



Archaeological studies at Pühalepa Churchyard in Hiiumaa (2021–2022)

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At present, Hiiumaa is the only county in Estonia that does not have a monument for the Estonian War of Independence. To honour soldiers from Hiiumaa who died in the war, a memorial will be built west of Pühalepa St Lawrence Church and churchyard in multiple stages. This article looks at the results of the archaeological fieldwork carried out during the first three stages in October 2021, June 2022 and November 2022.

CONSTRUCTING A MONUMENT

The construction of the memorial has been planned for many years now and the final design, *Sacrifice*, was approved in 2018. A large spiral monument is planned on the same axis as the church (scheduled monument no. 23619), west of the churchyard (no. 22293) in the protection zone of the Suuremõisa Manor parkway and park (no. 23626).

In 2021, an electrical cable was installed in the churchyard to supply electricity for the monument, during which an archaeological watching brief was carried out. As the churchyard and the area around it are situated on an alvar, the soil in the churchyard was mostly composed of gravel (drift) mixed with organic-rich soil and human remains. The trench was 16.5 m² large, up to a metre deep, and it terminated near the gate on the inner side of the fieldstone churchyard wall (no. 23620) (Figs 1–2). The cable was connected to an existing cable which had been installed by directional drilling in the 2010s from the area of the future monument and car park. This spot was also dug open to expose the cable. A natural boulder was cleared of soil by the eastern edge of the memorial area to exhibit it in the future (Reppo & Malve 2023a).

In 2022, the work was carried out in two rounds. In June 2022, the circular foundation pit of the monument and the path leading to it were prepared with an area of 198 m² (Figs 1, 3). After the removal of 40 cm of soil – topsoil and the organic-rich dark soil underneath it – natural unstratified drift (gravel) appeared. As the monument will sit on an artificial mound, this was also the extent of excavation as there was no need to dig beyond natural soil. In November 2022, two small foundation pits for the information board (0.4 m² in total, both

45 cm deep) and three pits for flag posts (1.62 m² in total, 90–110 cm deep) were dug and soil was removed again to expose the cable a second time (Reppo & Malve 2023b). Metal detectors were used in all stages of the research.¹

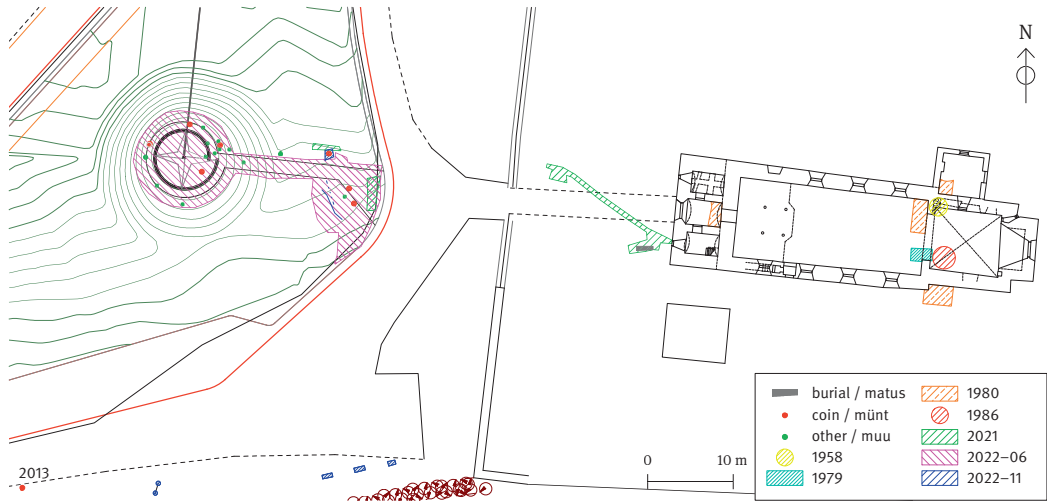


Fig. 1. The studied area and previous studies at Pühalepa Church and churchyard.

Jn 1. Uuritud ala ja varasemad uuringud Pühalepa kirikus ja kirikaias.

