



Salvage excavations at Keila Iron Age settlement site

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INTRODUCTION

The prehistoric settlement site of Keila lies in north-western Estonia, in the vicinity of the current Keila town in Harjumaa County. The Iron Age settlement site was discovered on the eastern shore of the Keila River (Fig. 1), about 700 m from the centre of the Keila town by archaeologist Mati Mandel (AM) in 1976. The Keila River has changed its bed due to the postglacial land rise. Seasonal floods, once dominating the landscape, have formed river and valley terraces suitable for early inhabitants.

The determination of the distribution of the cultural layer of the Keila settlement (approx. 3.4 ha) and the first small-scale archaeological excavations were carried out by M. Mandel in 1977 (Mandel 1978, 362). No construction remains were discovered. Based on finds (AM A 499), mostly ceramics, the settlement was dated from the 10th to the 13th century. The next two relatively small excavations of the Keila settlement site were conditioned due to the installation of communication cables in 2009 and in 2014 (Treuman 2010; Mandel & Toome 2015). Both excavations confirmed the dating of site as determined by the 1977 excavations.

Uncoordinated digging during the construction of the railway lines that in the Keila Iron Age settlement site (scheduled as National Monument no. 17879 in the Registry of Cultural Monuments) took place without required prior permission, as reported by M. Mandel on 15 September 2021. The illegal work was stopped some days later by the MA. Unfortunately, most of the cultural layer was already removed by the excavator by that time (Fig. 1: red line; Fig. 2). Archaeological salvage excavations (Fig. 3: 1–3) were carried out in the damaged area by OÜ Muinasprojekt in October 2021 (Tammet & Kraut 2021).

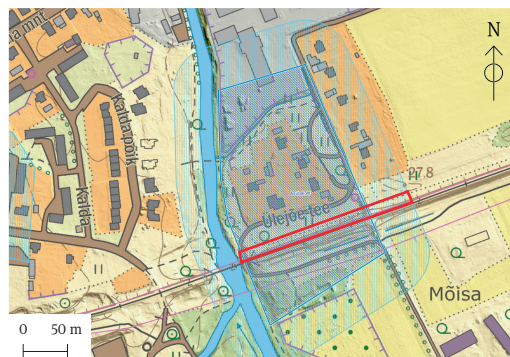


Fig. 1. Keila Iron Age settlement (blue pattern). The area where the cultural layer was damaged by illegal digging in 2021 is marked in red.

Jn 1. Keila rauaaegne asula (sinine viirutus). Punasega on tähistatud 2021. a illegaalse kaevamisega rikutud kultuurikihi ala.

Basemap / Aluskaart: Estonian Land Board/Maa-amet; mapping / kaardistamine: Mihkel Tammet



Fig. 2. Damaged area from the north-east.

Jn 2. Rikutud kultuurikihi ala. Vaade kirdest.

Photo / Foto: Mihkel Tammet

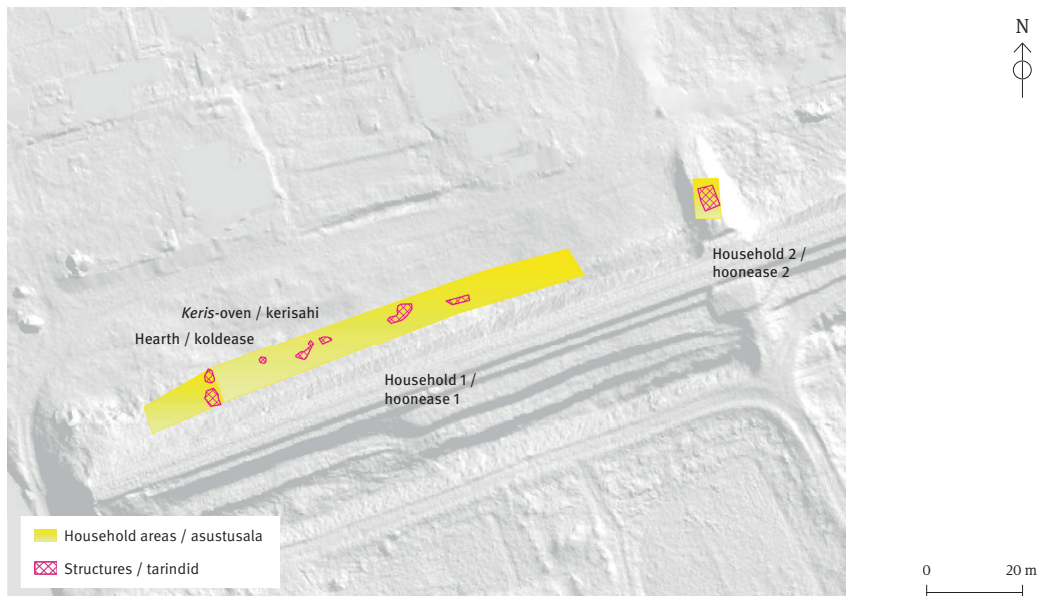


Fig. 3. General plan of salvage excavation of Keila Iron Age settlement in 2021. Discovered household areas, construction remains and findspots.

