Christian burials from coastal Estonia, but is not visible in burials from Kuremäe (and Kukruse). However, the relatively high δ^{15}N values of some Kuremäe individuals can instead suggest a minor reliance on freshwater resources, which have lower δ^{13}C values and higher δ^{15}N values compared to terrestrial foods. Consumption of freshwater

[5] See Malve & Aguraiuja-Lätti 2025 for further information and references regarding the samples taken from the Kuremäe skeletons.

resources has also been identified at Kukruse (Oras *et al.* 2018), and the similarity between Kuremäe and Kukruse isotope data seems to support this hypothesis.

The sulphur isotope ratios at Kuremäe (ranging from 3.51‰ to 8.31‰) are somewhat higher than the local terrestrial baseline (Aguraiuja-Lätti *et al.* 2022), but they show good overlap with those of other human burials from north-eastern Estonia, including Viru-Nigula and Rakvere (Aguraiuja-Lätti & Lõugas 2019; Malve *et al.* 2024; Aguraiuja-Lätti *et al.* 2025). Based on the available evidence, all the sampled individuals may have been locally born. Some of the higher $\delta^{34}S$ values could also be influenced by consumption of aquatic resources, which have more positive sulphur isotope ratios compared to terrestrial foods (Aguraiuja-Lätti *et al.* 2022); however, there is no significant statistical correlation between the different isotope proxies to further support this assumption.

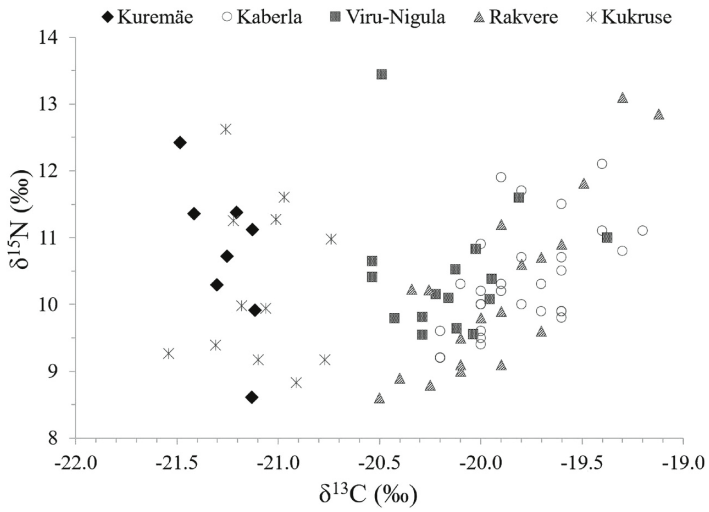

Fig. 8. *Scatterplot of $\delta^{13}C$ and $\delta^{15}N$ values for Kuremäe human burials alongside comparative data from sites in northern and eastern Estonia: Kaberla rural cemetery (Aguraiuja-Lätti & Lõugas 2019), Viru-Nigula churchyard (Malve* et al. *2024), St Michael's churchyard in Rakvere (Aguraiuja-Lätti & Malve 2023), and Kukruse cemetery (Oras* et al. *2018).*

Jn 8. *Hajuvusdiagramm Kuremäe inimluude $\delta^{13}C$ ja $\delta^{15}N$ väärtustega. Võrdluseks on võetud andmed Põhja- ja Ida-Eesti matusepaikadest: Kaberla külakalmistu (Aguraiuja-Lätti & Lõugas 2019), Viru-Nigula kirikaed (Malve* et al. *2024), Rakvere Püha Mihkli kirikaed (Aguraiuja-Lätti & Malve 2023) ja Kukruse kalmistu (Oras* et al. *2018).*

Graph / Graafik: Ülle Aguraiuja-Lätti

FINDS AND DATING

Based on the finds obtained until 1993, Priit Ligi concluded that the oldest burial mounds in Kuremäe were erected before the last quarter of the 12th century (Ligi 1993, 83–84). No artefacts specifically dated to this period were found in 2023–2024, but some finds with wider dates might cover the second half of the 12th century. For the most part, metal-detecting of the studied area revealed 20th-century household waste. The grave goods from burial no. 5 (Fig. 9) offered the best possibilities for dating. The six openwork pendants, copper alloy beads (at least 14), two bracelets, a penannular brooch, a ring, a knife, a spiral tube, and

small textile fragments (Fig. 10) are all typical for the Votic-type burials of Alutaguse. The pendants, beads, and bracelets twisted from three wires are dated from the second half of the 12th century to the end of the 13th century (Ligi 1993, 58–60, 69–70; Valk 2004, 242–244). The spiral ring with an expanded central part dates to a wider period, from the last quarter of the 11th century to the beginning of the 14th century (Ligi 1993, 77).