Map / Kaart: Monika Reppo



Fig. 2. The studied area in the churchyard as viewed from the church tower.

Jn 2. Vaade kirikaias uuritud alale kirikutornist.

Photo / Foto: Martin Malve

¹ The soil was detected by Kristjan Tammaru in October 2021, Illar Salusoo in June 2022 and Erki Järvekuil in November 2022.

In past decades, no archaeological research has been carried out around or in the churchyard or in the church (Fig. 1). This does not mean that no groundworks have been done in the area – all works carried out west of the churchyard before 2021 were completed with no archaeologists present. Most of them were minor works but the reconstruction of the car park and the road in front of the churchyard in 2013 saw an area of over 1,100 m² repaved. No soil was allegedly removed from the area. After the asphalt had already been laid down, the removed soil piled by the roadside was metal-detected. This yielded the two earliest coins known from Hiiumaa which were deposited in 2015 at Hiiumaa Museum. The denar minted under Simon I zur Lippe (1247–1277) in Paderborn, Germany and the silver coin minted ca. 1297–1299 under Guy Dampierre, count of Flanders (r. 1251–1305) both date from mid-to-late 13th century (Leis-Aste 2018, 51–53). These coins were the only archaeological finds associated with Pühalepa Church before the research described here.



Fig. 3. The foundation pit of the monument after archaeological research.

Jn 3. Monumendi vundamendisüvend peale arheoloogilisi uuringuid.

Photo / Foto: Martin Malve

THE OLDEST BUILDING IN HIIUMAA

The coins found in 2015 are an important find as they are contemporaneous with Pühalepa Church, which was built in the second half of the 13th century (Alttoa 2015, 72; Raam 1996, 93–94). It is the oldest building in Hiiumaa. Today the church is surrounded by a small churchyard (0.9 ha), which is enclosed by a low fieldstone wall. The burial ground was used from the 13th century until the 1940s; the oldest preserved gravestones are from the 17th century (Kaskor 2013, 7–12). The fieldstone gate ‘posts’ are dated to the 19th century as is the cast iron fence surrounding the family plot of the Ungern-Sternbergs² in the south-western corner of the churchyard (Nurk 1979, 7). Despite multiple studies within the church and by the outer perimeter of the church walls throughout the 20th century, the churchyard has remained essentially unstudied apart from the cataloguing of the gravestones (Nurk 1979; Kaskor 2013). To gain a better understanding of previously conducted research, past trenches, sondages and test pits were transferred on the base map of the studies (Fig. 1). Researched areas from 1958, 1979 (both described in Raam 1979), 1980 (Raam 1980), 1981 (Raam 1981) and 1986 (Raam 1986) are shown. No plans were identified for the areas from 1958 and 1981 so the location of the test pits was drawn based on the descriptions in Villem Raam’s work (see further Reppo & Malve 2022, 9–10).

Despite studying an area of 225 m², no structures were found in or outside the churchyard in 2021 nor 2022. In the 2021 trench for the electrical cable by the western side of the church tower, part of the tower’s foundation was uncovered. The bottom of the trench was measured here at +9.62 m a.s.l. which was 77 cm from ground level. The foundation of the tower had been laid with fieldstones, which reached the ground level where the wall plaster began; the foundation level of the tower was not reached. The test pits dug by the northern and southern

² The Ungern-Sternbergs were an influential Baltic German noble family. They owned Suuremõisa Manor from 1796 until 1929.

outer perimeter of the tower and the inner western wall of the vestibule in 1981 yielded the same result (Raam 1981, 9). As such, no new information regarding the construction of the church could be collected.

THE CHURCH AND CHURCHYARD AS A BURIAL PLACE

The analysis of previous research results (see Reppo & Malve 2022, 11–13) shows that the presence of human bones has rarely been documented in Pühalepa. The only *in situ* burials ever recorded in Pühalepa prior to this study were the two burials discovered in 1980 when a trench was dug in the vestibule under the tower in front of the western portal. The upper, i.e. newer burial was north-south, and the lower, i.e. older burial was east-west oriented. The latter burial predates the church as the foundation of the nave rests on its legs. These burials remain undated – neither of them had grave goods and it is not stated whether the burials were preserved or removed. Only the older burial has been recorded on a plan (Raam 1980, 25–26, 83). Disarticulated bones have only been noted in 1981 in test pits dug on the outer side of the southern wall of the nave and in the western vestibule (Raam 1981, 9). The wall of a burial chamber was exposed by the choir in the same year (Raam 1981, 11). Using both the church and churchyard as burial space for congregation members was common for medieval and early modern churches.