Jn 3. Keila rauaaja asula 2021. a päästekaevamiste üldplaan. Avastatud asustuspiirkonnad, ehitusjäänused ja leiukohad.

Relief map by Estonian Land Board / Eesti Maa-ameti reljeefikaart; mapping/ kaardistamine: Mihkel Tammet

HOUSEHOLD AREAS, BUILDING CONSTRUCTIONS AND FINDS

The total area from which the soil was almost completely removed covered approx. 600 m². In less damaged places, the thickness of the cultural layer varied, reaching up to 80 cm. Two household areas were identified on the higher part of the former shore terraces (Fig. 3). Household area I was located in the southwest part of the site and was archaeologically investigated. Household area II, located in the northeast, had suffered less damage and was preserved for future research. The area was covered with protective fabric and rubble.

Two charcoal-rich areas were exposed in the excavation area of household I and both were probably related to building remains. Further digging showed that only remains of foundations were more or less intact in the uneven limestone surface pits. Some of the cavities and depressions were levelled with burnt cobblestones (Fig. 4). These stones were probably recycled from nearby fire pits.

Remains of two hearths were found at the top of the terraces. **Hearth I** was round, with a stone lining (Fig. 5). The diameter of the hearth was ca. 90 cm and the depth of the hearth pit was 50 cm at most. There were no other visible constructions surrounding the hearth. Either they were missing or had been destroyed during the soil removal related to railway construction work.

The dating of hearth I is based on the hand-made pottery fragments found at the bottom layer of the hearth pit. One of the larger fragments is a rim piece and comes from a black-coloured smaller upright-necked bowl with a small right-angled carination at the transition from the neck to the shoulder (Fig. 6). Similar fineware vessels were found in Harjumaa from the stone grave of Lehmja-Loo III (AI 4444: 188). In Vello Lõugas' opinion the grave of Lehmja-Loo III was mainly used in the 7th century (Lõugas 1973, 129). Valter Lang has suggested that such vessels



Fig. 4. Limestone cavities and depressions filled with burnt cobblestones. View from the north.

Jn 4. Põlenud munakatega täidetud paepõhja ebataasused ja uurded. Vaade põhjast.

Photo / Foto: Silver Jäger



Fig. 5. Hearth I. View from the south-west.

Jn 5. Vaade I koldekohale edelast.

Photo / Foto: Silver Jäger



Fig. 6. Fragment of a black-coloured bowl from the bottom of hearth I.

Jn 6. I koldekoha põhjast leitud musta värvi kausi servatükk.

(AI 8545: 32.)

Photo / Foto: Jaana Ratas



Fig. 7. Ring-headed bronze pin decorated with silver.

Jn 7. Hõbedaga kaunistatud pronksist rõngaspeaga ehtenõel.

(AI 8545: 23.)

Photo / Foto: Jaana Ratas

were used in Estonia during the 7th and 8th centuries (Lang 1991, 56, fig. 5: 2).

A fragment of a decorative ring-headed bronze pin (Fig. 7) should also date from the same period. It was found in the profile at the edge of the trench and was related to the layer above the cobblestone filling. The upper part of the pin is covered with silver and decorated with two circular flanges and with a round decorative shield above the opening. According to the typology compiled by Marika Mägi (1997), it represents variant 1.1 of early ring-headed pins found in Estonia. Mägi has dated such pins to the 7th century (Mägi 1997, 33). It should be stressed that similar decorative pins are quite rare in Estonia. One of them was found earlier in Keila and it belonged to the deposit that A. M. Tallgren dated to the 8th century (Tallgren 1925, 81, plate IV).

