



A late medieval treasure trove of Tallinn

Salvage excavations of the 15th-century landfill between the Jahu and Väike-Patarei streets

Erki Russow

Tallinna Ülikool, humanitaarteaduste instituut, ajaloo, arheoloogia ja kunstiajaloo keskus (Tallinn University, School of Humanities, Institute of History, Archaeology and Art History), Uus-Sadama 5, 10120 Tallinn, Estonia; russow@tlu.ee

Keiti Randoja and Rivo Bernotas

OÜ Arheox (Arheox Ltd), Aida 11–26, 51004 Tartu, Estonia

Andres Tvauri, Riina Rammo and Monika Reppo

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

Jaana Ratas

Tartu Ülikooli Viljandi Kultuuriakadeemia (University of Tartu, Viljandi Culture Academy), Posti 1, 71004 Viljandi, Estonia

Juhan Kreem

Tallinna Linnaarhiiv (Tallinn City Archives), Tolli 6, 10133 Tallinn, Estonia

Lembi Lõugas

Tallinna Ülikool, arheoloogia teaduskogu (Archaeological Research Collection of Tallinn University), Rütli 10, 10130 Tallinn, Estonia

THE YEAR THAT CHANGED EVERYTHING

The history of the archaeological research of Tallinn is by now quite long, starting with the first known collection of archaeological finds in the early 19th century, with the first salvage documentation attempts in the 1920s and 1930s and with the continuous rescue work since the mid-1970s. Over the years, the area of the Hanseatic town, its suburbs and town commons have brought many archaeological surprises from stray finds to unexpected building and ship remains. However, one of the notable insufficiencies thus far has been a considerable lack of evidence on late medieval portable material culture, such as household items, clothing and devotional objects to name a few categories. The numerous excavations and archaeological watching briefs inside the town walls have unearthed a great number of 13th – early 14th century artefacts, but failed to offer a comparable amount of later medieval material, especially from the 15th–16th century.

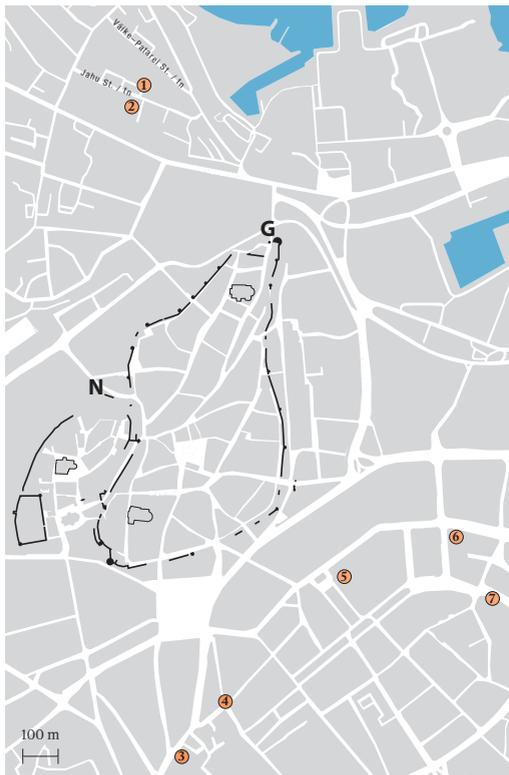


Fig. 1. Jahu – Väike-Patarei streets site and other excavated areas mentioned in the text. 1 – Jahu – Väike-Patarei Sts quartier, 2 – Jahu 5 (2018–2019), 3 – Pärnu Rd. 31–35 (2016), 4 – Tatari / Sakala St. (2017), 5 – Estonia Ave. 7 (2018–2019), 6 – Tartu Rd. 1 (2010–2012), 7 – St John’s hospital (2001, 2013–2015). G – Great Coastal Gate, N – Nun Gate.

Jn 1. Jahu – Väike-Patarei tänavate uuringuala ning tekstis mainitud arheoloogilised kaevandid. 1 – Jahu – Väike-Patarei tn kvartal, 2 – Jahu 5 (2018–2019), 3 – Pärnu mnt 31–35 (2016), 4 – Tatari / Sakala tn (2017), 5 – Estonia pst 7 (2018–2019), 6 – Tartu mnt 1 (2010–2012), 7 – Jaani seek (2001, 2013–2015). G – Suur Rannavärv, N – Nunnavärv.

Map / Kaart: Jaana Ratas

district that mostly involve watching briefs (about 70) and rarely go beyond that (summarised in Heinloo 2018).

As it turned out, the decision to use a more comprehensive approach was justified. The outcome of the extensive fieldwork that started in May 2018 and continued with a few breaks until March 2019 can be described as phenomenal without hesitation. Already during the very first days of the excavation, the number of late medieval finds was extraordinary, not only by quantity but also regarding variety and rarity. This was something unseen before in Tallinn but also in other Estonian urban centres. The general impression gained in summer 2018 was that the area under discussion might be a late medieval landfill, approximately

This deficiency started to change when the more intensive archaeological investigation of the historic suburbs began. During the last two decades, several large-scale excavations to the southeast and south of the walled town have produced a significant quantity of medieval and post-medieval finds that might originate from the town core and were possibly discarded on to open space *resp.* agricultural land belonging to the burghers (the most recent examples are sites of Harju Gate suburbs: Bernotas *et al.* 2017; 2018; Fig. 1). But this connection is not always straightforward as there are also some examples of on-site deposition of household trash, being it a potential medieval inn at Tartu Rd. 1 (Russow *et al.* 2013), St John’s hospital at Tartu Road (unpublished) or private habitation on plots at Estonia Avenue 7 (Heinloo, this volume).

Yet none of the sites investigated up to now has revealed good insights to the late medieval urban movables on a broader scale, until the present day. This situation altered dramatically with one archaeological fieldwork on the north-western outskirts of the old town, on the suburban quartier between the Jahu and Väike-Patarei streets (Fig. 1: 1). Here, the test pits made in March – April 2018 revealed some ‘anomalies’, indicating that the surviving layers include artefacts that are not common finds at suburbs – late medieval cloth seals, evidence on leatherworking, a good survival rate of wood, etc. This information was regarded sufficient to devise a different research plan compared to usual archaeological activities at Kalamaja

from the second half of the 15th century. This is substantiated with the rather narrow date frame of the majority of the collection as well as the stratigraphical and topographical situation (see below).

As of the time of writing the present paper (late October 2019), not all the finds have been inventoried because of the wealth and nature of the composition. Currently, the inventory list has reached to 22 000 items, consisting mainly of pottery, glass, wood and non-ferrous finds, with new data entries submitted every day. But this number does not yet include textiles (about 2000 fragments), leather (about 8000 pieces of finished objects and production waste) and also some of the wooden and ferrous artefacts that are currently amid conservation processes. Thus we estimate that the total number of the collection which is stored at the Archaeological Research Collection of Tallinn University under the inventory number AI 7909 will exceed 35 000 if not even 40 000. This is by far the largest archaeological collection in Estonia – the next one consists of a group of sites of ‘Hansakvartal’ at Riia suburbs in Tartu with ca. 28 000 finds dated between the 12th – 20th centuries. In the present occasion we estimate that about 80–90% of the collected artefacts belong to the second half of the 15th – early 16th century, which means that this might be also the largest set of late medieval finds in the northern Baltic at least. Without any doubt, just one excavation at one ‘right’ place has transformed our knowledge about the late medieval material culture in Tallinn prominently and finally more can be said about several aspects of the daily life using archaeological data.

The present paper is the very first attempt to summarise what has been found. As stated above, not all the finds were available for inspection and it would be also extremely difficult to grasp tens of thousands of finds in a meaningful way in a short overview. Still, we find it extremely important to publish the preliminary information as soon as possible, as the find complex deserves wider international recognition and the final publication will take many years to complete. Therefore, the data submitted here must be handled not as a conclusive result but only as a first impression of what has been found. We do hope that the following years will bring a lot of special studies, and at some point in the future the final report can be offered to the wider audience.

HISTORICAL BACKGROUND

The site under discussion (Fig. 1: 1) is situated ca. 500 metres from the northernmost gate of the medieval walled town, the Great Coastal Gate (Fig. 1: G). This is the area of a historical suburb called Kalamaja (Eng. *Fishing house*) that lies between the shoreline and in front of the northern and north-eastern side of the old town.

The medieval topography of the Kalamaja suburb is largely unclear (Johansen & von zur Mühlen 1973, 127–139; Nerman 1996, 13–23), the name Kalamaja (Germ. *Vysschermagen*) appears for the first time in the written records around the mid-15th century and according to the town’s accounting books, also the regular tax collection began here at the same time (KB 2 *passim*). Fishermen were mentioned in the written sources in many occasions already in the tax lists of the second half of the 14th century, but the exact location of their venue is not known (von zur Mühlen 2003, 186–187). In 1415 the Commander of Tallinn of the Livonian Order agreed with the Hanseatic town that during the fishing season, the fishers can build fishing huts (*vischer boden*) with turf decks on the area of town’s paddock that must not be larger than two to one and a half fathoms, might be either of stone or wood underneath the ground and so deep as one wishes, but not higher than three logs above the ground; after the catch the users of the huts had to leave (UB vol. V, no 2022). The formulation of the document

is unclear, and thus it is difficult to interpret what kind of fishermen were mentioned, but it is believed that the agreement concerns the peasants of the Commander, from which has been supposed that the area under discussion was already settled by the town's fishermen. The tax collection at Kalamaja during the 15th century points towards permanent settlement there; the oldest surviving tax list of the suburb states that in 1527 there were 78 households, of which 17 were with taverns (TLA, Bs 5 I, fol. 1–2). It is also important to refer that approximately in this region – between the Suurtüki, Vana-Kalamaja and Suur-Patarei streets – also the ropemakers had their manufacturing area, and at least from the 16th century there is written evidence on municipal ropewalk at Suur-Patarei (its former, German name is *Reeperbahn*) street (Johansen & von zur Mühlen 1973, 132–133).

The first cartographical evidence on Kalamaja settlement dates from the end of the 17th century (Raid 2011, no 4, 5, 8). Most detailed information of this area comes from the estate plans of Tallinn suburbs by Sigismund von Staden, compiled in 1699 (TLA, Aa 120). However, it is problematic how much this situation is possible to trace back in time. Namely, it is known that during the Livonian - Russian war (1558–1582) Tallinn survived two enduring sieges, and the local town chronicler Balthasar Russow reports that during the first siege the Kalamaja suburb was burnt to the ground on the 16th of October 1570 (Russow 1853, 91). The settlement recovered soon after that (Johansen & von zur Mühlen 1973, 139) but it is impossible to say how much of it followed the previous pattern.

The recent archaeological work at Kalamaja has helped to ascertain the possible area of medieval habitation, which seems to concentrate from the Jahu – Väike-Patarei streets site about 150 metres to the northwest close to the Vana-Kalamaja Street that heads to another gate of the walled town, the Nun Gate (Fig. 1: N; Heinloo 2018). Sadly, not much can be said about the archaeological situation in the near vicinity of Jahu – Väike-Patarei streets quarter. The previous fieldwork includes one preliminary research at Jahu St. 1 (2014) and one rescue excavation done in late 2017 – early 2018 at Jahu St. 5 (Fig. 1: 2) that confirmed some kind of late medieval or early modern settlement activities on spot in the latter case (Bernotas & Randoja 2019).

OUTLINE OF THE FIELDWORK

The fieldwork on the plots of Jahu St. 6 and Väike-Patarei St. 1 (Fig. 2) was organised because of the property development by YIT Eesti AS to build 7 new apartment houses. The archaeological research that combined both excavation and several watching briefs took place between March 2018 and March 2019 and was led by the team of archaeologists of OÜ Arheox: Rivo Bernotas, Keiti Randoja and Riho Ilves.

Prior to the recent building activities, the area was used as industrial land with factory and storage facilities as well as garages; on the northern corner was also a filling station for lorries.

Topographically, the site is situated about 50–100 metres from the coastal cliff with clear height differences below (5–7.5 m a.s.l.) and on the cliff, which on the investigated area varies between 12–14 m a.s.l. as there is a slight decrease towards the north and northeast.

The test pits that were made in March and April 2018 gave solid evidence that below the 19th – 20th century layers and beneath the foundations of industrial buildings there is a rather well preserved late medieval layer. Based on the collected finds as well as the appearance of dark brown organic and manure-rich soil, the layer was interpreted as 15th – early 16th century rubbish deposit.



Fig. 2. Aerial view of the excavated site at Jahu – Väike-Patarei streets.

Jn 2. Üldvaade Jahu – Väike-Patarei tn kaevandile õhust.

Photo / Foto: Andrus Anderson

Provided with this information, it was decided to create three test excavation trenches on the northern, north-eastern and south-eastern parts of the area under development to get a better understanding of the layers that included medieval finds. It appeared that on the northern side of the area the thickness of the medieval deposits was up to 1.6 metres, whereas on the north-eastern and southwestern parts it was somewhat less thick, about 0.5–1 metre. It became also clear that most of the excavated layers with late medieval finds were secondary, deposited soil from elsewhere. The only *in situ* layers were an up to 10 cm thick grey sandy layer and in spots also a black charcoal-rich sandy layer on top of the natural ground (loamy sand). No medieval building remains were found in test trenches, and the only structural evidence of former settlement activities were some ditches dug into natural soil on the south-eastern part of the investigated area.

After the completion of test trenches, excavation strategy was devised for the whole area. This included manual excavation of the layers connected to the on-site settlement activities as well as careful cleaning of the possible constructions (ditches, foundations, etc.) by hand. The secondary deposits, including the manure-rich soil with abundant late medieval finds, were peeled mostly with backhoe under the guidance of the archaeologist and displaced aside layer by layer where the loosened earth was rummaged by shovels and hands, simultaneously using the metal detector. All in all, nine excavation trenches (e.g. the sectors excavated manually) with a total area of 780 m² were set up and the mechanical removal of the medieval fill layers under archaeological surveillance comprised 2974 m² (Fig. 3).

