



Excavations on the medieval village cemetery of Loosi at the eastern border of Võrumaa

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INTRODUCTION

Loosi cemetery and chapel site are located in Vastseliina parish, Võrumaa County, 8.5 km from the border of the historical provinces of Livonia and Pskov, as the crow flies (Fig. 1). The distance to the medieval castle of Vastseliina – the border castle of the medieval prince-bishopric of Tartu (Alttoa 1978) – is 11.5 km.

The site was discovered and looted by amateur metal detectorists, and the National Heritage Board was informed about it only afterwards, in 2012. The find assemblage obtained during further metal detector studies from 2015 to 2020 gave evidence of a medieval and later cemetery with possible roots in pre-historic, i.e. pre-Crusade period, whereby numerous 13th–14th cc. coins and some other finds indicate a medieval chapel site (Valk *et al.* 2018a). However, agricultural activities and Soviet period land improvement had dispersed the finds over a large area (*ibid.*, fig. 5). The presence of a chapel site in the extreme periphery of Medieval Livonia already as early as in the mid-13th century can only be explained by its special location. Evidently, the early coin finds refer to a location on the main road from the core areas of Tartu bishopric and, in prehistoric times, the province of Ugandi, to the Old Rus centres of Izborsk and Pskov.

Trial excavations of the site, located in the area of Walgatabalwe which was baptized in 1220 during the Livonian crusade (HCL XXIV: 6), were carried out by the University of Tartu in the framework of the research project ‘Estonia in 1100–1400: native society, traditions and culture in the time of changes’. The work started in 2023, the excavations of Trench no. 2 were finished in May 2024. The aims of the investigations were to find, if possible, the exact location of the chapel site, and to get information about medieval cultural traditions in the area. Archaeological information on the medieval cemeteries of the eastern part of historical Võrumaa was almost missing, being limited to some stray finds.

Until the excavations in Loosi, the only archaeologically investigated 13th–15th centuries’ burial site in the hinterlands of Vastseliina castle was the cemetery of Siksälä in the



Fig. 1. The location of Loosi cemetery.

Jn 1. Loosi kalmistu asukoht.

Map / Alusplaan: Land Board / Maa-amet

south-easternmost corner of Estonia. This monument, which was largely excavated in 1980–1993 (Laul & Valk 2007; Valk & Laul 2014; Valk *et al.* 2014; Valk 2021) revealed archaeological record profoundly different from that of the medieval village cemeteries of the western part of Võrumaa and the southern part of Tartumaa. This cemetery with rich finds typical for the north-eastern Latvia, but with specific features of burial customs alien to the Latgallians represents the ‘Chud of Ochela’ – a Finnic ethnicity with mixed Baltic and Finnic origins, whose core areas were in the north-east Latvian prehistoric Atzele province (Laul & Valk 2007; Valk & Laul 2014; Valk *et al.* 2014). A key question before the excavations was to see whether the cultural pattern in the Loosi area resembles that of Siksälä cemetery or that in the core areas of southern Estonia, late prehistoric Ugandi province. An indication to ‘the Chud of Ochela’ was the 14th century hoard of Utike (2 km from Loosi cemetery), which included two large shield-shaped silver bracelets representing an artefact type numerous in Siksälä cemetery (Kiudsoo & Tamla 2006, 287–289). The research questions concerned also possible common features in the social background of Loosi and Siksälä cemeteries, caused by their location close to the eastern border of medieval Livonia.

INVESTIGATIONS AND TRENCHES

To find out if any remains of the supposed chapel were still preserved in the ground and to determine the place for excavations, first a trial trench was made. This was done in the area with the largest concentration of metal detector finds in the region of the suggested chapel site, as indicated by a low hillock within the area of dispersed finds. This trench (20 × 0.5 m) was made in the north–south direction. It was dug until the bottom of the layer disturbed by ploughing – until the depth of around 30–40 cm when the first grave pits started to appear.

The site for larger excavations was chosen in the area with the highest concentration of finds in the trench. There – right next to the trial trench and partly overlapping with it – Trench 1 (5 × 2.5 m) was made. From the trench a total of 32 burials were found (Figs 2, 3). Trench 2 was opened in the southern end of Trench 1 where a rather compact assemblage of cremated bones suggested a dispersed cremation burial. This trench was repeatedly extended: firstly, to find out the extent of the cremated remains and secondly, to study a burial where a decoration of copper alloy spiral tubes had preserved. In the trench 12 burials were unearthed (Fig. 4). After repeated extending, caused by the discovered burials, it covered an area of about 2 × 3.5 m.



Fig. 2. Trench 1 in the depth of 60–70 cm.
Jn 2. I kaevandi VII korräs (60–70 cm maapinnast).
 Photo / Foto: Marie Anna Blehner

All soil, heavily compacted in all the trenches, indicating the former use of heavy agricultural machinery, was sieved on meshes of 6 mm eye diameter. *In situ* finds were measured with Trimble GNSS station and finds from the sieve (including commingled cremains) were given a context of 1 × 1 m squares. While the long trial trench was dug manually and fully sieved, in Trenches 1 and 2 the disturbed top soil was removed, after supplementary metal detector investigations of the area, until the depth of 30 cm with a small backhoe. All this disturbed soil was later sieved. Deeper layers in the trenches were

dug by 10 cm by using shovels and trowels. Photogrammetry was used to document the burials.

Supplementary metal detector investigations were also carried out in the research area of 2015–2019 and on the neighbouring grassland up to 50 metres south of it. Metal detecting was performed on the hillock and the surrounding field by Aleksandr Kotkin and Aleksandr Smirnov from the history club Taaler. Furthermore, to find out the extent of the cemetery towards the east, i.e. down the sloping ground, the layer disturbed by ploughing was removed from two east–west directional trenches of ca. 21.5×1 m and 8×1 m with the backhoe. This area was now once again studied with metal detector, to discover any signals of metal objects at greater depths.

The metal detector investigations yielded mainly 16th–17th centuries' finds, most of them from the neighbouring plot in the south. Evidently, these finds had been moved there from the cemetery by bulldozer during the Soviet period land improvement work. From the backhoe trenches from the lower part of the layer disturbed by ploughing 22 finds, and from the formerly investigated area outside the trenches 5 finds were collected.

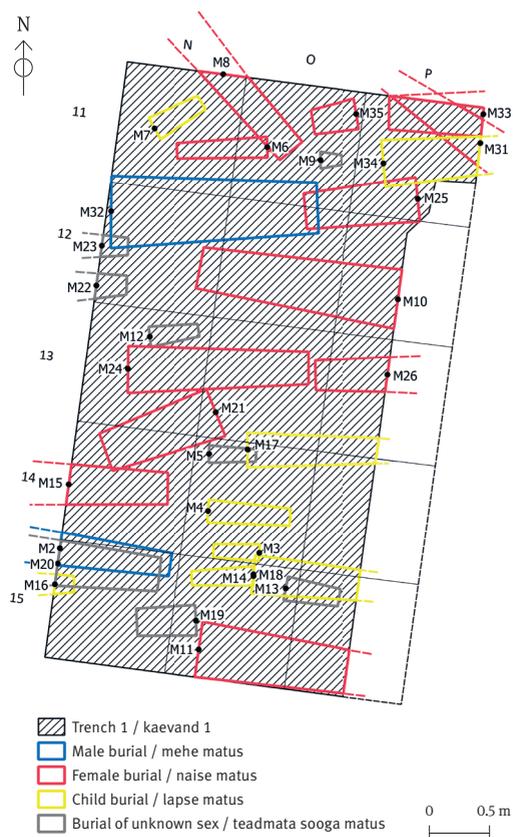


Fig. 3. The location of burials in Trench 1. M means matus, i.e. 'burial'.

Jn 3. Matuste paiknemine 1. kaevandis.

