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Archaeological fieldwork at the Medieval and Early Modern Age churchyard in Paistu, Viljandi County

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INTRODUCTION

In 2016 water system of Paistu village was renewed by replacing aged pipes. Due to the large heritage protected area in the middle of the Paistu village new pipes were installed into the previous location, thus providing little possibility for any new archaeological data. However, single stray finds collected already years back from the village (TÜ 489, TÜ 2209) suggest a yet non-localized occupation layer in the vicinity. In the course of previous studies inside the churchyard 13th–14th century inhumations were located right next to the church and some 18th century inhumations in a test pit little further to the south-west of the church (Konsa 2002; Fig. 1: A). Loose human bones have also been located outside the present churchyard borders (Lõhmus 2007; Fig. 1: B).

Paistu parish is for the first time mentioned in written sources already in the beginning of the 13th century but the present church is built probably in the end of the century, according to the architectural features. The church is first mentioned in written sources in 1329 when the parish and church was plundered by the forces of Lithuanian Grand Duchy. Another plundering, worth mentioning in the context of this study, was in 1481 when Russian forces pillaged Viljandi County, including the Paistu parish (Luha *et al*. 1939, 260).

According to the current project, several trenches were opened in the historical centre of the village and test pits excavated at the southern and western side of the church. Thus, it was very likely to localise a possible occupation layer and also to suggest updated borders of the original churchyard. However, despite the extensive opened area, no *in situ* preserved occupation layer was documented and no finds were collected which could be related to the past village.

FIELDWORK

As a result six trenches were opened at about a hundred meters south from the church. All trenches were 1 metre wide and were excavated in two layers – first the *ca*. 30 cm thick topsoil layer was removed, natural ground was recorded and then the trench was excavated to the required depth. It was expected that refuse pits, indicating to previous settlement, would be localised in the light clayish moraine. As new pipes were planned directly on top of previous

ones, only mixed layers were revealed in most parts of the trenches. In trenches south-west from the church, only natural and untouched moraine was opened. No archaeological finds were spotted in the soil either. The only signs of previous habitation were discovered at Paistu tee Street where house remains were found, possibly burnt down during the World War II and buried. Thus, despite of some previously found pottery sherds from Paistu, the settlement site was still not localised, although its existence in the area is highly likely.

On the southern side of the churchyard, where human burials were expected, pipes were installed by drilling. For this six test pits (Fig. 1), all measuring 2 × 3 metres, were opened. They all revealed pristine soil with only few modern finds, suggesting that original Paistu cemetery was limited with the immediate vicinity of the church only. However, further studies proved that the cemetery extended much further to the east from the church.

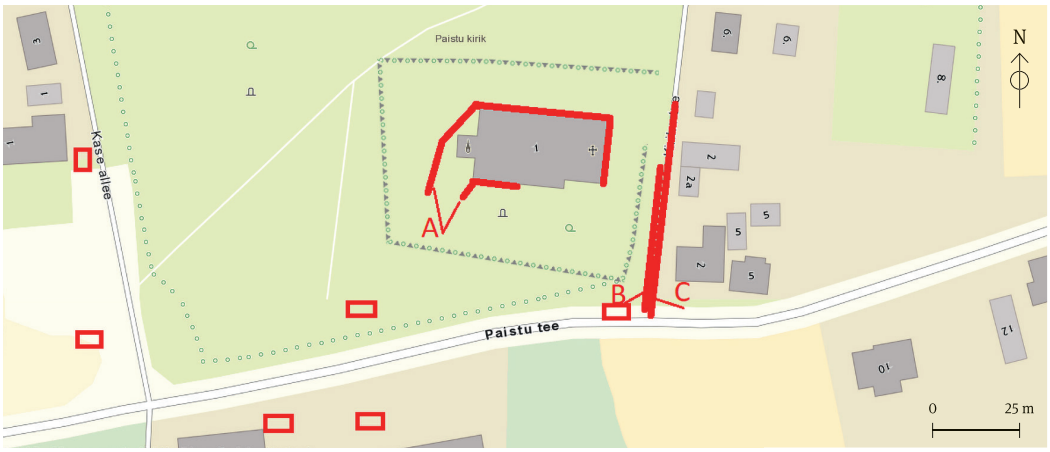

Fig. 1. *Plan of trenches around Paistu church. A – trenches supervised by Konsa (2002), B – trench supervised by Lõhmus (2007), C – trench supervised during current study. Squares mark test pits for drilling.*
Jn 1. *Paistu kiriku ümber olevate trasside asendiskeem. A – trassid Konsa (2002) järgi, B – trass Lõhmus (2007) järgi, C – käesolevate uuringute trass. Ristkülikud markeerivad puuritud veetrassi sisseviike.*
Map / Plaan: Tõnno Jonuks

