



The settlement site of Maalasti: crafts from the Mesolithic to the Medieval Times

Ragnar Saage, Kristiina Johanson, Eve Rannamäe and Sander Jegorov

Tartu Ülikool, ajaloo ja arheoloogia instituut, arheoloogia osakond (University of Tartu, Institute of History and Archaeology, Department of Archaeology), Jakobi 2, 51005 Tartu, Estonia; ragnar.saage@ut.ee

Arvi Haak

Tartu Linnamuuseum (Tartu City Museum), Narva Rd 23, 51009 Tartu, Estonia

Tartu Ülikool, ajaloo ja arheoloogia instituut, arheoloogia osakond (University of Tartu, Institute of History and Archaeology, Department of Archaeology), Jakobi 2, 51005 Tartu, Estonia

INTRODUCTION

The settlement site of Maalasti is located in the northern part of Viljandi County, just north of the Navesti River. It has been a favourable site for habitation since the Mesolithic Era. Considering that the small-scale excavations in 2021 were the first of their kind in addition to the previous fieldwalking surveys, the settlement of Maalasti contains a rich deposit of artefacts from different periods. The finds from the settlement site can be divided into three categories based on the find circumstances: 1) a large number of pottery, flint and metal artefacts has been collected and given to the National Heritage Board by the owner of the Mäeltoa-Lauda farm Gert Kallas (TÜ 2651: 24–59; TÜ 3035), 2) several fieldwalking surveys by the University of Tartu and the National Heritage Board archaeologists have taken place at the surrounding lands, resulting in small assemblages of finds (TÜ 618; TÜ 2651: 1–23) and 3) in the autumn of 2021 trial excavations led by Ragnar Saage took place near the Mäeltoa-Lauda farm (TÜ 2962).

The majority of the finds originate from the Mäeltoa-Lauda plot. These areas can be divided into 1) the immediate vicinity of the current house in all directions (Fig. 1: A1–A3), 2) three find locations further than 200 m from the farm (Fig. 1: A4–A6) and 3) locations with just one find (Fig. 1: S1–S2).

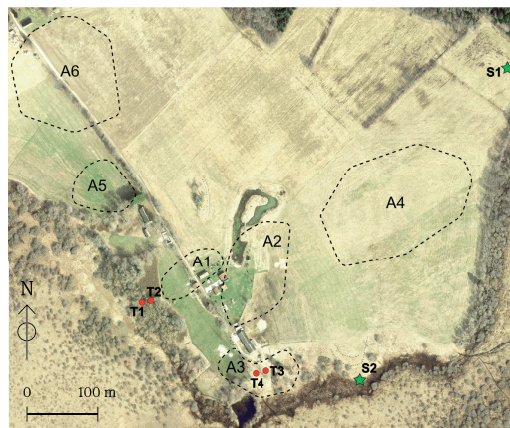


Fig. 1. Significant locations on the settlement site of Maalasti: A1–A6 – areas where artefacts were found, S1 – the bronze axe find spot, S2 – cup-marked stone, T1–T4 – test pits and trenches in 2021.

Jn 1. Maalasti asulakoht: A1–A6 – leiualad, S1 – pronkskirve leiukoht, S2 – lohukivi, T1–T4 – 2021. aastal tehtud šurfid ja kaevandid.

Base map / Aluskaart: Estonian Land Board / Maa-amet, additions / täiendused: Ragnar Saage

The aim of this article is to summarise the finds obtained from the 2021 fieldwork and the previous surveys. Four main categories could be distinguished, 1) flint and stone finds, 2) metal objects and metalworking waste, 3) ceramics and 4) animal remains.

FIELDWORK IN 2021

The main goal of the small-scale excavations in 2021 was to investigate the location of the iron currency blooms¹ found in 2017, hence a test pit was dug here, which was widened to a 2 × 2 m trench (Trench 1, Fig. 1: T1). Trench 1 in the iron bloom find place turned out to be quite empty of pottery and animal bones, indicating the settlement did not extend that far to the west. The iron blooms had been buried between two very large boulders. A second test pit slightly east (Fig. 1: T2) had similar finds – a few pottery fragments and animal bones, but quite a lot of worked flint.

A third test pit was made to a location where the owner had previously found slag (Fig. 1: T3), but the test pit did not have a higher concentration of hammer scale or slag, and therefore a smithy has yet to be found in Maalasti. Finally, as the farm owner had found some pottery and burned stones south of the barn (Fig. 1: A3), this area was also studied with a test pit (Fig. 1: T4). As there was a layer of stones and numerous finds, this excavation area was also expanded into a 2 × 2 m trench (Trench 4, Fig. 1: T4).

