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## **COINS AND TOKENS FROM A 15TH-CENTURY LANDFILL IN THE KALAMAJA SUBURB OF TALLINN**

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In 2018–2019 at least 35 000 finds were revealed on the plot at Jahu 6 in the medieval and early modern Kalamaja suburb of Tallinn, which had been brought to the disposal area together with waste and garbage from the city surrounded by the city wall. In addition, 249 coins from the 14th–15th century were found. The latter are mostly Livonian coins, first and foremost from Tallinn, less from Tartu and Riga because foreign coins constituted only 2.4 per cent. The most common denomination is pfennig. The composition of the coin assemblage confirms, with regard to its origin and nominal distribution, the previous knowledge of coin circulation in the 15th-century Livonia based on the comparative analysis of coin hoards and written sources. The fact that the temporal distribution of coins in the upper and deeper layers is rather even suggests that most of the garbage had been deposited over a rather short period of time in 1470–1480. It seems that garbage disposal may have ended some time before 1490.

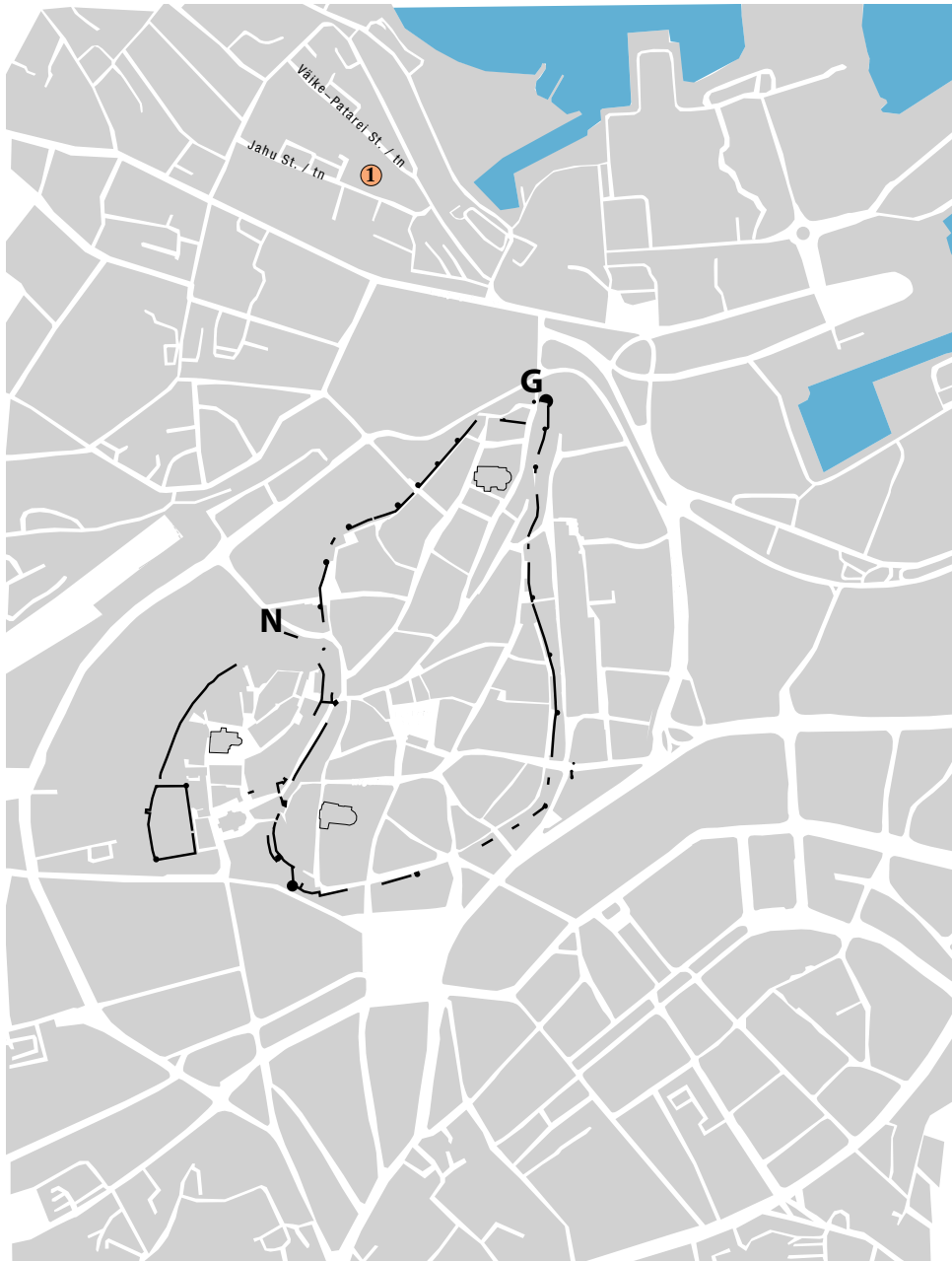
The garbage layer also revealed three counterfeit coins from an alloy of tin and lead, which imitate 15th-century Tallinn small change. Other interesting finds from the garbage layer include two tokens from an alloy of tin and lead – one of them granted the right to grind grain and the other probably malt in the mills owned by the City of Tallinn.

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### **Medieval landfill in Kalamaja**

In 2018 and 2019 archaeological rescue excavations took place on the plot at Jahu 6 (Fig. 1) in the block between Jahu and Väike-Patarei streets in Tallinn. The



**Fig. 1.** 1 – location of the medieval Kalamaja landfill, N – Suur Rannavärv, the northernmost gate of the medieval city, G – Nunnevärv, the westernmost gate of the medieval city. Drawing by Jaana Ratas.

studied area is located about 500 m from Suur Rannavärv, the northernmost gate of the medieval city. In the Middle and Modern Ages, the Kalamaja suburb (LG *Vysschermagen*, G *Fischermay*) was located on the seaside in the northern and north-eastern sides of the city surrounded by the city wall.