As the eastern border of the cemetery under heritage protection overlapped with the modern border of the churchyard, new pipes remained outside the protected site and were decided to be installed into an open trench at Kiriku tee Street. An old pipeline had been installed there over 20 years ago and no finds were reported. Thus, the area was believed to be also out of the borders of the cemetery. However, first human burials were found almost immediately and it became clear that dozens of burials had been excavated entirely or partially during the previous works, but were left unreported. More or less at the same place Mari Lõhmus (2007) had localised several loose human bones, but no *in situ* inhumations were found due to the low depth of the trench. Already in this report it was suggested that the original cemetery had reached further to the east.

BURIALS

Inhumations found from the trench (Fig. 1: C) were all buried approximately in the E-W direction, head facing west. As the trench was running in the N-S direction none of the burials could be entirely excavated. Many had been partially destroyed already during the previous

earthworks, others had to be dug partly during this excavation. The low number of loose bones was significant, particularly when comparing Paistu cemetery with other Estonian churchyards (e.g. Malve 2016, 199–202). This indicates that this section of the studied cemetery was in use only for a short period and earlier burials were not disturbed by later inhumations. Still, some loose human bones were found, indicating at mixed inhumations, most of them very poorly preserved.

All opened inhumations were buried in one layer, more or less in the same depth, approximately 140–160 cm from the present ground. The original depth of graves was not possible to determine as the previous topsoil had been removed when street pavement was laid. A significant marker was a high number of group inhumations. On several occasions, like in the case of burials nos 12–16, 17–20 and 27–28, judging by the preserved articulated bones, inhumations were interred together (Fig. 2). However, adjacent burials no. 25 and no. 26 had probably been buried as separated acts as some bones of the inhumation no. 25 were missing, possibly due to the burial situation of no. 26.

Fig. 2. *Skeletons nos 17–20 in one grave.*
Jn 2. *Ühishaud luustikega nr 17–20.*
Photo / Foto: Tõnno Jonuks

None of the inhumations had any proper grave goods. However, several of them had objects associated with garments, like brooches, necklaces and on a single occasion also a silver round sheet pendant (Fig. 3). Among penannular brooches one had rolled ends (Fig. 3: 2), one was with simple square ends (TÜ 2613: 2) and in the case of one brooch the ends were missing (TÜ 2613: 27). The brooches were rather simple and only one (TÜ 2613: 2) was decorated with simple lines, imitating twisting. Round brooches were more numerous. As stated above, many copper alloy objects were poorly preserved. The round brooches (TÜ 2613: 4, 10) have been fragmented, but preserved with parts of textile. Another poorly preserved brooch, (TÜ 2613: 9) had originally probably been covered with some simple ornament. The brooch TÜ 2613: 26 represents a simple and undecorated round brooch and TÜ 2613: 32 a large round brooch, which decoration is poorly preserved but the central part of the brooch was probably covered with rhomboid pattern and encircled with a double-line band. Hanseatic brooches TÜ 2613: 13 and TÜ 2613: 22 (Fig. 3: 3) were exactly the same and were most likely produced in the same mould. The decoration

Fig. 3. *A selection of finds from the trench at Paistu Kiriku tee St. 1 – silver round sheet pendant, 2 – penannular brooch with rolled terminals, 3 – hanseatic brooch, 4 – tin and quartz beads.*
Jn 3. *Valik Paistu Kiriku tee trassi matuste juurest leitud ehteid. 1 – hõbedast ripats, 2 – rullotstega hoburaudsõlg, 3 – hansasõlg, 4 – tina- ja kvartshelmed.*
(TÜ 2613: 12, 7, 22, 18.)
Photo / Foto: Tõnno Jonuks

was better preserved on no. 22, but the survived elements of no. 13 suggest the same text and symbols. The text reads as AVE MARIA and it ends with triple dots, set in a triangle. Except hanseatic brooches all others were rather simple and partially clumsily made, suggesting they were the production of a village craftsman. Several of such brooches are found in South Estonian rural cemeteries and are dated to the 13th–15th centuries (Valk 1999, 95).

Beads are represented by various materials, among others yellow (TÜ 2613: 14, 21) and black (TÜ 2613: 19) seed-beads. One collection (TÜ 2613: 18) included also a poorly preserved tin or pewter bead and two faceted beads made of quartz (rock-crystal) (Fig. 3: 4). Burial no. 21 had a necklace of at least 59 cowry shells (TÜ 2613: 15).