During the study at hand, human bones were discovered both in and outside the churchyard in 2021 but none were found in 2022.³ The first stretch of the trench for the electrical cable installed in 2021 was planned east-west oriented. An *in situ* skeleton was uncovered here with four other *in situ* skeletons visible in the section. Although this particular skeleton was exhumed and osteologically analysed, it was decided to change the course of the trench so that it ran southeast-northwest – diagonally from the tower to the gate. No further burials were found after altering the initial plans.



Fig. 4. *In situ* burial west of the church tower.
Jn 4. Kirikutornist läänes paiknenud *in situ* matus.
Photo / Foto: Martin Malve

THE BURIAL

A supine, west-east oriented (head to the west) burial was discovered west of the bell tower one metre below ground level, laying on natural light sand (Fig. 4). The grave fill was gravelly and contained abundant commingled remains (see below). The grave cut through at least two earlier burials, disturbing both, and was in turn cut by a later burial on the skeleton's southern side without damaging it. No grave goods or coffin remains were discovered with the burial.

Paleopathological analysis of the skeleton

The skeleton was complete and belonged to an adult man who was 167.3 cm tall and had died at around 50–57 years of age. Although there was some mechanical damage to the skull, ribs, shoulder blades, sternum, spine, hip and long bones, their preservation was very good. Several of the identified pathologies were indicative of the man's age and physical

³ In April 2023, a foundation pit was prepared for memorial plaques by the monument walkway foundation pit dug in 2022. A single disarticulated collarbone was found here.

load – osteoarthritis on the upper and lower limbs, cervical osteochondrosis, and thoracic and lumbar spondylosis. Mostly occurring in older adults, several benign bone tissue tumours (osteomas), a few millimetres in size, were documented on the man's frontal and right parietal bone.

It was also identified that he endured high levels of physical stress, demonstrated by Schmorl's nodes (VII–XII thoracic and I–II lumbar vertebrae) and potential overtension, demonstrated by vertebral body compressions (IX–XII thoracic and I lumbar vertebra) on the lower spine. Schmorl's nodes are intervertebral disc herniations, characterised by small depressions on the upper and lower surface of the vertebra. They are caused by trauma, continuous repetitive motion, strenuous activity performed under heavy loads or congenital idiosyncrasy (Jiménez-Brobeil *et al.* 2010, 37).

The man had suffered several injuries during his life-time that could be related to hard work or dangerous activities – he had fractured the distal end of his left tibia and the distal $\frac{1}{3}$ of his right ulna (Fig. 5). It is impossible to say whether the fractures were concurrent, however, they were well-healed. Bony growths had formed on the medial aspect of the distal end of the diaphysis of the left femur and the distal $\frac{1}{3}$ of the left tibia, likely as a result of the same injuries. A small, depressed fracture (6.32 × 6.90 mm) on the left parietal bone was probably the result of trauma by some blunt object (e.g. a stone).

In addition to injuries, physical stress and old age, the man had likely suffered some problems due to a genetic peculiarity – incomplete fusion of the posterior neural arch of the sacrum (Fig. 6), a developmental disorder known as *spina bifida occulta*. This may have caused him issues in his digestive system and legs.

The skeleton: teeth

Of his 32 teeth, the man had lost six during his lifetime, indicated by healed dental alveoli (tooth sockets). All molars and the second incisor on the left side of the upper jaw and the third molars on the right side of the lower and upper jaw were missing, likely due to complete decay because of caries. Caries itself was identified only on the premolars and molars of the lower jaw with some cavities engulfing the entire crown or by smaller cavities on the interproximal contact points. Advanced caries was presumably the cause of six periapical lesions. In three cases, it had probably led to tooth loss.