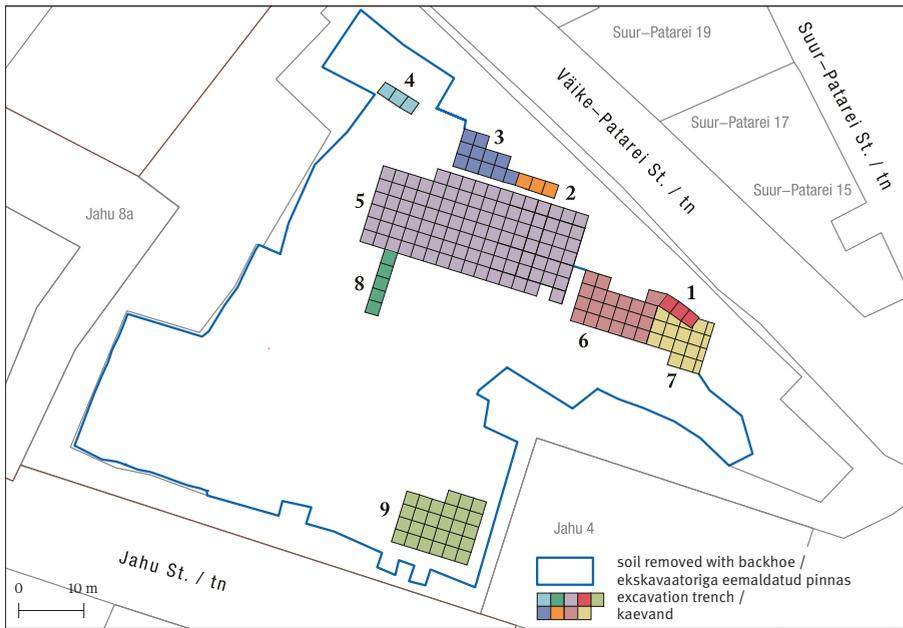


Fig. 3. The division of excavation trenches at Jahu St. 6 / Väike-Patarei St. 1.

Jn 3. Arheoloogiliselt uuritud alad Jahu 6 / Väike-Patarei 1 kinnistutel.

Drawing / Joonis: Rivo Bernotas

As the completion of the fieldwork report is still in progress, it is difficult to present here the final and definite interpretation of the development history of the area. The following is the first synthesis of the excavation results that will be presented in a more detailed manner in the future when all the collected data is available for analysis. In a very general way, the following site development can be envisaged.

The area under discussion was taken into use after the foundation of the medieval town in the 13th century as there is no evidence on prehistoric activities on site. Based on the finds (stoneware, early glazed redware) collected from the lowest deposit (the grey *in situ* layer)



Fig. 4. Ditches unearthed at the SW-part of the excavation.

Jn 4. Kaevamiste edelaosast leitud kraavid.

Photo / Foto: Keiti Randoja

that formed on top of the natural ground, it happened around the turn of the 14th – 15th century. How exactly the land not far from the cliff and open to sea winds was initially used, is unclear, but at some point in the late 14th or early 15th century, several ditches (Fig. 4) were dug on the northeastern and southeastern part of the excavated area, through the grey layer into the natural ground. These ditches that were later filled with manure and grey sand were at least up to 9 m long and 60 cm wide, had a SE–NW direction and inclination towards NW. Most noteworthy was an about 30 m long, 50 cm wide and up to 30 cm deep trench with SW–NE direction

that was lined with birch bark and on top of that a layer of branches was laid (Fig. 5). Later on, the trench was filled with manure that also formed the lowest (and sandy) part of the manure layer and also an E–W directional cart path (preserved at the length of 7.7–8.7 m, wheelbase 1.26–1.40 m) crossed the discontinued trench (Fig. 6).

There are various possibilities on how to interpret the found ditches. As the ground level falls notably towards north and north-west (natural ground on south-eastern and southern corner is situated at 10.9–11.6 m a.s.l., on the northern corner at ca. 9.7–10.2 m a.s.l.), it is plausible that the NW-corner of the excavated area was initially either wet or even watery and thus the ditches were used to channel excess water from elsewhere to one central point. In addition, the ditches might also mark the former property boundaries. On the other hand, no medieval building remains, neither sheds, dwelling houses nor other supporting structures such as wells were found. Whether the sparse evidence of some kind of fire in the form of a charcoal-rich layer found on several places suggests the former existence of light constructions (fences?) at the site is not possible to ascertain.

What is evident, is the distinct change in land use during the second half of the 15th century. The former open (?) area was now turned into a place where to cart muck: onto the grey *in situ* soil evolved a layer of brought soil that was a combination of manure, household trash and production waste of craftsmen. This was not a single event but rather a continuous activity, since the manure layer had a number of interphases, in some areas it was covered with a thin blanket of hay, in other places with gravel (Fig. 7). There are also some spatial differences, as apparently the filling up of the area concentrated on the north-western part of the excavation, i.e. to the zone where the former ground level was the deepest. As said above,



Fig. 5. One of the ditches dug into the natural ground at the NW-part of the excavation.

Jn 5. Kaevamiste loodeosas asunud looduslikku aluspin-da kaevatud kraav.

Photo / Foto: Keiti Randoja



Fig. 6. A fragment of cart track found in the NW-part of the excavation.

Jn 6. Kaevamiste loodeosas paljandunud vankriroopad.

Photo / Foto: Keiti Randoja



Fig. 7. Excavation trench 5, late medieval fill layers in the NW-profile.

Jn 7. Hiliskeskaegsed täitekihid 5. kaevandi loodeprofiilis.

Photo / Foto: Keiti Randoja

here the dark brown organic and manure-rich soil was up to 1.6 metres thick and became thinner (1–0.5 metre) towards south, east and south-east, i.e. towards higher ground level.

The exact borders of the fill layers remain open until the completion of the excavation report. At the present stage of research it is also not possible to say that any clear chronological differences exist spatially: it seems that the whole area was simultaneously in use and the major deposition of the muck happened in a relatively short time period, ending already at the turn of the 15th/16th centuries (see below, section ‘The dating of the landfill’).

Despite the fact that intense trash deposition ended here presumably before 1500, the area remained also later vacant and was probably occasionally used for displacement of urban waste. This is substantiated with artefactual evidence, as the finds include 16th century objects that are rather untypical for suburban settlement activities. Based on the first structures on top of the medieval fill layers, like a 17th–18th century well and also on the cartographic evidence, the area was divided into the suburban town plots by the mid-17th century at the latest. Apparently, the Early Modern period building density was rather low, as the medieval fill layers remained intact. Even the later, 18th–20th century property development left earlier deposits by and large unharmed, due to the nature of the land use: in the 19th and 20th century, the storage and industrial buildings erected there had no basements. Their former purpose is also visible in the archaeological record: customs seals of the Russian Empire, as well as seals of the military storage of the Republic of Estonia (the 1920s–1930s) were found.

FINDS

The following overview is the first summary of the artefactual and ecofactual information collected during the fieldwork. As the excavation report is still in progress and the collection has not been fully catalogued, we are currently unable to offer precise analysis where the finds have been evaluated based on their exact stratigraphical context. Still, as the majority of the finds came distinctively from the organic and manure-rich layers, we can say that in all, the collection reflects a relatively short-time deposition of household and artisanal waste that came from elsewhere. The favourable preservation environment, as well as the low level of disturbances (no remarkable intrusions of later building activities) has guaranteed that the survival rate of the finds is extremely high, giving us for the first time a wider view on late medieval material culture in Tallinn. It must be highlighted that even though the original place of use of the artefacts is unknown, it is certainly an excellent collection to estimate the consumption habits of a Hanseatic town on a broader scale – similarly to other known places of landfills and planned land reclamation, such as the Thames waterfront in London (Schofield *et al.* 2018, 308) or Augsburg (Hermann 2011) among many other examples.

The dating of the landfill

In order to understand the probable time frame of the excavated site and especially the main period of accumulation of the finds, it is important to begin the find survey with the dating issues. As there are neither written sources handling these plots nor medieval buildings in the investigated area, the most reliable information comes from the analysis of the collected numismatic finds.

In all, 232 coins were found, mostly with the help of a metal detector. Based on the excavation situation and the composition of the finds, the coins were probably lost one by one and do not form closely related sets (purses, money boxes, hoards, etc.). 211 of the coins belong

to the late 14th and 15th century, the earliest one being a penny struck between 1364–1389 in Västerås by the Swedish king Albert of Mecklenburg. However, the majority of the coins were struck after the Livonian monetary reform of 1422. The anonymous Tallinn pennies, altogether 93, were the most numerous category. In addition to Tallinn pennies also schillings, one-sided scherfs, as well as pre-1422 made *lübisches* and *artigs* were unearthed, raising the collection of 15th century Tallinn coins up to 120 specimens. Beside the Tallinn mint also the coins of the Prince-Bishopric of Tartu, mostly pennies, were found (68), and in a lesser amount pennies of the Archbishopric of Riga (13). Especially noteworthy are four silver *den-gas* of Novgorod struck between 1420–1478, the first respective examples in Estonian public collections. One item of a 15th century Visby *örtug* and a gold coin – a florin of Liège, struck during the reign of Jean de Hornes (1485–1505) were also represented.

As the 15th century coins were made without an exact year of coinage, it is important to observe during whose reign the money was minted for the establishing the exact *tpq* of the coin collection. Among schillings of the masters of the Livonian Order, there are 10 Tallinn coins of Bernd von der Borch (1471–1483). There was no minting in Tallinn during the reign of his successor, Johann Freitag vom Loringhofe (1483–1494). Only one schilling, struck in Wenden (Est. Võnnu, Lat. Cēsis) by Wolter von Plettenberg, next master of Livonian Order (1494–1535) was found, and as there are no contemporary Plettenberg-schillings of Tallinn among the finds – despite the fact that these were produced between 1494–1500 (Haljak 2010, 109–110) – it seems plausible that the mentioned Wenden schilling belongs already to the small group of 16th century coins (see below) from Jahu–Väike-Patarei streets.

Of the schillings of the Prince-Bishopric of Tartu, the youngest are four pennies struck during the reign of Johannes II Bertkow (1471–1485) and of the coins of the Archbishopric of Riga the latest are seven pennies of the archbishop of Silvester Stodewescher (1448–1479). Yet the *tpq* of the late medieval landfill at the current state of the knowledge is 1485, after the Liège florin (Fig. 8) of Jean de Hornes (1485–1505).

Thus we may conclude that according to the number and dating of the 15th century coins the most active deposition of the waste on the area of Jahu – Väike-Patarei streets stopped in all likelihood sometime after the year of 1485. When exactly the land was first used as a landfill, is difficult to estimate solely on coin finds. Considering that there were only a handful of pre-1422 monetary reform coins, discarding urban waste here must have started later than this date. Besides, as the coins struck during the 1470s and 1480s were numerous found also from the lowest horizon of the trash layers, it is not very likely that the usage of the landfill started before the 1470s.

Some coins belong to the post-landfill period. Sometime around the second half of 16th century or early 17th century, 8 coins were lost here, including small change of the Archbishopric of Riga, Free town of Riga and nominals of the Swedish kingdom. The finds of the 17th and 18th centuries consisted of 8 Swedish, Polish-Lithuanian and Russian coins.



Fig. 8. Possibly the latest coin of the landfill – florin of Liège, struck during the reign of Jean de Hornes (1485–1505).

Jn 8. Arvatavasti hiliskeskaegse prügiladestuse hiliseim münt – Jean de Hornes'i valitsemisajal (1485–1505) Liège'is löödud floriin.
(AI 7909: 9007.)

Photo / Foto: Jaana Ratas

Other monetary and trade or business-related finds

For monetary history, the finds of counterfeit money are interesting. Three were found: one made of Sn-Pb alloy imitating a late 14th century *artig* of Tallinn, another with the same composition copying a local penny and the third, a copper forgery emulating a 15th century Tallinn schilling. Remarkable finds are also four tokens, all made of Sn-Pb alloy, including one coin-like item with the small coat of arms of Tallinn (Fig. 9: 1–7). The latter is a tax stamp, used for daily transactions between the municipality and town dwellers. A related casting mould (but not an exact match), dated to 1537 is available in the collections of Estonian History Museum (Leimus 2012). Finally, the money-related finds included a lid of a wooden and a sherd of a ceramic money box.

Another relevant group is the collection of western European counting jettons that consists of 51 items. These are abundantly available in Estonian late medieval and post-medieval rural contexts as parts of peasant adornments but here they are mostly without holes (only 7 were pierced), and thus were discarded or lost after their initial use as tools of accounting. Still, as one of the jettons had a drop of melted metal on it, and another one was cut, there is reason to believe that at least partially these finds are material evidence of some craftsman making low-cost ornaments in Tallinn. Another kind of past practices of accounting was available through a number of tally sticks (6 items).

The tools of merchant were represented with a scale and several weights. Of the latter, the most interesting find is a copper alloy weight marked with the small coats of arms of Tallinn.

Certainly, a lot of the artefacts found during the excavation are in one or another way connected to long-distance trade, but perhaps with the exception of cloth seals, they are commodities (pottery, glass, textiles, etc.), not direct proof of the business.

Until the research done on the site under discussion, only a dozen lead cloth seals had been found in Tallinn: two from the upper town, ten from the suburbs, despite the fact that the textile trade was the second important business for the Hanseatic town. This has now dramatically changed as the excavations at the Jahu – Väike-Patarei site unearthed at least 184 cloth seals (this number reflects finds up to no 21 000), but the total number might be even greater.¹ Not all of the items are identifiable, either because of the fragmentation or unclear image, however, thus far the recognisable cloth seals include examples (Fig. 9: 8–13) from Amsterdam, Armentiers (?), Augsburg, Bruges, Deventer, Dortmund, Göttingen, Helmond (?), Leiden, Mechelen, Milan, and Ypres. As the find identification is still in progress, it is too early to offer detailed statistics here.