As an exceptional find a silver round sheet pendant (TÜ 2613: 12; Fig. 3: 1) was found under the head of a 18–25 years old female inhumation (burial no. 21). The pendant possibly belonged together with cowry shells and numerous beads. It has originally been a flat pendant with a half-orb centre, now missing. The central part of the pendant was clear of decoration, but encircled with triangles filled with three dots. Such pendants occur in hoards dating from the Middle Ages, but usually not in inhumations.

Fig. 4. *Skeleton no. 9. Upper part of the body remains under the previous church enclosure, marked by a large boulder.*

Jn 4. *Luustik 9, mille ülaosa jääb kunagise kirikaia piirdemüüri alla. Müürist on jälgitav suurem vundamendikivi.*

Photo / Foto: Tõnno Jonuks

Inhumations nos 14 and 20, both 25–35 years old females, had their hair preserved, covered with multi-coloured textile and small spiral tubes. Remains of textile also included small fragments of tin or pewter, originally representing some decoration.

Excavations proved that the churchyard had originally extended further. Mari Lõhmus already noticed an old stone fence at the SE corner of the churchyard, buried underground (Lõhmus 2007, 2). Thus the southern fence of the churchyard has been at its present location, but has originally extended to the east. At present the eastern border of the churchyard is marked by a stone fence at the side of the street. In the course of the excavation a foundation of a previous stone fence was located underground, about 1 m eastward of the current one. Still, all of the opened inhumations were situated outside of this border and one burial (no. 10) was partially under the foundation (Fig. 4). This means that the original churchyard has been several times abridged. How far the churchyard originally extended is hard to tell. Inhumations nos 27 and 28, situated on the eastern side of the Kiriku tee Street, stretched already under the buildings there. Unfortunately none of the present residents of these houses had witnessed the building process and were not aware of any human

bones found from their yards. Still, according to the report by Mari Lõhmus (2007, 3) a local lady has told about finding human bones when a 'house was built two buildings to the east from the church'. Most probably the 15th–16th century churchyard reached half of the plot on the eastern side of Kiriku tee Street, ending with a slight slope.

HUMAN REMAINS

Over the years 41 articulated skeletons are located in or around the Paistu church and churchyard. Six were documented by Marge Konsa in 2001 (Konsa 2002), but only four were available for the study.[1] 35 skeletons were documented in 2016, but the first seven were excavated without notifying archaeologist and thus it was only possible to localise skeletons according to single *in situ* preserved bones. In the course of the fieldwork 28 poorly preserved skeletons were partly dug and taken up, 16 of which belonged to adults[2], 10 to juveniles and in the case of two we might be dealing with adolescents or young adults (Table 1). Of the skeletons of adults three were female, three male, one possible male and in six cases the sex could not be determined because of the scarcity and fragmentariness of bones. Of the juveniles sex could only be determined in three cases – of these two were male and one female. The sex- and age-based composition of the buried individuals refers unequivocally that this was an ordinary cemetery where men, women and juveniles of all ages were interred. Most of the human bones, but also finds were very poorly preserved. The poor condition is probably due to the clayish moraine soil, which preserved humidity, thus resulting in softening and decomposing of bones. Erosion of small bone chips from the surfaces of the bones significantly complicated the determination of bones. Soil also affected finds and even copper alloy objects were preserved very poorly. Possibly the earlier installation of pipes had its effect as well, by mixing soil and making it easier for humidity to enter the ground. The skeletons also revealed fractures and damages caused during the fieldwork.

The skeletons revealed several diseases and injuries.[3] The most widespread were various dental diseases: caries, dental calculus and alveolar reduction that were all found with juveniles, young adolescents as well as mature adults. Intervertebral disc herniations (Schmorl's nodes; Fig. 5) were discovered with the vertebrae of three juveniles and one young adult. The crown of the left

Fig. 5. *Small depressions (Schmorl's nodes) were discovered on the midline of the bodies of the thoracic vertebrae of the 16–20 years old individual (skeleton no. 8).*
Jn 5. *16–20 aastase indiviidi (luustik 8) selgroo rinnalülikehade keskosas tuvastatud lohukesed (Schmorli sõlmed).*
Photo / Foto: Martin Malve