Drawing / Joonis: Marie Anna Blehner

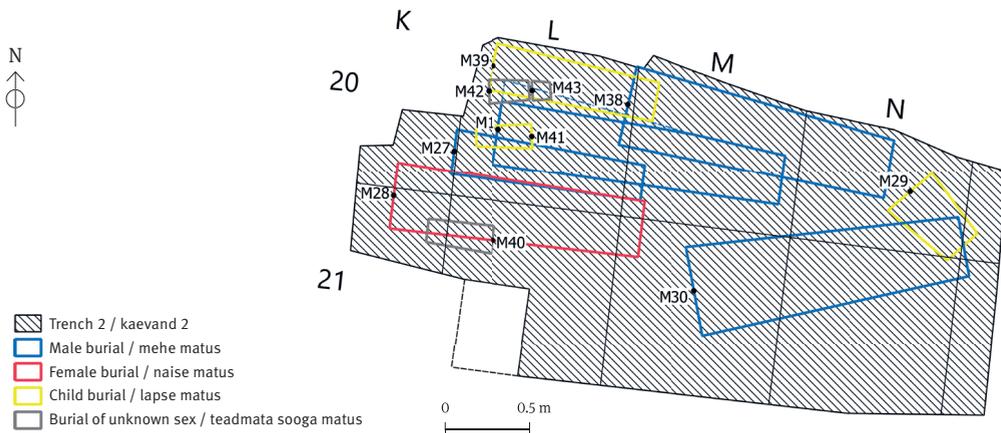


Fig. 4. The location of burials in Trench 2. M means matus, i.e. 'burial'.

Jn 4. Matuste paiknemine 2. kaevandis.

Drawing / Joonis: Marie Anna Blehner

BURIALS

Inhumation burials

All in all, 49 inhumation burials were discovered during the excavations of the Loosi cemetery. Out of these, 44 were excavated, documented and collected for further analysis, and five were left in the sides of the trenches. The first *in situ* burial was discovered at the depth of 35 cm from the ground. During the osteological analysis, it was also discovered that among the commingled bones from the depth of 30–40 cm were the remains of three infants/small children (burials 36, 37 and 49). The first partially or fully *in situ* burials appeared in the depth of 40–50 cm and since the depth of 50 cm graves had not been disturbed by machinery. Burials ended generally at the depth of 60–70 cm where their number was the largest (Fig. 2). Exceptionally, one burial (no. 32), not earlier than 1704, was found at the depth of 80–90 cm.

Most of the *in situ* burials were destroyed to at least some extent by ploughing or later burials. Some of them were excavated only partially, as far as they stretched out of the trenches. Only six burials were preserved fully or mostly intact (nos. 10, 24, 29, 30, 32 and 39). Out of the 41 *in situ* documented burials 28 were orientated to the west. However, 10 women and three children were buried with the head to the east (Figs 3, 4). It was a custom in Võrumaa to bury the men and the women in opposite directions (Valk 2001, 70–72). Thus, it is reasonable to assume that the three children buried facing the west (nos 3, 14 and 41) were likely female.

All *in situ* skeletons were buried in a supine position with legs straight and the arms either next to the body in a straight position or at an angle across the upper or lower parts of the chest and stomach. While burials 1, 17, 33 and 38 had at least one arm next to the body, burial 39 had both. Considering the movement of bones during the decomposition process, it seems likely that most of the dead were buried in coffins and in 15 cases remains of timber coffins had preserved. As a rule, the dead were buried individually. The only double grave included burials 27 and 28 – a man aged 16–20 and a woman between 18–25 years of age.

From 24 burials grave goods were found. Inversely, 20 of the skeletons could not be linked to any finds for certain, but most of them were badly damaged. Most of the burials with finds had up to three items, the most common finds being one or two knives (in 10 burials) and coins (in at least 9 burials). Rings (4 burials), belt rings (4), brooches (3), fire strikers (3), clasps (3) and needles (3) were also quite common, but some pieces of flint, organic material, copper alloy spiral tubes etc. could also be found. The area between the feet of burial 8 contained iron, copper alloy and leather finds and, therefore, it was removed with the surrounding soil as a block to be opened in the laboratory (see below). Two well-preserved male (no.

30 and 38) and two female (no. 28 and 33) burials, the latter heavily damaged by later graves, were richer in finds when compared to others.

Burial 30 was that of a 19–30-year-old man. He was buried in a supine position, right arm at a 90-degree angle across the lower part of the stomach and left arm at a 45-degree angle across the upper body (Fig. 5). In total, there were 12 items buried with him (Figs 6, 7): a piece of flint (Fig. 6: 1), two belt rings (Fig. 6: 2, 3), two clasps (Fig. 6: 4, 7), an iron detail of belt fitting (Fig. 6: 5), a big



Fig. 5. Loosi cemetery, burial no. 30.

Jn 5. Loosi kalmistu, matus 30.

Photo / Foto: Marie Anna Blehner



Fig. 6. Finds from burial no. 30. 1 – a flint flake, 2, 3 – belt rings, 4, 7 – clasps, 5 – a belt fitting, 6 – a brooch.

Jn 6. Matus 30 leide. 1 – tulekivikild, 2, 3 – vöörõngad, 4, 7 – pandlad, 5 – vöösirik, 6 – sõlg.
(TÜ 3179: 201, 194, 199, 196, 200, 192, 195.)

Photo / Foto: Heiki Valk



Fig. 7. Knives from burial no. 30. 1 – a big knife, 2 – a knife with wire wended handle.

Jn 7. Matus 30 noad. 1 – suur pussnuga, 2 – traatmähisega pidemega nuga.
(TÜ 3179: 193, 202.)

Photo / Foto: Heiki Valk

annular brooch (Fig. 6: 6), and two knives (Fig. 7: 1, 2), one of them of extremely big size, a needle, a piece of lead and an unidentified tiny copper coin, not earlier than the 15th century.¹ Most of the finds were at the left side of the body, except for the coin and the needle near the head, and the brooch on the upper part of the chest. Judging by the size of the brooch the burial might not be earlier than late 14th or early 15th century.

Burial 38 (a 30–40-year-old man) was also buried in a supine position, right arm at an acute angle over the upper part of the chest and left arm straight along the body (Fig. 8). He was buried with the total of ten finds (Fig. 9): a belt ring of iron (Fig. 9: 1), a tiny clasp or buckle (Fig. 9: 2), three rectangular iron mounts (Fig. 9: 3–5) from the belt region, two knives (Fig. 9: 7, 8), an unidentified iron



Fig. 8. Loosi cemetery, burial no. 38.

Jn 8. Loosi kalmistu, matus 38.

Photo / Foto: Marie Anna Blehner

¹ Coins identified by Ivar Leimus (AM).

artefact (Fig. 9: 6), an iron needle and a coin – probably of a 14th century German bishopric. The finds originate mostly from the pelvic and upper leg region. Exceptionally, only the needle was located near the skull.

Burial 28 was that of an 18–25-year-old woman. She laid in a supine position with her arms both across the lower part of the stomach. 18 cowry shells from a necklace had remained in her disturbed neck region (the skull was missing) and there were shielded rings with long open ends on both of her middle fingers (Fig. 10: 1, 2). She was buried with a belt ring and a Danish ‘crown bracteate’ minted in Tallinn in ca. 1265–1332 in the pelvic region. A small pattern of copper alloy spiral tubes at the knees was removed as a block to be opened in the laboratory.



Fig. 9. Finds from burial no. 38. 1 – an iron belt ring, 2 – a tiny clasp or buckle, 3–5 – iron mounts from the belt region, 6 – an iron artefact, 7, 8 – knives.

Jn 9. Leide matuses nr 38. 1 – vööringas, 2 – pannal, 3–5 – naastud, 6 – raudese, 7, 8 – noad.
(TÜ 3179: 286, 287, 292/1, 292/2, 293, 291, 290, 289.)

Photo / Foto: Heiki Valk



Fig. 10. Rings from Loosi cemetery. 1, 2 – shield-shaped rings with long open ends, 3 – a fragment of a ring with a flat shield, 4 – a spiral ring, 5 – a spiral ring or wire twist from a knife handle, 6 – a ring, without stone, 7 – a closed ring, 8–13 – signet rings.

Jn 10. Sõrmuseid Loosi kalmistult. 1, 2 – laiakilbilised keerdotstega sõrmused, 3 – laiakilbilise sõrmuse katke, 4 – spiraalsõrmus, 5 – spiraalsõrmus või noapideme otsa traatmähis, 6 – kiviga sõrmus (kivi kaotsis), 7 – vitssõrmus, 8–13 – pitsatsõrmused.