Fig. 9. *A richly furnished female burial (no. 5) from the second half of the 12th century or the 13th century.*
Jn 9. *Rikkalik naisematus (nr 5) 12. sajandi II poolest või 13. sajandist.*
Photo / Foto: Martin Malve

Fragments of a knitted fabric were preserved on the finger bone of this burial due to copper salts from the ring. These may belong to funerary mittens which have been documented in Olgin Krest burials on the right bank of the River Narva and in Jõuga (Peets 1993, 218–220). The date of the simple penannular brooch with a rhomboid cross-section and round flat buttons ranges from the end of the 12th century to the 14th or even the 15th century (Ligi 1993, 65; Valk & Laul 2014, 102). The artefacts place burial no. 5 to the second half of the 12th century or the 13th century. As the graves in the Votic-type burial grounds were usually covered with mounds until around the turn of the 13th–14th centuries (Ligi 1993, 84–85), burial no. 5 may also have been covered with a mound. In the Jõuga cemetery, situated about 10 km SW from Kuremäe, the depth of the graves with mounds varied between 0.3–1.5 m (Ligi 1993, 30). Kuremäe burial no. 5, with its 1.5-metre depth, would also fall within this range.

Fig. 10. *Grave goods from the burial of an adult woman (no. 5): 1 – pendants, 2 – beads, 3 – bracelets, 4 – a brooch, 5 – a ring.*
Jn 10. *Täiskasvanud naise matusest (nr 5) avastatud esemed: 1 – võreripatsid, 2 – helmed, 3 – käevõrud, 4 – sõlg, 5 – sõrmus.*
(AI 8990: 1–6, 7–19, 31–32, 30, 33.)
Photo / Foto: Marie Anna Blehner

Fig. 11. *A rhomboid cross pendant from an adult female burial (no. 8).*
Jn 11. *Täiskasvanu hauast (nr 8) avastatud rombripats. (AI 8990: 37.)*
Photo / Foto: Martin Malve

Only a few artefacts were recovered from the other burials. A 13th–14th-century silver coin (AI 8927: 2) was found by the skull of the burial in test pit 5. The rhomboid cross pendant (Fig. 11) found under the skull of burial no. 8 may be dated to the 13th–15th centuries (Ligi 1993, 64; Ligi & Valk 1993, 191; Valk & Laul 2014, 113) or even to the 16th century (Valk 2001, 52). According to Priit Ligi, in Alutaguse the mounds were replaced around 1300 by rectangular, oval, or circular stone enclosures, sometimes filled with soil – the so-called *zhalnik*-graves –, which were erected in some Votic burial sites until the mid-16th century (Ligi 1993, 86–87). Burial no. 8 may also have been originally marked on the ground with either a mound or a *zhalnik*-like stone enclosure.[6]

Due to the poor preservation of the iron knife with a half-preserved blade found on the sternum of burial no. 6 it is difficult to determine its age, which is also complicated for the copper alloy rivet found in the grave pit of burial no. 1. A narrow iron scythe blade (Fig. 12), broken in half (AI 8927: 1), found in the area of the former mound no. 3, could have originated from a burial. Two scythes have been found from the Kuremäe burial mounds before (Ligi 1988, 269). Generally attributed to the Final Iron Age (Ligi 1993, 40; see also Laul & Tõnisson 1991, 86), such tools may also have been used in the beginning of the Middle Ages.