Building details, artefactual evidence on heating and lighting

Various items connected with buildings were found in the landfill, such as small fragments of bricks, roof tiles, plaster and carved stone, but without exceptions in a very fragmented state. All roof tiles belong to the monk-nun type tiles, some of these were glazed from one side. The largest group of building ceramics is quadrangular yellow or brown (seldom green) glazed floor tiles and their fragments, altogether more than 100 pieces. The size differences (length 10.4–14.4 cm, thickness 2.3–4.5 cm) show that tiles are from different floors and likely from diverse houses. There are also numerous examples of iron hinges of doors and windows, not to mention more than 1000 iron nails, all with traces of use. Window glass has been handled below.

¹ One must note that another excavation of 2018–2019, Estonia Ave. 7 (Heinloo, this volume) adds to this find category additional 32+ cloth seals, yet again highlighting the importance of using metal detecting devices continuously during fieldwork.



Fig. 9. Coin forgeries, local tokens and a selection of cloth seals. 1 – forgery of late 14th-century Tallinn artig, 2 – forgery of Tallinn penny, 3 – forgery of 15th century Tallinn schilling, 4–6 – tokens with a house sign, 7 – municipal tax stamp, 8 – cloth seal of Bruges, 9 – Dortmund, 10 – Deventer, 11 – Helmond, 12 – Leiden, 13 – Milan.

Jn 9. Võltsrahad, koduraha ja valik kangaploomme. 1 – Tallinna 14. saj lõpu artigi võltsing, 2 – Tallinna penni võltsing, 3 – Tallinna 15. sajandi killingi võltsing, 4–6 – peremärgiga kodurahad, 7 – Tallinna veskiraha, 8 – kangaploom Brüggest, 9 – Dortmundist, 10 – Deventerist, 11 – Helmondist, 12 – Leidenist, 13 – Milanost.

(AI 7909: 2620, 2621, 16899, 703, 2628, 7725, 11665, 15, 57, 1932, 1877, 53, 11623.)

Photo / Foto: Jaana Ratas

Important correction to the former knowledge can be highlighted in the case of heating the late medieval rooms. Previously it was thought that the building of tiled stoves started in Tallinn on a larger scale around the mid-16th century as the corpus of late medieval stove and vessel tiles was up to now rather meagre (Russow 2019a, 352–353). This seems to be not a quite correct estimation, as the landfill includes hundreds of fragments of vessel tiles (335, when the first 16 000 finds were inventoried), of what the prevailing type is dish-shaped vessel-tile with the rectangular opening and flat base (as of Roth Heege 2012, 243). The number of figurative stove tiles remains also now low if compared with vessel tiles (45, when the first 16 000 finds were inventoried), but suggests that the introduction of highly decorated tiled stoves began in Tallinn already before 1500 AD. Still, it is safe to say that at least in the merchant houses the major heating system was the hypocaust oven, which in the present collection is represented with brickware bowl-shaped objects (20 fragments), possibly used as devices helping to add humidity to the heated room (Russow & Gaimster 2017, 226).

There are also some wooden pokers that might be connected with different kinds of hearths. For making fire, at least some of the 68 collected examples of flintstone were used. As this kind of good quality flintstone is not available in the surroundings of Tallinn, it came probably as part of the ship's ballast. Of lighting fixtures, 34 wooden splinters, about ten fragments of copper alloy candlesticks and chandeliers, more than 7 fragments of metal lanterns as well as several pieces of iron and copper alloy candle snuffers were found.

Daily life and household items

Jahu – Väike-Patarei streets' landfill gives also an excellent insight into the consumption habits of late medieval urban households. The variety of the found artefacts is extraordinary, from knives (30+), spoons (14+), and keys (16+) to combs (about 20 fragments), wooden mirror cases (5), ear spoon (1) and a table bell (?).

As usual, the largest share of the finds belongs to domestic pottery of which only a rough outline can be given here. Again, this massive amount of finds offers a few new angles into the late medieval consumption and allows some corrections to previous thoughts. The general popularity and variability should be visible through the preliminary list of wares, compiled after the first 16 000 finds were examined (Table 1). It must be emphasised that this is just an attempt to produce a basic overview and not a final conclusion: no efforts were made to calculate the number of rim or body sherds or document the different vessel shapes. Further, the future thorough analysis of the wares will certainly bring changes to the given pottery list as some of the initial identifications need new and more careful estimation. Still, what is already now clearly evident, is a prevailing position of glazed redwares² in the late medieval urban household. If it was previously thought (Russow & Haak 2018, 60ff) that the turn towards the domination of redwares happened only in early/first half of the 16th century, it seems now that already during the second half of the 15th century this group of pottery had a reigning place in the kitchen corner. Typologically the most common forms were tripod pots and pans, but there is also a significant number of dripping pans. A rather modest group of greywares consist mostly of slightly polished wares, characteristic to the contemporary northern German *Grauware* (Schäfer 1997, 326–329).

Table 1. List of pottery wares and the number of sherds up to find no 16000. The code names and general dating of pottery follows the framework published in Russow 2006. * marks the wares where the sherd count includes also finds between 16000 and 22 000.

Tabel 1. Keraamikagruppide nimekiri ja kildude arv kuni 16 000 leiunumbrini. Keraamikakoodid ja üldine dateering lähtub Russow 2006 avaldatust. * tähistab keraamikagruppe, kus on arvestatud ka leidudega kuni numbrini 22 000.

Compiled by / Koostaja: Erki Russow

	Code / Kood	Pottery group / Keraamikarühm	No of sherds / Kildude arv
1300	SIEG1	Siegburg proto stoneware / Siegburgi protokivikeraamika	4
	SIEG2	Siegburg near stoneware / Siegburgi varakivikeraamika	1
	ORNPLK	highly decorated medieval redware / ornamenteeritud glasuurkeraamika	1
	KNSN	local coarseware / kohalik lihtkedrakeraamika	217
	LASX2	Southern Lower Saxon (near) stoneware with iron wash / angoobiga Lõuna-Alam-Saksi (vara)kivikeraamika	15

² The initial identification might include misinterpretations as the Dutch glazed redware is not always easily differentiable from the Baltic redwares if there are no distinctive morphological elements recognisable. Also, the line between the late medieval glazed redware and post-medieval glazed redwares is vague.

	Code / Kood	Pottery group / Keraamikarühm	No of sherds / Kildude arv
1400	SIEG3a	earlier Siegburg stoneware, without ash glaze / varasem Siegburgi kivikeraamika	9
	LASX3	brown mottled southern Lower Saxon (near) stoneware / Lõuna-Alam-Saksi pruunilaiguline (vara)kivikeraamika	39
	LANG1	Langerwehe stoneware with iron wash / Langerwehe angoobitud kivikeraamika	9
	HSN	greyware / hallid savinõud	165
	HSN?	possible greyware / hallid savinõud, oletuslik	8
1500	LANG2	Langerwehe stoneware with salt glaze / Langerwehe soolaglasuuriga kivikeraamika	117
	LANGVGLK	Langerwehe-type glazed whiteware / Langerwehe valge glasuurkeraamika	7
	SIEG3b	Siegburg stoneware with ash glaze / lõõmutusega Siegburgi kivikeraamika	1100
	SIEGGRL	green-glazed Siegburg stoneware / rohelse pliiglasuuriga Siegburgi kivikeraamika	15
	SIEGANG	Siegburg stoneware with iron wash / angoobitud Siegburgi kivikeraamika	23
	RAER1	Raeren stoneware, medieval / keskaegne Raereni kivikeraamika	75
	PGLK1	Medieval glazed redware / keskaegne punane glasuurkeraamika	4622
	PGLKholl	Low Countries medieval redware / Madalmaade keskaegne punane glasuurkeraamika	78
	VNSN	Russian coarseware / Vene lihtkedrakeraamika	75
	WALD?	low fired (near) stoneware, Waldenburg? / madala põletuskuumusega (kivi)keraamika, Waldenburg?	18
	FALKE	Lausitz ("Falke") stoneware / Lausitzi ("Falke") kivikeraamika	20*
	ZITTAU	Eastern German (near) stoneware with wavy decoration / Ida-Saksa lainelise ornamendiga (vara)kivikeraamika	15
	WALD1	Waldenburg stoneware, medieval / keskaegne Waldenburgi kivikeraamika	67
	ANGVSN	medieval whiteware, possibly with slip decoration / keskaegsed valged savinõud, oletuslikult angoobkaunistusega	8
	Valencia	Valencian lustreware / Valencia säravapinnaline keraamika	61*
	MERIDA	Portuguese redware / Portugali punane keraamika	18
	Montelupo	Montelupo maiolica / Montelupo majoolika	3
	MAI	Italian? maiolica / Itaalia (?) majoolika	2
	SEVILLA	Sevilla-type coarseware / Sevilla tüüpi lihtkeraamika	5
	ZIEGLERW	brickware / telliskivikeraamika	20*
ANGMHSN	greyware with slip decoration / angoobmaalinguga hallid savinõud	50	
1600	PGLKholl sgraffitto	Low Countries redware with sgraffito / Madalmaade sgraffitto-tehnikas punane glasuurkeraamika	1
	PGLK2	post-medieval glazed redware / varauusaegne punane glasuurkeraamika	135
	VGLK2	late medieval and post-medieval glazed whiteware / hiliskeskaegne ja varauusaegne valge glasuurkeraamika	112
	COL	Cologne stoneware / Kölni kivikeraamika	26
	SIEG4gl	Renaissance period salt-glazed Siegburg stoneware / renessanssiaja soolaglasuuriga Siegburgi kivikeraamika	4
	VK	unglazed whiteware / glasuurimata valged savinõud	4
	WALD2	Renaissance period Waldenburg stoneware / renessanssiaja Waldenburgi kivikeraamika	1
	VMGLK	glazed white slipware / maalingutega valge glasuurkeraamika	5
	VGLKholl	Low Countries whiteware / Madalmaade hele glasuurkeraamika	5
	HOLLMAJ	Low Countries maiolica / Madalmaade majoolika	2
	RAER2	Raeren stoneware, highly decorated / Renessanssiaja Raereni kivikeraamika	5
	VNHGLK	NW-Russian glazed greyware / Loode-Vene hall glasuurkeraamika	1
	PMGLK	glazed red slipware, post-medieval / varauusaegne punane maalingutega glasuurkeraamika	26
	DUING	Duingen stoneware / Duingeni kivikeraamika	2

	Code / Kood	Pottery group / Keraamikarühm	No of sherds / Kildude arv
1600	FRECH	Frechen stoneware / Frecheni kivikeraamika	6
	PMGLKfries	Frisian slipware / Friisi punane maalingutega keraamika	1
	OBERODE	post-medieval slipware from Weser region / varauusaegne maalingutega glasuurkeraamika Weseri alalt	1
	HOLLFAJ	Low Countries faience / Madalmaade fajanss	27
	WEST2	Westerwald stoneware, incised decoration / hiline Westerwaldi kivikeraamika	6
1700	PORC-CH	Chinese porcelain / Hiina portselan	2
	PORC-EU	European porcelain / Euroopa portselan	12
	SELTERS	stoneware mineral water bottles / kivikeraamilised mineraalveepudelid	7
	INDUSTRIAL	transferwares / trükikaunistustega tööstuslik keraamika	6
	UNIDENT	unidentified pottery / tuvastamata keraamika	15
Total / Kokku			7281

The list of imported tableware shows also a few surprises. Besides the common pottery finds as a good variation of Siegburg, Langerwehe and Raeren stoneware, there are also products that have only rarely been found in Tallinn. Most striking is a group of east or middle German near stoneware / highly fired earthenware³ (Krabath 2012, 60 and fig. 29) with wavy decoration (Fig. 10: 1), that reached northern Baltic possibly with the long-distance



Fig. 10. Examples of rare pottery finds. 1–3 – Zittau (?) near stoneware, 4–5 – Lausitz (‘Falke’) stoneware, 6–7 – Valencian lustreware, 8 – Montelupo maiolica.

Jn 10. Valik haruldasemat keraamikat. 1–3 – Zittau (?) varakivikeraamika, 4–5 – Lausitzi (‘Falke’) kivikeraamika, 6–7 – Valencia säravapinnaline keraamika, 8 – Montelupo majoolika.

(AI 7909: 9524, 80, 13471, 14101, 13470, 1858, 1857, 1975.)

Photo / Foto: Jaana Ratas

trade of Waldenburg stoneware, or less likely, with the Lausitz (‘Falke’) stoneware (Fig. 10: 2) from the same region. The number of sherds of exclusive Lausitz stoneware (20) is also something to point out, as well as Valencian lustreware (Fig. 10: 3) and other Mediterranean tin-glazed wares (Montelupo maiolica, Fig. 10: 4). In the case of Valencian lustreware, for example, there were altogether 33 sherds known from Tallinn thus far – and with 2 exceptions all from suburban sites. It is also interesting to note that the number of late medieval Russian coarseware is rather high, as this kind of pottery is extremely rare among the finds in Tallinn.

