



Rescue excavations at the Ihaste Stone Age settlement site

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INTRODUCTION

Archaeological fieldwork at the Ihaste Stone Age settlement site took place in June 2016 due to planned constructions of a dwelling house and its surrounding pavement in Varsa 5 plot (Fig. 1). The fieldwork was conducted by OÜ Muinaslabor. The aim of the archaeological survey was to remove the turf layer, excavate the ploughing and the filling layers, sieve them and collect the finds. According to the agreement with the National Heritage Board the solid sand layer beneath the ploughing and filling layers (undisturbed Stone Age cultural layer) could remain unexcavated, but had to be covered with geotextile and a buffer soil layer by the owner before the construction started.



Fig. 1. A drone photo of Varsa 5 excavation site from NW.
Jn 1. Vaade Varsa 5 kaevamistele droonilt loodest.
Photo / Foto: Marko Kohv

Ihaste Stone Age settlement site is situated on the left bank of the River Emajõgi and lies on the little ridge between Hipodroomi Street and the flood plain of the River Emajõgi, on the slope descending from east to west (Fig. 2). The area of Varsa 5 plot was in use as an arable land for a long time. In a map from 1684 there was a field or a meadow and due to ploughing activity the upper layers of the settlement site are mixed (EAA). Varsa 5 plot has also been a residential area. In the topographic map of 1937 buildings are marked on that site (Fig. 3). At the beginning of the 1980ies archaeologist Heiki Valk found a Comb Ware pottery sherd during the military training of the Tartu State University (Johanson & Kriiska 2007, 143). In 1997 Andres Tvauri and Andres Vindi conducted a landscape survey in Ihaste during which they discovered the Stone Age settlement site and in the same year small-scale fieldwork, directed by Aivar Kriiska, were carried out at the site (Kriiska 1997).

In May 2005 preliminary research took place at the Ihaste settlement site to find out the extent of the cultural layer in the planned street network and housing estate (Johanson & Kriiska 2005). In 2005 archaeological excavations were conducted to excavate the utility lines for the planned housing estate (Moora *et al.* 2006). Archaeological excavations on the



Fig. 2. Location plan of the archaeological investigation area of Varsa 5 plot is marked with orange, the area with a richer cultural layer of Varsa 1–6 plots with blue and Ihaste Stone Age settlement site with red.

Jn 2. Arheoloogilise uuringuala asukohaskeem Varsa 5 krundil on tähistatud oranžiga, rikkama kultuurikihi ala kruntidel Varsa 1–6 sinisega ja Ihaste kiviaja asulakoht punasega.

Map / Kaart: Estonian Land Board / Maa-amet, Kristiina Johanson



Fig. 3. Varsa 5 plot (red dot) on a 1937 topographic map of Estonia.

Jn 3. Varsa 5 krunt (joonisel punane täpp) 1937. aasta Eesti topograafilisel kaardil.

Map / Kaart: Estonian Land Board / Maa-amet, Keiti Randoja

Varsa 2 and 3 plots were conducted in 2006 in relation to the construction of dwelling houses (Johanson 2015a–b). In 2015 several preliminary investigations took place at the Ihaste site on the plots of Varsa 1 (Möllits 2015), Varsa 8 (Johanson 2015c; Johanson 2016) and Salutähe 7a (Johanson 2015d) as well as in Hipodroomi street (Kriiska & Kask 2015). Furthermore, in 2009–2011 the presence of the cultural layer has been studied in Varsa 16–20 and Kuljuse 3 plots. A layer rich in finds was found from the plots of Varsa 1–6, which are situated on the higher slope in front of the flood plain of the river.