(TÜ 3179: 280, 281, 264, 247, 65, 246, 256, 188/1, 188/2, 260, 176, 240, 60.)

Photo / Foto: Heiki Valk

Burial 33 (a 40+ year-old woman) was also in a supine position, the only remaining limb being the left arm straight along the body. Exceptionally for the whole trench five irregularly located granite stones with the diameter of 15/20–25/30 cm were found above the bones. The right middle finger of the burial had a ring (Fig. 11: 2), and she was buried with a knife under the right thigh (Fig. 11: 4). Furthermore, a bracelet with some timber (Fig. 11: 1) and a silver penny of Tartu bishopric from between the 1260s and 1330s were on her right side. A radiocarbon date from the skeleton² – 690±30 BP, cal. (95.4%) 1272–1317 (65.8%) or 1360–1389AD (29.6%) – fits well with the coin date. Six yellow seed beads (Fig. 11: 3) were in the neck region. The most magnificent find was a very well preserved, although partly damaged decoration of spiral tubes in her pelvic region. The small fragment of spiral tube decorations found higher nearby may originate from the same burial. All these textile remains were removed in blocks to be excavated in the laboratory (for detailed overview see below, section ‘The blocks and textile remains’).



Fig. 11. Finds from burial no. 33. 1 – a bracelet, 2 – a ring, 3 – seed beads, 4 – a knife.

Jn 11. *Matus 33 leiud.* 1 – käevõru, 2 – sõrmus, 3 – helmed, 4 – nuga.

(TÜ 3179: 210/1, 207, 208, 209.)

Photo / Foto: Heiki Valk

Cremation burials

The entire excavated area contained dispersed cremains, usually found as single particles or in groups of two or three pieces. Cremated remains formed larger assemblages in two places: the smaller one in the middle of the east side of Trench 1 and the bigger one from the eastern part of Trench 2. Judging by the distribution of dispersed cremains, they continued towards the east and the south also outside the trench. To this assemblage of cremated bones belongs, evidently, also the spearhead with traces of fire (Fig. 12: 2). Radiocarbon analyses from the cremains³ gave the result 540±30 BP, cal. (95.4%) 1322–1356 (26.0%) or 1391–1437 AD (69.5%). Judging by the date of burial 30 which partly had cut the cremation grave, the latter cannot date from a later time than the 14th century.



Fig. 12. The spur and spearhead from Loosi cemetery.

Jn 12. *Kannus ja odaots Loosi kalmistult.*

(TÜ 3179: 103, 124.)

Photo / Foto: Heiki Valk

² Poz-177194. Radiocarbon samples were calibrated with OxCal v4.4 programme (Bronk Ramsey 2009) and IntCal20 calibration curve.

³ Poz-177596.

HUMAN REMAINS AND OSTEOLOGICAL ANALYSIS

All 44 skeletons were osteologically analysed⁴ (Malve in prep; see Appendix). Statistics also include skeletons that were highly fragmented and/or whose sex and age could not be determined, as well as skeletons that were not fully excavated: because of either being damaged by later burials and/or during earthwork or remaining partially out of the excavation area. Overall, the bones were well preserved. However, in some cases the bone was in poor condition, often with the surface missing and without the ends of long bones.

The analysed skeletons included 30 adults (68.2%) and 14 subadults (31.8%). Eight (26.7%) of the adults were males (including two possible males) and 16 (53.3%) females (including two possible females). The sex of six adults could not be estimated. The ratio of male-to-female burials is not equal, but a larger number of female skeletons is probably random. The small number of non-adults could be related to poor bone preservation or is coincidental.

Both skeletal and dental diseases were studied and Medieval and Early Modern Period pathologies were identified during osteological analysis. Dental diseases were the most frequently encountered pathologies and were mainly detected on adult skeletons. The most common dental diseases were dental calculus, caries, periapical lesions and alveolar reduction. The adult sample consisted of 203 permanent teeth, while from non-adults only 47 permanent teeth and 41 deciduous teeth were recorded. The most frequently encountered expression of pathology on skeletons was osteoarthritis of the limb joints and of the spine (spondyloarthritis). Joint diseases were recorded mostly on over 40 years old individuals. Spondylosis and Schmorl's nodes were also quite common among the deceased, in both males and females.

The most remarkable find was discovered from the pelvic cavity of an over 40-year-old female (burial no. 33). It resembled an oviform hollow cyst, measuring 10.51 mm in length, 8.06 mm in maximum diameter and approximately 0.2 mm in shell thickness (Fig. 13). The find is probably a calcified cyst and was likely preserved by copper alloy corrosion. Furthermore, soft tissue was still intact around the calcified ovate due to corrosion. This kind of cysts could be ovarian cysts or related to tuberculosis and parasites. It is an extremely rare find in Estonian bone material.

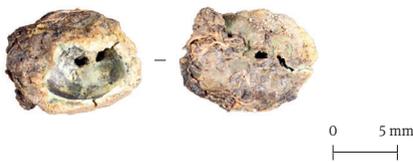


Fig. 13. Calcified ovate cyst from the pelvic cavity of an older female (burial no. 33) – view from both sides.

Jn 13. Vanema täiskasvanud naise (matus 33) vaagnaõõnest avastatud ovaalne luustunud tsüst – vaade mõlemalt poolt.

Photo / Foto: Marie Anna Blehner

Choosing the femur as the bone to be used in height calculations, stature could be estimated for seven women and six men. The ranges and means were as follows: 149.94–161.3±3.72 cm; 155.1±3.72 cm (females); 163.54–173.51±3.27; 169.1±3.27 cm (males).

In addition to skeletons, 9008 commingled bones and bone fragments were identified during osteological analysis. This included 379 commingled teeth, 58 deciduous and 321 permanent. The main pathologies found on commingled remains were dental

⁴ The sex of the burials was determined according to the morphological traits on the pelvis and cranium (Buikstra & Ubelaker 1994, 16–20), maximum length of the long bones (Garmus & Jankauskas 1993, 6–8), and tarsal bones (Garmus 1996, 26). The age at death was determined according to tooth wear (Brothwell 1981, 72), pubic symphyseal face (Todd 1920; 1921; Brooks & Suchey 1990), and age caused changes on the limb joints (Ubelaker 1989, 84–87). The age of subadults was determined by examining the development and eruption of the teeth (AlQahtani *et al.* 2010; Moorrees *et al.* 1963a, b), limb bone length (Scheuer *et al.* 1980) and epiphyseal fusion (Schaefer *et al.* 2009). Pathological conditions were identified based on Buikstra (2019) and Roberts & Manchester (2012). Stature was calculated according to the formula of Trotter and Gleser (Trotter 1970), using measurements of the right femora.

calculus and caries, age-related diseases (osteoarthritis, spondylosis, spondyloarthritis), and diseases of the vertebral column (Schmorl's nodes). Among the commingled human bones there was a left humerus from an adult skeleton with probable *peri mortem* blade injury. The cut mark runs through almost the whole diaphysis, starts from the anterior part and ends in the posterior side, where there is a visible small area without a cut (Fig. 14). Another remarkable injury was traced on a single proximal phalanx. The bone was missing a whole distal part, the surface of the bone suggests that it was also sliced off by blade. The phalanx showed new bone formation related to initial healing on all sides of diaphysis, suggesting that the individual did not die immediately, but after some time.

Beside skeletons and commingled bones also cremated human remains were collected. Primary osteological analysis revealed 986 burnt human remains. The bone colour varied from black to white, mostly it was white. The bone assemblage consisted primarily of tubular bones and skull fragments, in addition two tooth fragments were recorded, one of them belonging to a deciduous tooth. In one case osteophytes were detected on a vertebra body, which are related to degeneration (e.g. spondylosis).

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THE FINDS

General overview

The find assemblage mainly consists of artefacts characteristic of the rural cemeteries of southern Estonia – jewelry, metal accessories of dressing, coins, and small tools and utensils.

Brooches were represented by 17 items, including seven penannular (Fig. 15: 9–13), three annular (Fig. 15: 4, 8) and two tiny round 17th-century brooches (Fig. 15: 1–2), a fragment of an

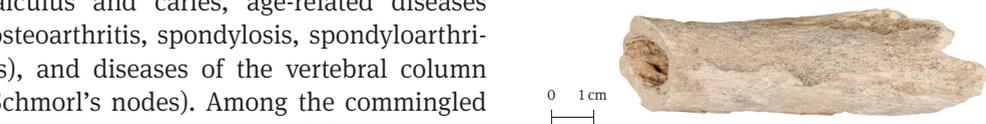


Fig. 14. The left humerus of an adult with probable *peri mortem* injury in the distal 1/3 of the diaphysis.