The quantity of wooden storage utensils and tableware is unusual for Tallinn as well. The most copious is the group of stave dishes with more than 2000 pieces. Next to these other staved vessels like fragments of barrels, buckets and larger drinking vessels were found. Both groups had items with marks, either burned or scratched: letters, house marks, symbols, etc. Whether the inscription ‘1541’ on the bottom of one of the

³ Before 2018, only one sherd was known from Tallinn. This distinctive group seems to be made between the 15th and early 16th century at least in two regions: in SE-Saxony and southern Lower Saxony. Pers. comm. Stefan Krabath and Andreas Heege.

bowls marks the year of production and gives thus another dating dimension to the collection should be left open for now. In a lesser volume, turned wooden bowls, plates (50+) and birch bark bushels (10+) were discovered. Of the probable metal items bound with food and drinking activities, most abundant are finds of copper alloy tripod pots and cauldrons, but at least one iron skillet belongs also to this find group. Remarkably high is the number of copper alloy taps, 20 items documented up to now – 4 taps and 16 cocks.

It is difficult to estimate how many fragments are from chests and boxes as not all of the iron fittings are easily identifiable as part of the portable furniture. The same applies to the found keys and padlocks. This is certain at least in one occasion, as the letter-combination padlock (Fig. 11) – the first such kind of find in Estonia – should reflect the raising wish to secure one's valuable possession (Gaimster 2005).⁴



0 1 cm

Fig. 11. Letter-combination padlock.

Jn 11. Koodlukk.

(AI 7909: 11664.)

Photo / Foto: Jaana Ratas

Glass vessels and flat glass

The 2388 fragments of glass recorded⁵ from Jahu – Väike-Patarei streets quartier (Table 2) make up nearly a quarter of all archaeological glass held in collections from Tallinn (see Reppo 2016 for comparison). Nearly three quarters of the glass is undecorated window glass, forming 74.8% of the collected glass. Although windows form an important part of townscapes, glazing and the use of window glass in late medieval Tallinn has not been studied archaeologically. Most of the window glass from Jahu street is likely made of cylinder glass, also known as broad glass.⁶ No fragments of crown glass were found.⁷ Only 7 intact glass panes were recovered – one rhomboid (Table 2) and 2 triangular. More than half of the fragments showed signs of grozing – knapping the edges to fit the panes into lead cames. Some of these were unfinished (Fig. 12: 1–2), indicating the presences of glaziers in late medieval Tallinn. Others had not been worked, displaying an uneven, wavy sheet edge (Fig. 12: 3).

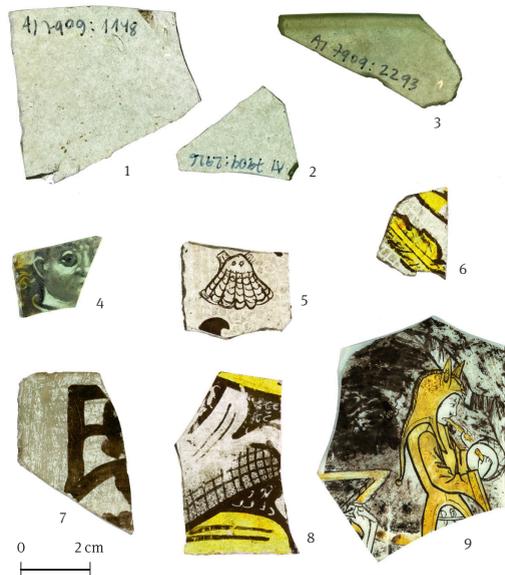


Fig. 12. A selection of found window glass.

Jn 12. Valik akn klaasi.

(AI 7909: 1148, 2926, 2293, 1881, 17141, 12116, 1925, 3201, 1247.)

Photo / Foto: Jaana Ratas

⁴ This find might be from the latest phase of the trash deposition as at the present moment we do not know related letter-combination padlocks dated before the 1500s.

⁵ This section examines the finds accessible at TLÜ AT at the time of writing (AI 7909: 1–18001).

⁶ Formed by cutting off the ends of a glass cylinder, cutting it open and flattening it under weights when still malleable. This is how the wavy edges of the unworked glass sheets form.

⁷ Crown glass is a type of glass blown into a disk shape with a so-called bull's eye or swelling in the middle of the pane. Ripples from the rotation of the pipe are usually visible even on pieces cut from this glass.

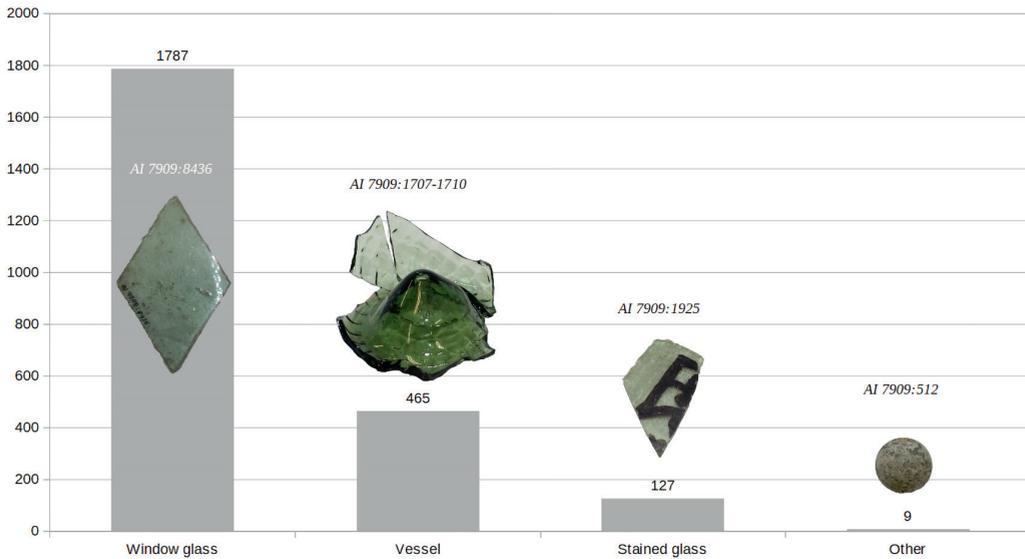


Table 2. Found glass fragments.

Tabel 2. Avastatud klaasileiud.

Compiled by / Koostaja: Monika Reppo

Alongside plain window glass, 127 fragments of stained glass were also uncovered (5.3%). Stained glass refers either to painted (83), flashed (10) or brightly coloured (34) glass. The vast majority of stained *resp.* painted glass found is light green or colourless with darker lines forming outlines of figures and other finer detail. These lines are on the inner surface of the glass and are usually made by using powdered frit of dark glass or pigment with a low melting pointing which is then fused in place –‘painted’ (Mills 1987, 123; see Table 2). A number of motifs are present, such as pillars, clothing, flowers and figures (Fig. 12: 4–8), the most elaborate being the musician or jester with pipe and tabor (Fig. 12: 9). To obtain the yellow stains seen on the piper fragment, a clay base is mixed with silver salts and it seems to be the best-preserved type of staining.

A quarter of the stained glass is coloured. Some of the red glass is only red on one side as it has been flashed on the glass. As the intensity of red sheet glass is usually too dark for display, historically, a thin layer of red glass flashed onto a sheet of colourless glass has been preferred (Historic England 2018, 38). For this, copper is generally used although gold can also be employed. There are 34 fragments of brightly coloured glass. Only seven of these had additional painting on it. Apart from blue and red, only fragments of dark green and brown glass were present. The coloured glass generally formed the basic mosaic around the more finely detailed and painted glass set in lead cames. Unfortunately, it is currently impossible to say whether the stained glass originates from a secular or religious context.

Glass vessels form one-fifth of all of the collected glass (19.5%). There is very little variety among the vessels. Optic mould-blown, pruned or trailed beakers or flasks and bottles with similar design form the majority with a few undecorated vessel fragments. The most numerous are ribbed *Maigelbecher*, *Kreuzrippenbecher* (Table 2) and *Maigelein* beakers. The dominance of applied and pattern-moulded drinking vessels is highly representative of 15th and early 16th century Tallinn (Reppo 2016, 58, 71).

Less than 0.4% of glass is represented by miscellaneous glass objects – marbles (4), jewellery (3) and a potential spectacle lense (1). The clear marbles are 15 to 17 mm in diameter (Table 2). Late medieval glass marbles made in Germany and Venice appear in the 15th century. Marbles of any material can be used both by adults and children as pastime; the former usually utilise them in gambling. Glass marbles dating earlier than the 16th century are believed to have been more expensive (Blaževičius 2013, 146). From Jahu – Väike-Patarei streets quartier, only one other ceramic marble was discovered. It is notable that a marble-shaped leftover is also formed when making wineglasses as the paraison end needs to be cut off from the base of the bowl (Historic England 2018, 31). This type of glass-working waste has a pinch on one side but generally resembles a marble and could be ground to be used as one.

Textiles

In the excavations so far 1933 finds of textiles have been recorded, which makes it one of the largest assemblages discovered from one site in Estonia. Archaeological textiles are defined as all artefacts made of processed fibres. Considering present excavations, it means, for example, woven fabrics, ribbons, braids, knitted fragments, felt, cordage, nets, and thread. As the context of the waste deposit is more favourable to animal fibres – such as wool, animal hair, and silk, the textiles made of plant fibres are rare. The only exception is ropes that are more durable than, for instance, woven fabrics.

Woven fabrics

Most of the textile finds are relatively small fragments of fabrics woven on looms (1372 pieces). The dimension of the largest piece is ca. 3525 cm² and the smallest is ca. 0.39 cm². All but 15 silk fragments of woven textiles have been made of sheep wool and to some extent also other animal hairs (e.g. goat hair, see more below) occur. The dominant weave type of wool fabrics is tabby (67%, Fig. 13: 1); 2/2 twill is also common (27%, Fig. 13: 2–3), but 2/1 twills are relatively rare (6%, Fig. 13: 4). These textiles belong to very varying groups according to density, the number of threads per one centimetre ranges between 2 and 80. Most of the wool fabrics (ca. 75%) have traces of fulling (Fig. 13: 1, 2, 4). While coarse twills are merely fullled (Fig. 13: 4), others (45%) are also teaselled and shorn several times resulting in a dense and short fibrous layer that covers the surface (Fig. 13: 1). Fabrics finished in this way are the most common textile type found in the medieval and early modern cesspits (e.g. Rammo 2015, 113–116). Clearly distinguishable are 20 finds of 2/2 weft-faced twill worsteds resembling silk (Fig. 13: 6) and 31 fragments of mixed fabrics of wool and linen. The fragments of both groups apparently come from only a few items. Of the 15 silk fabrics, eight are tabbies, three twills, and others represent complicated weave types (e.g. velvet, satin, damask).

260 fragments still have traces of seams and stitches suggesting that the cloth had been used for something, most likely for garments. The threads of plant fibres used in the wool textiles have been disintegrated; the silk items with the seams made of the same material are better preserved. The most notable among those finds are a tiny gaming purse and a girdle fragment, which are additionally adorned with brocaded bands and in the latter case also with metal mounts (Fig. 13: 8).

Narrow wares and accessories

In addition, 81 fragments of ribbons and plaited braids were recorded, among which the silk items are the most numerous (72%). Narrow silk braids (22 pieces) could have been used for



Fig. 13. A selection of found textiles. 1 – fulled, teased, and shorn tabby cloth, 2 – slightly fulled 2/2 twill, 3 – 2/2 twill, 4 – heavily fulled coarse 2/1 twill, 5 – coarse tabby for packaging, 6 – worsted (2/2 twill) of fine combed wool, 7 – silk tabby-woven ribbon with colourful bands, 8 – girdle of silk velvet and brocaded bands, 9 – net remain made of horse hair, 10 – a knitted cap, 11 – fragment of a possible felt hat.

Jn 13. Valik tekstiilileide. 1 – vanutatud, karvastatud ja šääritud labane, 2 – kergelt vanutatud 2/2 toimne, 3 – 2/2 toimne, 4 – tugevalt vanutatud jäme 2/1 toimne, 5 – jämedakoeline labane pakkekangas, 6 – peenest kammvillast 2/2 toimne, 7 – värviliste triipudega siidpael, 8 – siidsametist ja brokaatpaeltest valmistatud vöö katke, 9 – hobusejõhvist võrgu jäänused, 10 – kootud müts, 11 – katke oletatavast viltmütsist.

(AI 7909: T68, T283, T958, T636, T454, T243, T370, T1061, T306, T1063, T1000.)

Photo / Foto: Jaana Ratas

fastening clothing; one of them has still a metal aglet attached to it. The dominant technique for silk ribbons is simple tabby weave (39 pieces, Fig. 13: 7). Only six fragments of brocaded bands can be mentioned. Narrow wares made of wool represent also simple braids and tabby-woven bands.

70 knitted fragments originating from a maximum of 43 items were found. These fragments are relatively coarse and worked from two-ply yarn in stocking-stitch. Some of the pieces can be identified as certain items: a cap (Fig. 13: 10), a few socks (at least 5), gloves and mittens (at least 4). 21 pieces out of a maximum of four items have been made in *nålebinding* technique.

In the excavation trenches 183 fragments of felt were discovered. Felt was widely used for various purposes in medieval and modern period – hats, boots, capes, sheaths, soles, rugs, caulking (e.g. Crowfoot *et al.* 2006, 75; Turnau 1997, 21–22). Apart from 21 relatively fine fragments (Fig. 13: 11) the other pieces are coarse and thick (up to 14 mm). The latter are made of hairy raw material containing in addition to wool obviously also hairs of other animals. One well-preserved thick sole for footwear indicates possible use of this material. In addition, felt was needed also for other purposes, for example, caulking ships (see below, section ‘Possible harbour or ropemakers’ waste?’).