Throughout the settlement site, or at least in its richer parts, the stratigraphy is roughly the same. On top there is the turf layer, under that dark grey humus horizon which is mostly ploughed upside down on the higher slope of the settlement site. For example, ploughing marks were documented in Varsa 2 and 3 plots (Johanson 2015a–b), and now also in Varsa 5 plot. In Varsa 8 plot which lies under the higher slope no ploughing marks were discovered (Johanson 2016). Dark grey sand (dark grey ploughing horizon/humus) consisted of finds from different periods. Under the dark grey ploughing horizon/humus a reddish brown sand layer is exposed which upper part forms the undisturbed part of the Stone Age cultural layer. In areas richer in finds the sand is of a darker shade, consisting of small pieces of charcoal and animal bones in addition to

archaeological artefacts; in areas with less or no finds the sand is of a lighter yellowish red shade. Archaeological finds appear in the range of about 20 cm of depth, deeper the sand alters smoothly to a lighter shade and goes over to natural sand. Similar stratigraphy was expected before the excavations in Varsa 5 plot.

EXCAVATION METHODS

During the archaeological fieldwork an area of 492 m² was excavated. The measurements of the excavation pit were from north to south 24 m, from east to west 20.5 m (Fig. 4). The excavation pit was divided into 1 × 1 square metres. The turf layer was removed with excavator and the remaining ploughing and filling layers were dug with shovels or trowels and sieved. The finds were collected from the area of 1 m² of depth of the whole ploughing layer. Finds were not measured *in situ* as most of them came from the ploughing layer.

In accordance with the agreement with the National Heritage Board and keeping in mind the presumed stratigraphy of the settlement site it was planned to remove the humus layer until the undisturbed sand layer – the reddish brown sand of the Stone Age cultural layer. The Stone Age cultural layer itself was not excavated. At the beginning of the excavation it appeared that the Stone Age cultural layer was preserved only in the eastern part of the excavation pit (Fig. 4). Here the turf layer was thinner, approximately 5 cm, and the ploughing layer reached max 10 cm from the ground level. So, in the eastern part of the excavation area the ploughing layer was removed until the undisturbed Stone Age cultural layer with trowels and sieved entirely.

In the middle and western part of the excavation pit the ground was disturbed during several earlier activities on that site. Here the initial layers were definitely disturbed (about 1/2 of the whole excavation area) before the year 2005. For example, Moora *et al.* (2006) name different places on the higher foot of the slope for digging sand, caved in trenches *etc.* which were partly filled with construction debris. In these parts of the excavation area the Stone Age cultural layer was mostly destroyed, so it was decided to remove the disturbed layers there as deep as 40 cm with excavator and continue with shovels in order to find the spots of undisturbed layers. In places, where it was possible to follow the undisturbed layers, the humus was excavated with trowels and sieved as in the eastern part of the excavation. Since here the undisturbed reddish brown sand layer was not present the disturbed layers were removed until the presumed original level of the undisturbed sand. Because it was decided not to entirely sieve the disturbed layers, there are fewer finds from the western part of the excavation area.



Fig. 4. Orthophoto of Varsa 5 plot. Green line – area with removed turf layer, red line – excavated area, yellow line – border between the disturbed (western) and undisturbed (eastern) area.

Jn 4. Varsa 5 ortofoto: roheline joon – ekskavaatoriga kooritud ala, punane joon – kaevandi ala, kollane joon – läänepoolse segatud ja idapoolse segamata ala piir.

Map / Kaart: Estonian Land Board / Maa-amet, Kristiina Johanson

More recent disturbances in Varsa 5 plot have probably taken place in the course of the excavation of the utility lines in 2005. Approximately 20 cm of sand had been laid out in the southwestern and western part of the area with disturbed layers and partly also in the eastern part of the excavation area with the untouched cultural layer. It consisted of similar tone of reddish brown sand and dark grey sand layers as in the rest of the settlement site, but a new turf layer had already formed on it. So it can be suggested that the sand derives from the utility lines dug for the streets and the communications in 2005.

THE COURSE OF THE EXCAVATION

Ploughing marks

In the eastern part of the excavation pit (approximately $\frac{1}{2}$ of the area) where the undisturbed sand layer was exposed, there were crossing ploughing marks with the width of 10–12 cm (Fig. 5). The ploughing marks were of a rounded cross-section and deepened 2–3 cm into the Stone Age cultural layer. The ploughing marks were north-south and east-west directional. It is difficult to date the marks as the field might have been ploughed until the 19th century.