Jn 14. Tõenäoliselt surmav terariista vigastus täiskasvanu vasaku õlavarreluu diafüüsi distaalses kolmandikus.

Photo / Foto: Marie Anna Blehner



Fig. 15. Brooches from Loosi cemetery. 1–2 – tiny round brooches, 3 – a round brooch or a buckle, 4 – a fragment of an annular brooch, 5 – a fragment of an annular brooch with 'ears', 6, 7 – heart-shaped brooches, 8 – a round brooch, 9–13 – penannular brooches.

Jn 15. Sõlgi Loosi kalmistult. 1–2 – vitssõled, 3 – vitssõlg või pannal, 4 – kitsakaarelise rõngassõle katke, 5 – kitsakaarelise nurksõle katke, 6, 7 – südassõled, 8 – rõngassõlg, 9–13 – hoburaudsõled.

(TÜ 3179: 117, 231, 263, 237, 218, 173, 294, 100, 50, 265, 248, 125, 33.)

Photo / Foto: Heiki Valk

annular brooch with 'ears' (Fig. 15: 5) and two heart-shaped brooches (Fig. 15: 6, 7). A round iron object (Fig. 15: 3), gained as a stray find, may have served both as a brooch and a buckle. Worth special noting is the big annular brooch of 9 cm diameter from grave no. 30. From the heart-shaped brooches one (Fig. 15: 7) was found together with a Russian coin from 1645–76 and the other (Fig. 15: 6) with a Swedish *öre* from 1660–1697.

From the 13 or 14 finger-rings six date from the 13th to the mid-15th centuries. Most numerous from that time are four items with long open ends and a broad shield (Fig. 10: 1, 2; 11: 2). Such rings are most rare in the typical village cemeteries of southern Estonia, but there are several finds from Ala-Kõrtsi cemetery in Urvaste parish (western part of Võrumaa) from the first half or the middle of the 13th century (Valk *et al.* 2018b, fig. 4: 4; 11: 1–4). Three finds from Loosi are robust work, probably from the degeneration stage of the artefact type, but the ring from burial 33 is a finely elaborated item, similar to those from Ala-Kõrtsi cemetery. A fragment of a ring with a broad shield (Fig. 10: 3), and a spiral ring decorated with notches (Fig. 10: 4) also belong to the mid-13th – mid-15th centuries.

One find which resembles a spiral ring made of wire (Fig. 10: 5) may also be a wire twisted around a wooden knife handle (compare with Fig. 7: 2). A simple closed ring (Fig. 10: 7) and a ring with a (missing) stone (Fig. 10: 6) may belong to the Early Modern Times. The latter find is atypical for the rural cemeteries, referring to non-peasant background. Six signet rings (Fig. 10: 8–13), common finds in the rural context of southern Estonia originate from the second half of the 16th and the 17th century.

The only wholly preserved bracelet – a find from burial 33 is a flat thin item decorated with wolf tooth and rhombus ornamentation (Fig. 11: 1). A fragment of another, bigger bracelet, possibly of a shield-shaped item (: 255) was also found.

Necklaces were not numerous. Cowry shells were present in three burials. There were two shells and 18 seed beads above burial no. 14. 18 cowry shells were found from the neck region of partly disturbed female burial no. 28 with a coin from ca. 1265–1332, but, considering the disturbance, their original number may have been bigger. 18 shells belonged to the necklace of burial no. 40 which was located immediately under the previous one. From the necklaces of disturbed burials originate 17 single cowry shells, three tiny bells (Fig. 16: 9–11) and several seed beads. Six seed beads (Fig. 11: 3) were found from the neck region of burial no. 33.

Dress accessories are represented by three assemblages picked up as blocks (see below). In addition, 29 spiral tubes of copper alloy wire, some of them maybe from the same clothing items, were collected as stray finds. 15 rings of iron (Fig. 6: 3; 9: 1) and one of copper alloy originate from the belts. A tiny bone ring from the belt region of burial no. 30 (Fig. 6: 2) also belongs to belt accessories. The diameter of the iron rings varied from 3 to 6 cm. 11 iron clasps or buckles (Fig. 6: 4, 7) are mostly rectangular, but a tiny buckle from grave no. 38 (Fig. 9: 2) was of round shape.

Also the six round iron mounts with the diameter of 28–30 mm are probably associated with the belts, five of them decorated with a pressed central dot (Fig. 16: 12). Three of these iron mounts were found from the belt region of burial no. 34, one from under the skull of burial no. 25, but it may also originate from the disturbed context and belong to another burial, and two were gained as stray finds. From burial no. 38 two rectangular oblong iron mounts (Fig. 9: 3, 4) were found – one under the back, the other at the fingers of the left hand. An iron decoration which indicated a ca. 5.5 cm wide leather belt (Fig. 6: 5) was found from the pelvic region of burial no. 30. A lead alloy belt mount (Fig. 16: 3), a tiny round copper alloy mount (Fig. 16: 2), two rectangular ornament links, one whole and the other half-preserved

(Fig. 16: 5, 6), a tiny button (Fig. 16: 1), a broken Orthodox cross (Fig. 16: 8), two decorative details or mounts (Fig. 16: 4, 13), and a tiny bone bead or belt ring (Fig. 16: 7) were obtained as stray finds.

During the investigations the total of 33 knives and their fragments, judging by shape, from different periods, were found. The most outstanding find was a big, 32 cm long knife (Fig. 7: 1), conventionally regarded as a butcher's tool, from burial no. 30 which dates, judging by the find assemblage, from the 15th century. The knife had a flat handle with iron rivets on both sides. An exceptional find from rural cemeteries of southern Estonia is also the blade of a folding knife (Fig. 9: 7) that probably had a wooden handle. It belonged to burial no. 38, dated by a 14th century coin.



Fig. 16. Finds from Loosi cemetery. 1 – a button, 2, 3, 12 – mounts, 4 – a decorative detail, 5, 6 – rectangular ornament links, 7 – a bead or belt ring, 8 – an Orthodox cross, 9–11 – bells, 13 – a decorative detail.

Jn 16. Leide Loosi kalmistult. 1 – nõõp, 2, 3, 12 – naastud, 4 – ehisdetail, 5, 6 – vahelülid, 7 – vöörõngas või helmes, 8 – õigeusu kaelarist, 9–11 – kuljused, 13 – ehisdetail.

(TÜ 3179: 244, 20, 220, 216, 273/2, 272, 273/1, 245, 243, 179, 261, 149, 234.)

Photo / Foto: Heiki Valk

Fire steels (Fig. 17) are represented with four items, three of rectangular and one of oval shape. Three flakes of imported flint originate from Scandinavian Cretaceous deposits. Since the flakes have no traces of elaboration, they probably belong to the medieval period. Two pieces of flint were found from graves (burials no. 17 and 30) and one of them (Fig. 6: 1) bore traces of wearing. The finds also include four iron sewing needles – three of them from burials no. 24, 30 and 38 –, a whetstone and some fragments of wheel-thrown pottery.

Unusual finds for medieval cemeteries of southern Estonia are two stray finds – a rowel spur (Fig. 12: 1) and a spearhead with traces of fire (Fig. 12: 2), evidently from a cremation grave. Such spurs appeared in the middle of the 13th century and were in use in the 14th century (Peets 2007, 192–193).



Fig. 17. Fire steels from Loosi cemetery.

Jn 17. Tulerauad Loosi kalmistult.

(TÜ 3179: 58, 170, 183, 205.)

Photo / Foto: Heiki Valk

The find assemblage also includes 66 archaeological coins – 17 from medieval and 48 from Early Modern Times, and one unidentified fragment. From the medieval coins 13 date from before and four from after the Livonian monetary reform of the 1420s, one is of uncertain date. Among the earlier period coins there are four ‘crown bracteates’ of Denmark minted in Tallinn, six pennies of Tartu bishopric – two from ca. 1260–1330, three from ca. 1390–1420 and one of uncertain date, two pennies of the Livonian Order minted in Tallinn, and a bracteate from northern Germany from the 14th century. Due to the acid soil, the thin bracteates were poorly preserved. The post-reform medieval coins are represented by two schillings of the Livonian Order, minted in Tallinn, a penny of Tartu bishop Savijerwe and a Gotlandic *hvid* from 1534–59.