Hearth II, located 7–8 m ENE from hearth I, had a somewhat different construction (Fig. 8). The area of burnt cobblestones, small limestone slabs and intense charcoal

was with great probability the remains of a house with a *keris*-oven. No structures had been preserved from the building, but the location of the oven inside the house could be more clearly determined. It was regularly elongated in shape (1.7 m wide and 2.4 m long) and originally built into a pit that had eroded into the sedimentary rock. In order to fit the oven in place, its walls were slightly sunk into the limestone in the south-east and south-west. Pieces of burnt clay, some with smoothing marks, were found on the south-west side of the oven – apparently the outer wall of the oven was isolated from the wall of the building with a layer of clay. The floor of the oven was made of one or two thicker limestone slabs, which had crumbled into small pieces in the intense heat. Since burnt clay was also found inside the oven, the floor of the oven could have been smeared with clay or repaired. Special attention was paid to a small square charcoal-rich opening in the southeast wall of the oven. It is possible that this opening was used to gather ash. Lye-rich ash was a valuable source material in pottery making, tanning, washing clothes, etc.

In the north-western part of the oven remains, in front of the oven mouth, was a smaller area full of charcoal, ash and limestone fragments. Since it was somewhat lower than the level of the oven floor, it was probably a place for cooking (*lee* in Estonian). The burnt stones documented there may have come from the limestone slabs that bordered the *lee*. Right next to the *lee* was a post hole wedged with upright limestone plates, which probably housed the support post for the oven. Constructions similar to those found at Keila household, and identified as *keris*-ovens have been investigated at Soontagana, Lõhavere and Varbola hill forts by Evald Tõnisson. He cautiously dated the earlier *keris*-ovens to the beginning of the second millennium, but did not rule out the possibility that rudimentary *keris*-ovens already

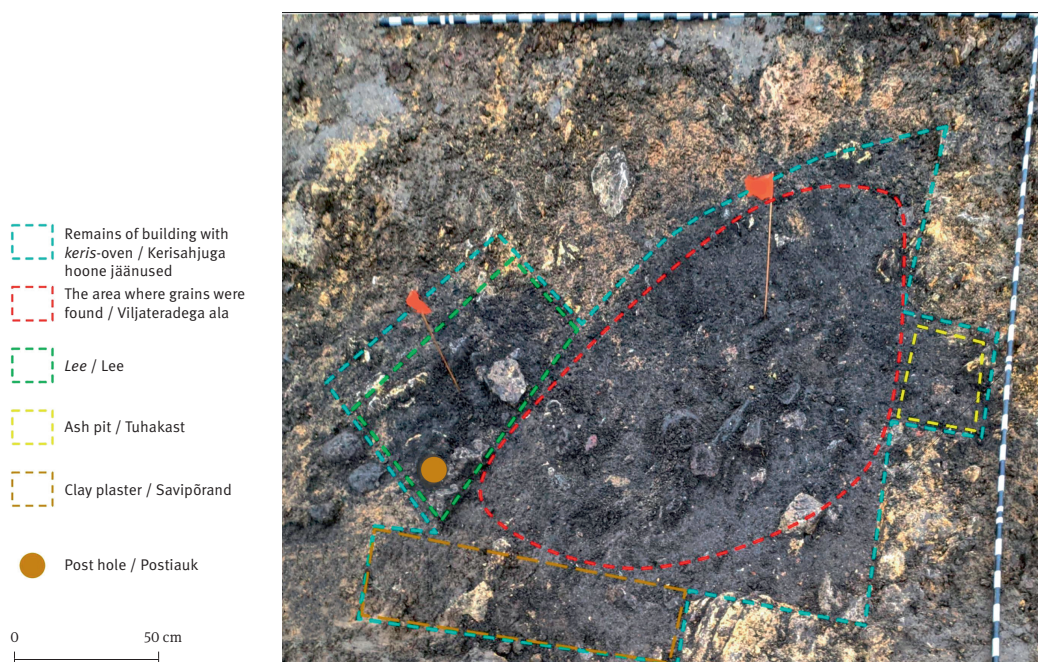


Fig. 8. Remains of keris-oven. Orange flags refer to pottery concentration areas.

Jn 8. Kerisahju jäänused. Oranžid lipud tähistavad savinõukildude kontsentratsioonialasid.

Photo / Foto: Silver Jäger; mapping / kaardistamine: Mihkel Tammet

existed in the second part or in the end of the first millennium AD (Tõnisson 1981, 46–48). One of the two *keris*-ovens unearthed at Keava hill fort in 2001–2005 was probably built not later than the end of 11th century (Lang 2012, 33). Based on the oven constructions found in Estonia, it was suggested by E. Tõnisson that *keris*-ovens were predominantly used for heating and cooking inside the buildings (Tõnisson 1981, 50–52). Charred grains found at Keila oven support also the concept that the baking took place in the same oven and that there was no separate bread oven outside the building.