The pre-15th century cultural layer was excavated in an area of 780 m<sup>2</sup>. In addition, the cultural layer was removed by an excavator in an area of 2974 m<sup>2</sup>, which was subsequently rummaged through manually. All the removed ground was searched by means of a metal detector.

In the northern part of the explored area the medieval cultural layer was up to 1.6 m in thickness; elsewhere it was 0.5–1 m. On top of natural sandy ground there was a locally emerged layer of greyish sandy earth about 10 cm in thickness with charred patches. On top of this layer there were layers of medieval excrements, construction waste, gravel, sand, shingles, and hay.

The study yielded at least 35 000 finds. Their exact number was unknown at the time of writing this article because not all the finds had been recorded. However, it is definitely the largest medieval archaeological find assemblage from a single site in Estonia and the entire Circum-Baltic region.

The find material is remarkably diverse. There are objects from different materials – from wood and textile to non-ferrous metals, including gold. There is construction, household, food, and handicraft waste. In addition, all kinds of objects and fragments were found: pieces of clothing and fabrics, footwear, items for fixing clothes, jewellery, fragments of weapons and defensive armour, household appliances and their fragments, pilgrimage tokens, merchandise seals, etc.

Both the composition of the fill and the finds (including gold and luxury items), which were not consumed by the inhabitants of medieval suburbs, show that excrements and garbage had been brought here in the 15th century from an area surrounded by the Tallinn city wall (Russow et al. 2019, 185–218).

### **The unearthed coins and their context**

The plot at Jahu 6 revealed 276 coins, which were mostly found by means of a metal detector. They included 249 coins (Table 1), which date from the 14th–15th century and were unearthed from a layer of medieval waste. Apart from the coins, the medieval layer revealed three counterfeit coins and two tokens from an alloy of lead and / or tin.

The second temporally dated assemblage – 27 coins – originates from the end of the 15th century until the beginning of the 19th century.<sup>1</sup> These coins were revealed either right on top of the medieval layer, dropped on the excavated area from the wall of the pit or from the bucket of the excavator with more recent ground, or they happened to be there as a result of more recent digging.

Such large-scale medieval garbage sites have not been studied anywhere before. Thus, the temporally compact and rather numerous coin assemblage of Jahu 6 is a

<sup>1</sup> Occasional coins from the second half of the 19th century and the 20th century were discarded.

**Table 1.** List of medieval coins

No.	Ruler	City	Denomination	Years
1	Teutonic Order in Livonia, anonymous	Tallinn	Artig	Ca 1370–1375?
2	Teutonic Order in Livonia, anonymous	Tallinn	Artig	Ca 1385–1395
3	Teutonic Order in Livonia, anonymous	Tallinn	Artig	Ca 1395–1398
4	Teutonic Order in Livonia, anonymous	Tallinn	Artig	Ca 1407/8–1415
5	Teutonic Order in Livonia, anonymous	Tallinn	Lübische	Ca 1415–1420
6	Teutonic Order in Livonia, anonymous	Tallinn	Lübische	Early 15th century
7–8	Teutonic Order in Livonia, anonymous	Tallinn	Schilling	Ca 1422–1449
9–21	Teutonic Order in Livonia, anonymous	Tallinn	Schilling	Ca 1480–1497
22	Teutonic Order in Livonia, anonymous	Tallinn	Schilling	Further undated
23–79	Teutonic Order in Livonia, anonymous	Tallinn	Pfennig	Ca 1426–1465
80–91	Teutonic Order in Livonia, anonymous	Tallinn	Pfennig	Ca 1426–1465?
92–117	Teutonic Order in Livonia, anonymous	Tallinn	Pfennig	1480s–1490s
118–121	Teutonic Order in Livonia, anonymous	Tallinn	Pfennig	1480s–1490s ?
122–137	Teutonic Order in Livonia, anonymous	Tallinn	Pfennig	Ca 1426–1490
138	Teutonic Order in Livonia, anonymous	Tallinn	Scherf	Ca 1426–1430
139–148	Teutonic Order in Livonia, anonymous	Tallinn	Scherf	Ca 1430–1440
149	Teutonic Order in Livonia, anonymous	Tallinn	Scherf	1480s–1490s ?
150	Tartu Bishop Dietrich III Damerow	Tartu	Artig	Ca 1395–1400
151	Tartu Bishop, anonymous	Tartu	Lübische?	Early 15th century?
152–154	Tartu Bishop Dietrich IV Resler	Tartu	Schilling	1422–1441
155	Tartu Bishop Dietrich IV Resler	Tartu	Pfennig	1426–1441
156	Tartu Bishop Dietrich IV Resler	Tartu	Scherf	1426–1441
157	Tartu Bishop Bartholomäus Sawijerwe	Tartu	Schilling	Ca 1441–1450
158–191	Tartu Bishop Bartholomäus Sawijerwe	Tartu	Pfennig	1441–1459
192–208	Tartu Bishop Helmich von Mallinkrodt	Tartu	Pfennig	1459–1468
209	Tartu Bishop Helmich von Mallinkrodt?	Tartu	Pfennig	1459–1468?
210–219	Tartu Bishop Andreas Peper	Tartu	Pfennig	1468–1473
220–223	Tartu Bishop Johannes II Bertkow	Tartu	Pfennig	1471–1485
224–226	Tartu Bishopric, further undated	Tartu	Pfennig	
227–234	Riga Archbishopric, <i>sede vacantia</i> or Silvester Stodewescher	Riga	Pfennig	1448–?
235–241	Riga Archbishop Silvester Stodewescher	Riga	Pfennig	1448–1479
242–243	Livonia, unidentifiable		Pfennig	
244	Sweden, Albrecht von Mecklenburg	Västerås	Pfennig	1364–1389
245	Union of Kalmar	Visby	Örtug	Early 15th century
246	Liège Bishop Jean de Hornes	Liège	Postulate gulden	1485–1505
247–248	Republic of Novgorod	Novgorod	Denga	Ca 1447–1450s <sup>2</sup>
249	Republic of Novgorod	Novgorod	Denga	Ca 1447–?