Fig. 5. Ploughing marks in the eastern part of the excavation pit. View from north.

Jn 5. Adrajäljed kaevandi idaosas. Vaade põhjast.
Photo / Foto: Taisi Juus

Possible firepits

Four depressions – possible firepits or pits for household remains – distinguished from the surrounding soil by their darker colour, were discovered during the excavations. Three of them were dug through as these were situated in the area where the Stone Age cultural layer was preserved and therefore might have been from the Stone Age. The aim was to determine the nature of the depressions – how deep these were and what they contained. Depression no. 1 was situated in the disturbed part of the excavation pit, it was approximately 20 cm in diameter and contained large pieces of coal. Taking into account the size of the coal pieces and their good preservation it was likely to be a firepit of a relatively late origin, so it was not excavated through.

Depression no. 2 was situated in the north-eastern part of the excavation pit. The diameter of the possible firepit was 30 cm and its depth about 25 cm. The pieces of coal were very small and there were no finds in the pit.

Possible firepits nos 3 and 4 were situated closely together in the southeastern part of the excavation pit and contained pieces of charcoal. Samples were taken from both pits. The diameter of possible firepit no. 3 was 40 cm and the patch was of depth of 13 cm. A flint blade was found from the pit. The diameter of possible firepit no. 4 was 25 cm and the depth 27 cm. The pit contained quite large, up to 5 cm long pieces of coal. As the pieces of coal were quite large and the pit was 30 cm deep, the pit was probably not of Stone Age origin.

Possible utility line

During the fieldwork a possible utility line for water and sewerage, excavated in 2005 by Rünno Vissak and Tanel Moora (Moora *et al.* 2006) was found in the southern part of the excavation pit. A clearly visible cut filled with grey soil directed from north to south was discovered in the depth of 45 cm. The utility line was probably 2 m wide and reached into the current excavation pit with the approximate length of 4.5 m. White strings and wooden stakes were found from the utility line as well as an excavation trowel in the depth of 30 cm. All these probably derive from the excavation of Vissak and Moora and were left in the utility line while backfilling it.

Finds from Varsa 5 excavation site

During the excavations almost 2500 artefacts were gathered. Most of the finds came from the eastern, undisturbed part of the area. The most common finds were flint finds (Fig. 6: 3; 5–6) of which the majority are flint flakes (1886), but there were also flint blades (387), scrapers (81), cores (18), unworked flint pebbles (23) and knives (5). One flint arrowhead and a flint drill were found as well. A large proportion of flint blades indicates at the Mesolithic age of the site.

Of finds from crystalline rocks 15 adzes and their fragments were found. Most of the adzes were only partly ground blanks or artefacts with crumbled surfaces. There were 8 almost whole adzes and 7 ground edge fragments of adzes. The most remarkable of the adzes was



Fig. 6. A variety of artefacts from Varsa 5 excavations. 1 – a quartz knife, 2 – sherds of a Comb Ware vessel, 3 – flint core, 4 – a slate adze, 5 – flint blades, 6 – a flint scraper.

Jn 6. Valik leide Varsa 5 kaevamistelt. 1 – kvartsist nuga, 2 – kammkeraamika katked, 3 – tulekivinukleus, 4 – kiltkivist talb, 5 – tulekivilaastud, 6 – tulekivist kõõvits.

Photo / Foto: Taisi Juus

an intact trapezoidal adze ($4.4 \times 3.5 \times 1.0$ cm) which was ground all over the surface and was made of slate (TÜ 640: 702; Fig. 6: 4). The adze is dated to the Late Mesolithic.

Quartz finds were less frequent than flint finds. Fewer quartz finds are typical to the rest of the Ihaste Stone Age settlement site and overall to the Central Estonian Mesolithic sites (Johanson & Kriiska 2005). Most of the quartz finds were flakes (26), but also a triangular shaped side scraper or a knife (Fig. 6: 1) was discovered.