The scarcity of finds does not allow for a detailed analysis of the early modern period of the Kuremäe burial complex. Some of the metal-detected coins, including a wire kopeck (AI 8990: 44) minted during the reign of Tsar Ivan IV of Moscow (1547–1584), may not be directly related to burials, but may be sacrificial offerings or traces of later commemorations of the dead. Due to the poor preservation of grave markers and the absence of grave goods in most of the burials, it is not clear when the transition to moundless graves similar to those

Fig. 12. *A narrow iron scythe blade had broken in half.*
Jn 12. *Pooleks murdunud kitsas rauast vikatitera. (AI 8927: 1.)*
Photo / Foto: Martin Malve

[6] Earlier sources do not mention any definite *zhalnik* graves in Kuremäe.

in the rest of Estonia took place here. The persistence of a Votic population in the Alutaguse region is indicated by some Votic features in folk culture (e.g. in older clothing; Voolmaa 2013, 48–49) of the so-called *Poluverniks* around Iisaku, which have attracted researchers since the 19th century.[7]

DISCUSSION AND CONCLUSIONS

The Kuremäe burial complex is one of around ten Votic-type burial sites identified in north-eastern Estonia, mainly in the southern part of the Alutaguse region (see Ligi 1993). Similar sites are located on the right bank of the Narva River and in the Gdov region northeast of Lake Peipsi, where most of the people who migrated to Alutaguse and used the Votic-type burial grounds are thought to have originated from (Ligi 1993, 90, 94). This study revealed the probable extent of the Kuremäe burial site, with three burials found in three of the 27 test pits and ten burials found in two of the trenches. Eight graves were excavated, all in the trenches. The burials studied in Kuremäe in 2023–2024 date to the late 12th–15th/16th centuries, but the chance finds indicate that the site was in active local memory even later. Of the studied burial mounds, two were discovered to be mislocated by the National Heritage Board, and the third comprises at least a dozen mounds rather than a single mound. The protected burial site west of the excavated area was also found to be mislocated and is now believed to refer to burials excavated earlier and as part of this study.

This study was carried out because signals by the National Heritage Board of a potential burial site east of the parking lot were ignored, resulting in the damage of six burials in 2023. It is possible that some bones were also uncovered in 2022–2023 when a pedestrian and bicycle path was built in the village, terminating south of the studied area, but archaeological surveillance had not been required. Of the two mounds that had been mislocated, one has been completely levelled and used for interments during the 20th and 21st centuries, and a large tree has grown through the other one. With the damage to the rest of the burial ground in 2003 by the construction of the parking lot, this remarkable burial complex has been seriously disturbed in the past decades. Further studies are planned to assess the preservation of the mounds.

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[7] On the similarities of the Votic and East Estonian folk culture, see Lillak 2021, 49 and the literature cited.

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ARHEOLOOGILISED UURINGUD JA PÄÄSTEKAEVAMISED KUREMÄE MATMISPAIGAL

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2024. aasta augustis toimusid Ida-Viru maakonnas Kuremäe külas (jn 1) arheoloogilised välitööd, mille eesmärk oli kindlaks teha ajutise kaitse all oleva kalmistu tegelik ulatus maastikuluure, prooviaukude ja arhiiviainese (jn 2) abil. Samuti toimusid päästekaevamised matustel, mis lõhuti 2023. aastal kohaliku raamatukogu keskküttetorustiku kraavi (jn 3) süvendamisel. Ajutise kaitse alale jäi ka kolm kaitsealust kääbast ning leitud luustikest läände veel üks kaitsealune kalmistu, mille asukohad uuringu käigus täpsustusid. Selgus, et Kuremäel pole tegu vaid hilisraua- ja keskaja vadjapärase kääbaskalmistuga, vaid suurema ja pikemaajalise matmiskompleksiga, kus esineb nii varaseid kääpaid kui ka hilisemaid laibamatuseid ning viimastelgi võis paikneda madalaid kääpaid. Kokku uuriti detektoritega läbi 45 600 m² suurune ala, kaevati 27 prooviauku ja avati kaks kaevandit. Leiti 13 terviklikult või osaliselt *in situ* säilinud üksikmatust – kolm prooviaukudes ja kümme kaevandites. Kaheksa matust kaevati läbi. Kõik surnud olid sängitatud selili, peaga läänekaartesse, praegusest maapinnast 60–100 cm sügavusele (erandiks vaid 150 cm sügavusel asunud matus nr 5). Matused paiknesid hõredalt, mitmemeetrise vahega. Vaid täiskasvanud mehe (nr 6) ja naise (nr 8) hauad olid lähestikku (jn 4), võimalik, et nad sängitati samal ajal.