Fig. 5. Healed fracture of the right ulna (medial view).

Jn 5. Paranenu parema küünarluu murd (mediaalne vaade).

Photo / Foto: Triinu Borga



Fig. 6. Spina bifida occulta (incomplete midline bony closure) of the sacrum (posterior view).

Jn 6. Avatud lüülilõhestus (kaared ei ole ühinenud) ristluul (selgmine vaade).

Photo / Foto: Triinu Borga



Fig. 7. Worn grooves on the first incisors of the mandible and dental calculus on the labial and buccal sides of the tooth crowns.

Jn 7. Alalõualuu esimestele lõikehammastele kulunud sälgud ning hambakivi kroonide huule- ja põsepoolsetel külgedel.

Photo / Foto: Triinu Borga

There was also tooth wear in the form of grooves on the incisal surface of both lower and upper right incisors (Fig. 7), indicating the holding of a tool, for example a needle or thread, with his front teeth over a longer period of time. Slight and moderate dental calculus (tartar; Fig. 7) indicates carbohydrate- and protein-rich diet. Calculus and the alveolar reduction on both his lower and upper jaw is indicative of poor dental hygiene.

COMMINGLED HUMAN REMAINS

As mentioned, human remains were found both in and outside the churchyard. Disturbed during later burials and other earthworks, the skeletal parts showed signs of abundant damage and breakage. The examination of the debris left on the windowsills

of the church tower also revealed a sizable collection of human bones. These bones had been collected during the removal of sand insulating the church vaults. In total, 2274 bones or bone fragments and 12 deciduous and 73 permanent teeth were collected as commingled remains during our study. All age groups were represented, mostly commonly age-related diseases and dental pathologies were identified.

All identified pathologies (see below) are characteristic of skeletons discovered in medieval and early modern rural churchyards (e.g. Kose churchyard; Malve 2018). Although commingled remains fail to give a complete overview of a single individual, paleopathological analysis of those remains offers an opportunity to assess diseases that most afflicted the local population without excavating burials preserved *in situ*. The presence of osteological material as well as artefacts in vault insulation has been noted elsewhere in Estonia (e.g. Mihkli Church in Pärnu County, Mäesalu & Malve 2012, 213) and confirms once again that an archaeological survey is needed during such works.

Paleopathological analysis of the commingled remains

Diseases continuous with ageing and physical stress were prevalent. Age-related changes were found in the articular surfaces of the vertebrae of the spinal column. Osteophytes and porosity on joint surfaces from joint wear were found only on the bones of the upper and lower limbs of adults, mostly on the humeri and femurs, and in some cases also on the tali. Spinal wear was detected on the bodies of the thoracic and lumbar vertebrae in adults.

In infants and young children endocranial lesions were identified on the intracranial surface of the frontal, parietal and occipital bones, indicating diseases like e.g. scurvy. The endocranial lesions of an adult woman had healed. A non-specific lesion was discovered on the medial side of the diaphysis of the left tibia of an adult.

Healed fractures were present only in three cases, all adults – two rib arc fractures and in the middle $\frac{1}{3}$ of the diaphysis of the right ulna. In the fourth case, a deformed right radius head indicated a possible elbow injury. Of diseases relating to physical stress, Schmorl's

nodes were present in the thoracic and lumbar vertebrae of adults, from the IV thoracic vertebra to the upper lumbar vertebrae. In a few cases, intervertebral disc herniations had also occurred in non-adults, especially juveniles. In several cases, especially in the vertebrae of older adults, several pathologies were present simultaneously on one vertebra, for example, Schmorl's nodes, spondylosis and spondyloarthrosis were found together. Since these are diseases that progress with age, bones with multiple pathologies are more likely to indicate the skeletons of middle-aged or elderly people.