A small proportion of Stone Age ceramics (23) was found as well. Most of these were side fragments of ceramic vessels (Fig. 6: 2). Both Comb Ware and Corded Ware ceramics were present but most of the sherds were indefinite. Sherds of these types of ceramic vessels and other finds characteristic to the Neolithic indicate at the usage of the settlement site after the Mesolithic occupation.

There were many finds from the 20th century. The artefacts were collected from disturbed layers, the grey humus layer, on top of the undisturbed Stone Age cultural layer and test pits. Most of the late finds composed of commodity ceramics. Plastic, metal and glass buttons, coins, bullets and cases of cartridges, pieces of glassware and one lead seal were also discovered.

In addition to artefacts burnt and unburnt animal bones were found all over the excavation area. Animal bones were also collected with the accuracy of a square metre. Although animal bones were from a disturbed context and their dating is unknown, it was decided to preserve and identify them because it is possible that some of them may originate from the Stone Age. Most of the bones belonged to mammals and the majority that could be identified to species belonged to ox.¹ There were also bones of pig, dog, sheep/goat and a few bones of hare, beaver, otter, fish and bird bones. Some of the bones had cutting and chewing marks on them. The ox bones were very large and well preserved which is a clear indication of their recent date. Sheep/goat bones were probably recent too, since these species were still herded at the site 10 years ago. As of beaver, otter, hare and bird bones, their original deriving from the Stone Age layer is possible.

SUMMARY

During the fieldwork of Varsa 5 plot, ploughing and filling layers were removed until the Stone Age cultural layer. The ground was sieved and almost 2500 finds were collected, most of which were flint finds. In the eastern part of the excavation pit the intact Stone Age cultural layer was preserved with crossing ploughing marks depressed into the layer. Due to various activities during the Soviet time and in the 1990ies and 2000ies the western part of the excavation pit was greatly disturbed. During the fieldwork a possible utility line of Vissak's and Moora's 2005 excavation was found.

Ihaste settlement site is undoubtedly a very important Stone Age site which earlier finds date to the 9th millennium BC. It is presumed that the Ihaste Stone Age settlement site was inhabited in different periods of the Mesolithic and later on. The density of the Stone Age finds was quite remarkable even without digging the untouched Stone Age cultural layer – on the average 5.04 finds from square metre from the ploughing and filling layers. The high proportion of cutting tools is also noteworthy. Therefore, Varsa 5 plot definitely requires thorough excavations, at least in the undisturbed parts of the site.

¹ Determined by Eve Rannamäe (TÜ).

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REFERENCES

- EAA = EAA.308.2.68, leht 1. (*Map in RA.*)
- Johanson, K. 2015a.** Aruanne arheoloogilisest uurin-
gust kiviaja asulakohal (reg nr. 27428) Varsa 2
krundil (Tartu linn, Tartu maakond). (*Manuscript
in TÕAK.*)
- Johanson, K. 2015b.** Aruanne arheoloogilisest uurin-
gust kiviaja asulakohal (reg nr. 27428) Varsa 3
krundil (Tartu linn, Tartu maakond). (*Manuscript
in TÕAK.*)
- Johanson, K. 2015c.** Aruanne arheoloogilisest eelu-
ringust kiviaja asulakohal (reg nr. 27428) Varsa 8
krundil (Tartu linn, Tartu maakond). (*Manuscript
in TÕAK.*)
- Johanson, K. 2015d.** Aruanne arheoloogilisest eelu-
ringust Ihaste kiviaja asulakohal (reg nr. 27428),
Salutähe 7a krundil. (*Manuscript in TÕAK.*)
- Johanson, K. 2016.** Aruanne arheoloogilistest uurin-
gutest kiviaja asulakohal (reg nr. 27428) Varsa 8
krundil (Tartu linn, Tartu maakond). (*Manuscript
in TÕAK.*)
- Johanson, K. & Kriiska, A. 2005.** Aruanne arheologi-
listest eeluuringutest Ihaste mesoliitilisel asula-
kohal 11.–14. mail 2005. (*Manuscript in TÕAK.*)
- Johanson, K. & Kriiska, A. 2007.** Archaeological
research on Ihaste Mesolithic settlement site. – AVE,
2006, 143–160.
- Kriiska, A. 1997.** Aruanne arheoloogilisest inspektsioo-
nist Ihastes (Tartu-Maarja khk.) 22.–27. sept. 1997.
(*Manuscript in TÕAK.*)
- Kriiska, A. & Kask, S.-K. 2015.** Aruanne arheologi-
listest eeluuringutest Ihaste mesoliitilise asula-
koha (nr 27428) kaitsevööndis 28.–29. mai 2015.
(*Manuscript in TÕAK.*)
- Moora, T., Vissak, R. & Jaanits, K. 2006.**
Archaeological excavations in Ihaste, Tartu. – AVE,
2005, 141–160.
- Möllits, S. 2015.** Aruanne arheoloogilisest eeluuringust
Ihastes, Varsa tn 1 krundil, asulakohas reg nr 27428
Tartumaal 2015. aastal. (*Manuscript in TÕAK.*)