11 coins belong to the period of the Livonian War (1558–1582/83) and Polish rule (1582–1625). Poland is represented by four schillings of Sigismund III minted in Riga and a schilling minted in Dahlen, Sweden – by a penny of Eric XIV minted in Tallinn and two schillings of Johan III minted in Riga. There were also two schillings of the Free Town of Riga and one of the Duchy of Couronia (Gotthard Kettler).

Among the 37 finds from the period of the Swedish rule from 1625 to the early 18th century, most numerous are Swedish schillings minted in Riga. Coins from the reign of Gustavus II Adolphus (1611–32) are represented with two finds (one of them Suczawa fake), those of Christina (1632–54) with nine Riga schillings and a silver *öre* minted in Tallinn, those of Charles X Gustav with three schillings and of Charles XI with 15 Riga schillings from the 1660s (one of them Suczawa fake). There is also a Polish schilling of John Casimir (1648–68).

Russian coins were represented by four wire kopecks – one minted by Mikhail Fiodorovich (1613–45), one or two by Alexei Mikhailovich (1645–76) and one by Peter I (1682–1717), as well as by a copper *denga* of Peter I from 1704.

The blocks and textile remains

Burial no. 33 contained remains of a clothing accessory made of tiny spiral tubes wound of copper alloy wire (Figs 18, 19). This object was found under the pelvis, its one end turning on the left hip bone. The central part of the accessory (: 269; Fig. 18A) and two tiny fragments of the end on the left pelvic bone were lifted as blocks with supportive soil and some bone

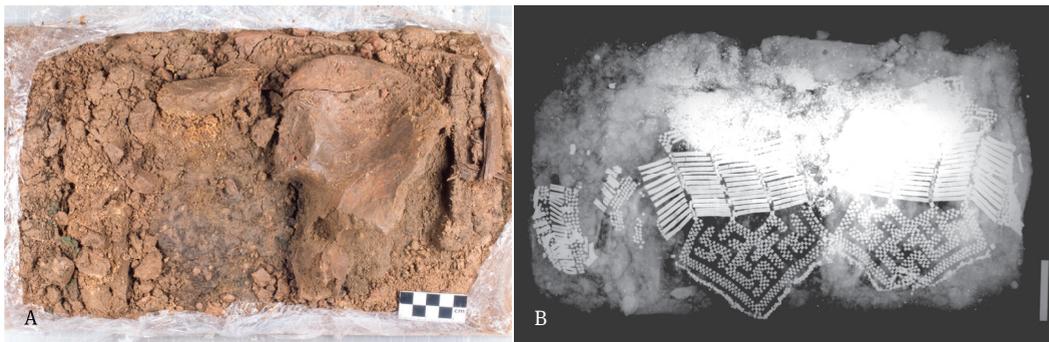


Fig. 18. A – The central part of the accessory in the block from burial no. 33 after removing the cling film. The block measured ca. 40 × 24 cm, its height was ca. 4–9 cm, B – X-ray photo of the block from burial no. 33 before the cleaning.

Jn 18. A – Rõivaakssuuaari keskne osa matusest 33 võetud monoliidist pärast kile eemaldamist. Monoliidi mõõtmed olid 40 × 24 cm, kõrgus u 4–9 cm, B – röntgenfoto matuse 33 monoliidist enne puhastamist.

(TÜ 3179: 269.)

Photo / Foto: Kristel Kajak, Ragnar Saage

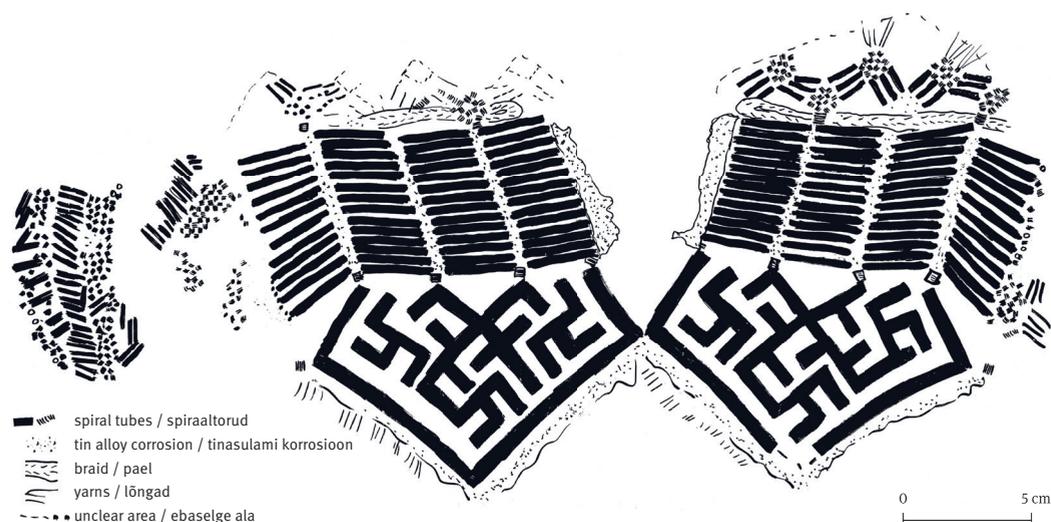


Fig. 19. Schematic image of dress accessory from burial no. 33.

Jn 19. Matusest 33 leitud rõivaeseme skemaatiline kujutis.

Drawing / Joonis: Kristel Kajak

fragments. The plywood covered with cling film was used as a base for the block, and the sides were also supported by cling film. The plastic prevents mould growth, which starts fast in a suitable environment if cellulose-based wood and moist soil containing microorganisms come in contact. Blocks were cleaned at the Archaeological Laboratory of the University of Tartu.

The structure of the spiral tube accessory is well visible on the X-ray photo of the main block taken before cleaning: it consists of two rhomboid patches with swastika motifs, both having an ‘upper band’, where longer tubes alternate with the pattern of tiny ones (Fig. 18B). Similar spiral tube decorations, called ‘back aprons’, have also been found earlier: in twelve 13th–14th century female burials of eight cemeteries (Laul 1981; Valk *et al.* 2018b, 101–102). During the cleaning, it became clear that in addition to the metal parts, textiles and other organic remains have survived relatively well, and the Loosi find is the best-preserved example of its kind.

Cleaning was carefully done with brushes and spatulas, and the purpose was to observe the sequence of multiple layers of organic matter (Kajak 2024a). Altogether, nine ‘stratigraphic units’ were distinguished. As can be seen on the illustration (Fig. 20), under the soil and bone fragments (1), human skin (2) and two layers of textile (3, 4) were revealed. These textile layers were of two different fabrics: both of wool, in 2/2 twill weave, and probably dark bluish. This find indicates that the body was dressed in upper clothing made of wool. The next unit was the accessory of interlaced yarns and spiral



Fig. 20. Layers in the block from burial no. 33.

Jn 20. Matuse 33 monoliidis eristatud kihid.

Drawing / Joonis: Kristel Kajak

tubes (7), followed by the remains of the linen tabby (8) and the wood of the coffin bottom (9). The linen tabby is the remains of the shroud or coffin furnishing.

In addition, near the spiral tube ‘bands’, a defined area of grey tin alloy remains (6) was unearthed together with reddish textile remains of wool (5), possibly originating from a tablet-woven belt. An item adorned with tin plaques, the form of which is not possible to reconstruct, was placed under the ‘back apron’. However, it is difficult to determine whether the plaques and possible belt remains were initially connected. The different layers could not always be separated without damaging the find. Occasionally, the decision was made to preserve the textile, metal, and wooden remains as an integral piece. In the case of one rhomboid patch, the tin fragments and two spiral tubes were fixed with 10% Paraloid B-40 solution in acetone.