Commingled human remains: teeth

Slight dental calculus was identified mostly on the distal and mesial sides of the premolars and molars, present on both deciduous and permanent teeth. The youngest individual with calculus was around 6.5–7.5 years old. Caries was mainly found on the distal and mesial sides of the maxillary and mandibular front incisors and molars and in some cases, on the occlusal (biting) surface. Although mild in most cases, medium and advanced caries were identified as well. The latter was also indicated by periapical lesions in incisor and canine teeth sockets. Front incisors and molars were most affected in cases of chronic tooth decay. In some cases, chronic tooth decay also affected incisors and canine teeth, but then it tended to be the elderly who were missing most teeth, apart from one case where it was a young adult woman. Caries occurred in young as well as older adult men and women but not in juveniles. In a singular case, a canine tooth on the left side of an adult's lower jaw had grown in incorrectly.

The disarticulated skeletal remains found in 2021 in the churchyard and in the church were reinterred in the churchyard in June 2022 after the osteological analysis had been completed.

FINDS FROM THE CHURCHYARD AND BEYOND

The finds from the three watching briefs can be divided into six categories – building waste, churchyard inventory, personal belongings and grave goods of the deceased, personal belongings of churchgoers, warfare and modern rubbish.⁴ All of these were found both in and outside of the modern-day churchyard. The finds have been described in detail already (Reppo & Malve 2022, 18–29) and a shorter overview will be given here.

Building waste

Numerous lead window comes (e.g. HKM 6617: 6, 10–15), rhomboid window panes (HKM 6617: 39) and window glass fragments were found. Lead comes were used and made since the medieval period in Estonia. The examples from Pühalepa are fragmentary but likely from the post-medieval period. The window glass is cut, not knapped, so it cannot predate the 17th century (Reppo 2022, 143–148) and is likely from the 19th century when the church windows were changed (Raam 1979, 71). The windows were replaced multiple times over the course of the centuries (see e.g. Kaplinski 1979, 106, 112–115).

Bricks (HKM 6649: 67–72) have been used in the niches (Raam 1979, 39) and apse (Raam 1980, 3) of the church and in the ceiling and floor of the Ebba-Margaretha Stenbock's tomb chapel (†1776; Nurk 1979, 31). Bricks were also used in the tiled stoves built in the church in the 17th century (Raam 1979, 61, 99). A stove tile with black glaze found in the churchyard is likely from the 19th century (HKM 6617: 8). However, roof tiles with black glaze are remnants of the original roof of the tomb chapel of Ebba-Margaretha Stenbock built in the 1770s

⁴ The rubbish collected in 2022 will be included in a future exhibition highlighting the reality of working at archaeological sites.

(HKM 6617: 65–66). No roof tiles from the church were identified. The oldest architectural element that was found was the fragment of a medieval limestone window pillar (HKM 6617: 9) discovered in the trench by the tower.

Churchyard inventory

Finding details of churchyard inventory during archaeological fieldwork is hardly surprising. Two types of objects were found. Birch and oak leaves and other foliage imitation in metal (iron sheet) are from 19th–early-20th-century painted metal funeral wreaths (e.g. HKM 6617: 16–29, 31–38; Fig. 8) that could either be hung inside the church or in a metal tub under a glass lid on the front of the cross. The fragments of the Classicist cast iron fence of the Ungern-Sternberg family plot, including fragments of the rosettes were found both in and outside the churchyard. As there are plans to reconstruct the fence, the fragments were handed over to the church. No gravestones or crosses were found during this study.



Fig. 8. Selection of finds.

In 8. Valik leide.

(HKM 6617: 17, 16, 2, 4, 7, 40; HKM 6649: 3, 8, 18, 11, 26.)

Photo / Foto: Monika Reppo

Personal belongings and grave goods

It is difficult to estimate whether the personal belongings found in and outside of the churchyard belonged to churchgoers or originate from disturbed burials. The only *in situ* artefact from the burial layer was a (17th–)18th-century copper alloy buckle (HKM 6617: 7; Fig. 8). Other belt accessories such as mounts and links were also found, the most notable of these were a medieval copper alloy mount depicting a crowned head (HKM 6649: 11; Fig. 8), likely from the same or similar belt as another rectangular mount (HKM 6649: 26; Fig. 8) and an 11th–13th-century hexagonal belt link (HKM 6649: 16). An undated iron belt ring was found during the burial of the analysed bones (HKM 6649: 64). Other types of clothing fasteners were found as well such as a post-medieval hook (HKM 6649: 17) and buttons (HKM 6649: 12, 22).