PÄÄSTEAEMAMISED IHASTE KIVIAJA ASULAKOHAL

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Arheoloogilised päästekaevamised kiviaja asulakohal Tartus Vana-Ihastes aadressil Varsa 5 toimusid seoses planeeritava elamu ja selle sillutise rajamisega (jn 1). Kaevamisi teostas OÜ Muinaslabor. Arheoloogiliste päästekaevamiste eesmärk oli Varsa 5 krundil kiviaegse kultuurikihi peal oleva kamara eemaldamine, künni- ja täitekihtide läbi kaevamine ning sõelumine, leiumaterjali kogumine ja dokumenteerimine.

Asulakoht asub Emajõe vasakul kaldal väikesel neemikul Hipodroomi tänava ja jõelammi vahele jääval alal, idast läände langeval nõlvakul (jn 2). Varsa 5 krundi ala oli pikka aega põllumaana kasutusel. 1684. aasta kaardil on seal põllu- või heinamaa, mistõttu on asulakoha pealmine kiht aegade jooksul segi kinnitud. 1937. aasta Eesti topograafiliselt kaardilt (jn 3) on näha, et see piirkond oli hoonestatud. 1980. aastate alguses leidis Heiki Valk Tartu Riikliku Ülikooli sõjalise õppuse välitunni ajal sealt kammkeraamilise savinõu killu. 1997. aastal viisid Andres Tvauri ja Andres Vindi Ihastes läbi inspeksiooni, mille käigus avastati kiviaegne asulakoht. Ka hiljem, 2005.–2016. aastatel on kaitsealuse asula erinevatel kruntidel toimunud mitmeid arheoloogilisi välitöid.

Kogu asulakoha ulatuses või vähemalt selle leiurikkamas osas, on laias laastus tegemist sarnase stratigraafiaga. Kõige peal on kamarakiht, selle all tumehalli värvi huumusekiht, mis asulakoha kõrgemal põndakul on valdavalt olnud segamini kinnitud. Tumehall künnikiht/huumus sisaldab eriaegseid leide. Nimetatud kihi all on kogu asulakoha ulatuses punakaspruun liiv, mille ülemine ladestus moodustab kiviaegse kultuurikihi säilinud osa. Leiurikkamates osades on liiv tumedamat määrdunud tooni, sisaldades lisaks leidudele ka pisikesi sõetükke ja loomaluukilde, leiuvaesemates ja -tühjades osades heledam kollakaspunane. Leide esineb umbes 20 cm ulatuses, seejärel muutub liiv sujuvalt heledamaks ja läheb üle looduslikuks aluspõhjaliivaks. Sarnast stratigraafiat oodati enne kaevamist ka Varsa 5 krundil – plaani kohaselt tuli eemaldada vundamendi süvendamiseks sobimatu huumus ning puhastada välja punakaspruun liivakiht. Vastavalt kokkuleppele Muinsuskaitseametiga jäeti kiviaegne kultuurikiht kaevamata tingimusel, et Varsa 5 krundi omanik katab selle enne ehitustööde algust geotekstiili ja täitepinnasega.