Concluding the present state of the art, these spiral tube decorations found in southern Estonia were likely a kind of belt ornament as they have been discovered in the waist area, and sometimes tablet-woven belt fragments were also present. Based on the finds, it is impossible to say how these belt ornaments were worn, were they hanging on the back or on the hips. Despite the slight variation in details, all remains of these belt ornaments

are similar in form. The rhomboid patches were interlaced with a combination of woolen yarns and horsehair and their edges were bordered with tablet-woven bands, sew-on tin plaques, and colourful fringes. Silvia Laul proposed the classic reconstruction in 1981, in which these two patches were united by the upper ‘band’, and the item was hanging from the waist on the bottom (Laul 1981; Valk *et al.* 2018b, fig. 6).

However, the find from Loosi and another recent find in Urvaste (*ibid.*, 101–102) prove that the accessory consists of two rhomboid parts and their upper part was not joined. From the Loosi block, no linking parts between the two patches were found. Instead, the upper ‘bands’ were stretching towards the hips like ‘wings’ ending with fringes (Fig. 21). Moreover, additional fringes were also present on the upper edge of the spiral tube ‘band’ adorned with triangles. Thus, the two parts of this accessory were surrounded by fringes.

From the block taken from around the heels of mid-17th – early 18th century female burial no. 8 (Kajak 2024b) remains of leather footwear were found (Fig. 22). The probable boots or shoes had iron calks. The continuous copper alloy decorations of twisted wire with yarn inside, as well as the placement of that decoration between the multi-layered heel and the overshoe are unique in the Estonian context.



Fig. 21. A rhomboid patch together with the ‘upper band’ of longer spiral tubes (block from the burial no. 33).

Jn 21. Rombikujuline lapp koos pikkadest spiraalidest ülemise vööndiga matuse 33 monollidist.

Photo / Foto: Kristel Kajak

DISCUSSION

Judging by finds, the cemetery of Loosi was in use at least from the mid-13th to the early 18th century – then using the village cemeteries ended in southern Estonia (Valk 2001, 88–91, fig. 71). Although the pre-crusade origin of the earliest burials cannot be excluded, such early origin of the site could not be verified, albeit some previous metal detector finds (Valk *et al.* 2018a, 160, 167) may date from pre-conquest times.

Although the excavations led to no definite traces of a medieval chapel, the question concerning the assemblage of stones above burial no. 33 still remains. It is unclear whether the stones reflect a specific burial rite related to this burial and uncommon for the cemetery as a whole, or they originate from the foundation of the destroyed chapel, referring to its vicinity.

The excavations enable to see Loosi cemetery and its surroundings in a broader cultural context – between the central areas of south-eastern Estonia, and the ‘Chud of Ochela’, represented by Siksälä cemetery. Likewise in Võrumaa in general, the central part of Loosi cemetery had continuously been in use for a long time, with earlier graves disturbed by later ones, whereby mostly just fragments of earlier, medieval burials had preserved. In this respect the burial traditions at Loosi differ from those at Siksälä cemetery where disturbing earlier graves was deliberately avoided and the burial area was extended in the course of time.

Different cultural backgrounds of Loosi and Siksälä cemeteries are expressed also in the position of the hands of the deceased. In Siksälä in about half of the cases both hands lay parallel to the body, which is very unusual for the village cemeteries of southern Estonia. In Loosi this practise could be observed in just one burial.

Also the general character of Loosi cemetery grave goods from the 13th to the mid-15th centuries represents rather the core areas of Ugandi, being different from that in Siksälä cemetery. This is expressed in female costume and jewelry (lack of shawls, headbands, wide shield-shaped bracelets, anthropomorphic pendants and S-shaped pendant loops), as well as in the find of the ‘back apron’ – a costume detail characteristic for the cemeteries of pre-historic Ugandi area. However, brooches and necklaces seemed to be less common in Loosi than in the central regions of Ugandi.

Thus, the excavation results indicate the cultural affinity of Loosi to the southern Estonians, and not to ‘the Chud of Ochela’. Although in administrative terms the surroundings of Loosi did not belong to Ugandi – as Henry of Livonia writes, the priest came from there to Walgatabalwe, and baptized the outermost hamlets against Pskov (HCL XXIV: 6) –, the cultural traditions of the area resemble those of Ugandi. A factor which contributed to this affinity, was evidently the road between Ugandi and the Pskov Land which must have passed close by the Loosi cemetery (Valk *et al.* 2018a).



Fig. 22. *Remains of leather footwear and left calk from burial no. 8.*

Jn 22. *Jalatsi jäänuseid ja vasak kontsaraud matuses nr 8. (TÜ 3179: 172.)*

Photo / Foto: Kristel Kajak

In some aspects, the cemetery of Loosi is, however, closer to Siksälä than to the medieval village burial grounds of Ugandi. A specific feature of the site, when compared to the typical medieval cemeteries of south-eastern Estonia, is the numerous presence of dispersed cremated bone fragments – considerably higher than in other excavated cemeteries where they do not occur at all or where they are represented with single finds only. The date of the cremains indicates that the retreat of pre-Christian traditions was slower in the periphery than in the core areas of Ugandi.

A specific feature of Loosi cemetery against the background of typical medieval village cemeteries of south-eastern Estonia are also the finds of a spearhead and a spur. In this context, the two spearhead fragments in the find assemblage from 2015–2019 (Valk *et al.* 2018a) should also be noted. Although spurs and spearhead are alien for the medieval cemeteries of the core areas of south-eastern Estonia,⁵ such finds were numerous in Siksälä cemetery (Valk & Laul 2014, 88). These finds from Loosi, however, might be regarded not so much as ethno-cultural features, but rather as indicators of the general social and political situation in the border areas of Tartu bishopric and medieval Livonia. The cemeteries of Loosi and Siksälä are both located close to the border (8.5 and 5 km) and the finds of weapons and spurs might refer to the special social status of the local population, involved in guarding the border of the bishopric. The finds from Loosi show that the area controlled by the native border guards of special status stretched quite far from the border, deep inland. The two almost fully preserved and richly furnished medieval male burials from the 14th and 15th centuries – nos 38 and 30 – also refer to a different social situation in the borderland.

CONCLUSIONS

Excavations on the cemetery of Loosi gave new information on the medieval cemeteries and cultural traditions in the eastern border area of Võrumaa. It appeared that the cultural features expressed in jewelry and costume correspond, in great lines, to those in the core areas of the prehistoric Ugandi province and differ from those recorded at Siksälä cemetery, representing the ‘Chud of Ochela’. However, as specific features, the relatively large number of grave goods in some burials up to the mid-15th century, as well as the presence of cremations are significant. These features of burial rites can be explained by the location of the cemetery in the border area.

ACKNOWLEDGEMENTS

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⁵ From the medieval rural burial sites of the region only one javelin spearhead has been found from the cemetery at the foot of Otepää hill fort. However, the context of the find is unclear: it also may result from military activities.

Appendix. Osteological age, sex, pathologies, finds and dating of the recorded skeletons from Loosi cemetery.

Lisa. Loosi külakalmistult leitud luustike osteoloogiline vanus, sugu, patoloogiad, hauainventar ja matuste dateering. Compiled by / Koostanud: Martin Malve and Marie Anna Blehner