Some items of jewellery were also discovered. The oldest of these was a 13th-century copper alloy trapezoid pendant with an embossed cross in the middle (HKM 6649: 3; Fig. 8) found in the area of the planned monument. A tin alloy pendant shaped like a (fig?) leaf (HKM 6649: 8; Fig. 8) was also found here. A copper alloy *fleur-de-lys* ornament (HKM 6617: 4) found in the churchyard may also belong to a pendant or a belt. A 17th(–18th)-century tin alloy ring (HKM 6617: 2; Fig. 8), a simple open-ended ornamented finger ring (HKM 6649: 9) and a 14th–15th-century

penannular brooch (HKM 6649: 18; Fig. 8) were the only other items of jewellery that were found. The lower half of a sleigh bell (HKM 6649: 19) is from the post-medieval period.

The largest subcategory among the personal objects is 14th–20th-century coins (Fig. 9) that were found during the fieldwork. These illustrate the human activities by the church through time (see Table 1; Fig 1). In total, 25 coins were found in 2021–2022. As mentioned above, 13th-century coins have also been found in the past (Fig. 1). A high concentration of coins in front of churches has recently been observed by Nõo Church (Valk & Kiudsoo 2020). This is associated with the custom of church fairs or *kirmas* (Ger *Kirchmesse*) which used to be common all over Estonia on church holidays.



Fig. 9. Found coins. 1 – Swedish kingdom, Stockholm, Magnus Eriksson (1319–1363), penny; 2 – Swedish kingdom, Magnus Eriksson, penny (1320–1330); 3 – Visby, örtug (ca. 1340–1400); 4 – Teutonic Order, Reval (1426–1555); 5 – Prince-bishopric of Tartu, Johannes II Bertkow (1473–1485), penny; 6 – Teutonic Order, Reval, Bernd von der Borch, killing (s. d. 1480–1483).

Jn 9. Leitud mündid. 1 – Rootsi kuningriik, Stockholm, Magnus Eriksson (1319–1363), penn; 2 – Rootsi kuningriik, Magnus Eriksson, penn (1320–1330); 3 – Visby, örtug (u 1340–1400); 4 – Saksa ordu, Tallinn (1426–1555); 5 – Tartu piiskopkond, Johannes II Bertkow (1473–1485), penn; 6 – Saksa ordu, Bernd von der Borch, Tallinn, killing (s. d. 1480–1483).

(HKM 6649: 7, 6, 2, 4, 1, 3.)

Photo / Foto: Martin Malve

Table 1. *14th–17th century coins and bracteates***Tabel 1.** *14.–17. sajandi mündid ja brakteaadid**Identified by / Määranud: Andres Tvauri*

Period / Periood	Years / Aastad	Find no. / Leiunr	Type / Päritolu	Ruler / Valitseja	Type / Tüüp
14th century	1319–1363	AI 6649: 7	Sweden	Magnus Eriksson	penny
	1320–1330	AI 6649: 6	Sweden	Magnus Eriksson	penny
	c. 1340–1400	AI 6649: 2	Visby		örtug
15th century	1413–1441	AI 6649: 24	Tartu	Dietrich IV Resler	penny
	1424–1555	AI 6649: 25	Tallinn		penny
	c. 1426–1470	AI 6649: 5	Tallinn		sherf
	1426–1555	AI 6649: 4	Tallinn		(silver coin)
	1473–1485	AI 6649: 1	Tartu	Johannes II Bertkow	penny
	1480–1483	AI 6649: 3	Tallinn	Bernd von der Borch	schilling
	16th century	1520s	AI 6617: 1	Visby	
17th century	1671	AI 6649: 76	Sweden	Charles XI	1/6 öre