Irdseid luid esines matus nr 4 paremal küljel ja osalt peal (jn 5), need kuulusid ühele indiviidile (nr 7), kes osteoloogilise määrangu põhjal osutus võimalikuks täiskasvanud meheks ja olid ülematmisel kõrvale lükatud või asetatud. Üksikuid irdseid luid saadi ka matus nr 1 haualohust, siiski esines segatud inimluid kalmistu alal vähe. Kolme maetu (nr 3–5) juurest tuvastati võimalikke kirstu kõdupuidu katkeid. Osteoloogiliselt uuriti kuut 2023. aasta torustikutöödega lõhutud skeletti ja segatud luid, kahte 2024. aastal avastatud luustikku, 1985. aastal leitud luustikke ja varem kogutud põlenud luukatkeid. Kokku vaadati läbi 11 luustikku – üheksa täiskasvanut (kolm meest, üks võimalik mees, neli naist, üks määramata sooga) ja kaks alaealist. Luudel esinesid keskaegsete maakalmistute maetutele omased patoloogiad, enim hammastega seotud vaevused (hambakivi, kaaries, periapikaalsed tühimikud, eluajal väljalangenud hambad). Üksikutel indiviididel täheldati hüpoplaasiat, alveolaarkaarte taandumist ja valesti lõikunud hambaid. Arvukalt oli ealisi terviseprobleeme jäsemeliigestel (osteoartriit), selgroolülikehade kulumust (spondüloosi) ja selgroolülide ülemiste ning alumiste liigespindade degenereerumist (spondüloartroosi). Võimaliku füüsilise koormusega seotud haigustest tuvastati selgroolüli vaheketaste songa (Schmorli sõlmed). Ühel täiskasvanud mehel (nr 3) oli paranenud roide murd parema X roidekaare osas.

Õnnetustele või vägivallale viitasid 6–38,55 mm läbimõõduga lohukujulised paranenud traumad täisealise naise (nr 1) ja mehe (nr 6) ajukoljuluude (otsmiku- ja kiiruluudel) paremal ja vasakul küljel. Sama naise üla- ja alalõualuu vasak pool oli tugevalt deformeerunud ja õhenenud, alveolaarjätked lahustunud II eespurihambast III purihambani (jn 6); enamik hambaid oli eluajal välja langenud. Osaliselt ühinema hakanud lõualuud vasaku II purihamba juures (jn 7) ning luukasvis vasaku alalõualuu II eespuri- ja I purihamba kohal takistasid naisel söömist ja igapäevaelu, ta vajas abi toitumisel ja taastumisel. Sellise raske vigastuse paranemine on märkimisväärne, ehkki on raske hinnata, kui pikalt inimene nii elas. Pole teada, kas surma ajal aktiivne uus luukude naise vasaku üla- ja alalõualuu I–II purihamba asukohas seostus traumaga. Aktiivne luukude esines ka vasaku V roide kaareosa selgmisel küljel. 1985. aastal kääpast nr 1 leitu täiskasvanud mehe rindkere parema IV–X roidekaare selgmisele pinnale tekkinud aktiivne luukude viitas võimalikule kroonilisele kopsuhaigusele (nt kopsutuberkuloos, kopsupõletik). Hulgaliselt uut moodustuvat luukudet esines ühe täiskasvanud mehe luustikul (nr 6), hõlmatud skeletiosade suur hulk viitab hetkel teadmata üldhaigusele.