unique historical source. For example, altogether 140 medieval coins have been found in the city of Turku in Finland (Ehrnsten 2019, table 7.7). By contrast, 1690 numismatic objects in total were found in Gdańsk Poland only in 1997–2009, but in different circumstances (Paszkievicz 2013, 17 f.).

The significance of the coins from the Kalamaja landfill as research material is enhanced by the fact that there are few coin finds in Livonia from the middle and the second half of the 15th century (Molvynin 1967, 363 ff.; Ducmane & Ozoliņa 2009, Nos 80–85, 87–89).

<sup>2</sup> Dating by Ivan Volkov.

Under what circumstances could coins end up in a medieval waste layer? The majority of the coins revealed in the garbage layer represented valid legal tender at the time of disposal (see below). It is unlikely that coins may have been thrown away. All the coins were found separately, and their distribution was even in the medieval waste layer whereby there is no good reason to suggest that some wealth deposit could have ended up there together with ground. Therefore, it is likely that these coins may have been dropped during everyday activities and were swept up along with garbage from streets, markets, shops and workshops.

Coin hoards are classified in a number of ways. In Estonia and its neighbouring countries, they mostly belong to four archaeological find contexts: wealth deposits, accidentally lost coins, grave goods, and sacrificial offerings (Kiudsoo 2012, 54 ff.). Coin hoards usually represent savings that remained in their permanent storage site or some property hidden in case of danger; they consist of coins of higher value and have been hidden with the purpose of using them later. Lost coins, however, have been usually lost in the course of cash transactions, or they represent small change that has been dropped from one's pocket or purse. Also, lost purses or coins in the pockets or pouches of dead bodies belong to this category.

Unlike coin hoards, grave goods, and sacrificial offerings, lost coins remained in the ground accidentally. Because of the strong likelihood that coins may get lost during their use, lost coins should reflect everyday coin circulation more precisely than coin hoards, grave goods, or sacrificial offerings. Unfortunately, lost coins do not show former coin circulation reliably either. Smaller coins were lost more easily than bigger denominations. It happened not only because they could slip through one's fingers more easily but also because they more often changed owners. The selection of lost coins reflects coin circulation also in some definite context (e.g. a village site, market place, or church). For example, church finds do not show which denominations were used for sale transactions, but which denominations were usually put in a collection box or sacrificed (Klackenberg 1992, 36 ff.).

### Medieval coins

The temporal framework of the landfill use yields 249 medieval coins (Table 1). The vast majority of them were struck after the Livonian monetary reforms of the 1420s (see Leimus et al. 2018, 56 ff.); there were only ten earlier coins.

Livonian coins prevail in this find assemblage. Tallinn coins (149) constitute the most numerous group. In addition, there are coins from the Tartu bishopric (77) and the Riga archbishopric (15) (Fig. 2).

Starting with the 1420s three kinds of coins were minted in Livonia: schillings (36 schillings = 1 mark), pfennigs (= 1/3 schilling), and scherfs (= 1/2 pfennig). Pfennigs (202) prevail among the denominations of the Jahu Street finds (Figs 3 and 4). One can add to them three earlier *lübische*'s. Twenty schillings and five artigs, which preceded schillings, were found. The layer revealed also 13 scherfs, which was the smallest 15th-century coin.

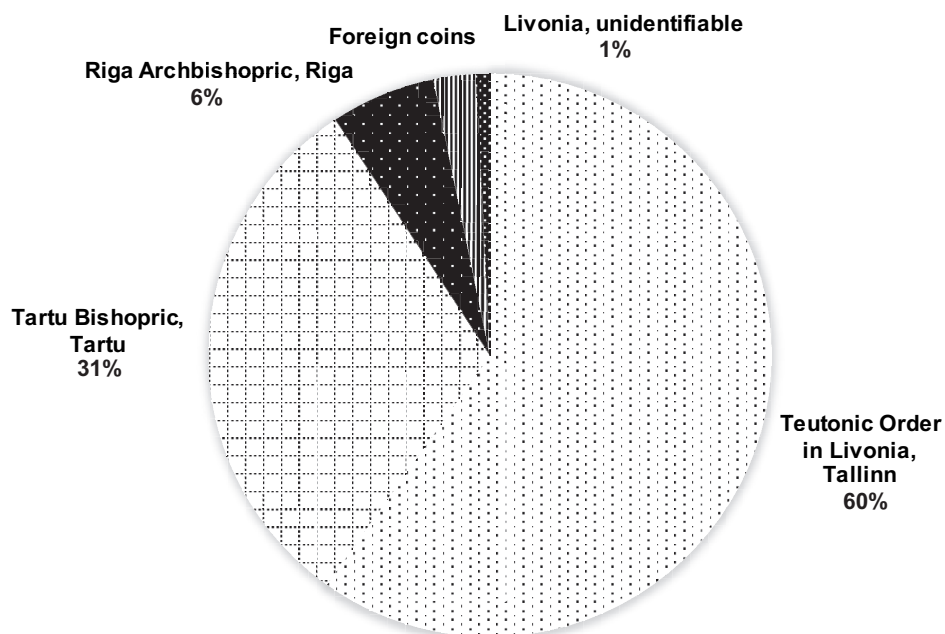


Fig. 2. Origin of medieval coins.