Warfare

Among the bones and nails deposited on the windowsills of the tower, a crossbow bolt dating from the 13th century was found (HKM 6617: 40; Fig. 8). Although the church did have a defensive function, no such finds have been discovered from here before. A 16th–18th-century musket ball (HKM 6649: 23) found in the foundation pit of the monument points to later conflicts, such as the destruction of the church in 1575 in the Livonian War (1558–1583) or the 1612 Danish raid to Hiiumaa. The island was untouched from military activity in the Great Northern War (1700–1721; Raam 1979, 59–61). Debris from World War II was also present – 4 well-preserved German M35 (M40) helmets with rolled edges and leather straps were found buried in the churchyard (deposited at Hiiumaa Military Museum 142: 1–4). German forces occupied the island from October 1941 to October 1944 (Tähiste 2014, 31–44). Two bullet casings made in the Soviet Union in 1944 (VIII 44 ★) were found in the area of the planned monument. A bullet casing from 1917, made in Dresden (D 9 17 S67) was also found here.

FUTURE PLANS

The watching briefs carried out in 2021–2022 yielded 121 artefacts now stored at SA Hiiumaa Muuseumid and Hiiumaa Military Museum (NGO Hiiumaa Militaarajalooselts). Prior to these three watching briefs, only two coins had reached the local museum as archaeological finds from Pühalepa Church. The research showed once again how important studying the areas in the vicinity of medieval churches and churchyards is. Although most of the preparation works for the construction of the monument have been completed by now, the construction of the War of Independence memorial will continue for a few years to come and archaeological watching briefs are planned for each future stage that involves groundworks. In the case of refurbishing the car park area, a thorough study will be needed.

ACKNOWLEDGEMENTS

We wish to thank everyone who participated in the excavation and post-excavation processes. This paper was supported by the Estonian Research Council grants nos PRG1931 and PRG1027, and OÜ Arheograator.

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PÜHALEPA KIRIKAIA UURINGUD 2021.–2022. AASTAL

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Seoses Vabadussõja monumendi ehitusega on Pühalepa kirikuaias ning sellest läände jäävas Suuremõisa mõisa pargi ja allée kaitsevööndis 2021.–2022. aastal toimunud arheoloogilised uuringud kolmel korral, kokku 225 m² suurusel alal (jn 1). Hiiumaa vanima ehitise, 13. sajandi II poolel ehitatud kiriku juures pole viimastel kümnenditel arheoloogilisi uuringuid toimunud (vt jn 1) ning seda ümbritsevat 0,9 ha suurusel kirikaeda pole peale hauatähiste inventeerimise varem uuritud. Oktoobris 2021 ühendati kiriku torni juurest raudkividest kirikaia värvaposti siseküljeni kaevatud 16,5 m² kraaviga (jn 2) elektrikaabel. Esialgu esimeses lõigus ida-läänesuunaliselt planeeritud kaablikraav otsustati *in situ* säilinud matuste tõttu ümber planeerida. Uues kagu-loodesuunalises lõigus *in situ* matuseid ei leitud, kuid alvarile rajatud kirikaia kruusa- ja mullasegune pinnas oli tihedalt segatud inimluud täis.

Oktoobris kaevati eksponeerimiseks lahti kirikust läände jääva kaitsealuse platsi ääres asuv ränd-

rahn ning arheoloogilise jälgimiseta samasse kohta varem suundpuurimisega paigaldatud elektrikaabel. Sama kaabli kirikaia poolse otsaga uus ühendus loodigi. Nimetatud kaabel kulgeb samuti arheoloogilise jälgimiseta 2013. aastal rekonstrueeritud parkla ja tee (kokku u 1100 m² ala) alt ida-läänesuunaliselt. Antud platsi lõunaservast saadi tollal peale tööde lõppu metallotsijaga Hiiumaa vanimad mündid – 13. sajandi II poole Saksa denaar ja Flandria hõbemünt (jn 1). Siin käsitletavatel töödel kasutati metallotsijat kõikides etappides. Juunis 2022 toimusid tööd 198 m² suurusel alal kirikaia väljas. 40 cm mätta- ja huumusrikka mullakihi all paljandus moreeniine aluspõhi (jn 3). Oktoobris 2022 kaevati jälle välja nimetatud kaabliots ning rajati lipumastide ja infotahvli vundamentiaugud. Ühtegi struktuuri 2021.–2022. aastal ei leitud. Dokumenteerida sai vaid 40 cm laiuses ja 77 cm sügavuses (põhi +9.62 m ü.m.p.) kraavis kirikutorni maakividest vundamenti, mis ulatus maapinnani, kuid selle vundeerimissügavuseni ei jõutud.