In Trench 4, very dark soil containing charcoal, burnt stones and droplets from casting copper alloys appeared, which indicates a casting workshop in the vicinity of the trench. The northern part of the trench had a thick layer of clay, which created a clear stratigraphical sequence in the area it reached. The clay could originate from some structure which fell apart after the workshop lost its roof. Black parallel lines in the undisturbed virgin soil at the bottom of the trench looked like plough marks. These would have had to precede the workshop. Therefore, there are four main units in the trench starting from the earliest: Unit 1 – the cultivated farmland, Unit 2 – the workshop, Unit 3 – clay following the destruction of the workshop and Unit 4 – the post-workshop layer (Fig. 2: U1–U4). The border between Units 1 and 2 is based on the find depth – the copper alloy finds ended abruptly, and Unit 1 contained

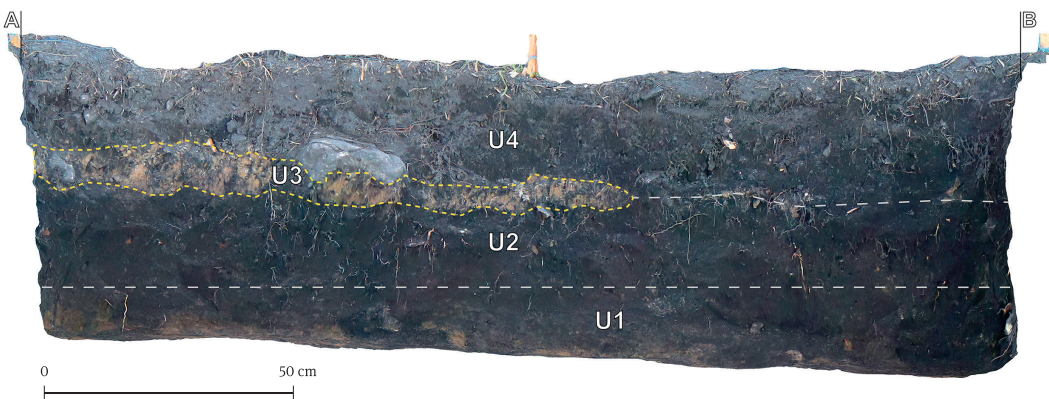


Fig. 2. Eastern profile of Trench 4: U1–U4 – Units 1 to 4.

Jn 2. Kaevand 4 idaprofil: U1–U4 – üksused 1 kuni 4.

Photo and drawing / Foto ja joonis: Ragnar Saage

¹ Currency bloom was a rectangular piece of bloomery iron that was compacted after the iron was taken out of the smelting furnace. The rectangular shape was probably intended for trade.

only ceramics and flint. Two AMS radiocarbon analyses were done from two animal bones (AZ-27:01 and AZ-42:01). The first originated from the lower part of Unit 4 and is probably contemporary with the workshop, falling between 1230–1277 AD (95% prob.).² The second bone was found in the lower part of Unit 2, and this presumably originates from the cultivated pre-workshop soil and dates Unit 1 to the Viking Age (893–1023 AD, 95% prob.).³

The find distribution in the workshop unit (Fig. 3) illustrates that only a minority of the artefacts were found under the layer of clay (U3), most notably the silver pendant. The find location for about half of the artefacts was measured with a total station, the rest were found on the sieve.

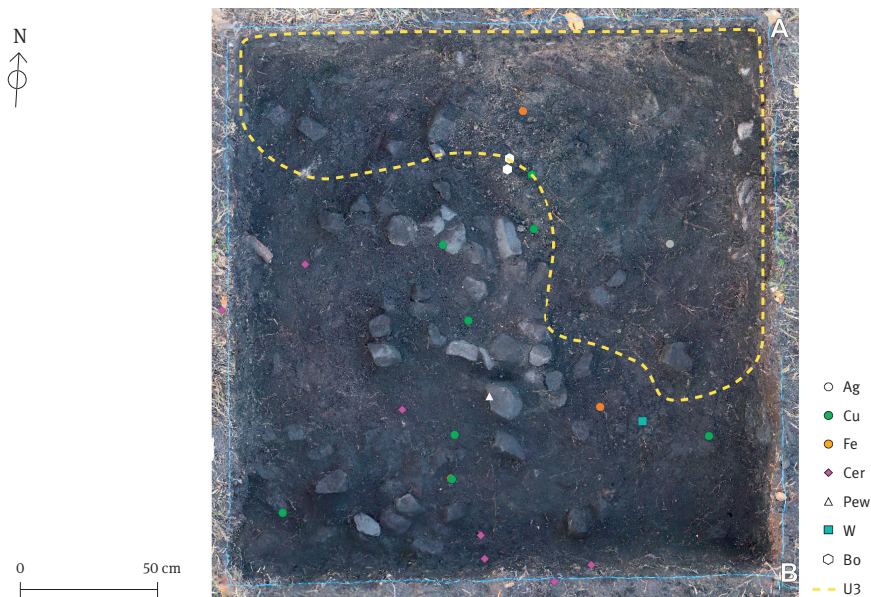


Fig. 3. Finds from the workshop horizon (U2) and the extent of the clay layer (U3) in Trench 4: Ag – silver, Cu – copper alloys, Fe – iron, Cer – ceramics, Pew – pewter ring, W – whetstone, Bo – animal bones.