Leather items

Collected finds included both numerous leather artefacts and production waste of leatherwork (see below). The assemblage consists of more than 8000 items of which perhaps 50% have been catalogued so far.⁸ The diversity of the leather collection is relatively good when about half of the finds (4589) were assessed, ca. 63% of it consisted of pieces of shoes. Next to these, a few examples of sheaths and at least two sword scabbards as well as fragments of belts, mittens and other clothing details were also recorded. Of the shoes, the most numerous group, as is usual for Tallinn, is the laced shoes with over 3000 pieces. There were two fragments of thong shoes, but what is most important, the Jahu–Väike-Patarei streets site introduces a new shoe type to the local medieval shoe typology – the shoes with pointed tips, a footwear that is normally connected to the highest rank of the society. The high number of multi-layered shoes that were fixed with wooden pins (about 14% of the finds), and the noticeable volume of wooden and cork (21+ fragments) details that belong to leather sandals should also be pointed out. The presence of pattens is also verified through the wooden parts, until now documented in 8 cases. Probably the larger share of the small buckles (62+), some of them still with leather straps came from the discarded pattens and shoes.

Dress accessories

The variety and quantity of metal dress accessories is also phenomenal, something unseen in Estonian urban archaeology until now. This new corpus incorporates everything from the copper alloy strap ends or lace caps (45+) and buckles (40+) to tin alloy dress hooks (20+), buttons (60+), dress pins (17+), bells (35+) and hundreds of miniature plaques (about 200 catalogued so far), used either as belt mounts or ornaments attached to clothing. The overwhelming number of these finds follow the decoration styles known from west European collections, but some of the examples reflect also the style that is more common in native (rural) material culture. As the finds are at the time of writing still statistically and stylistically

⁸ The following rough data has been taken from an unpublished conference presentation ‘Interpretation of the leather findings from the waste ground. Medieval shoe findings in Tallinn, Jahu St.’ in 3.10.2019 by Krista Sarv (AM).

not analysed, it is hard to offer any generalisation here. Special mention should be made of a new find type in Estonia – a key pendant with a human figure (Fig. 14: 1) that most probably originates from some of the late 15th century workshops in or around Nuremberg. Presently this is the northernmost example of this find category, as the closest published examples are until now known from Pomerania and Mecklenburg-Vorpommern (Homann & Ansorge 2017).⁹ Other key pendants (e.g. Fig. 14: 2–3) have been found elsewhere in Estonia but not acknowledged as such so far.

Jewellery

There is a multitude of finds that fall into the category of personal ornaments, some of these quite clearly used only for decoration purposes, others might have had additional value, such as necklaces or strings of beads. While the latter group is not easily divided between the profane and religious artefacts, they are all handled together here. In all, the beads form the most numerous group of finds, with more than 40 items. However, this number can be divided into subgroups by the choice of material. Thus far (find documentation up to 16 000), the largest share is formed by the amber beads (28+), followed by coral (7+), chalcedony (3+), metal? (2+), jet (1), wood (1), clay (1) and pearl (1). Since no beads were found together as one clear set, it is hard to suggest how many necklaces in total can be counted here.

The second-largest group of jewellery are finger-rings. Presently 47 have been recorded, among these also at least one example – 2 melted down gold rings – possibly coming from a goldsmith's workshop (Fig. 14: 4). Whether the intact gold ring (Fig. 14: 5) originates from the same place, remains unanswered. The remaining finger-rings are mostly of copper alloys and usually without any decoration (Fig. 14: 6–7), reflecting perhaps more the fashion of lower social classes, including native Estonian population (for instance, see fig. 8. in Valk *et al.*, this volume). The latter is represented also with clearly 'folksy' ornaments: one penannular brooch that was common peasants' jewellery, one fang of wild boar as well as some of the pendants such as a cross pendant with rhombus-shaped central part and round sheet pendants. Still, there are also several tin alloy pendants and decorated finger rings (Fig. 14: 8–13) that are more characteristic to the 'common' urban material culture.

Artefacts related to religious activities

Perhaps one of the most telling groups of finds is the one that reflects the religious practices of the late medieval Hanseatic town. There is again surprising variety available, unseen previously in Estonia. First of all, the number of unearthed pilgrim badges is incomparable with the earlier situation: until 2018, about 20 pilgrimage signs were known from entire Estonia, of which half from Tallinn.¹⁰ With this fieldwork, this collection has now more than doubled as there are at least 40, but highly likely even more badges to say nothing about the tin alloy crosses and cross-shaped pendants. Without exhaustive overview here it is possible to say that by and large, the new set of finds echoes quite well the changing nature of pilgrimages where the previously preferred long-distance travels were replaced with visits of nearer sacred places. Thus next to the Santiago de Compostela (5 shells) and Rome (1 badge, Fig. 15: 1) the prevailing shrines are closer to the Baltic: besides the badges from Blomberg in Westphalia, St Joost in Lower Saxony, Tempzin in Mecklenburg (Fig. 15: 2–4) the largest set (7) of badges are from Wilsnack (Fig. 15: 5).

⁹ There is one relatively close but unpublished parallel from SW-Estonia, a recent metal detector find from Mustuuru village.

¹⁰ Mostly unpublished, this number includes also 1–2 items that have been elsewhere occasionally identified as profane badges.

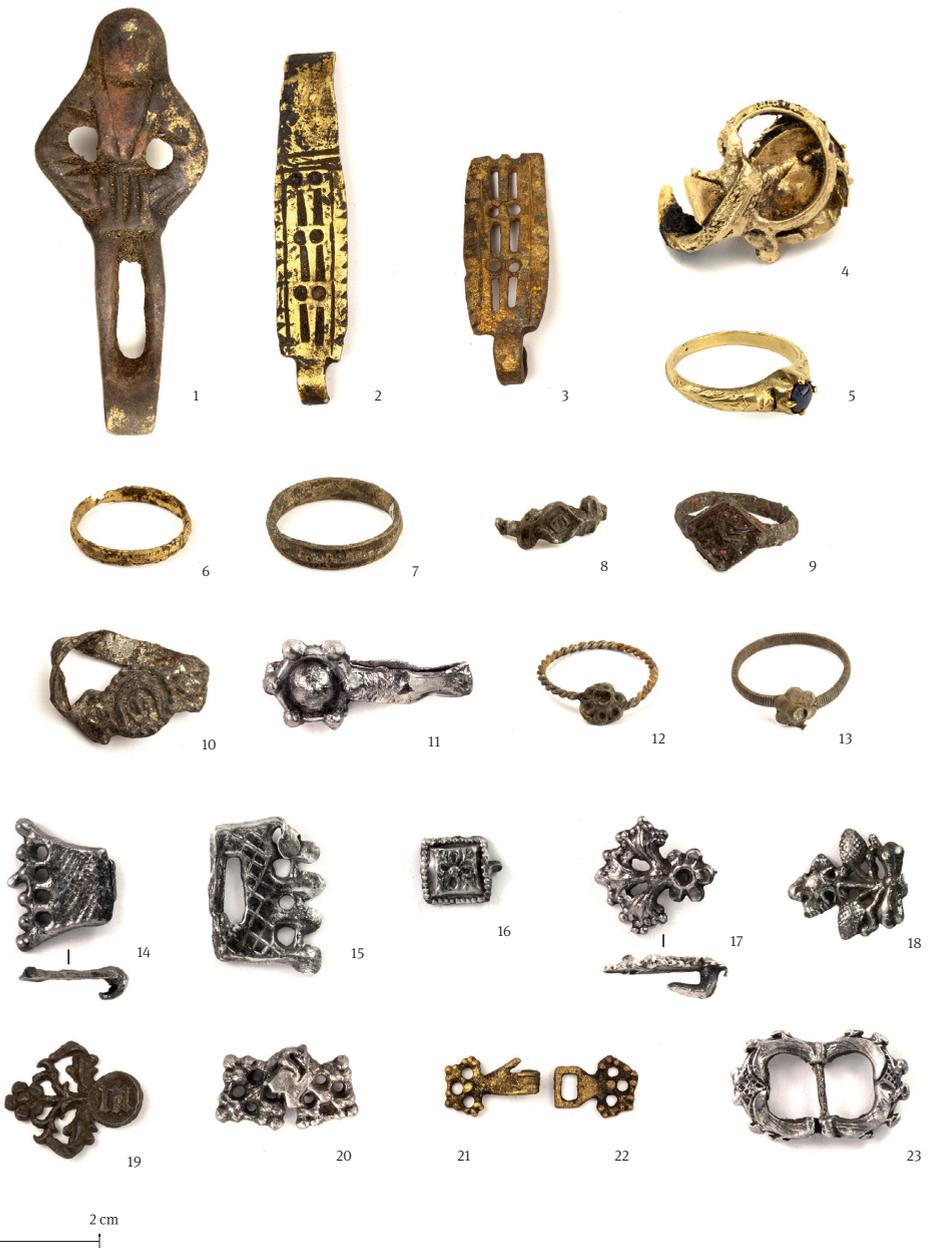


Fig. 14. A selection of found dress accessories and jewellery. 1 – ‘Nuremberg’ key pendant, 2–3 – local key pendants, 4 – melted down gold rings, 5 – a gold ring with corundum, 6–7 – copper alloy finger-rings, 8–11 – tin alloy finger-rings, 12–13 – copper alloy finger-rings with inserted stone, 14–15 – dress hooks, 16 – a mount, 17–22 – dress hooks, 23 – a buckle.

Jn 14. Valik rõivastuse ja ehetega seotud leide. 1 – Nürnbergis valmistatud võtmehoidja, 2–3 – kohalikud võtmehoidjad, 4 – kokkusulanud kuldsõrmused, 5 – korundiga kuldsõrmus, 6–7 – vasesulamist sõrmused, 8–11 – tinasulamist sõrmused, 12–13 – vasesulamist ja kiviga sõrmused, 14–15 – riidehaagid, 16 – naast, 17–22 – riidehaagid, 23 – pannaal (AI 7909: 2725, 2633, 15633, 3498, 3497, 1563, 16915, 2627, 1855, 12101, 1702, 11625, 12263, 2055, 4425, 4438, 3194, 2744, 10287, 1560, 2751, 2752, 2101.)

Photo / Foto: Jaana Ratas

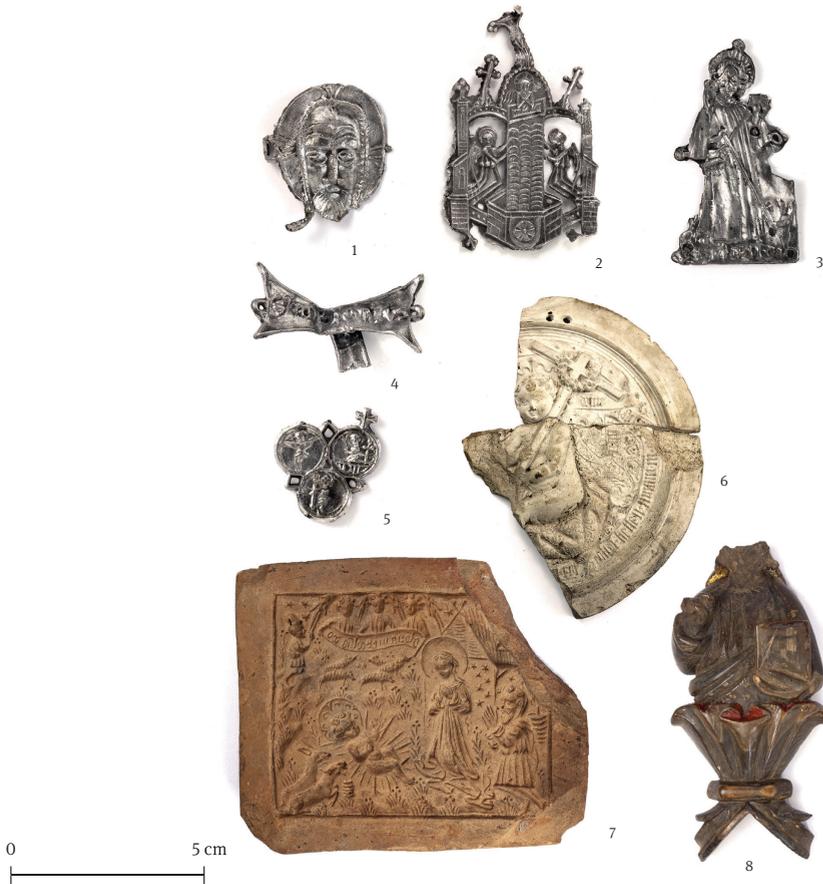


Fig. 15. Selection of pilgrim badges and other religious artefacts. 1 – Rome, 2 – Blomberg, 3 – St Joost, 4 – Tempzin, 5 – Wilsnack, 6 – white pipeclay devotional wall picture, 7 – a culinary mould, 8 – an ivory statuette.

Jn 15. Valik palverännumärke ja teisi usuteemalisi esemeid. 1 – Rooma, 2 – Blomberg, 3 – St Joost, 4 – Tempzin, 5 – Wilsnack, 6 – valgest savist hardusseinapilt, 7 – koogivorm, 8 – vääriskihvast kujuke.

(AI 7909: 9, 4404, 702, 3047, 1900, 2712, 5718, 50.)

Photo / Foto: Jaana Ratas

Another significant change is the dramatic increase in white pipeclay devotional figurines. Until the Jahu – Väike-Patarei streets landfill, only two were known from Tallinn, the recent excavation brought at least 11 new examples (summarised in Russow 2019b). Even more important additions are at least three white pipeclay reliefs, of which at least two probably hung on the wall (see Fig. 15: 6) – a whole new category of material evidence on personal devotion practices in late medieval Tallinn. Also, two redware ceramic culinary moulds, one depicting the Nativity of Jesus (Fig. 15: 7) and another representing an unidentified saint, for the making of ‘almond’ or ‘bisket’ bread¹¹ were found. And last but not least, an ivory Christ on Throne statuette (Fig. 15: 8) might come from a domestic shrine of a wealthy merchant. This is another artefact that needs more thorough research in the future as for now there are no close parallels known to this piece, which highly likely is much older than the rest of the find complex.¹²

¹¹ For a close parallel, see collections.museumoflondon.org.uk/online/object/37595 (last accessed 29.10.2019).