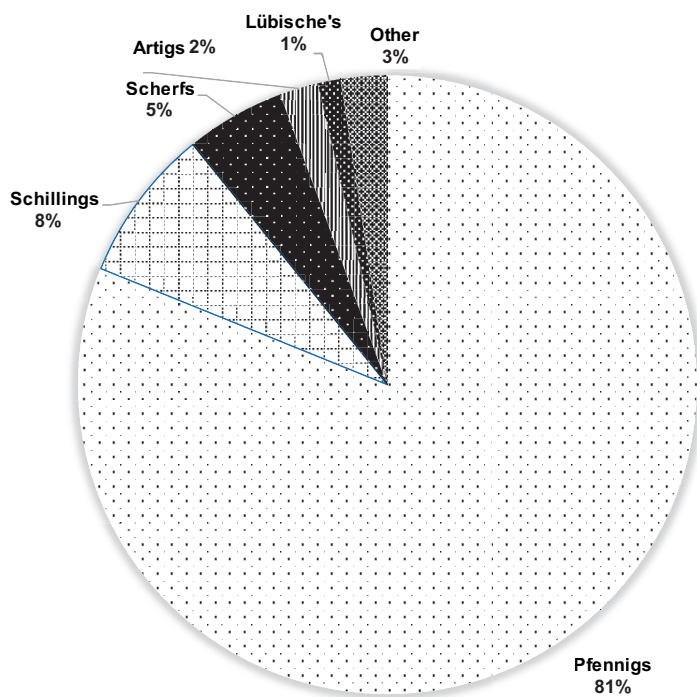


Fig. 3. Denominations of medieval coins.



**Fig. 4.** Tallinn pfennig from the 15th century (AI 7909: 2672). Photo by Ivar Leimus.

There are two reasons for such a distribution of coin denominations. First, the minting of schillings, which had started in 1422 in Livonian mints – in Tallinn, Tartu, and Riga – came to an end already in the mid-15th century. One could explain it with the all-European shortage of silver, which stopped coinage altogether or reduced it considerably all over Europe (Day 1978, 3–54; Spufford 1988, 33–62; Leimus et al. 2018, 168). The minting of coins in Livonia resumed at first in Riga ca 1479, then immediately in Tallinn in 1480 or 1481 and at the same time also in Tartu (Leimus et al. 2018, 58). In 1480 the local bishop Johannes II Bertkow (1473–1485) came to an agreement with the master of the Order with regard to a new and inferior coinage standard. The new schillings were to be of fineness of five lots (5/16 or 31,25%), and at first 176 and then 180 coins were to be produced from a Riga weight mark (LEKUB I.14, No. 56; LEKUB II.1, No. 580).

Second, it was easier to lose pfennigs and more difficult to find them. As for scherfs, in Livonia they were struck only in small quantities and at long intervals (Leimus 1999, 52). However, they have quite often been found in offering places and churches (Kiudsoo 2020). On the other hand, the few coin hoards of Livonia from the third quarter of the 15th century consist mostly of pfennigs. A representative example is the Glemzina (at present Russia, Pskov oblast, Pytalovo district) hoard from the 1470s, which was found in eastern Latvia in 1935 (Ducmane & Ozoliņa 2009, 103, No. 85). Among 2137 coins there were 1782 pfennigs; however, all the schillings dated back to the first half of the 15th century.

Unfortunately, the Tallinn coins from the final decades of the 15th century cannot be dated with greater precision because the years are not indicated. The resumption of the coinage of schillings was mentioned previously. The type of schillings introduced in Tallinn ca 1480 are distinguishable from the coins struck in the second quarter of the 15th century by a dot in one angle of the long cross of the reverse; the moneyer's sign is a hexagonal star at the beginning of the obverse legend. It is likely that sometime in the 1490s the star may have been replaced by a crescent (Haljak 2010, No. 105). It could well be that the change of the sign marked the hiring of Diderick Becker, a new mint master, in Tallinn on 30 August 1497 (LEKUB II.1, No. 580). However, such schillings, as well as schillings with the next marks (Haljak 2010, Nos 106–108), are absent from the material of Jahu Street. Thus, schillings with hexagonal stars were struck over a relatively long time – ca

1480–1497(?). Their relatively small number among the coins found in Jahu Street (13 or 14) rather dates them in the earlier phase of this period.

Unfortunately, there are no reliable data about the temporal dynamics of coining Tallinn pfennigs. On the basis the separation marks used in legends, 15th-century Tallinn pfennigs are divided into two types: the earlier coins have a cross and the more recent ones a pentagonal star in legends (Haljak 2010, Nos 75–77 and 80, respectively). In addition, there are some rare Tallinn pfennigs, where one side has been struck with an earlier and the other side with a more recent die (Haljak 2010, Nos 78, 79). It could well be that the minting of pfennigs, which had begun in 1426, was stopped in Tallinn in 1465 and resumed together with schillings ca 1480 (Leimus et al. 2018, 58 f.; LEKUB I.14, No. 441<sup>3</sup>).

However, it is possible that the hoard hidden in Glemzina in the 1470s includes, according to Arkadi Molvõgin, one (!) coin with a star among 898 earlier pfennigs from Tallinn (Molvõgin 1967, 118, 365 ff.), but Latvian numismatists do not confirm this claim. The only pfennig with a star in the Glemzina find was struck in the name of Silvester Stodewescher, the archbishop of Riga (Anda Ozoliņa, pers. comm. 8.07.2020).