Burial no. / Matuse nr	Sex / Sugu	Age / Vanus	Pathologies / Patoloogiad	Stature / Kehakasv (cm)	Finds / Leiud	Date / Dateering
1	♂	50–66 y / a	Osteoarthritis of limb joints, spondylosis on the 4th–5th lumbar vertebrae, spondyloarthrosis on the 4th–5th lumbar vertebrae, healed fracture of the right clavicle, <i>os acromiale</i> on the right scapula.	173.51±3.27	Belt ring, knife	15th–16th centuries
2	♂	Adult / Täiskasvanu	Osteoarthritis of lower limb joints, probable healed non-specific lesion on the lateral side of the midshaft of the left tibia, enthesophyte on the posterior side of the midshaft of the left femur, probable trauma on the posterior calcaneal articular surface of the right talus, healed trauma on the middle calcaneal articular surface of the left talus.	170.77±3.27	–	?
3	?*	7.5–8.5 y / a	Teeth: slight dental calculus, localised hypoplastic defect. Porosity on the right orbit (<i>Cribra orbitalia?</i>).	–	Corrosion found during osteological analyses – an iron item?	?
4	?	1.5–2.5 y / a	–	–	Coin	1696–1717 ⁶
5	♂?	Adult / Täiskasvanu	–	–	–	?
6	♀	40+ y / a	Osteoarthritis of the lower limb joints.	151.42±3.72	Fire steel	13th–14th centuries
7	?	7.5–10.5 m / k	New bone formation on the posterior side of the corpus of the 4th–9th ribs.	–	Coin	1632–1654
8	♀	Adult / Täiskasvanu	Slight osteoarthritis on the left knee joint.	154.88±3.72	Copper alloy, iron and leather pieces	mid-17th – early 18th century
9	?	Adult / Täiskasvanu	–	–	–	?
10	♀	40–83 y / a	Teeth: slight dental calculus, remarkable alveolar redaction, caries, periapical lesions, <i>ante mortem</i> lost teeth. Spondylosis on the 6th–8th and 11th thoracic vertebrae, 1st–2nd and 5th lumbar vertebrae, spondyloarthrosis on the 6th–10th thoracic vertebrae, left <i>os trigonum</i> , probable trauma on the posterior calcaneal articular surface of the right talus, porosity on the orbits (<i>cribra orbitalia?</i>).	160.31±3.72	Heart-shaped brooch, knife, coin	1632–1654

⁶ Here and below: in case of coin dates the period of coinage is provided, but the burial may also be from later time.

Burial no. / Matuse nr	Sex / Sugu	Age / Vanus	Pathologies / Patoloogiad	Stature / Kehakasv (cm)	Findings / Leiud	Date / Dateering
11	♀	44–83 y / a	Teeth: canines of the maxilla have not erupted, but have fully formed inside alveolar process, slight dental calculus, remarkable alveolar redaction, caries, periapical lesions, enamel hypoplasia. Numerous button osteomas on the frontal bone, a single button osteoma on the left parietal bone, osteoarthritis on the limb joints, spondylosis on the 3rd–12th thoracic vertebrae, 1st–5th lumbar vertebrae and 1st sacral vertebra, spondyloarthritis on the 2nd–7th cervical vertebrae, 1st–12th thoracic vertebrae and 1st–5th lumbar vertebrae, Schmorl's nodes on the 6th, 8th–9th and 11th–12th thoracic vertebrae and 1st–5th lumbar vertebrae, compression of the bodies of the 8th and 10th–11th thoracic vertebrae, fragment of the lateral part of the left patella has not been fused (congenital abnormality).	161.3±3.72	Signet ring	mid-16th – early 17th centuries
12	?	Adult / Täiskasvanu	Spondylosis on the 1st lumbar vertebra, spondyloarthritis on the 5th–6th cervical vertebrae, 1st–12th thoracic vertebrae.	–	–	?
13	♀?	Adult / Täiskasvanu	–	–	–	13th–15th centuries
14	?*	Birth / Sünd – 4.5 m / k	–	–	Clasp	14th–16th centuries
15	♀	Adult / Täiskasvanu	Osteoarthritis on hip joints, left <i>os trigonum</i> .	153.64±3.72	Knife	15th–17th centuries
16	?	Infant / Perinate	–	–	–	?
17	?	14–18 y / a	–	–	Bell, knife, flint	14th–15th cc.
18	?	14.5–16.5 y / a	Teeth: slight dental calculus, dental hypoplasia. Canines of the maxilla have falsely erupted. Probable fractures on the distal end of the diaphysis of the right ulna and left radius.	–	–	13th–15th centuries
19	?	Adult / Täiskasvanu	–	–	–	?
20	♂?	Adult / Täiskasvanu	Healed non-specific lesions on the anterior, medial and posterior side of femora, active non-specific lesions on the lateral side of the left tibia, active non-specific lesions on the medial and distal part of the anterior side of the left fibula, active non-specific lesions of the medial side of the left talus, probable traumatic osteoarthritis between the joints of the left talus and calcaneus.	168.75±3.27	Belt ring, fire steel, knife	14th–16th centuries
21	♀	19–21 y / a	Probable trauma on the articular surface for the talus head of the left navicular.	154.38±3.72	–	15th–17th centuries
22	?	14–20 y / a	–	–	–	?
23	?	Adult / Täiskasvanu	–	–	–	?
24	♀	19–24 y / a	Teeth: slight dental calculus, dental hypoplasia. Arches of the medial sacral crest have not been fused (congenital abnormality), spondyloarthritis on the 3rd–4th thoracic vertebrae, Schmorl's nodes on the 1st–5th thoracic vertebrae and 1st sacral vertebra.	149.94±3.72	Organic material, needle, coin	1665–1685

Burial no. / Matuse nr	Sex / Sugu	Age / Vanus	Pathologies / Patoloogiad	Stature / Kehakasv (cm)	Finds / Leiud	Date / Dateering
25	♀	20–30 y / a	Teeth: inside the alveolar process the is unerupted 4th molar, which has smaller crown and root, slight dental calculus, ante mortem tooth. Schmorl's nodes on the 8th–9th and 11th thoracic vertebrae.	–	Two signet rings, plaque	mid-16th – early 17th century
26	♀	Adult / Täiskasvanu	–	–	Knife, spiral tube	13th–14th centuries
27	♂	18–20 y / a	Right <i>os trigonum</i> .	–	Two belt rings	ca. 1265–1330s
28	♀	18–25 y / a	–	–	Cowry shells, two rings, belt ring, coin, pattern of spiral tubes	ca. 1265–1330s
29	?	Birth / Sünd – 4.5 m / k	Probable endocranial lesions on the orbital part of the frontal bone and on the right temporal bone.	–	–	15th–17th centuries
30	♂	19–30 y / a	Teeth: slight dental calculus. Healed sinusitis of the left maxillary sinus, enthesophyte on the distal part of the anterior of the right humerus, probable healed trauma on the medial part of the right clavicle, probable osteitis on the femora, Schmorl's nodes on the 7th–12th thoracic vertebrae, congenital abnormality on the 5th lumbar vertebra.	163.54±3.27	Brooch, two knives, two belt rings, two clasps, coin, needle, iron item, lead item and a piece of flint	15th (?) century
31	♀	40–66 y / a	Osteoarthritis on limb joints, spondylosis on the 1st and 3th–5th lumbar vertebrae, spondyloarthrosis on the 1st–5th lumbar vertebrae, Schmorl's node on the 1st lumbar vertebra, sacralization of the 6th lumbar vertebra.	–	Fire steel	14th century
32	♂	39–57 y / a	Teeth: slight dental calculus, periapical lesions, ante mortem lost teeth. Spondylosis on the 12th thoracic vertebra and 1st lumbar vertebra, Schmorl's nodes on the 11th thoracic vertebra and 2nd–3rd and 5th lumbar vertebrae, lumbarization of the 1st sacral vertebra.	167.32±3.27	Coin	1704
33	♀	40+ y / a	Spondylosis on the 4th–5th lumbar vertebrae, spondyloarthrosis on the 4th–12th thoracic vertebrae, cyst (8.06 × 10.51 mm) inside the pelvic cavity.	–	Ring, knife, bracelet, coin, seed beads, pattern of spiral tubes	13th–14th centuries
34	?	15.5–16.5 y / a	–	–	Three plaques, knife	13th–14th centuries
35	♀	25–35 y / a	Teeth: slight dental calculus, caries, periapical lesions, ante mortem lost teeth. Active endocranial lesions on the frontal, occipital, parietal and temporal bones	–	–	?
36	?	Below / Alla 3 y / a	–	–	?	?
37	?	10.5 m / k – 1.5 y / a	–	–	?	?
38	♂	27–34 y / a	Teeth: slight dental calculus, periapical lesions, caries. Possible spondyloarthrosis on the 5th–6th cervical vertebrae, 2nd and 4th–6th thoracic vertebrae. Schmorl's nodes on the 6th–12th thoracic vertebrae and 1st–3rd lumbar vertebrae.	–	Belt ring, clasp, needle, three iron items, two knives, coin	1330s–1370s

Burial no. / Matusse nr	Sex / Sugu	Age / Vanus	Pathologies / Patoloogiad	Stature / Kehakasv (cm)	Finds / Leiud	Date / Dateering
39	?	5.5–6.5 y /a	Teeth: caries, Skinner's type mandible canines. Active non-specific lesions on the dorsal side of the left tibia.	–	Heart-shaped brooch	17th–early 18th centuries
40	♀?	Adult / Täiskasvanu	–	–	Cowry shells	13th–14th centuries
41	?*	2–5 y /a	–	–	–	?
42	?	Adult / Täiskasvanu	–	–	–	?
43	♀?	Adult / Täiskasvanu	–	–	–	?
44	♀?	Adult / Täiskasvanu	Left unexcavated / Ei kaevatud välja			
45	?	Adult / Täiskasvanu	Left unexcavated / Ei kaevatud välja			14th–17th centuries
46	?	Subadult / Alaealine	Left unexcavated / Ei kaevatud välja			
47	?	Adult / Täiskasvanu	Left unexcavated / Ei kaevatud välja			
48	?	Adult / Täiskasvanu	Left unexcavated / Ei kaevatud välja			
49	?	Birth / Sünd – 1 y / a	Porosity on both scapulas.	–	–	?