¹² Late 14th century is not excluded (pers. comm. Sarah Guérin). This is not surprising, considering the religious, aesthetic and monetary value of the artefact.

Literacy and written communication

The landfill revealed also a considerable number of finds that are echoing the late medieval literacy of the Hanseatic town. The majority of these artefacts belong more or less to the group ‘usual’ examples, such as styli made of bone, iron and copper alloy (altogether at least 11), wax tablets (3, incl. one complete specimen with a handle), possible slate tablets (6+), book clasps (10+), a copper alloy corner of the book (1) as well as three seals, of which two are completely of copper alloy and one with a wooden handle. What is unseen so far, is a probable leather cover of a book with a pressed decoration and text fragment in Cyrillic.

Pastimes

The extent of the artefacts of past recreational activities is similarly fairly broad, reflecting both the pastimes of the adults and children. These finds include chess (2) and gaming pieces (5), dices (3), teetotum (1, with eyes, not numbers), knucklebones (2), wooden swords (2), a wooden boat, a bone spinner and a miniature horse made of tin alloy. There are also several instruments for making music or noise: a bone whistle (1), a jew’s harp (1), a mouthpiece of some kind of wind instrument (1), and for the first time in Estonia, also one tin whistle – boatswain’s call.

Militaria

Only a few items of warfare were found. These are one sword pommel, dagger blades (2), one iron tip of the pike and at least 11 massive crossbow bolts. Of the early firearms two fragments of copper alloy gun barrels should be mentioned, accompanying 33 lead bullets with the diameter between 10–18 mm. Some of these had casting residue attached, and in one case the cast bullet had an iron core. Although during the 15th century firearms were widely used, it cannot be excluded that some of the bullets were lost here later and not during the peak time of the landfill. There are also two cannonballs (the better preserved one with the diameter of 68 mm), made of limestone. Of suit of armour, a piece of chain mail and three fragments of plated mail were unearthed.

Means of transport

Primarily horse equipment belongs to this category, of which 7 horseshoes as well as numerous horseshoe nails, one calk, two curry combs, a few spurs and bridles were collected. There are also two fragments of cartwheels and numerous boat rivets among the finds.

Uncategorised finds

Not all collected artefacts can be easily grouped in meaningful ways, either because of the difficulties in identification or multiple possibilities how to interpret their use. There are, for example, at least 11 wooden tags with incised house or owner’s signs, likely used to label movable property such as fishing nets. Fishing is also presented with one ice pick, a handful of birch bark or pine floats and net weighs (2) – stones wrapped in birch bark. The found hoe and two iron spades could exemplify several activities.

Several dark brown lumps were in the beginning considered as wool tufts, but finally identified as natural sponges (Fig. 16) during conservation treatment (4 fragments in total). In the Middle Ages, sponges were harvested in the Mediterranean and imported to whole continental Europe. Sponges were commonly used in hygiene, bath and medicine (e.g., administering anaesthesia), and they may have also served as contraceptive (Pronzato & Manconi 2008).

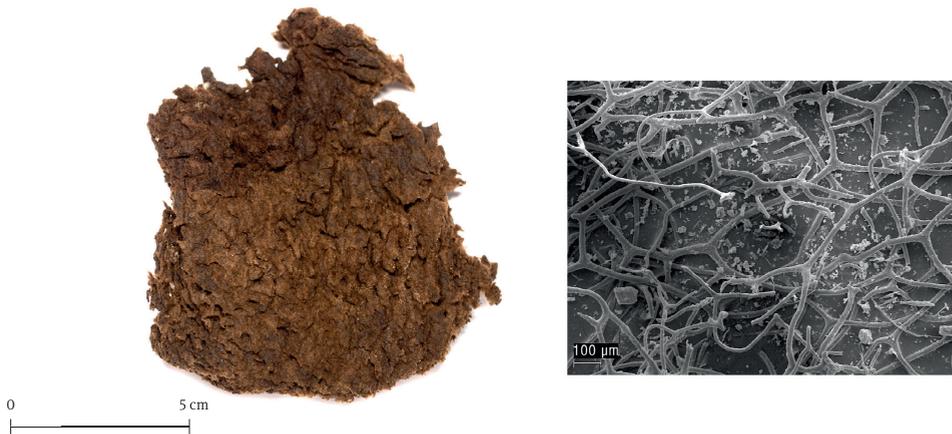


Fig. 16. *Mediterranean sponge is a very rare find in archaeological deposits.*

Jn 16. *Vahemerest pärit käsn on arheoloogilises kontekstis väga haruldane leid. (AI 7909: 10178.)*

Photo / Foto: Jaana Ratas, Riina Rammo

Discoveries of remains of sponges in an archaeological context are notably rare. Possible Mediterranean sponges in medieval Tallinn meant probably luxury.

The group of small and unworked amber fragments (25) is rather hard to position, likewise the piece of raw berg crystal, although it is not completely excluded that they might be associated with the jewellery craft otherwise visible in the collection.

Finds reflecting craft activities

Indeed, not only finished artefacts but also abundant evidence on different craft activities were collected. While most of this needs further thorough analysis in the future, at least some preliminary thoughts can be shared already.

Metalworking

Without any in-depth calculations, it seems that of the found tools, semi-finished products and production waste the largest share belongs to the crafts connected to the domain of non-ferrous metals. This can be substantiated with 15+ crucible, three limestone casting moulds, one wooden casting mould (Fig. 17: 1) and with hundreds of pieces of scrap metal, mostly of copper alloy but not only, as there are also bits of tin alloy of different size and shape. Although perhaps hard to prove at the moment, it is reasonable to believe that probably a large number of found lead cloth seals, pilgrim badges and window comes (about 300 examples) might be connected with the reuse of the metal, similarly to the single fragment of a late Iron Age brooch made of copper alloy. Thus the Jahu – Väike-Patarei streets landfill echoes among others probably the enterprises of glaziers, pewterers, peasant jewellery maker, known as *pisemaker* in written sources as well as a goldsmith (see above, subsection 'Jewellery').

Surprisingly modest was the volume of finds of ironworking – only two forge bases were collected. This is perhaps justified with the known crafts topography of late medieval Tallinn: the smithies were located on the southern side of the walled town close to the Harju Gate, thus it was more meaningful to scatter the production waste in the vicinity of the production site than to transport the refuse to another side of the settlement (see also Heinloo, this volume).

Possible harbour or ropemakers waste?

Numerous finds might be related with harbour activities, shipping, trade and ropemakers craft. 95 fragments of relatively thin cordage of varying dimensions have been found, the diameter ranges between 7–24 mm. The main raw materials for ropes were tree bast, probably linden, and hemp. Three-strand and two-strand constructions formed with a s- or z-twist are represented (for parallels, Rammo 2017, 161–162). In addition, two small fragments have been made of tree branches or roots and three of thin tree strips (for parallels Schjølberg 1988).

119 fragments of coarse tabby textiles (Fig. 13: 5), which belong to a well-known group found across northern Europe, especially in port towns (e.g. Schjølberg 1984, 82; Möller-Wiering 2002, 162; Crowfoot *et al.* 2006, 78; Rammo 2017, 160–161). These coarse textiles were most likely used for packing goods (Möller-Wiering 2002, 164). 37 fragments of hairy loosely plied two-strand cords meant for caulking were also discovered (e.g. Schjølberg 1984, 75–77). Similar cords were used for caulking in the 15th–16th century ship ‘Viljo’ discovered in Kadriorg in 2015 (Roio *et al.* 2016, 141). Both the coarse tabbies and the caulking cords have been made from hairs of animals (e.g. goat, cattle), sometimes mixed with wool (e.g. Schjølberg 1984, 82; Crowfoot *et al.* 2006, 78).

Other hair products and hair

The assemblage under study includes eight fragments of cords made of black horse hair. In two cases degraded remains attached to these cords indicate that they were used as edges for nets made of wool. Three fragments of a net made of horsehair were found as well (Fig. 13: 9); the size of the mesh is ca. 60 × 32 mm. There are also three brushes among the hair products.

In addition to textiles, 150 units of loose hair were collected. Most of them might be tufts of sheep wool, but also horsehair (22 cases) and bristles of different animals are present; some of the finds can be human hair. 23 units contained coarse hairs together with fine undercoat from a fur. Further research is needed in order to identify the origin of this material. Hair were used for various purposes and as a raw material it was also article in medieval long-distance trade.



Fig. 17. Selection of found tools. 1 – a wooden casting mould, 2 – a thimble with spiralling indentations, 3 – a leather-working stamp.

Jn 17. Valik käsitöövahendeid. 1 – puust valuvormi poolmik, 2 – sõrmkübar spiraalselt paiknevate lohkudega, 3 – nahatöö punts.

(AI 7909: 1562, 3156, 15806.)

Photo / Foto: Jaana Ratas

Needlework items

The number of needlework items, at least from metal, is fairly low with 54 examples. In total, 32 thimbles were discovered. Most of these are from the late 15th and early 16th century whereas some can be connected with later periods of inhabitation on the plot. In general, squat, short thimbles with indentations in concentric, vertical and spiral alignments are earlier, the latter dominating in the 16th century (Fig. 17: 2). From the end of the 14th until the beginning of the 17th century, Nuremberg had a monopoly of the market (Beaudry 2006, 93–94), so it is highly likely that most of the thimbles found are made in Germany.

Of the 14 pins discovered, 5 are A-type and 3 are B-type (see Caple 2006, 130). A-type pins have squat, uneven double-wound wire heads and generally date to the 15th century. B-type pins dominate in the 16th century. They also have double-wound wire heads but they are gently pressed together so they are rounder and finer. On later, C-type pins, the wire is pressed together so tightly that the lines are no longer visible. Most of the pins found from Jahu street date from the 15th and 16th century which corresponds to the date of the dumpsite.

Identifying scissors was fairly difficult. As handles can also belong to candle snuffers, it is hard to say for certain how many scissors were found on the site. All of the four items marked as scissors are made of copper alloy. A set of highly decorated copper alloy scissor handles resembles another, post-medieval set found from Sakala St 22 / Tatari St 8 (AI 6221: 17). Only one other set from the landfill can be identified with conviction as scissors. No shears were uncovered.

Only four needles were discovered, all from copper alloy which is common for needles produced before 1500 (Beaudry 2006, 44). Based on the characteristics, they are all speciality needles. It is possible that the 12 cm needle with a triangular point is for heavy leather or other thick fabric (Egan 2010, 267–268; Deagan 2002, 196) whereas the thick 9 cm and 19 cm long needles with round points could be for sewing up parcels and pack-cloth. Compared to material found from elsewhere in Tallinn (Reppo 2013), the needlework items discovered are fairly common but the lack of scissors and shears is notable.

An interesting set of finds of textile production is the corpus of spindle whorls: so far 10 have been recorded, of which six are greyware or stoneware, three made of stone, including one 13th century spindle whorl made of Ovruch (near Kyiv in Ukraine) pink slate and one tin alloy item.

Leatherwork

The leatherwork is represented with thousands of leather cuts that quite probably evidence both the tanner and the cobbler. Nevertheless, as there is also one stamp with *fleur de lys* decoration, made of bone (Fig. 17: 3), one awl and a compass, it is to be expected that the thorough analysis of the cut pieces might reveal also traces of other leatherworking craftsmen.

Soil samples

Eleven buckets (à 12 litres) of soil were collected from the excavation area 5, square L2, and one from the area 6 (see Fig. 3). The soil was water-sieved in the laboratory of Archaeological Research Collection, Tallinn University. KOH-solution was used to fluidify thick organic matter of the soil. There were two sieves on top of each other, one with a 5 mm mesh and the other with a 2 mm mesh, which were used during the water-sieving process. Such approach gave us two different-size fractions and allowed better sorting of the material. After soaking the soil in KOH-solution, the lighter float which rose to the surface of water, was poured first into

the sieves and washed by clean water. From the floated fractions, mainly all kind of vegetal remains were gathered, except wood pieces without manufacturing traces and fibres. Heavier sediment was also sieved by double sieve and two different-size fractions were dried before sorting the finds out. This contained smaller items (e.g. metal finds) and animal bones, i.e. finds which are not floating on the water surface, but sink to the bottom. It should be mentioned that the soil samples were very dense in terms of small bones and seeds.

As the analyses of plant and animal remains are still in progress, we can only present a very brief overview on the species represented in the gathered material. Also, microscoping level of plant seeds and small fish bones is not applied yet, thus, some species are automatically off from the list we present here. However, these plants, which have larger seeds, are usually those from our table, like cereals, berries and fruits. Small seeds often come from the herbaceous plants. From the small fish, most probably sprat (*Sprattus sprattus*), smelt (*Osmerus eperlanus*) and ruffe (*Gymnocephalus cernua*) have ‘microscopic bones’, and are not recognisable at first glance. Bones of larger fish, as well as mammals and birds, are usually collected from the excavations and the soil samples contain only small and medium-size bones.

From the plant remains, the first attractive (well recognisable) find category is the shells of walnut (*Juglans regia*). These were quite numerous among the excavation finds (more than 140 shells found), but less represented in soil samples. As walnuts are definitely imported, then numerous hazel (*Corylus avellana*) nuts can be of local origin (more than 60 in the excavation collection). One of the surprises is the find of three European horse chestnuts (*Aesculus hippocastanum*) as until now it was believed that this tree was introduced in Estonia only in the beginning of the 18th century. Thus it might be the earliest evidence of importation of chestnuts into the northern Baltic. Also imported, the berries of grapevine (*Vitis vinifera*) were often detected in the form of seeds in the soil samples. Most probably the raisins were imported, as fresh grapes do not preserve during long distance trade. Seeds of damson (*Prunus insititia*) and cherries (*Prunus avium*), as well as apples (*Malus domestica*), were common in the material and wild strawberries (*Fragaria vesca*) and raspberries (*Rubus idaeus*) were most probably found as well. The list of plants will be much longer and diverse than mentioned here and hopefully the analyses of botanical material can go on in the near future.