Jn 3. Töökoja üksuse (U2) leiud ja savikihi (U3) ulatus kaevandis 4: Ag – hõbe, Cu – vasesulamist esemed, Fe – raud, Cer – keraamika, Pew – tinasõrmus, W – luisk, Bo – loomaluud.

Photo and drawing / Foto ja joonis: Ragnar Saage

FLINT AND STONE FINDS FROM MAALASTI

Altogether 690 stone finds⁴ have been analysed from the site, with flint finds clearly dominating. Among flint finds, approximately half (48%) are flakes, while 15% are unworked flint nodules, and 22% are cores (Fig. 4: 1–3) and pre-cores. Flint blades (n=41) (Fig. 4: 8–9) make up six per cent of all finds. Artefacts of secondary working (retouching) are quite a few. Altogether 49 flint tools (7% of all finds) were identified. Of these, fragments of three arrowheads (Fig. 4: 5–7) made of flint blades should be mentioned. Two fragments are tang parts, and one is the tip of an arrowhead. One of the tangs is regularly retouched, while the other only shows modest traces of working. The tip also shows only a very slight retouch.

² UBA-47474, 763±21 BP. Reimer *et al.* 2020; sampling permit TÜ PP no. 113.

³ UBA-47475, 1081±25 BP. Reimer *et al.* 2020; sampling permit TÜ PP no. 113.

⁴ Another 230 flint finds from Maalasti have been assessed by Ragi-Martin Moon (Moon 2021b); these have not been included in this article.



Fig. 4. Stone finds from Maalasti settlement site: 1–3 – flint cores, 4 – quartz core, 5 – tip of a flint arrowhead, 6–7 – tangs of flint arrowheads, 8–9 – flint blades, 10–11 – flint scrapers.

Jn 4. Kivileiud Maalasti asulakohalt: 1–3 – tulekivinukleused, 4 – kvartsnukleus, 5 – tulekivist nooleotsa teravik, 6–7 – nooleotsade rootsud, 8–9 – tulekivilaastud, 10–11 – tulekivist kōõvitsad.

(TÜ 2962: 99, 112; TÜ 2651: 32, 49, 50; TÜ 2962: 49, 25, 36, 103; TÜ 2651: 30, 30.)

Photo / Foto: Kristiina Johanson

The tanged arrowheads and scarce retouching are characteristic of the Mesolithic. Scrapers (44; Fig. 4: 10–11) form the major part of the identified tools. However, only a few have been regularly retouched, while many rather show heavy use wear (traces of cutting, scraping) on their edges with only a slight retouch present.

Only 11 quartz finds (1.6%) were collected. Among these, most (8) are flakes, but a core (Fig. 4: 4) and a blade are also present. The small amount of quartz is expected. While quartz is commonly found in moraine everywhere in Estonia, this raw material has, to some extent, always been used in Stone Age settlement sites. However, in central Estonia, where local Silurian flint is easily available, quartz makes up only 1–3% of all stone finds, e.g. 2.4% in Kivisaare (Moon 2021a, app. 2) and 1.3% in Ihaste (Randoja *et al.* 2017, 35–36).

The flint is of local Silurian origin, which is commonly found in moraine from central and southern Estonia (Johanson *et al.* 2021). The flint is of relatively good quality. While the flint nodules from the fields are usually very small, not exceeding 3–4 cm in diameter, the largest pieces from Maalasti are 6–7 cm in diameter. It can be suggested that the place has not been intensively ploughed, and therefore the moraine flint has been preserved as larger nodules. There are a few flints that are likely imported. For example, one of the tangs of arrowheads is of pure reddish-purple colour, which is characteristic of the Carboniferous raw material from the Valdai Hills. A few flakes are of slightly translucent grey flint, similar to the Cretaceous flint probably of Scandinavian origin (Johanson *et al.* 2021). However, as the place has been occupied in later prehistory and the Middle Ages as well, these flakes may be connected to these settlement phases, since Scandinavian flint has been historically used for strike-a-lights. This is further suggested by a flint flake of likely Scandinavian origin with heavily damaged edges. It was at first identified as a scraper, but the amount of damage might indicate its use as a strike-a-light.