* – Probable females according to their burial orientation to the east.

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ARHEOLOOGILISED KAEVAMISED LOOSI KÜLAKALMISTUL VÕRUMAA IDAPIIRI LÄHISTEL

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Võrumaa idapiiri lähisel asuva Loosi külakalmistu (jn 1) uuringute eesmärk oli täpsustada andmeid Ugandi–Pihkva maantee äärses varasemas kabeli ning Võrumaa idaosa keskaegse matmiskombestiku ja kultuurilise kuuluvuse kohta. Sooviti selgitada, kas ja kuivõrd sarnaneb Loosi ümbruse keskaegne kultuuripilt Eesti kagunurgas asuva Siksälä kalme omaga, s.t kui kaugele kirde poole on ulatunud peamiselt Läti kirdeosas elanud adsele maarahva asuala. Detektoristide rüüstatud muistise künnikihist oli varasemalt, 2015.–2020. aasta uuringutel kogutud suur hulk juhu- leide.

Kabeli asukoha leidmiseks tehti mäele 20 × 0,5 m mõõtmega põhja–lõuna-suunaline ja künnikihi põhjani ulatuv tranšee, kuid pühakojale viitavaid märke leida ei õnnestunud. Piirkonda, kus sõelutud pinnas sisaldas kõige enam leide ja põlenud luukilde, mõõdeti sisse osaliselt tranšee ala hõlmav ja sellega külgnev kaevand (u 5 × 2,5 m). Teine kaevand tehti tranšee lõunaotsa, kus künnikihis paljandus segatud põletusmatusele viitav põlenud luude kogum. Pärast korduvat laiendamist kujunes seal uurimisala suurusks u 2 × 3,5 m.

Kaevamisel leiti kokku 49 ja uuriti 44 luustikku – 30 täiskasvanu (sh 8 mehe ja 16 naise) ning 14 nooruki

või alaealise matust, 32 esimesest (jn 2, 3) ja 12 teisest kaevandist (jn 4). Varaseimad neist pärinevad 13. sajandist, hiliseimad 17. sajandi lõpust või 18. sajandi algusveerandist. Enamik keskaegseid luustikke oli korduva ülematmisega lõhutud, kuid seetõttu oli matuste ajaline järjestus hästi jälgitav. Luustikud asusid maapinnast 35–80/90 cm sügavusel. Sarnaselt keskaegse Võrumaa külakalmistutega ja Siksälä kalmistuga võis täheldada meeste ja naiste erinevat matmissuunda. Kuigi enamik surnuid oli maetud kristliku traditsiooni kohaselt peaga läände, oli osa naisi ja lapsi suunatud peaga ida poole (jn 2–4).

Osteoloogiline analüüs tuvastas keskaegsetes kalmistutes tavalisi luude ja hammaste patoloogiaid (nt kaaries, osteoartrroos, Schmorli sõlmed). Paleopatoloogiliselt eriline leid oli tsüstilaadne moodustis vanema naise (matus 33) vaagnaõõnest (jn 13). Ühe lõhutud matuse vasakul õlavarreluul oli tõenäoliselt surma põhjustanud terariista löikejalg (jn 14).

Luustike juures ja segatud pinnases oli külakalmistutele iseloomulikke leide – sõlgi, münte, helmeid, nuge, võõrõngaid, pandlaid, tuleraudu, naaste ja muid väiksemaid esemeid (jn 10, 11, 15, 16). Erilist märkimist väärivad juhuleiuna saadud kannus (jn 12: 1) ning ühes varauusaegses naisehaus

(matus 8) olnud kontsaraudadega ja ilustustega nahkjalatsite jäänused (jn 22).

Neli keskaegset, 15. sajandi keskpaigast varasemat luustikku olid silmapaistvalt leiurohked. Matus 30 (jn 5) juurest leiti mitmeid võõmanuseid ja suur rõngassõlg (jn 6) ning kaks nuga (jn 7), üks neist 32 cm pikkune suur puss. Matus 38 (jn 8) luude juures oli rauast vööosi ja kaks nuga (sealhulgas liigendnuga) (jn 9) ning täpsustamata Põhja-Saksamaa piiskopkonna 14. sajandi brakteaat. Tugevalt lõhutud naisematus 28 põlve piirkonnast leiti u 8 cm läbimõõduga spiraalorukestest muster, luude juures oli 1260.–1330. aastate brakteaat ja kaks laiakilbilist keerdotstega sõrmust (jn 10: 1, 2). Ülematmisega osaliselt lõhutud luustiku 33 vaagnaluude alt leiti spiraalorukestest ornamendiga kaunistatud nn tagapõll, mis võeti üles monoliidina ning puhastati välja ja konserveeriti TÜ arheoloogia laboris (jn 18–21). Sama luustiku juures oli veel 1260.–1330. aastate penn, käevõru, laiakilbiline pikkade keerdotstega sõrmus, nuga ja veidi kudruseid (jn 11). Kalibreeritud radiosüsinikuproov luudest andis võimalikuks surma-aastate vahemikuks 1272–1317 (65,8%) või 1360–1389 pKr (29,6%). Jäi selgusetuks, kas nimetatud matus peal olnud 15/20–25/30 cm läbimõõduga kivid on seotud matmisviisiga või pärinevad need kabeli vundamendist.

Teisest kaevandis avastati ülematmisega lõhutud põletusmatus otsingul tules olnud odaots (jn 12: 2). Selle põletusmatus luud – neist tehtud radiosüsinikudateering andis kalibreeritud tulemu-

seks aastad 1322–1356 või 1391–1437 – olid segi paisatud rohkete leidudega mehematuste 30 (14. sajandi lõpp – 15. sajandi algus) ja 38 (14. sajand) haudade kaevamisel.

Kaevamistulemuste põhjal esindab Loosi kalmistu 13. sajandist kuni 15. sajandi keskpaigani Ugandi muinasmaakonna ala, mitte adsele maarahva kultuuritraditsioone. Sellest annavad tunnistust korduv pealematmine, maetute käte mitmekesine asend ning Siksälä kalmele iseloomulike rõivaesemete (peapärjad, metallkaunistustega sõbad) ja ehete (laiad kilpkäevõrud, antropomorfsed ripatsid, S-kujulised ripatsisangad) puudumine, samuti nn tagapõlle leid.

Ugandi keskaegsetest külakalmistutest eristab Loosi matusespaika ka segatud pinnases leiduvate põlenud luukildude rohkus. Juhul, kui need pärinevad keskajast – ühel juhul näitas seda ka radiosüsinikudateering –, on see märk matmiskombestiku suuremast konservatiivsusest piirialadel võrreldes sise- maaga. Odaotsa ja kannuse leid – neid leidub väga arvukalt ka Siksälä kalmes – viitavad piiriäärse rahva sotsiaalsele eristaatusele: siingi on tegemist kesk- aegse Liivimaa piirialade haldajatega. Ka mõnede 14. sajandi ja 15. sajandi algupoole mehematuse suur leiurohkus võrreldes selleaegsete Ugandi külakalmistutega osutab sotsiaalsete olude ja matmiskombestiku eripäradele piirialadel. Siiski ei leia Loosil sotsiaalsed eripärad relvapanustes sedavõrd tugevat rõhutamist kui Siksälä kalmes.