[1] The sex of the burials was determined according to the morphological traits on the pelvis and cranium (Buikstra & Ubelaker 1994, 16–20) and the maximum length of the long bones (Garmus & Jankauskas 1993, 6–8). The age at death was determined according to the changes in pubic symphyseal face (Todd 1920, 285–334; Todd 1921, 1–70; Brooks & Suchey 1990, 227–238), wearing of the teeth (Brothwell 1981, 72) 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 (Ubelaker 1989, 63) and the epiphyseal fusion (Schaefer *et al.* 2009). The sex of the juveniles was not determined, since the characteristic features only form in the end of puberty (Buikstra & Ubelaker 1994, 16), but in some cases it was possible to sex the adolescences on the basis of the size and maturation of bones (Table 1). Pathological conditions were identified according to Ortner & Putschar (1985) and Roberts & Manchester (2012). The maximal length of long limb bones was used to calculate the body length of adults (Trotter 1970, 71–83). Degree of alveolar reduction and dental calculus is determined according to Brothwell (1981, 155, fig. 6.14).

[2] Adults also include skeleton no. 8, in case of which the age of the deceased at the time of death was 16–20 years.

[3] For pathologies the skeletons from 2001 and 2016 were examined together.

Table 1. *Osteological age and sex of the recorded skeletons from Paistu churchyard.*
Tabel 1. *Paistu kirikaiast leitud luustike osteoloogiline vanus ja sugu.*
Compiled by / Koostanud Martin Malve

Skeleton no. / Luustiku nr	Sex / Sugu	Age / Vanus	Pathologies / Patoloogiad
Skeletons found in 2001 (Malve 2009)			
3	♂?	45–50 y / a	Teeth: slight dental calculus, caries, *ante mortem* lost teeth.
4	?	3–5 y / a	-
5	♀	40+ y / a	Osteoarthrosis on hand joints, compression fracture of X and XI thoracic vertebrae.
6	?	5–9 y / a	-
Skeletons found in 2016			
8	?	16–20 y / a	Schmorl's nodes in thoracic and lumbar vertebrae.
9	♀	Adult / täiskasvanu	-
10	♀	15–17 y / a	Schmorl's nodes in thoracic vertebrae.
11a	?	11–14 y / a	-
11b	?	6–11 y / a	-
11c	♀	19–21 y / a	-
12	♂	16–18 y / a	Schmorl's nodes in thoracic vertebra. Teeth: slight dental calculus.
13	♂	25–35 y / a	Teeth: slight dental calculus, slight alveolar reduction, enamel hypoplasia.
14	♀	25–35 y / a	New bone formation inside the maxillary sinuses (sinuitis). Teeth: slight dental calculus, caries, periapical lesion, *ante mortem* lost tooth.
15	?	5 y / a ± 16 m / k	-
16	♀	25–35 y / a	Unfused metopic suture of the frontal bone (metopism). Teeth: slight dental calculus, slight alveolar reduction, enamel hypoplasia.
17a	?	Adult / täiskasvanu	-
17b	♂	15–18 y / a	Teeth: medium dental calculus, slight alveolar reduction, enamel hypoplasia, caries, periapical lesions, *ante mortem* lost tooth.
18a	?	3–5 y / a	-
18b	?	Adult / täiskasvanu	-
19	?	2–4 y / a	-
20	♀	25–30 y / a	Teeth: slight dental calculus, caries, periapical lesions, *ante mortem* lost teeth.
21	♀	18–25 y / a	Teeth: slight dental calculus, *peri mortem* trauma on the crown of the second left molar of the mandible, caries.
22	♀	25–35 y / a	Spondylosis of thoracic vertebrae, spondyloarthrosis of thoracic vertebrae. Teeth: slight dental calculus, slight alveolar reduction, caries, *ante mortem* lost teeth.
23a	?	12 y / a ± 30 m / k	Teeth: enamel hypoplasia.
23b	?	2–4 y / a	-
24	♂	Adult / täiskasvanu	-
25	♂	17–25 y / a	Schmorl's nodes in thoracic vertebra. New bone formation inside the maxillary sinuses (sinusitis). Teeth: slight dental calculus, caries, enamel hypoplasia.
26	?	Adult / täiskasvanu	-
27	♂?	Adult / täiskasvanu	Teeth: dental calculus.
28	?	Adult / täiskasvanu	Teeth: dental calculus.
29	?	Adult / Juvenile / täiskasvanu / nooruk	-
30	?	Adult / täiskasvanu	Osteoarthrosis on the right knee.

mandibular M2 of skeleton no. 21 had fractured during lifetime and the edges of the trauma smoothed (Fig. 6). During the fieldwork of 2001 and 2016 altogether 296 disarticulated human bones or their fragments were gathered, which originate from the burials destroyed with later inhumations and other earthwork. The skeletal parts revealed earlier damages as well as fractures caused during the excavations. Disarticulated bones revealed mostly dental pathologies – caries and dental calculus. Distinctive features of osteoarthrosis on limb and hip joints were found. The most interesting discovery was a fragment of a right ulna with an abnormally healed bone fracture that had not joined as a result of which false joint or pseudoarthrosis had formed. Diseases and pathologies determined on bones are characteristic to the skeletal material from medieval and early modern rural churchyards.