There are considerably many pre-cores and cores among the flint material. Pre-cores are nodules with only a few (1–3) flaking traces. Different flaking techniques have been used to detach flakes and blades. The large number of cores and pre-cores might be explained by the find circumstances – while the majority of the finds have been gathered by the owner and not specifically searched for, the large cores and pre-cores are easier to spot than smaller working debris. This is evident by the relative number of blades (4.5% among field walking finds vs 11% among excavation finds). However, provided that the occurrence of different kinds of stone finds gathered during fieldwalking activities corresponds to the actual incidence of finds at the settlement site, which at this point is difficult to determine, the relative abundance of cores and pre-cores and scarcity of blades and morphological scrapers might indicate that the Maalasti site was not a sedentary settlement site, but rather a campsite for fulfilling different tasks. Besides hunting and fishing activities, the necessary tasks might have involved collecting raw material and applying initial flaking to decide which nodules should be taken to the main settlement. During the period of Lake Big Võrtsjärv, the site would have been situated on the shore of the lake or even on a small island with abundant foraging possibilities (see, e.g., Haberman *et al.* 2003, fig. 33).

The dating of the Stone Age settlement phase in Maalasti is indirect. The absence of Stone Age pottery refers to the pre-pottery Mesolithic, i.e. roughly before 5000 BC. The tanged arrowheads indicate Mesolithic dating, too. Usually, the large number of blades indicates a site's dating to the first half of the Mesolithic, e.g. 34.5% in Early Mesolithic Pulli (Jaani & Jaani 1975, 69) or 28.3% in Ihaste (Moora *et al.* 2006, 154–155). The number of blades decreases in time, reaching 3–4% during the Neolithic (Moon 2021a, app. 2). Maalasti with its 11% of the finds from the 2021 excavation fits well with the later Mesolithic pattern, i.e. 7000–5000 BC. While many other central Estonian Mesolithic sites were abandoned in the Late Mesolithic with the decline of the water level of Lake Big Võrtsjärv (Kriiska *et al.* 2020, 56), the settlement site in Maalasti, now located next to the Navesti River, never lost its connection to water.

METAL FINDS AND WASTE

The three currency bars found before the excavations at the location of Trench 1 make up the first iron hoard of this kind in southern Estonia (Fig. 5). Two of the three currency bars were investigated metallographically, and these turned out to be bloomery iron (Saage 2020). The smelting site where these blooms were produced is currently unknown. However, among the finds of the settlement site, there is also slag and limonite iron ore, which has not been roasted. The latter could also be a natural occurrence, but it was found close to the slag and the burnt clay lining for a furnace or a forge. Another stray unworked iron piece has been recovered from the settlement, but this looks more like Swedish osmund iron than local bloomery iron. It is slightly heavier than they usually are (weighing 433 g), but it has the characteristic cutting mark that many of the osmunds have on one of its sides (Wallander 2015, 130).



Fig. 5. Iron currency bar hoard from Maalasti.

Jn 5. Kaubaraua kangide peitleid Maalastist.

(TÜ 2651: 22, 23; TÜ 2962: 116.)

Photo / Foto: Ragnar Saage

Metal droplets and fragments of artefacts from Trench 4 indicate a workshop in the vicinity. The absence of crucible fragments could mean that the casting waste was disposed of further away or that the hearth where the metal was heated was not located in the trench. However, the metal finds do provide a good source for understanding the metal recycling of rural craftsmen. All the metal finds were analysed with a portable X-ray fluorescence spectrometer Spectro xSORT. The analysed surfaces were not cleaned from the corrosion products; hence the results should be regarded as semi-quantitative.

Several cauldron fragments were made from leaded antimony bronze containing also nickel and arsenic (Fig. 6: 64, 66). The latter is a common alloy for these vessels, and it indicates the use of fahlore ores for copper smelting (Dungworth & Nicholas 2004). Interestingly, two ornaments were also made from this alloy: a bracelet and a rumble bell (Fig. 6: 75, 78). The use of copper alloy cauldrons for casting new items was also documented in the case of the 14th to 17th-century smithy site of Käku on the island of Saaremaa (Saage *et al.* 2015, 198).

A piece of decorated silver sheet originates from a pendant or a similar ornament (Fig. 6: 70). Two pewter objects – a button and a ring (Fig. 6: 20c, 80) – were probably cast into a stone mould. There was also a piece of worked animal bone and a fine whetstone fragment (Fig. 6: 38, 44). One of the copper alloy pieces had one of its ends hammered flat (Fig. 6: 77), which could be a test by the craftsmen to see how the material would react to forging. Most of the metal artefacts and droplets were found in the layer containing stones (Fig. 3) that presumably originate from the melting hearth. Considering the occurrence of cauldron fragments and the ornamentation technique on the scrap metal, it is very likely



Fig. 6. Artefacts, scrap metal and production waste from the workshop in Trench 4. The numbers correspond to the inventory numbers of the collection TÛ 2962.

Jn 6. Esemed, vanametall ja töötlemisjäädgid kaevand 4 töökoha kihist. (TÛ 2962.)

Photo / Foto: Ragnar Saage

that the animal bone dated to the mid-13th century is contemporary with (or even originates from) the workshop.