The star in question deserves particular attention from the perspective of dating coins; therefore, we will discuss its occurrence in greater detail. In Livonia, the hexagonal star first appeared on the pfennigs of the final years of Silvester Stodewescher (1448–1479), the archbishop of Riga (Haljak 2010, No. 751). The notes on a coin envelope of Franciscus Pärn, a Latvian-German numismatist with Estonian roots, suggest that it is also the most recent coin in the Glemzina find (Fig. 5: 1). After the death of Silvester Stodewescher coinage by the Riga archbishopric was stopped for political reasons for two decades (Leimus 2017, 107 ff.; Leimus et al. 2018, 60). After that the same mark appeared on Tallinn schillings (Haljak 2010, Nos 68–72<sup>4</sup>), which were then struck, as noted previously, in about 1480 (Fig. 5: 2). Thus, it is possible that the mint master who had come from Riga had introduced the star in Tallinn.

Alternatively, the hexagonal star on Tallinn schillings may have originated from coins struck by the Teutonic Order in Königsberg (Fig. 5: 3). The obverse of these coins (and sometimes on the reverse as well) has had this star from 1460 until the end of the reign of Grand Master Martin Truchsess von Wetzhausen (1477–1489) (Vossberg 1843, 173 ff., Nos 887–1071). This Grand Master made efforts to escape Polish dependence and prepared for war but was soon defeated by the Polish King Kazimierz IV and swore allegiance to him 1479. However, in order to find resources for his plans, he issued large quantities of low-proof coins. Kazimierz IV and the Polish cities of Prussia tried to put an end to this coinage in 1480–1481 (Vossberg 1843, 184 f.; Waschinski 1952, 150 f.). The scarcity of sources does not enable us to judge whether their efforts were successful, but one cannot rule out the possibility

<sup>3</sup> The transcript contains some minor errors in the referred publication (cf. Leimus 1999, 47, note 42).

<sup>4</sup> Gunnar Haljak's catalogue mistakenly has no Tallinn schillings from the reign of the provincial Master Johann Freitag vom Loringhove (1483–1494) when their minting must have been extensive judging by the Uusiportti hoard in Finland (see Voionmaa 1945).





**Fig. 5.** Hexagonal star on a Riga (1), Tallinn (2) and Königsberg (3) coin. Photos by Anda Ozoliņa, Gunnar Haljak and Ivar Leimus.

that under Polish pressure the Grand Master could have really stopped mintage for some time.<sup>5</sup> Be that as it may, in small quantities the Prussian schillings also penetrated to Livonia (Ducmane & Ozoliņa 2009, Nos 92, 99).

In this connection we should mention another interesting fact. Namely, in 1456 Heinrich von Plauen, Elbląg commander of the Prussian Order, requested three journeymen minters from the Livonian landvogt in order to launch the Königsberg mint; his request was met with approval (LEKUB II.1, No. 503; for the full text see Waschinski 1952, 229). At that time coinage in Livonia was at a low ebb and the only operational mint of the order, that of Tallinn, struck since 1450 only small quantities of pfennigs (Leimus 1999, 38 f., 46; Leimus et al. 2018, 58). Thus, the journeymen were out of work and there was no good reason to employ them.

One cannot rule out the possibility that someone of the previously mentioned minters returned to Tallinn around 1480 when there was a danger that minting in Königsberg might come to an end (or it actually stopped for a while) and resumed the tradition established in Prussia of adding a hexagonal star at the beginning of the legend(s) of schillings. It is true that the Tallinn pfennigs from the same period have a pentagonal star, but this slight difference does not necessarily indicate two different mint masters working at the same time.

<sup>5</sup> His schillings are of two types. The legend of the much more numerous one begins with the Gothic majuscule M (Vossberg 1843, 185 ff., Nos 1002–1057) while the second and later type, which is much less numerous, the minting of which was continued also during the reign of the next Grand Master Johann von Tiefen (1489–1497), has a trefoil in the same place (Vossberg 1843, 187 ff., Nos 1058–1110).

It is true that as late as in March 1480, which is right before the resumption of minting, the master of Order mentions in his letter Rotger (Rutcher) Vorman as the mint master of Tallinn (LEKUB I.14, No. 48). However, he was already at an advanced age at that time, having started his career not later than in 1442 (Leimus 1999, 137). It is doubtful whether master Rotger could have held his office until 1497, that is, well over half a century although one cannot exclude this possibility. Thus, it is more plausible that new schillings and pfennigs were struck by a new and younger mint master who kept his position until 1497 but whose name is unknown to us.

To sum up, no matter whether the mint master who marked his coins with a star came to Tallinn from Riga 1479 or from Königsberg in 1480–1481, it indicates that the minting of Tallinn schillings and pfennigs did not begin before 1480.

Tartu coins can be dated much better in accordance with the reign of the bishops. The latest Tartu coins in the landfill were issued by Bishop Johannes II Bertkow (1471–1485) while the next Bishop Dietrich V Hake (1485–1498) did not leave behind any coins. This circumstance could indicate that garbage disposal ended around 1485. At the same time, one has to bear in mind that few late Tartu coins were found in Jahu Street. There are only four coins from Bishop Bertkow, which is not a very representative sample.

The plot at Jahu 6 yielded even fewer Riga coins; therefore, the fact that the jointly struck schillings by the Riga city council and the cathedral chapter since 1485 are absent is relatively unimportant.