The concentration of pottery finds was higher inside the area of hearth II (Fig. 8: orange flags) and these finds were most likely related to the building that once stood there, which housed the *keris*-oven. The sherds come from about a dozen hand-made vessels made from clay mass mixed with rather coarser-grained sand. The outer and inner surfaces are quite carefully smoothed; the thickness of the wall is 0.6–1.0 cm, and they have a vertical or slightly outward-facing neck and a rather convex shoulder. Presumably, most of them have been used as cooking pots, as testified by the sooty outer surface and a layer of burnt food remains on the inner surface. Only three fragments have ornamentation (AI 8543: 32a–c). They originate from one and the same orange-colored pot, the wall of which was 0.5–0.8 cm thick, with 6–8 parallel dense lines below the almost vertical neck. Presumably it has also been used as a cooking pot, as the outer surface of the fragments has become heavily sooty (Fig. 9). Hand-made vessels with a vertical or almost vertical neck and a slightly everted shoulder were characteristic of northern and north-western Estonia, but also in Sakala, Virumaa and Saaremaa during the Viking Age and the Final Iron Age, where the local tradition of hand-made pottery continued longer than in eastern and southern Estonia (Tvauri 2005, 74–78;



Fig. 9. Sherds of a broken pot in situ. The vessel is decorated with parallel lines.

Jn 9. Joonornamendiga kaunistatud purunenud poti kilud in situ.

(AI 8545: 32a.)

Photo / Foto: Silver Jäger



Fig. 10. Remains of charred grains.

Jn 10. Söestunud viljaterad.

(AI 8545: 1.)

Microscope photo / Mikroskoobifoto: Mihkel Tammet

Mägi 2002, plates 7: 1, 12: 6, 19: 2, 21: 3). The line ornament came into use in the second half of the first millennium and fell out of use in the first half of the 11th century (Lang 1996, 76). Horizontal lines on the Final Iron Age hand-made pottery in Estonia are always used together with other ornamentation motifs, more frequently with wavy lines, a zig-zag pattern or rhombic checker (Tvauri 2005, figs 72–74, 78–84). Bearing in mind that there was no wheel-made pottery in the surrounding of hearth II (except fragments of a single glazed bowl from the 18th or 19th century), therefore, we initially date the pottery found there to the period of the end of first millennium and the very beginning of the second millennium AD.

Soil samples from the *keris*-oven area were gathered and analyzed. Remains of charred grains (Fig. 10) gave us a rare insight to the culinary preferences of the time when the oven was fully functional. Most of the grains identified from the sample belonged to rye (*Secale cereale*), followed by common barley (*Hordeum vulgare*) and wheat (*Triticum* sp.). Some of the rye seeds bore milling/grinding marks (Tammet & Kraut 2021, 13). Charred seeds of common weeds related to agriculture were also present. It seems that rye was used as the main bread crop in the Keila household. The charred grain remains found from Tartu Pre-Viking and Viking Age fort-settlement had also a relatively high content of rye (Tvauri & Vanhanen 2016, 39, table 1), which supports the concept that rye

bread was widely common starting from the Pre-Viking Age. Unearthed animal bones and bone fragments from the *keris*-oven area are still to be examined.

CONCLUSION

In 2021, the salvage excavation in the protected settlement site of Keila focused on the most damaged area caused by the earthworks that took place in connection with the construction of the railway. In the excavated plot, two household areas and remains of two hearth foundations were recorded for the first time in the Keila Iron Age settlement. The first foundation was interpreted as an open hearth dug into the ground and the second as a *keris*-oven. According to the finds, the first can be dated to the 7th and 8th centuries and the second to the end of the first millennium or very beginning of the second millennium. Soil samples from the

keris-oven gave us a rear insight on cereals used for cooking. Charred seed remains were dominated by rye probably milled and used for baking bread. The presented dates are preliminary and may be specified after the results from dating the ^{14}C samples will be received.

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PÄÄSTEKAEVAMISED KEILA RAUAAJA ASULAS

Mihkel Tammet ja Ülle Tamla

Keila rauaaja asula avastas Mati Mandel 1976. aastal ning tema tegi ka esimesed uuringud kultuurkihi ulatuse ja vanuse väljaselgitamiseks. Rauaagease asula kultuurkiht on ladestunud Keila jõe idakaldale u 3,4 ha suurusele alale ja paikneb kunagistel kaldaterrassidel (jn 1: sinine viirutus). Seoses kommunikatsioonikaablite paigaldamisega tehti seal arheoloogilist järelevalvet 2009 ja 2014 ning mõlemal korral leidis kinnitust esmaste uuringute tulemus, mille järgi arvati asula pärinevat 10.–13. sajandist.