Fig. 6. *The crown of the second left mandibular molar of skeleton no. 21 had fractured during lifetime.*
Jn 6. *Luustik 21 alalõualuu vasak teine tagapurihamba kroon on eluajal täielikult purunenud.*
Photo / Foto: Martin Malve

A rich selection of ornaments, found at skeletons, indicate to a wealthy period, which is in contrast to several collective graves. Although it remains unclear, it is possible that such collective burials are connected with the events in 1481 when Russian troops plundered Paistu parish.

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ARHEOLOOGILISED UURINGUD KESK- JA VARAUUSAEGSES PAISTU KIRIKAIAS

Tõnno Jonuks ja Martin Malve

2016. aastal uuendati Paistu küla amortiseerunud vee- ja kanalisatsioonitorustikku. Ehkki Paistust on mitmeid juhuleide ning käesolevate uuringute raames avati trasse ulatuslikul alal (jn 1), siis uusi muistiseid selle käigus ei leitud.

Paistu kiriku idaküljel, Kiriku teel avatud kaevisest lokaliseeriti kokku 35 luustikku, millest 28 oli võimalik hiljem analüüsida. Enamik luustikest oli juba osaliselt lõhutud varasemate trassidega ja terviklikult ei õnnestunud uurida ühtegi. Luud olid säilinud suhteliselt halvasti. Oma mõju oli sellele nii kohalikul savisel pinnasel kui ka ilmselt varasematel kaevetöödel. Maetud oli peamiselt ühes kihis ja ülematuseid tuvastada ei õnnestunud. Küll aga oli uuritud kalmistuosale iseloomulikud mitmed ühishauad (jn 2). Enamike luustike juurest leiti ehteid ja rõivaste detaile (jn 3), neist märkimisväärsemaks oli noore naise luustiku (nr 21) juurest leitud hõbedast ripats (jn 3: 1) ning kahe naiseluustiku (14 ja 20) juurest leitud peaehte jäänused. Kirikaia piirid on aja jooksul muutunud, mida näitab ühe luustiku paiknemine kunagise piirdemüüri all (jn 4).

Välja puhastatud luustikest kuulusid 16 täiskasvanutele ning 10 alaealistele ja kahe puhul võis olla tegemist nii nooruki kui ka noore täiskasvanuga. Täisealiste luustikest kuus kuulusid naistele, kolm meestele, üks võimalikule mehele ning kuue puhul polnud luude vähesuse ja fragmentaarsuse tõttu võimalik sugu määrata. Alaealistest oli sugu võimalik määrata kolmel noorukil – neist kaks olid mees- ja üks naissoost.

2001. ja 2016. a saadud luustikke analüüsiti osteoloogiliselt ühe tervikuna. Luustikel tuvastati mitmeid haigusi ja vigastusi (tabel 1). Enim esinenud patoloogiateks olid erinevad hambahaigused: kaaries, hambakivi ja alveolaarkaarte taandumine, mida leiti nii noorukitel, noortel täiskasvanutel kui ka vanematel täisealistel. Kolme nooruki ja ühe noore täiskasvanu selgroolülidel avastati lülivaheketta songad (Schmorli sõlmed; jn 5). Luustiku 21 alalõualuu vasaku poole M2 hambakroon oli eluajal täielikult purunenud (jn 6), murru servad olid ümardunud.

Välitööde käigus koguti 296 segatud inimluud või selle fragmenti, mis pärinevad pealematmiste ja teiste mullatööde käigus lõhutud matustest. Skeletiosadel esines nii varasemaid kui ka kaevamisteaegseid kahjustusi. Segatud luudel tuvastati enim hambapatoloogiaid – kaariest ja hambakivi. Jäseme- ja puusaliigestel leiti osteoartroosi tunnuseid. Huvitavamaks avastuseks oli üks parema küünarluu fragment, mille keskosas oli paranenud murd, mis ei olnud ühinenud ja oli tekkinud ebaliiges e pseudoartroos.

Maetute soolis-vanuseline koosseis viitab üheselt, et tegemist on tavakalmistuga, kuhu oli maetud mehinaisi ja igas vanuses alaealisi. Luudel tuvastatud haigused ja patoloogiad on omased kesk- ja varauusaegsete maakirikaedade luuainesele.