Three silver dengas (Fig. 6) from the Republic of Novgorod constitute a unique addition to the previous coin finds in Estonia. In fact, only two Russian coins from this period has been found in the Estonian hoards or the archaeological context. A quarter of denga from Pskov minted c. 1425–1435 was discovered at the Loosi chapel site (Valk et al. 2018, 163, table 1). A denga struck in the free city of Pskov before 1510, belonged to the later Öötla hoard (*tpq* 1554; Kiudsoo & Russow 2010, 228 f.), possibly from the time of the Livonian War (1558–1583), and had been used as a pendant. However, written sources suggest that Russian merchants in Tallinn had sometimes considerable quantities of dengas. Also, the Tallinn mint used them as raw material in the 1440s (Leimus 2019, 114). Among the legacy of the late Tallinn

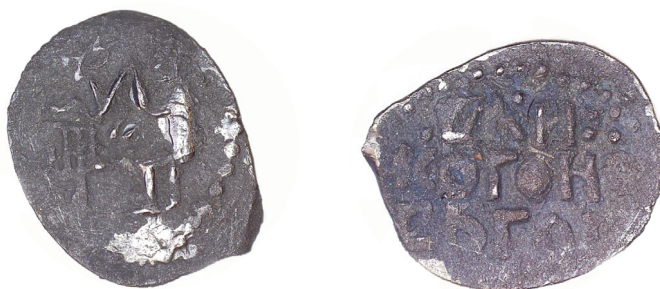


Fig. 6. Novgorod denga (AI 7909: 1805). Photo by Ivar Leimus.

merchant Peter Monneke who died in Lubeck in 1473, there were 131 Russian dengas and other coins (LEKUB I.13, No. 167).

Two out of three coins unearthed from the Jahu Street landfill were struck soon after the 1447 monetary reform in Novgorod, probably in the 1450s; the dating of the third coin is unclear (Ivan Volkov, pers. comm. 25.6.2020).

The Novgorod coins are not the only finds of Russian origin in the garbage layer at Jahu Street. For example, 99 fragments of a white-clay vessel produced with a simple potter's wheel and five fragments of a grey-clay vessel with green glaze were found. So far, in Estonia this kind of ceramics had been found only in towns and hill forts that were held by Moscovia during the Livonian War (Tvauri 2004, 395–419). 370 potsherds originated from simple ceramic clay vessels, which were widely used by the Livonian peasantry but represented the tradition of ceramic production of North-Western Russia or had been actually transported from the Pskov or Novgorod regions. In all probability some people from Novgorod may have brought some ceramics of this kind to Tallinn, which was unearthed on the plot of Jahu 6. In addition to ceramics, it should be mentioned that a fragment of a spindle whorl from pink shale (AI 7909: 3195). Such spindle whorls were produced in Ovruch near Kiev. In Estonia they have so far been found in the medieval context only in a 13th-century cultural layer in the medieval part of Tartu (Tvauri 2000, 24, fig. 6). However, the most surprising Russian find from Jahu Street is a fragment of a leather book cover (AI 7909: N 17/1) with some text in Cyrillic.

Among the Swedish coins only one bracteate was found – a pfennig struck in Västerås during the reign of King Albrekt av Meklenburg (1364–1389) (Fig. 7). It is a matter of taste whether one regards as a Swedish coin an örtug struck in Visby in Gotland at the beginning of the 15th century (Fig. 8; cf. Hauberg 1891, No. 44).

The most faraway, precious, and at the same time latest coin among the medieval coins of the Kalamaja landfill is a postulate gulden struck in the Netherlands in the name of Liège Bishop Jean de Hornes (Johan de Hoorn) ca 1485–1505 (Fig. 9), which was known as the Horn gulden in the German-speaking areas, including Livonia. Considering the temporal composition of the rest of the coin material from Jahu Street, the Horn gulden must have been struck during the initial years of the production of this coin type.



**Fig. 7.** Swedish Kingdom, Albrekt av Meklenburg, Västerås, pfennig, 1364–1389 (AI 7909: 16858). Photo by Andres Tvauri.



Fig. 8. An örtug struck in Visby (AI 7909: 1007). Photo by Andres Tvauri.



Fig. 9. The latest coin in the medieval garbage disposal site – a postulate gulden struck in Liège in the reign of Jean de Hornes (1485–1505). (AI 7909: 9007.) Photo by Jaana Ratas.

Finds of medieval gold coins are rare in Estonia (Leimus et al. 2018, 178 f.). It is worth mentioning that another similar Horn gulden was allegedly found in coastal water beneath the Tallinn City Hall, which is close to Jahu Street (AM 38761). These were the cheapest gold coins of the time. Pursuant to the resolution of the 1495 Valga Landtag, the Livonian rate of the Horn gulden was 35 schillings (a mark equalled 36 schillings), which was over twice less than that of the Rhein gulden (2 marks) (Akten und Rezesse 3, No. 2).

Thus, the garbage layer revealed mostly local coins struck in Tallinn and elsewhere in Livonia. There were only six foreign coins or 2.4 per cent. Also, the Livonian hoards of this period contain some foreign coins only as single specimens. They spread in larger numbers only when there was a shortage of domestic currency for some reason, for example, related to the coin crises in 1330 or the 1520s (Leimus et al. 2018, 51 ff., 60, 174). Thus, the Kalamaja coin assemblage with regard to its composition, origin, and nominal distribution confirms the present knowledge of the previous comparative analysis, which is based on coin hoards and written sources.

It is worth mentioning that no medieval coins found in the region of Jahu Street had a hole or a suspension loop, etc., which indicates that the city dwellers did not wear coins as jewellery. However, one should bear in mind that the proportion of pendant coins is as low as 0.7–1 per cent also in the rural coin hoards from the second half of the 15th century (Kiudsoo 2008, 111).

The temporal distribution of coins unearthed in the top and deeper parts seems to be rather even. Two pfennigs of Johannes II Bertkow (1473–1485), the Bishop of Tartu (AI 7909: 850, 868), were found in the lower part of the waste layer on top of the natural layer. Also, one Tallinn scherf dating back to the 1480s–1490s (AI 7909: 10261) was unearthed in the lower half of the layer. It seems that most of the garbage was brought here over a relatively short period of time in the 1470s–1480s. Garbage disposal seems to have come to an end soon after 1485. Although some coins that had been lost earlier may have ended up in the landfill together with the earth, this coin assemblage should present a cross-section of the coins that were in circulation and were lost in Tallinn during this particular period.