Kuigi kalmistu oli kasutusel 13. sajandist 1940. aastateni, on Pühalepa kiriku juures varem toimunud töödel inimluid märgatud harva. Vaid 1980. aastal leiti torni eeskoja alt lääneportaali eest (jn 1) üks põhja-lõunasuunaline ja sellest sügavamal lääne-ida-suunaline matus. Viimase jalad jäid kiriku pikihoone läänemüüri alla, mistõttu arvati, et see on kirikust vanem. See on ka ainus varem plaanistatud matus. Segatud luid on kirjeldatud vaid 1981. aasta šurvides pikihoone lõunaküljel ja samas eeskojas (jn 1). 2022. aastal võeti üles üks *in situ* säilinud matus (jn 4). 50–57-aastane mees oli 163,7 cm pikk ja ta oli maetud kirstu ja panusteta loodusliku liivase aluspinna peale. Hauatäide sisaldas hulgaliselt segatud luid ning mehe matmisel oli lõhutud vähemalt kahte varasemat matust. Lisaks patoloogiatele, mis viitasid mehe vanusele (liigete kulumine) ja füüsilisele koormusele (Schmorli sõlmed selgrool, lülikehade kompressioonid) oli võimalik tuvastada eluajal saadud vigastusi – hästi paranenud parema küünarluu (jn 5) ja vasaku sääreluu murd ja väike lohukujuline ($6,32 \times 6,90$ mm) trauma vasakul kiiruluul, mille on tekitanud mõni tõmp ese. Geneetilise eripärana ei olnud mehel ühinenud keskmine ristluuhari kogu luu ulatuses (jn 6). Avatud lülilõhestus võis talle põhjustada vaevusi seedeelundkonnas ja jalgades. Alalõualuu taandunud alveolaarkaared, kaaries ja hambakivi on kõik seotud kehva hambahügieeniga. Korduva tegevuse, näiteks mõne tööriista (nt nõela) või nõõri esihammaste vahel

hoidmisega oli alumise ja ülemise parema poole esihammaste lõikepinna sisse kulutatud sälgud.

Segatud luid või nende katkeid saadi 2274, lisaks 12 piima- ja 73 jäävhammast. Esines nii vanurite, täiskasvanute kui ka laste luid. Luudel esines enim hambapatoloogiaid (kaariest, hambakivi ja periapikaalseid tühimikke) ja skeleti vananemisega kaasnevaid haigusi: jäsemeliigestel osteoartroosi ja lülisambal lülikehade kulumist ehk spondüloosi, selgroolülilide liigete kulumist ehk spondüloartroosi ning kaelalüli kehade kulumist ehk kaelalülilide osteokondroosi. Vigastustest leiti paranenud toruluude ja roiete murde ning lülisambal Schmorli sõlmi ehk lülivahekettasongi. Oktoobris 2021 leitud segatud luud maeti tagasi järgmise aasta juunis. 2022. aastal inimluid ei leitud.

Kokku avastati 121 esemeleidu, mida saab jaotada 6 kategooriasse – ehitusjätmed, kirikaia inventar, maetute isiklikud esemed ja panused, kirikus käijate isiklikud esemed, sõjategevuse jäljed ja tänapäevane prügi, mida saadi nii kirikaia kui rajatava monumendi alalt. On märkimisväärne, et enne siinkirjeldatud uuringuid ja kogutud arvukaid leide, olid ainsad viimastel aastakümnetel Pühalepa kiriku juurest saadud leidudest kaks 13. sajandi hõbemünti. Kuigi suurem osa pinnaseteid on tehtud, jätkuvad monumendi ehitustööd veel mõned aastad ning vajadusel kaasatakse arheolooge. Juhul kui tulevikus võetakse plaani parkla uuendamine, vajab kogu see ala kindlasti samuti läbi uurimist.