2021. aasta septembris toimusid Keila kaitsealuse asula territooriumil (mälestis nr 17879) ebaseaduslikud kaevetööd seoses raudtee ülesõidu ehitusega (jn 1: punasega piiratud ala; jn 2). Rikutud alal (u 160 × 7 m, kokku u 600 m²) viidi läbi päästeuurimised. Kaldaterrasside kõrgemas osas avastati kaks omaaegset elutegevuspiirkonda (jn 3), millest edelas paiknenud I piirkond kaevati läbi. Kirdeosas avastatud II elutegevuspiirkond oli saanud vähem kahjustada ja otsustati säilitada kanga ja killustikuga kaetuna edaspidiseks uurimiseks.

Uuritud alal pälvistid tähelepanu põlenud muna-katega tasandatud paese aluspõhja lohud ja uurded. Ilmselt oli läheduses paiknenud küttekolletest pärinevaid kasutamiskõlbmatuks muutunud kive taas-kasutatud täitematerjaliks (jn 4). Esimeses elutege-

vuspiirkonnas puhastati välja koldekoht ja kerisahju jäänused. Kividega piiratud koldekoha läbimõõt oli u 90 cm ja sügavus u 50 cm (jn 5). Kolde põhjast leitud savinõukildude hulgas on musta värvi kausi servakild, mille pinnatöötlus ja profiil langeb kokku Lehmja-Loo III kalmest avastatud keraamikaga (jn 6). Vello Lõugase arvates maeti sellesse kalmesse peamiselt 7. sajandil; Valter Lang peab võimalikuks, et niisugust keraamikat kasutati Eestis 7.–8. sajandil. Samasse aega kuulub ka põlenud raudkividega täitekihi profiilist saadud hõbetatud peaga ehtenõela katke (jn 7). Seda tüüpi ehtenõelad on Eestis üsna haruldased ja seetõttu väärib esiletõomist, et üks samasugune nõel on leitud Keilast juba varem. See sisaldub 8. sajandisse dateeritud peitleius.

Kerisahjust oli säilinud vaid kõige alumine osa (jn 8). Hoonest ei olnud midagi alles, kuid ahju asend ja ligikaudne suurus (1,7 × 2,4 m) olid määratavad. Ahi oli ehitatud paesse erodeerunud lohku, mida oli külgseinte mahutamiseks süvendatud. Ahju edelaküljel oli suures koguses põlenud savitükke, millest mõnel olid silumisjäljed. Tõenäoliselt oli ahju välis-sein eraldatud hoone seinast savikihiga. Ahju pörandaks oli üks või kaks paksemat paeplaati, mis olid kuumuses murenenud. Nende peal olnud põlenud savikambud võisid pärineda saviga silutud või paran-

datud ahjupõrandast. Poleemikat tekitas tuhaga täitunud nelinurkne ava ahju kaguseinas. Võimalik, et see oli tuha kogumise koht – leeliserikas tuhk oli väärtuslik materjal savinõude valmistamiseks, parkimiseks, rõivaste pesemiseks jm. Haruldaseks leiuks olid kerisahju põhjalt avastatud söestunud viljaterad. Analüüsitulemus näitas, et tegemist on valdavalt rukkiga (jn 10). Arvame, et rukkiterad olid jäänud ahju leiva küpsetamisel ja kaudselt viitavad sellele ka jahvekraaped viljaterade pinnal.

Kerisahju lähiümbrusest saadud savinõukillud pärinevad kümme-konnast käsitsi vormitud nõust, millest mitmeid on kasutatud keedupottidena. Ühel

tahmunud pinnaga potil on joonornament. Leitud keraamika ei ole täpselt dateeritav, kuid pidades silmas pottide kuju, savimassi koostist, pinnatöötlust ja kaunistamisviisi oletame, et need võivad kuuluda I aastatuhande lõppu või II aastatuhande päris algusesse. Selline dateering on kooskõlas ka E. Tõnissoni (1981) ettevaatliku arvamusel, mille järgi meie vanemad kerisahjud võivad pärineda II aastatuhande algusest ja algsed kerisahjud I aastatuhande teisest poolest või lõpust. Keila rauaaja asula avariikaevamistel avastatud konstruktsioonide dateeringud võivad pärast ^{14}C dateeringute analüüsitulemuste laekumist täpsustuda.