### Counterfeit coins

In addition to genuine coins, the garbage layer unearthed three counterfeit coins (1.2 per cent of the total number of medieval coins). The earliest of them (Fig. 10: 1) imitated an artig struck in Tallinn ca 1417–1420. The forgery was made from an alloy of which about a half was tin and a half lead.<sup>6</sup> It was cast either in a mould made from a genuine coin or was even minted with genuine dies. The fact that mint abuses were possible is proved by the fact that some Tallinn *lübische*'s consisting of copper and coated with tin, which were struck with official dies, are known from about the same time (Haljak 2010, No. 55). It was the period of turmoil before the reforms of the 1420s in the coinage of Livonia when an adventurer paid a visit to the master of Order and promised to produce an absurdly large quantity of coins



**Fig. 10.** Counterfeit coins (AI 7909: 2620, 2621, 16899). Photo by Jaana Ratas.

<sup>6</sup> The composition of the counterfeit coins was established by Ragnar Saage by means of a portable X-ray fluorescence spectrometer (pXRF) of the Archaeological Department of the University of Tartu.

from a weight mark of silver, as many as twenty marks of coins (Leimus 2012a, 89). It could well be that the con man may have been hired for a while.

Two counterfeit coins (Fig. 10: 2, 3) imitate a 15th-century Tallinn pfennig. One of them consists of mostly tin that contains a small quantity of lead and copper. Thus, all the unearthened forgeries imitate local Tallinn coins and were consequently produced locally.

### Tokens

The layer of the Kalamaja landfill unearthened two tokens from an alloy of tin / lead<sup>7</sup>. The one that can be dated more easily (Fig. 11: 1) is a coin-shaped cast mill token for grinding seven ship pounds of grain in the mills owned by the City of Tallinn.<sup>8</sup> There is an image only on one side, which shows a coat of arms of Tallinn and is surrounded by seven small pellets. A die for striking mill tokens with a similar image can be found at Tallinn City Museum (Fig. 12; Ross 1994, 134 f., fig. 306). The token unearthened from the Kalamaja garbage layer is hitherto the only Tallinn



**Fig. 11.** Tokens. 1 – Tallinn mill token, 2 – supposed brewer's mark (AI 7909: 11665, 2628). Photo by Jaana Ratas and Ivar Leimus.

<sup>7</sup> Earlier two more lead or tin alloy objects from the medieval garbage layer of the excavated area at Jahu 5 have been regarded as tokens (Russow et al. 2019, fig. 9: 4, 6). Rather, they are pieces of metal, which were used to test the punch of the master's mark.

<sup>8</sup> For a more general discussion of mill tokens see Leimus 2012b, 271 f.



**Fig. 12.** A die for striking mill tokens from Tallinn City Museum (TLM 3240 KA 182). Length of the die is 8.3 cm. Foto by Tina Timonen.

mill token found in a checked archaeological context. It also dates the die of the city museum to the 15th century, probably the second half of the century. A lead token unearthed as a detector find from Lilli village, Anija rural municipality in Harjumaa in 2019, which was probably intended for grinding six pounds of grain looks quite similar (Fig. 13; Tammet 2020). The latter is interesting also because of a countermark with the image of the medieval coat of arms of Tallinn has been struck on the left edge of the obverse.

However, another token revealed in Jahu Street is even more interesting (Fig. 11: 2). Unfortunately, its execution and condition are not good; one side of the token probably shows crossed brewing implements – a malt spade and a mash-mixing paddle,<sup>9</sup> the other side a Gothic V. If the interpretation of implements is correct, it is the earliest local brewer's token, about which there are some data only from the 16th century. For example, in 1540 each Tallinner who wished to brew some quantity of beer had to pay the corresponding tax at the city hall office and receive a token as proof (Leimus 2012b, 272 f.). Alternative option is that we have crossed spade and pick here, which are characteristic tools on wall-tokens, distributed for counting labour at fortification works.



**Fig. 13.** A Tallinn mill token unearthed from the village of Lilli, Anija rural municipality in Harjumaa. Photo by Mihkel Tammet.

<sup>9</sup> The authors thank Andres Sepp of the Estonian Association of Brewing History for the identification of the implements.

### **Modern coins from the plot at Jahu 6**

There were 37 coins dating from the period after garbage disposal. It is a suburban area; therefore, there is nothing extraordinary in the fact that some coins were lost there. Because the 18th–20th-century layers were removed by means of an excavator and their content was not studied, hence only a small proportion of the modern coins in the excavation area found their way into the archaeological collection.

The collection includes five Livonian schillings from the first half of the 16th century. The earliest of these coins could be a schilling struck in Cēsis in the name of Wolter von Plettenberg (1494–1535), the Master of the Livonian Order, which could have ended up here only after the end of garbage disposal. One schilling was struck in Tallinn in 1536. Three schillings were struck in Koknese of the Riga archbishopric; two of them date back to the reign of Archbishop Thomas Schöning (1535–1540) and one to the reign of Wilhelm von Brandenburg (1539–1563).

Coins from the second half of the 16th century include two schillings of the Free City of Riga (from 1567 and 1570), and four coins were struck in the name of the Swedish king John III: two Tallinn schillings and two Stockholm öre.

Five Swedish coins date back to the 17th century; a quarter öre from 1655 was struck in the reign of King Charles X Gustav, the remaining coins (three 1/6-öre copper coins and one 1-öre coin) were struck in the reign of Charles XI. The same century is represented also by two Polish–Lithuanian coins – a schilling struck in the name of King Sigismund III Vasa in Riga in 1618 and a copper schilling of King Jon II Casimir Vasa probably from the beginning of the 1660s.