CERAMIC FINDS

Ceramic finds were collected both from the excavated area of 2021 and during fieldwalking in the surroundings of the site. From the investigated area, altogether 191 sherds of ceramic vessels and 39 fragments of burnt clay were collected. These originate primarily from Trench 4. As the majority of sherds were rather small, it was difficult to identify them more precisely, and only the most general conclusions can be presented.

Of the assemblage from trenches, 127 (66.5%) sherds were hand-made and 62 (32.5%) wheel-made (including industrial wares). Among the sherds collected during fieldwalking (TÜ 617, TÜ 2651), the proportions differed: of 123 sherds, 80 were from wheel-made and 43 from hand-made vessels. Among the fieldwalking finds, rim types 3: 2 and 3: 3, according to Tvauri (2000, 100–105), could be distinguished. These could be dated from the mid-12th to the 15th century, although none of the sherds is of the types that spread only before the 13th-century conquest.

Finds from Trench 4 were divided into four stratigraphic units. The uppermost layer (Unit 4) contained finds of different dating: the youngest were 19th or early 20th-century industrial wares (3 sherds) and a sherd of glazed redware (16th–18th c). The fragments of wheel-made local greywares (22) included a rim fragment (TÜ 2652: 41) of a pot, classified as a 3: 2 type according to Tvauri (2000, 100–102), or A2 (Haak 2010, fig. 13); it could be dated from the mid-12th until the late 13th century. Numerically, sherds of hand-made wares (44) dominated.

While Unit 3 yielded two undiagnostic sherds of wheel-made vessels, Units 1 and 2 were more homogenous. The latest find from Unit 2 was a sherd of glazed redware (16th–18th c). Sherds of wheel-made vessels (18) were small and generally lacked features allowing precise dating; however, line ornament was present (5 sherds). Its appearance in groups (TÜ 2652: 64) is more typical of the 11th–12th century (Tvauri 2005, 40); the total lack of wavy lines might also indicate similar dating of the find complex. Sherds of hand-made wares (21) were similar to those in Unit 1 (see below). In Unit 1, there were six fragments of wheel-made and 30 of hand-made vessels.

Among sherds from hand-made vessels, 14 sherds were with polished surfaces, typical of the Viking Age and the Final Iron Age (Tvauri 2005, 85–87). There were two fragments of carinated bowls, widespread in Estonia from the Bronze Age till the beginning of the Final Iron Age (Lang 1991; Tvauri 2005, 82–83), that are very similar to finds from Viking Age sites, while all the other hand-made sherds almost certainly also originate from the Late Iron Age.

Based on the ceramic finds, we can trace human activities from the Viking Age, the Final Iron Age and the medieval period, but it remains uncertain if the site remained in use also during the 16th and 17th centuries – the usually numerous local wares from the second half of the 16th and 17th century (Group 5 according to Tvauri 2000) are totally missing from the collection, while two redware sherds and three fragments of industrial wares only indicate sporadic human activity. It seems likely that the main habitation area had moved away from that particular spot during the medieval period. The different proportions of sherds of hand- and wheel-made vessels among finds from the excavated area and the fieldwalking collection may indicate that the earlier strata with hand-made pottery in the area were less disturbed by ploughing. We should also consider the different settlement histories of areas from where the finds were collected during fieldwalking.

ANIMAL REMAINS

In total, 397 specimens of animal bones and teeth were collected from Trench 4 (Table 1).⁵ The finds were quite fragmented, and therefore, ca. 61% of the specimens were recorded as unidentified mammals. Most identified specimens come from domestic animals: cattle, sheep/goat, and pig. Few rib fragments identified as artiodactyls are most likely from the same livestock species. A small number of remains are that of a horse, hare and micromammals. Among bird remains, only those of a duck and goose were identified; among fish, the only identified bone is from a pike.

Table 1. The analysed animal remains (n=397) from Trench 4 (TÜ 2962).

Tabel 1. Loomaluud (n=397) 4. kaevandist (TÜ 2962).

Compiled by / Koostanud: Eve Rannamäe

Group / Rühm	Taxon / Takson			Finds / Leide				Total / Kokku	
				Unit / Üksus 1	Unit / Üksus 2	Unit / Üksus 3	Unit / Üksus 4	No.	%
Mammals (n=388)	cattle	<i>Bos taurus</i>	veis		17	2	83	102	25.7
	sheep/goat	<i>Ovis aries/Capra hircus</i>	lammas/kits	1	11	1	10	23	5.8
	sheep	<i>Ovis aries</i>	lammas		1			1	0.3
	pig	<i>Sus domesticus</i>	sig		5	1	5	11	2.8
	even-toed animals	Artiodactyla	sõralised				3	3	0.8
	horse	<i>Equus caballus</i>	hobune		2			2	0.5
	hare	<i>Lepus sp.</i>	jänes	1				1	0.3
	cricketids	Cricetidae	hamsterlased	2			1	3	0.8
	micromammals	Micromammalia	piisimetajad	1				1	0.3
	mammals	Mammalia	imetajad	12	71	4	154	241	60.7
Birds (n=3)	goose	<i>Anser/Branta</i>	hani/lagle				1	1	0.3
	ducks	Anatinae	pardid				1	1	0.3
	birds	Aves	linnud				1	1	0.3
Fish (n=3)	pike	<i>Esox lucius</i>	haug		1			1	0.3
	fish	Pisces	kalad	2				2	0.5
Unidentified (n=3)	vertebrates	Vertebrata	selgroogsed		3			3	0.8
Total / Kokku				19	111	8	259	397	100