Kaheksast luustikust tehti süsiniku, lämmastiku ja väävli stabiilsete isotoopide analüüsid, uurimaks maetute toitumist ja päritolu. Analüüsi tulemused (keskmised väärtused $\delta^{13}C$ = –21.25±0.14‰, $\delta^{15}N$ = 10.73±1.15‰, $\delta^{34}S$ = 6.43±1.86‰) osutavad valdavalt maismaalisele toidusedelile, kus domineerisid teraviljad ja koduloomade saadused. Kuremäe tulemused erinevad teistest keskaegsetest Põhja-Eesti matusepaikadest, kuid kattuvad täiesti Kukruse kalmesse maetute tulemustega (jn 8), mis viitab tõenäoliselt kultuurilistele ja/või etnilistele erinevustele toitumisharjumustes. Läänemere ranniku populatsioonidele keskajal harjumuspärane mereliste ressursside tarbimine ei kajastu Kuremäe matuste luude keemilises koostises. Küll aga viitavad tulemused võimalusele, et nende toidulauale kuulus väiksemas mahus mageveekalu. Väävli isotoopanalüüsi tulemused peegeldavad tarbitud toidu geograafilist päritolu – Kuremäe matuste puhul on tõenäoliselt tegu olnud kohalikku päritolu indiviididega, sest nende tulemused kattuvad teiste Põhja-Eestist uuritud skelettide väävli

isotoopväärtustega. Keskmisest suurem variatiivsus matuste väävli isotoopkoostises peegeldab mitmekesisust tarbitud valkude päritolus, sealhulgas on tulemused kooskõlas võimalusega, et Kuremäe inimeste menüüsse kuulusid kalad.

Kuremäe-sarnaseid vadjapäraseid kalmeid on Kirde-Eestis kokku tuvastatud kümmekond ning Narva jõe paremkaldalt ning Oudova piirkonnast siia rännanud rahvarühma püsimisest Alutagusel vihjavad vadjalikud jooned hilisemas Iisaku ümbruse nn *poluvernikute* rahvakultuuris (nt vanemas rõivastuses). Priit Ligi järgi on Kuremäe vanimad kääpad rajatud enne 12. sajandi viimast veerandit. 2023.–2024. aasta uuringutel konkreetselt 12. sajandi matuseid polnud, kuid esines osaliselt sellega kattuva dateeringuga esemeid. Enim võimalusi dateerimiseks pakkus matus nr 5 (jn 9). Luustiku juures oli kuus võreripatsit, vähemalt 14 vasesulamist helmest, kaks käevõru, hoburaudsõlg, sõrmus, nuga, spiraaltoruke ning väikesi tekstiilikatkeid (jn 10) – tüüpilised Alutaguse vadjapäraste naisematuste leiud. Sõrmuse all oli sõrmeluul säilinud kootud kanga katkeid võimalikust kindast. Surikindaid on leitud ka Jõuga ja Olgin Kresti matustest. Leidude dateeringu põhjal on matus nr 5 12. sajandi II poolest või 13. sajandist ning seda võis algselt katta kääbas. Läheduses asuval vadjapärasel Jõuga kalmistul jäävad kääpa-alused matused 0,3–1,5 m sügavusele, mistõttu pole matuse nr 5 suur sügavus (1,5 m) ainukordne.

Teistest matustest saadi üksikuid esemeid. Matuse nr 8 kolju alt leitud rombikujuline ristripats pärineb 13.–16. sajandist (jn 11). Seegi matus võis olla algselt kaetud kääpa või 14.–16. sajandil piirkonnas esinenud kividega piiritletud madala kuhjatise, nn *žalnikuga*. Matuse nr 6 ristluu peal asunud poolikut raudnuga ja matuse nr 1 haualohust saadud vasesulamist neeti on keeruline dateerida. Ühe kääpa juurest leitud pooleks murdunud kitsas vikatitera (jn 12) võis algselt kuuluda mõne matuse juurde. Kaks noorema rauaaja või keskaja alguse vikatit on Kuremäelt leitud ka varem. Kalmistu hilisema, varauusaegse kasutuse kohta on leidude vähesuse tõttu raske järeldusi teha. Mõned detektoriga leitud mündid, sh üks Moskva tsaar Ivan IV valitsemisaegne (1547–1584) traatkopikas, ei pruugi otseselt matustega seostuda. Maapealsete hauatähiste halva säilivuse ja panuste nappuse tõttu ei selgunud, millal mindi siin üle teiste Eesti külakalmistutega sarnastele maahaudadele.