From the animal remains, many mammal species were recorded in the soil samples. All typical domestic animals are represented: cattle (*Bos taurus*), sheep and/or goat (*Ovis aries/Capra hircus*), and pig (*Sus domesticus*). Two bones of the ringed seal (*Pusa hispida*) found from the sediment samples allow to highlight the importance of seal hunting in the lives of coastal settlers.

Bones of small rodents do not indicate the well-developed rat (*Rattus* sp.) population in town, but rather refer to the local wild rodents like e.g. the water vole (*Arvicola amphibius*) activities. From the bird bones, the chicken (*Gallus domesticus*) was recognised, but here as well, a more detailed study is needed since the diversity of species is seemingly much greater than only this domesticated bird.

As expected, all gathered soil samples contained a lot of fish bones. Among the small-sized fish, perch (*Perca fluviatilis*) and different cyprinids (Cyprinidae) predominate, but herring (*Clupea harengus*) also occurs in a great number. It is not clear yet, whether the herring represents an Atlantic, i.e. imported, or local Baltic form. The first step in separating these herrings is to carry out an osteometric analysis since we expect that Atlantic herring is bigger in size than its eastern Baltic relative. The other marine fish, which is as numerous as herring,

is the flounder (*Plathichthys flesus*). Also, the cod (*Gadus morhua*) seems an important fishery target at that time. As cod represents a bigger-sized fish, then its bones should be common also in the manually removed soil of the excavations. Indeed, at least one large vertebra of cod, most probably of Atlantic origin, have been recorded there. In the soil samples sieved in the laboratory, mainly the smaller Baltic cod was recognised. Although, the cod was a very important commercial fish at that time, we should not forget the pike (*Esox lucius*), which was also a very highly valued fish. Larger bones of pikes were gathered directly from the excavation area, while smaller bones were found from the soil samples. There are definitely much greater variety of fish species among the smaller fraction of sieved soil, but their determination needs more detailed study under the magnifying-microscope.

THE SIGNIFICANCE OF THE SITE AND THE FIND COMPLEX

The above-given overview of the site should show quite well that besides the production and ordinary household waste the finds also reflect the material culture of the higher echelon of the late medieval society with quite a few items that are rare in the archaeological record also elsewhere. Even though it is impossible to identify the initial place of use of the discarded possession, it is relatively safe to say that the 'high end' products belong either to the well-off merchant households or, considering a large number of religious artefacts (window glass, some of the pipeclay figurines and hanging images), perhaps alternatively come from a monastic context. Whether the production waste originates from the *intra muros* workshops is more difficult to prove, but not excluded. However, at the present stage of the research, it is more important to put the excavation results into a wider perspective and leave the detailed analysis for the future.

First of all, Jahu – Väike-Patarei streets landfill fills a gap in our knowledge of the local urban waste management. From the written sources it is known that already around 1360 there was a demand in Tallinn burgher regulations (l. Germ. *bursprake*) to transport one's trash out of the town to designated areas (Johansen & von zur Mühlen 1973, 443–447).¹³ This can be explained with the changed townscape as the growing number of stone buildings and paved streets necessitated new approaches towards urban refuse. While the emerging settlement had enough space, and sometimes also a need to spread its litter horizontally on selected areas within the walled town during the 13th and early 14th century (like fill layers of Town Hall Square, with lots of leatherworking waste), this was not the case later. Therefore new practices were developed, similarly to other urban settlements elsewhere.

Up to now, only another accepted way of trash re-deposition from town parcels to suburbs was archaeologically recorded or speculated for late medieval Tallinn: bringing the muck onto the private properties or public agricultural/grassland (also written down in early 15th century burgher regulations, *ibid.*). This is perceptible in the area of Tatari-Sakala streets since the first excavations in the late 1990s (collections AI 6218, 6221, 6791), and more recently at Pärnu road (Bernotas *et al.* 2017) where the clearly visible plough marks on the natural ground might indirectly confirm the reason why there is such a large amount of artefacts not typical to suburbs.

The Jahu – Väike-Patarei streets quartier finally offers archaeological proof for the above-mentioned demand to lay waste to a special area. Considering the topographical situation, it is not a surprising location. If taking into account the place and distance between the

¹³ Whether the sentence 'voren buthen de hant' or 'als de hande ut wiset' can be interpreted as a special place designated with wooden hand (as suggested in Pölsam-Jürjo 2019, 353) is inconclusive.

dumping ground, it is quite logical: conveniently far (ca. 500–700 metres) from the town walls, easily accessible from the Great Coast Gate and presumably also from the Nun Gate. And the uneven landscape with possibly moist depression in the NW-part of the discussed site might additionally assure that using this particular area was part of a purposeful municipal land improvement project.

It is interesting to note that although the late medieval urban waste management has been archaeologically documented in many places around the North and Baltic Sea (see reviews in Gläser 2004), the number of exact parallels to Jahu – Väike-Patarei streets is low. The most well-known examples of municipal/communal waste depositions are connected to water-bound land reclamation – using the urban trash to move the waterline further, as the Thames in London (Schofield *et al.* 2018), extension of the Lübeck peninsula into the river Trave (Gläser 1999) or just discarding the inner city litter on the shore of Stralsund (Ansoerge 2009, 46–47), etc.¹⁴ But what looks to be infrequent, is the land-bound late medieval dumping grounds, if leaving aside short-time filling of the moats because of the urban extension or building of early modern period earthen fortifications. Usually, the archaeological evidence is limited to scattered urban trash on the fields outside the towns, a widely used custom and lucrative business between the farmers and municipalities (Feldhaus-Stephan 1995; Van Oosten 2015). Yet the survival or known existence of medieval landfills – specially designated dumping grounds – is by all accounts rather sparse. Here perhaps one of the best parallels is an early 16th century dumping area found 2010 in Augsburg, Southern Germany. Similarly to Jahu – Väike-Patarei streets quartier the corresponding place lies ca. 700 m from the town walls, and was used to fill cavities as well, with possible subsequent expansion further (Hermann 2011). This find complex might confirm one of the reasons why such kind of discoveries are rare: the location not far from the town centre meant that the former dumping grounds were put into use soon after the place went out of the initial use. And with extensive building activities around the booming 19th–20th century towns, much of the archaeological data was lost decades ago, contrary to the waterfront that perhaps experienced less dramatic developments.

CONCLUSIONS

After many decades of archaeological rescue fieldwork in Tallinn, quite a few surprises have been unearthed. But without any doubt, the salvage excavation of the late 15th century landfill between the Jahu and Väike-Patarei streets in Kalamaja suburbs will stand out for several reasons. The find collection is presently the largest set of late medieval artefacts collected in Estonia and highly likely even around the northern Baltic. Yet not only the quantity but also the quality and versatility of the complex must be stressed: the archaeological research of the material culture of late medieval Hanseatic town of Tallinn have now a lot of new perspectives and challenges how to complement our visions of the past. Figuratively speaking – before the discovery of this site we had a faint look through the keyhole into the late medieval households, now, due to the vast amount and diversity of the collection the door has been opened ajar. It is to be hoped that the following years bring chances to publish this intriguing collection in a most useful way: as special studies as well as a comprehensive commented catalogue.

¹⁴ This kind of medieval and later land management can be assumed in Tallinn as well, in the surroundings of the harbour, but as the archaeological fieldwork has been here relatively sporadic up to the 2010s, it is more or less speculation and needs substantial proof in the future.

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TALLINNA HILISKESKAEGNE VARALAEGAS. JAHU – VÄIKE-PATAREI TÄNAVATE VAHELISE 15. SAJANDI PRÜGILADESTUSPAIGA PÄÄSTEKAEVAMISED

Erki Russow, Keiti Randoja, Rivo Bernotas, Andres Tvauri, Riina Rammo, Monika Reppo, Jaana Ratas, Juhan Kreem ja Lembi Lõugas

Tallinna on praeguseks arheoloogiliselt uuritud väga pikka aega ning üllatavaid avastusi on tehtud nii vanalinnas, ajaloolistes eeslinnades kui ka kesk-aegse linna sarases. Ent hoolimata pikast uurimisloost leidub piisavalt valdkondi, mille uurimisseisu võib pidada ebapiisavaks – nagu näiteks hansalinna hiliskeskaegne olmekultuur. Viimase paari aasta-kümne välitööd on selles osas toonud muutusi, kuid laiemal üldistuse tegemiseks siiski suhteliselt vähe. See olukord muutus kõigest ühe päästeuringuga, 2018. aasta märtsi ja 2019. aasta märtsi vahel toimunud kaevamistega Kalamajas Jahu ja Väike-Patarei tänavate vahelises kvartalis (jn 1). Arheoloogiliste uuringute lõpuks on kogutud üle 30 000 leiu, võimalik et isegi 40 000, sest artikli avaldamise hetkeks ei ole kogu leiu kollektsioon veel inventeeritud. Küll aga saab öelda, et tegemist on Eesti suurima arheoloogilise leiukoguna ning arvestades, et hinnanguliselt 80–90% leidudest pärineb 15. sajandist, võime ilmselt rääkida ka Läänemere regiooni suurimast hiliskesk-aegsest leidude kogumist.

Ajalooliselt ei ole piirkonna varajaloost palju teada. Kirjalike allikate põhjal võib öelda, et Kalamaja ilmub kirjalikesse allikatesse nimeliselt esmakordselt 15. saj keskpaigas, ehkki kaudselt on piirkonda mainitud ilmselt juba varemgi. Kindel on, et püüasustusest saame maksunimistuste põhjal rääkida hiljemalt 15. sajandist ning 1527. aastaks asus siin 78 majapidamist, neist 17 koos kõrtsiga. Piirkonna ajaloolise topograafia kohta pole siiski andmeid enne 17. sajandi lõppu. Varasemate arheoloogiliste uuringute põhjal võib oletada, et vanim asustus koondus tänase Vana-Kalamaja tänava äärde, kust nimetatud tänav suundus Nunnavärasse. Jahu – Väike-Patarei tn kvartali vanima ajaloo kohta puudus nii ajalooline kui ka arheoloogiline info.

Juba 2018. a kevadel toimunud eeluuringutega selgus, et erinevalt Kalamaja tavapärasest arheoloogilisest situatsioonist vaatas objektile tehtud šurfidest vastu teistsugune olukord: leiti kesk-aegseid kaubapomme, nahatööjälgi, hästi säilinud puitu jne. Sellest johtuvalt tehti koostöös objekti arendaja ja Tallinna muinsuskaitseametnikuga otsus, et objekti tuleb uurida põhjalikumalt kui seda tavaliselt selles eeslinnas on tehtud. Nii korraldati kvartalis arheoloogilised päästeuringud (jn 2), kus vanimad koha peal tekkinud pinnasekihid kaevati inimjõul läbi (780 m²), kuid eeluuringute ja proovikaevanditega kindlaks tehtud hiliskeskaegne mujalt toodud täitepinna kooriti

kiht-kihi haaval kopaga ning sobrati seejärel kätega läbi (2974 m², jn 3). Ühtlasi toimus kõikjal intensiivne detektoriseire.

Sisuliselt kohe põhjalikumate kaevamiste alguseks oli selge, et suure tõenäosusega asus uuritud alal hiliskeskaegse Tallinna prügiladestuspaik. Selle põhjenduseks olid nii arvukad esemeleidud, mis on eeslinnaalale täiesti võõrad ning ka täitepinna iseloom – sõnnikused kihid, mis vaheldusid kergete kruusa- ja heinaviirgudega. Seega võib oletada, et alale ladestati jäätmeid pidevalt.

Hiliskeskaegne prügiladestus ei ole siiski esimene elutegevus selles kvartalis. Kaevamistega selgus, et eelkõige just kvartali loode- ja põhjapoolses osas on looduslikul aluspinnal säilinud hallikat elutegevuskihti, millest leiti 14. sajandi lõpu – 15. sajandi alguse leide. Ehitiste jäänuseid ei avastatud, päevavalgele tuli vaid üksikuid kraave (jn 4–5) ning nende järgest ajast pärit vankrijäljed (jn 6). Kraavid võisid tähistada kinnistupiire, samas ei saa välistada, et neid kasutati hoopis ala kuivendamiseks ning liigniiskuse suunamiseks kvartali loodeosas asunud sügavamale ja ilmselt vesisele alale. Sellest tulenevalt võidi prügi siia tuua kindla eesmärgiga parandada ala pinnase kvaliteeti. Prügi ladestamise järel ei muutunud maakasutus kiiresti, vaid ala püsis ilmselt väga pikka aega avatuna – puudusid varauaegsete hoonete jäljed, ainsaks rajatiseks oli üks kaev. Ka 18.–20. sajandi ehitustegevus säästis tekkinud kultuurikihti, sest kvartalisse ehitatud lao- ja tööstushoonetel puudusid keldrid ning vundamendid jätsid suurema osa hiliskeskaegset pinnasest (jn 7) puutumata.

Praeguses uurimisseisus on keeruline anda täielikku ülevaadet hiliskeskaegse prügiladestuskoha iseloomust: umbes pooled leiud on seni kataloogimata, kaevamisaruanne valmimisel. Ent ka olemasolevast ainesest piisab üldistuste tegemiseks, kuid neid tuleb võtta esmahinnanguina.