The faunal assemblage was analysed according to the stratigraphic units (Fig. 2). **Unit 4** (AZ-16–27, 56⁶) – the post-workshop layer – includes the core of the osteological material (n=259). Among the specimens identified to species, the most abundant is the cattle. Almost all cattle bones (n=80) are from a newborn calf, most likely of a single individual. Moreover, based on the colour and porosity of the bone, a large proportion (n>79) of the unidentified mammal fragments seem to originate from the same calf. Other domestic livestock are sheep/goat and pig. All bird bones recovered in Maalasti are from this unit and include a duck's humerus with a possible cut mark. Otherwise, the number of bones with traces of butchering is relatively low (n=8) and the bones are those of sheep/goat and unidentified mammals.

⁵ Animal remains from Trenches 1, 2 and 3 were identified as well, but are not presented in this article because of their unclear archaeological context and dating. The material was identified using the anatomical reference collection at the Department of Archaeology, University of Tartu, and osteology handbooks (Ernits & Nahkur 2013; Bocheński & Tomek 2009). Specimens from all four trenches were recorded in the ARHIS database following the guidelines by Lõugas (2018). Open access data will be available online in the ARHEST database (<https://andmekogud.arheologia.ee/#/leiud/arheozoologia>).

⁶ AZ numbers according to the ARHEST database.

Two unidentified bone fragments are also burned. In addition to the newborn calf, there are single finds of a juvenile sheep/goat, pig and an unidentified mammal. None of the juveniles carries cut marks. A juvenile pig's vertebra (TÜ-2962/AZ-27:01) was radiocarbon dated by AMS and dates from the mid-13th century.

Unit 3 (AZ-28–30) – the workshop clay – has only a small number of cattle, sheep/goat, pig, and unidentified mammal specimens (n=8). One unidentified fragment is burned. While the pig bone belongs to a juvenile, one of the cattle bones is of a subadult. A noteworthy find is the almost whole antebrachial bone of adult cattle. Although the proximal end of the ulna is missing, the greatest length of the radius gives the individual an approximate shoulder height of 103.6 cm (Matolcsi 1970). The relatively small size is comparable to pre-modern (i.e. before the modern breed improvement) cattle (e.g. Maldre 2007; 2008; Rannamäe & Lõugas 2019).

Unit 2 (AZ-31–44) – the workshop layer – is also relatively abundant (n=111) and consists mostly of livestock remains. Additionally, two horse specimens were found here. A few mammal remains have cut marks (n=3) or are burned (n=2). Most importantly, here in this unit, there are remains of seemingly the same calf as in Unit 4 (n=14), which suggests that Unit 2 has been disturbed before Unit 4 was deposited. A molar of a sheep/goat (TÜ-2962/AZ-42:01) was radiocarbon dated by AMS to the Viking Age.

Unit 1 (AZ-45–53) – the cultivated pre-workshop soil – has a small number of bone finds (n=19), which mostly remained unidentified. In addition to a single sheep/goat and a few micromammal remains (n=3), two fish scales and the only hare specimen in Maalasti were recorded here. Two bone fragments are burned.

DISCUSSION

The finds presented above illustrate that Maalasti is a complicated site, with evidence of habitation from thousands of years. As the majority of the Mesolithic finds have been collected by the land owner without exact documentation of their location, not much can be said about the distribution of lithic artefacts. However, the extent of Mesolithic finds covers the largest area compared to the subsequent habitation periods, appearing in all of the areas archaeologists have ventured (Fig. 1: A1–A6).

Two finds date from the Bronze Age: a socketed bronze axe (Fig. 1: S1) and a tutulus brooch (Fig. 1: A2) (Paavel 2017). These seem to indicate activity in the eastern part of the settlement. However, it is unknown where the people of Maalasti lived in the Bronze Age as there is no pottery from that time. A cup-marked stone in the southern end of the settlement (Fig. 1: S2) adds another layer of activities performed there. As the dating of cup-marked stones in south Estonia is problematic, the marking of the stone could have taken place either in the Bronze or Iron Age (Lang 2018, 184).