Välitööde käigus kaevati läbi 492 m² suurune ala. Kaevand oli põhja-lõunasuunaline mõõtmetega 24 × 20,5 m (jn 4), mis jagati ühe ruutmeetri suurusteks ruutudeks. Kamarakiht eemaldati ekskavaatoriga ning künni- ja täitekihid kaevati labidate ja kelludega

ning sõeluti. Leiud võeti üles 1 m² suuruselt alalt kogu künnikihi sügavuselt. Leide *in situ* sisse ei mõõdetud, kuna enamik neist pärines segatud huumusekihist.

Oodatud stratigraafia oli säilinud vaid kaevandi idaosas. Kaevandi kesk- ja läänes osas oli pinnas varasemate tegevuste käigus segatud (jn 4) ja hävinud oli ka kiviaegne kultuurikiht. Krundi idaosas oli kamar õhem, umbes 5 cm paksune, ülejäänud krundil umbes 10 cm. Seega eemaldati kaevandi idaosas künnikiht puutumata kiviaegse kultuurikihi ja sõeluti.

Kaevandi idaosas paljandusid põhja-lõuna ja ida-läänesuunalised ristuvad adrajäljed laiussega 10–12 cm (jn 5). Adrajäljed olid kumera läbilõikega ja süvendatud kiviaegsesse punakaspruuni kultuurikihti umbes 2–3 cm võrra. Neid on keeruline dateerida, sest põldu võidi künda kuni 19. sajandini. Kaevandi idaosas puutumata kultuurkihiga alal uuriti ka kolme võimalikku tuleaset. Kaevandi lõunaosas satuti Rünno Vissaku ja Tanel Moora 2005. aastal kommunikatsioonitrassil toimunud uuringute kaevandile, millest leiti kaevandi nõõrid ja tikud ning kühvel.

Kaevamiste käigus koguti ligi 2500 leidu. Leiumaterjalist moodustas suurema osa tulekivi (jn 6: 3; 5–6). Enamik neist olid tulekivikillud, kuid esines ka laaste, kõõvitsaid, nukleusi, kamakaid ja nuge. Ühel korral esines tulekivist nooleots ja puur. Laastude suur osakaal tulekivileidude hulgas viitab mesoliitikumile. Lisaks saadi talbu ja nende katkeid. Talbadest on kõige märkimisväärssem kiltkivist trapetsikujuline üleni lihvitud pinnaga talb (jn 6: 4). Kvartsi esines vähem, mis on iseloomulik ülejäänud Ihaste mesoliitilisele asulakohale ja üldiselt Kesk-Eestile. Enamiku kvartsist moodustasid killud. Vähesel määral leiti kiviaegset keraamikat, millest suurem osa oli katked nõude seintest. Esines nii kamm- kui ka nõorkeraamikat. Kamm- ja nõorkeraamikakillud ning teised neoliitikumile iseloomulikud leiud osutavad asulakoha mesoliitikumist hilisemale kasutusele.

Lisaks leidudele koguti kaevamiste käigus loomaluid. Kuigi need saadi segatud kontekstidest, võib osa neist pärineda kiviajast. Enamik luudest kuulus imetajatele, peamiselt veisele. Leiti ka sea, koera, kitse/lamba ja üksikuid jänese, kopra, saarma, kala ja linna luid.

Ihaste asulakoha näol on kahtlemata tegemist olulise kiviaja muistisega, mille vanimad leiud dateeruvad 9. aastatuhandesse eKr. Kiviaegsete leidude tiheus oli ilma kiviaegset kultuurikihti kaevamata üpris suur – 5,04 leidu ruutmeetrit. Märkimisväärne oli ka raieriistade suur arv. Seetõttu väärib käesolev muistis autorite hinnangul täielikku läbikaevamist, vähemalt puutumata kultuurkihiga aladel.