Prügiladestuspaiga ajalise raamistuse annavad leitud mündid, mida kaevamistel koguti üle 230. 211 neist kuulub 14. saj lõppu – 15. saj, lõviosa on löödud pärast 1422. aasta Liivimaa rahareformi. Domineerisid Tallinna rahad (120), leidis ka Tartu piiskopkonna (68) ja Riia peapiiskopkonna (13) münte. Huvitavaks täienduseks Eesti senistele mündileidudele on Novgordi hõbedengad (4), löödud 1420.–1478. aasta vahel. Kuid kõige intensiivsema prügiladestuse lõpu-aja võiks määrata leitud kuld münt, Belgias Liège's Jean de Hornes'i valitsemisajal (1485–1505) löödud

floriin (jn 8), mille järgi lõppes suurem prahivedu 1485. aasta järel. Arvestades, et 1470.–1480. aastatesse dateeritud münte leidis nii ladestuste ala- kui ka ülaosas, siis võib oletada, et Jahu – Väike-Patarei tänava vahelise ala suurem täitmine toimuski just sel ajavahemikul. Samas on leidude seas esemeid, mis dateeruvad ka hilisemasse perioodi, 16.–17. sajandisse. Leidude arvukuse põhjal näib siiski, et pärast 1500. aastat toodi jäätmeid siia pigem episoodiliselt.

Kogutud leiuväin on väga suur nii esemete arvult kui ka materjali ulatuselt. Leidub kõike alates puidust ja tekstiilist kuni värvilise metallini, sh kulda. Artiklis käsitletakse neid esemeid, mis ei ole hetkel konserveerimisel ning mis tundusid kirjutamise ajal kõige kõnekamana.

Leidude seas on näiteks valerahasid ja kodurahasid (jn 9: 1–7) ning hulgaliselt arvestuspenne. Üks erakordne leiurühm on tekstiilikaubandusega seotud plommid (jn 9: 8–13), mida leiti pea 200, eelkõige Flaami ja Flandria tekstiilitootmiskeskuste omi.

Prügi sekka oli visatud ka ehitusjäätmel: väike-seid tellise- ja katusekivide tükke, üle 100 keraamilise põrandaplaadi katke. Oluline täiendus senistesse teadmistesse on seniarvatust suurem ahjukeraamika esinemine 15. sajandi teisel poolel. Täiesti uus leiuliik Tallinnas on puust ahjurobid, vähemal määral ka peergude leidmine. Leidis teisi valgustusega seotud esemeid, küünlajalgade fragmentidest laternaplekini.

Majapidamisega seotud aines on väga suur, ainuüksi nuge leiti enam kui 30, lisaks lusikaid (14+), võtmeid (16+), kamme (20+), kuid isegi peegliraame (5).

Mõistagi moodustab suurima osa leiukollektsioonist tarbekeraamika. Savinõude seas leidub Tallinna mõistes tavapäraseid leiurühmi, aga ka mitmeid selliseid, mis on kas esmakordsed või mille arv torkab seniuuritu kõrval eriti silma (Tabel 1, jn 10). Seevastu puitnõude ja teiste puitesemete rikkus on Tallinna mõistes esmakordne, leiti rohkem kui 2000 esemekatket. Arvukalt leidub ka metallnõude tükke, aga ka vaadikraane (20). Täiesti ainukordse leid Eestis on koodlukk (jn 11).

Esimese 18000 leiu seas oli 2388 klaasikatket (Tabel 2), kuid klaasi leidub ka seni inventeerimata osas. Suure hulga kaunistusteta aknaklaasi (jn 12: 1–3) hulgas leidis ka klaasimise jääke, kus serva retušimine on jäänud pooleli, aga ka kolmnurkseid või rombikujulisi aknaruute. Lisaks saadi vitraažklaasi (jn 12: 4–8). Värvitule klaasile kantud tumedad detailjooned moodustasid rõvastuse, taimede ja figuuride piirjooni. Neist silmapaistvaim on muusiku või nariiga katke (jn 12: 9). Leidis ka lihtsalt värvilist klaasi, kusjuures üks osa punasest vitraažklaasist oli kuumtöötusel õhukese punase läbipaistva kihiga kaetud värvitu klaas. Klaasnõud olid suhteliselt üheilmelised

optilise mustriga või aplikatsioonidega (nupud, niidid, paelad) kaunistatud jooginõud. Kõige enam esines *Maigelbecher*, *Kreuzrippenbecher* ja *Maiglein-tüüpi* peekreid. Jahu tänavalt leitud klaasnõud on üldilmelt 15.–16. sajandi Tallinnas äärmiselt tavalised.

Tekstiilileidudest on seni kataloogitud 1933 leidu. Nende seas on eri tehnikais ja materjalidest esemete katkeid, millest suurim on 3523 cm² ja väiksem u 0,39 cm². 15 siidist kangatüki kõrval on valdavaks lambavillast, vähem teiste loomade karvadest tehtud esemed (jn 13), näiteks pakkekangad. 260 tekstiilifragmendil on jälgi õmblemisest. Lisaks leiti 81 paela, millest enamik on siidist. Suhteliselt arvukalt esines varastel kootud katkeid, mille hulgas võib näiteks tuua mütsi, kinnaste ja sokkide jäänused. Seevastu nõeltehnikas tükke oli vähem. Vilditükid võivad osaliselt pärineda samuti rõivaaknessuaaridest, näiteks mütsid ja sisetallad. Tekstiilileidude hulka kuuluvad ka niinest ja kanepist kõiejäanused, samuti karvadest lõdvast kokku keerutatud kõied, mida kasutati laevade tihtimisel. Mõned nõõrid ja ühe võrgu jäänused olid valmistatud hobusejõhvist. Kaevamistelt koguti ka karvu, mille hulgas oli nii lambavilla kui ka hobusejõhvi, metsloomade karvu ja inimjuukseid.

Nahkesemeid ning nende tootmisjääneid leiti enam kui 8000 katket. Hetkel, mil kogutust on läbi uuritud umbes pool, on valdavaks esemeliigiks jalats, sealhulgas ka seni Tallinnas avastamata jalatsitüüpe. Leidub ka üksikuid noa- ja mõõgatappesid, võõkatkeid, kindaid jne. Lisaks seostub nahkjalatsitega ka suurem kogum korgi- ja puidutükke, mis pärinevad nahksandaalide taldadest.

Eesti kontekstis unikaalne on ka leitud rõvakinnitusdetailide kogum. Leidub kõike alates nõõritsikutest (45+) ja pannaldest (40+) kuni tinasulamist haakide (20+), nõõpide (60+), nõõlde (17+) ja naastudenid (200+). Suurem osa neist järgivad euroopalikku moodi, aga esemete seas on ka maarahvale omaseid leide. Ühe huvitava esemena võib esile tõsta 15. saj lõpu Nürnbergis tehtud võtmehoidja (jn 14: 1), kuid sellele esineb ka kohalikke vaseid (jn 14: 2–3).

Ehete valik on mitmekülgne. Arvuliselt kõige enam on helmeid (merevaik, korall, kaltseidon jne), neile järgnevad sõrmused – kullast vase ja tinani (jn 14: 4–13). Ka usuga seotud asjade hulk on lai, sisaldades nii uskumatult palju palverännumärke (jn 15: 1–5, kokku vähemalt 40), kui ka seninägematult arvuvalgete savikujukeste fragmente. Keraamiliste piltide (jn 15: 6) ja koogivormide (jn 15: 7) kõrval on prügi sekka sattunud ka vääriskihvast valmistatud Kristuse kujuke (jn 15: 8).

Kirjakultuuriga seostuvad arvukad stiilused, nende kõrval on ka vahatahvliite, lukumite, pitsatite jne leide. Erandlik avastus on ilmselt venekeelse

raamatu kaanekatke. Vaba aja veetmisega haakuvad nii malendid, mängunupud, mõned puitmõõgad, aga ka lärmi või muusikaga seostuvad esemed: luuvile, parmupill, puhkpilli huulik ning Eestis esmakordse leiuna tinast vile. Relvastuse hulka liigitatud esemeist saab nimetada mõõganuppu, kahe pistoda teramikku, tosinat ammunooleotsa, aga samuti kahte tulirelvakatket ning 33 tinakuuli. Lisaks saadi üks rõngasrüükatke ning kaks lamellrüü fragmenti.

Unikaalne leid on ka materjal, mida esialgu peeti tekstiiliks, aga hiljem osutus Vahemerest pärit käsnaks või käsnade katkeiks (jn 16). Neid võidi kasutada nii hügieeni- kui ka meditsiiniotstarbel, kuid igal juhul on tegu hiliskeskaegse Tallinna mõistes luksustootega.

Prügi seas on massiliselt käsitööjälgi, töövahendeist tootmisjäänusteni. Esmapilgul suurima rühma, kellega leide seostada, moodustavad värvilise metalliga tegelenud käsitöölised, sest leidus nii valuvorme (sh puidust valuvormi poolmik, jn 17: 1) kui ka massilises koguses metallijäätmeid. Väga võimalik, et kaevamistel leitud kaubaplommid, palverännumärgid aga ka aknatina kujutab endast mõne töökoja materjali. Teisalt on pea olematu rauatööga seotud leiukogum, sest avastati vaid kaks ääsi põhja.

Käsitööjäätmete seas saab välja tuua esemed, mis võivad pärineda kas sadamaala tegevustest (kõied) või siis kaubapakkimisega seostatavast tegevusist (kangad), vähem tõenäoline tundub võimalus, et need on naabruses asunud köietegijate arheoloogilised jäljed.

Leiti ka karvu (nii hobuse kui ka lamba), millest osa on seotud harjadega, teine osa leidus lahtise kogumina.

Õmblustöövahendeist 54 oli metallist. Neist 32 olid erinevad 15.–16. sajandi sõrmkübarad, mida iseloomustavad kontsentriselt, ridades või spiraalselt paiknevad ümarad või ümarkandilised lohud; mõni üksik neist oli hilisem. Kõige enam esineb ümarkandiliste lohudega varianti (jn 17: 2). Nööpnõelu leiti 14. Sarnaselt sõrmkübaratele on need Tallinna materjalis levinud tüüpidest. Kääre oli raskem määrata, kuna valdavalt olid säilinud käepidemed, mis võivad kuuluda ka küünlakäärde juurde. Ka nõelu oli vaid neli. Nende pikkuse ja läbilõike põhjal pole tegu tavaliste õmblusnõeltega, vaid naha, koti- ja pakiriide õmblamiseks mõeldud spetsiaalsete nõeltega. Lisaks nõelale võib nahatööga seostada ta ühte leitud puntsi (jn 17: 3).

Esemeleidude kõrval võeti kaevamistel ka pinnaseproove, kokku 11 ämbrit (á 12 l). Seni on välja sõelatud ainesest läbi vaadatud vaid murdosa. Taimejäänustest on nimetamisväärseid enam kui 140 kreeka pähkli koort (tulid kaevamistel, mitte pinnaseproovist), metspähkli koored (rohkem kui 60) ning

üllatusena ka 3 hobukastani seemet. Teadaolevalt algas hobukastanite kasvatamine Eestis 18. sajandi alguses, need leiud on sel juhul hobukastanite vanimaks arheoloogiliseks leiuks Soome lahe lõunakaldal. Lisaks leiti viinamarjade, ploomide, kirsside, aga ka õunaseemneid. Nimekiri on alles algusjärgus, ning siia tuleb materjali süstemaatilisel ülevaatusel olulisi täiendusi.

Loomaluudest saadi veise, lamba/kitse ja sealuid, aga ka kaks hülgeluud. Oodatult oli palju kalaluid, väiksemate seast olid esindatud ahven, karpilasi, vähem heeringat. Leidus ka turska, ent sarnaselt taimejäänustega, täieneb nimekiri pärast detailsemat vaatlust.

Jahu – Väike-Patarei tn kvartali leiukompleksi rikkalik sisu osutab üsna üheselt, et sedavõrd rikkalik ning palju luksuseseid sisaldav aines pärineb linnamüüri piiratud alalt. Kust see kraam toodi ning kelle majapidamistest pärineb, on hetkel vähetähtis. Olulisem on vaadelda leiukompleksi avaramat tähendust.

Esitaks täidab uuritud prügiladestus ühe lünga Tallinna keskaegses prügimajanduses. Kui meil on varasemalt näiteid vanalinna-sisesest heakorraladestustest (algselt prügi laialiajamine linnaruumis eneses) ning oletamisi on tõendatud ka lõunapoolsetes eeslinnades käimlatest pärit sõnniku kasutamine väetisena, siis sellist n-õ maahõivena toimunud prügi mahapanekut pole seni arheoloogiliselt teada. Kirjalikest allikates on tõepoolest sedalaadi tegevust Tallinna 15. sajandi linnakorraldustes mainitud, täpsustamata kus selline paik asub. Näib, et Jahu – Väike-Patarei tn uurimisala oleks esimene sellelaadne leid ning prügimäe asupaik klindiserval ja elamiseks suhteliselt ebasobival alal tundub linnavõimu teadliku lahendusena.

Kui aga otsida paralleele Euroopa muudest piirkondadest, siis tuleb välja, et neid on üllatavalt vähe. Tuntud näited esindavad veepiiriäärset maahõivet (Thames Londonis, Trave Lübeckis jne), teada on ka linnasõnniku viimine linnalähedastele põldudele, kuid väga vähe on sarnaseid maapinnale ladestatud prügikohti. Hetkel on üheks väheseks vasteks 2010. aastal Augsburgis avastatud 16. saj alguse prügiladestamispaik. Võimalik, et suur osa hiliskeskaegse ja varauusaegse linnasüdame prügiladestamist toimus üsna linnamüüri lähedal ning seetõttu on need kohad 19.–20. sajandi industriaalühiskonna linnade laienemisel lihtsalt hävitatud. Niisiis oli selliseid kohti kahtlemata arvukalt, kuid nende säilimine tänapäevani kujutab endast õnnelikku juhusit. Nüüdseks on üks selline hiliskeskaegne varalaegas teada Tallinnast.