The finds of both wheel- and hand-made wares concentrate closer to the modern farms, but this could also be where most of the digging has taken place. We can observe a change of function of the area in the vicinity of Trench 4. The pottery and plough marks indicate it was a cultivated area in the Late Iron Age. While the finds indicate the Viking Age and the first part of the Final Iron Age, there is a ¹⁴C dating most likely from the 10th century AD. At some point during the Middle Ages, a workshop was erected there. After the destruction or abandonment of the workshop, the area continued to be cultivated or used as a pasture.

The iron currency bar hoard in the area of Trench 1 was buried to keep the iron safe in a time of conflict or it could have also been a ritual offering. The site was quite close to the

Navesti River valley, which in times of flooding can reach the plateau the settlement is located on. Sacrificial sites have been found in other water bodies or wet areas in Estonia, for example, the weapon deposit from Kohtla-Vanaküla (Kriiska *et al.* 2018). The two large boulders on both sides of the bloom hoard could also be markers, which were meant to help to recover the iron. The other currency bloom hoards found mostly from Virumaa in northeast Estonia (Kiudsoo 2018) seem to indicate this as a widespread phenomenon that needs further analysis.

Metallographic analysis from the suspected osmund iron piece may confirm its Swedish origin. With the spread of knowledge (among archaeologists and metal detectorists) of what osmunds look like, they are starting to appear in Estonian rural contexts. Osmunds should be very common finds starting from the 15th century, but so far there are less than ten confirmed pieces from Estonia.

CONCLUSIONS

Our studies confirm that Maalasti was inhabited during the Mesolithic, the Bronze Age, the Late Iron Age and the Medieval Period. What happened during the transitions of one period to another remains to be established, as we are currently unable to rule out local shifts of habitation, but also larger abandonment and resettlement. However, as expected, the activities have changed over time, resulting in a complex history and diverse collection of finds from Maalasti.

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MAALASTI ASULAKOHT: KÄSITÖÖ JÄLJED MESOLIITIKUMIST KESKAJANI

Ragnar Saage, Kristiina Johanson, Eve Rannamäe, Sander Jegorov ja Arvi Haak

Maalasti asulakoht asub Põhja-Viljandimaal Navesti jõest põhja pool asuval neemikul. Seal on välja tulnud inimasustuse jälgi mesoliitikumist ja pronksiajast ning ilmselt võime rääkida nooremal rauaajal alguse saanud järjepidevast asustusest, mis ulatub tänapäeva. Maalasti leiud võib jagada kolme kategooriasse: 1) maaomaniku Gert Kallase korjatud ja Muinsuskaitseametile üle antud esemed, 2) Tartu Ülikooli ja Muinsuskaitseameti arheoloogide poolt tehtud maastikuseirete käigus üles võetud leiud ja 3) 2021. aasta sügisel ette võetud väikesemahulised uuringud, mida juhtis Ragnar Saage.

Uuringute käigus kaevati neli šurfi (jn 1: T1–T4), millest kaks laiendati parema ülevaate saamiseks 2 × 2 m kaevanditeks. Neist esimene (T1) oli kaubaraua kangide leiukohas. Välitööde tulemusel selgus, et see koht paiknes asustusest eemal. Seega olid kangid sinna kas peidetud või ohverdatud. Kangide metallograafiline analüüs näitas, et raud on toodetud otsetaandamise teel ja seega tõenäoliselt kohaliku rauasulatuse tulemus.

Asulakoha lõunaservas asuvas kaevandis (T4) tuli välja ohtralt põlenud kive, loomaluid, tulekivi ja vasesulamist esemeid ning valujääke. Kaevandis tuvastati

neli põhilist kihti (jn 2): U1 – töökoja eelne viikingiaegsete leidudega künnikiht, U2 – metallivalamise töökoda 13. sajandist, U3 – töökoja peale vajunud savikiht ja U4 – töökoja järgne kultuurikiht. Töökojast tuli välja eelkõige vasesulamite valamise seotud leiude, aga ka rauast, luust, hõbedast ja tinasulamist esemeid (jn 3). Ühe toorainena on töökojas kasutatud arseeni-, nikli- ja antimoonisaldusega pronkskatlaid – sellele viitavad nii leitud katelde tükid kui ka sama koostisega esemed (jn 6).

Maalasti asulakohalt on kogutud 690 kivileidu, mille hulgas domineerib tulekivi. Ligikaudu pooled tulekivileidudest on killud (48%), laaste on 6%, nukleusi ja protonukleusi kokku 22% ning töötlemata kamakaid 15%. Tulekivist esemete (7%) hulgas on erilised leiud kaks nooleotsa rootsu- ja üks tipuosa (jn 4), ent kõige enam on esemete hulgas kõõvitsaid. Kvartsileidude osakaal (1,6%) on sarnane teistele Kesk-Eesti tulekivirikaste alade kiviaegsetele asulatele. Tulekivi on valdavalt pärit kohalikust Siluri ladestust ning esineb kohaliku toormaterjali kohta üpris suurte paladena – suurimad kamakad on 6–7 cm läbimõõduga. Importtulekivist leiude on üksikuid, muuhulgas üks tõenäoliselt Karboni ladestu

roosakast tulekivist nooleotsa rootsukatke. Suur hulk protonukleusi ja nukleusi ning laastude ja esemete vähesus Maalasti tulekivileidude hulgas osutab, et tegemist võib pigem olla kiviaegse laagripaigaga, kus küttimise ja kalastuse kõrval tegeleti toormaterjali kogumise ning esmase tötlusega, et koguda põhikülasse kaasa võetavad sobivad mugulad. Suur-Võrtsjärve ajal oli koht kas järve kaldal või järves paikneval väikesel saarel, mis pakkus suurepäraseid võimalusi püügimajanduseks. Maalasti kiviaegse asustuse võib laias laastus dateerida hilismesoliitikumi ehk ligikaudu 7000–5000 eKr. Kui paljud teised Suur-Võrtsjärve asulad võidi hilismesoliitikumi jooksul maha jätta veetaseme languse tõttu, siis Maalasti jäi ka järve taandudes veesidusaks, paiknedes, nagu praegugi, Navesti jõe kaldal.

Keraamikaleidud pärinevad nii 2021. aasta uuringutelt (valdavalt 4. kaevandist) kui ka ümbruses toimunud maastikuseiretelt. 2021. a kaevanditest koguti 191 keraamikakatket ja 39 põlenud savi fragmenti, keraamikaleidudest 66,5% olid käsitsikeraamika ja 32,5% ketrakeraamika. Maastikuseiretel kogutud 123 katkest 80 olid valmistatud kedral ja 43 käsitsi, ketrakeraamika võib dateerida 12. saj keskpaigast 15. sajandini. 4. kaevandi leiud jagunevad nelja stratigraafiaüksuse vahel, millest hiliseim (üksus 4) sisaldas muinas-aegse käsitsikeraamika kõrval ka 12.–13. sajandi ketrakeraamikat, lisaks esines üks uusaega kuuluva punase glasuurkeraamika katke, samuti mõned vabrikukeraamika katked. Üks punase glasuurkeraamika kild leiti ka üksusest 2, kus enam-vähem võrdselt esines ka eeldatavasti 11.–12. sajandisse kuuluvat ketrakeraamikat ja käsitsikeraamikat. Üksuses 1 domineeris juba käsitsikeraamika, mille hulgas on täpsemalt dateeritavad poleeritud pindadega katked, sh niven-

diga kausid, mis kuuluvad viikingiaega või hilisrauaaja algusse. Keraamikaleidude põhjal oli muistis kasutusel viikingiajal, hilisrauaajal ja keskajal, varauusaegseid leide on väga vähe. Kuna ketrakeraamikat leidub arvukamalt maastikuseiretel kogutud leidude hulgas, võib oletada, et varasemad ladestused on künniga vähem segatud, ehkki tuleb arvestada ka võimalusega, et hiljemalt varauusaajal liikus asustusala 2021. a kaevanditest mõnevõrra kaugemale.

Analüüsitud loomaluud pärinevad 4. kaevandist ja neid käsitleti nelja üksuse kaupa (jn 2: U1–U4). Kokku koguti ja analüüsiiti 4. kaevandist 397 luu- ja hambafragmenti (tabel 1). Loomaluude hulgas domineerisid koduloomad: veis, lammas/kits ja siga. Väiksemal määral esines hobuse, väikeimetajate ja jänese luid. Lindudest määrati pardi ja hane luud ning kaladest oli ainus äratuntav liik haug. Töökoja järgne üksus (U4) oli 259 leiuga kõige luuderikkam. Selles kihis oli ilmselt ühe vastsündinud vasika jäänused, mis moodustasid üle kolmandiku kihi luuleidudest. Sama vasika luid leidis ka töökoja kihis (U2), mistõttu on põhjust arvata, et kihid on mingis ulatuses omavahel segatud. Töökoja peal asuvast savikihist (U3) leitud täiskasvanud veise kodarлуу põhjal oli selle looma turjakõrgus 103,6 cm.

Maalasti asulakoha eriaegsed tuumikud on veel välja selgitamata. Kiviaegsed leiud asetsevad kõige laiemal alal, kuid seni on neid valdavalt üles korjandud maaomanik ja nende täpsemad leiustrid pole teada. Samuti pole selge, kus elasid inimesed pronksiajal, kuigi seda perioodi esindavad pronkskirves ja tutulus. Raua- ja keskajal on asustustuumik ilmselt asunud praeguse asustuse juures, vähemalt on sealt leitud kõige enam selle perioodi leide.