The most recent nine coins come from the Russian tsardom including four kopeks struck from silver wire in the name of Peter I from 1696–1717. Four copper coins are even more recent and reach the beginning of the 19th century.

The selection of the modern coins from the plot at Jahu 6 is rather predictable and reflects the local variety of everyday small change. Even Riga schillings were rather common in northern Estonia at the beginning of the 17th century (Kiudsoo 2000, 16). It was somewhat surprising that a Polish–Lithuanian copper schilling circulated in Tallinn because their circulation area is actually more southern (Kiudsoo 2000, 23 f., maps 2–3).

### **Conclusions**

The majority of coins in the find assemblage of 249 coins from a medieval landfill on the plot at Jahu 6 in Tallinn are from Livonia, first and foremost from Tallinn and less from Tartu and Riga while foreign coins constitute only 2.4 per cent. Pfennigs prevail among the denominations. The composition of the coin assemblage confirms with regard to its origin and nominal distribution the previous knowledge of coin circulation in Livonia in the 15th century based on the comparative analysis of coin hoards and written sources. The temporal distribution



of the coins from the top and deeper layers is rather even, which suggests that most of the garbage was brought to the site over a relatively short period in the 1470s–1480s. Garbage disposal is likely to have stopped at some point before 1490.

In particular, the meaning of the hexagonal star in the Tallinn coin inscriptions starting from the early 1480s has been discussed. It is possible that the mint master who had come from Riga had introduced the star in Tallinn. Alternatively, it may have originated from coins struck by the Teutonic Order in Königsberg.

The garbage layer also yielded three counterfeit coins from an alloy of tin and lead, which imitate small change used in Tallinn in the 15th century. The surprising finds included two tokens from an alloy of tin and lead – one of them granted the right to grind grain and the other probably malt in the mills owned by the City of Tallinn.

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### References

- Akten und Rezesse 3** = Akten und Rezesse der livländischen Ständetage 3 (1494–1535), bearb. von L. Arbusow. Riga, 1910.
- Day, J.** 1978. The Great Bullion Famine of the fifteenth century. – *Past & Present*, 79, 3–54.
- Ducmane, K. & Ozoliņa, A.** 2009. Latvija Eiropā: monētu depozīti 1.–20. gadsimtā. (Latvijas Nacionālā Vēstures Muzeja raksti, 16.) Rīga.
- Ehrnsten, F.** 2019. Pengar för gemene man? Det medeltida myntbruket i Finland. (Archaeologia Medii Aevi Finlandiae, XXVI.) Helsingfors.
- Haljak, G.** 2010. Livonian Coins XIII–XVIII Century. Part I. Tallinn.
- Hauberg, P.** 1891. Gullands Myntvæsen. Kjøbenhavn.
- Kiudsoo, M.** 2000. Eesti mündiaarded 17. sajandist: vääringud ja nende käibearealid. Peaseminaritöö. Tartu Ülikool. Tartu. (Manuscript in the archive of the archaeology department at the University of Tartu.)
- Kiudsoo, M.** 2008. Kesk- ja uusaegsetest ripatsmüntidest Eesti arheoloogilises materjalis. – *Loodus, inimene ja tehnoloogia*, 2. Interdistsiplinaarseid uurimusi arheoloogias. Toim L. Jaanits, V. Lang & J. Peets. (MT, 17.) Tallinn, Tartu, 109–132.
- Kiudsoo, M.** 2012. Estonian medieval and post-medieval hoards: nature and differences. – *Monetary History of the Baltics in the Middle Ages*. (Varia historica, 6.) Eesti Ajaloomuuseum, Tallinn, 54–65.
- Kiudsoo, M.** 2020. En preliminär översikt över hopade myntfynd i kyrkor i Estland. – *Myntstudier 1: Mynttidskriften på Internet*, 1–17.
- Kiudsoo, M. & Russow, E.** 2010. Hoards discovered in 2010. – *AVE*, 2009, 225–232.
- Clackenberg, H.** 1992. Moneta nostra. Monetarisering i medeltidens Sverige. (Lund Studies in Medieval Archaeology, 10.) Almqvist & Wiksell International, Stockholm.
- Leimus, I.** 1999. Tallinna mündiraamatud 1416–1526. *Revaler Münzbücher 1416–1526*. (Tallinna Linnaarhiivi toimetised, 3.) Tallinn.
- Leimus, I.** 2012a. Das Darlehen des Ordensmeisters an der Stadt Tallinn (Reval) als Treibkraft des dortigen Münzwesens am Ende des 14. und zu Beginn des 15. Jahrhunderts. – *Monetary History of*

the Baltics in the Middle Ages. Comp. and ed. I. Leimus. (Varia historica, 6.) Eesti Ajaloomuuseum, Tallinn, 80–91.

**Leimus, I.** 2012b. Money or no money: what does society need? Tokens in medieval and pre-modern Tallinn. – Nummi docent! Münzen – Schätze – Funde. Festschrift für Peter Ilisch zum 65. Geburtstag am 28. April 2012. Hrsg. G. Dethlefs, A. Pol & S. Wittenbrink. Osnabrück, 267–276.

**Leimus, I.** 2019. Russische Geldeinheiten in den Händen der livländischen Kaufleute. – “Hansisch” oder “nicht-hansisch”, das Beispiel der kleinen Städte und Livlands in der Hanse. – Hansische Studien, 27, 111–117.

**Leimus, I., Kiudsoo, M. & Haljak, G.** 2018. Sestertsist sendini. 2000 aastat raha Eestis. AS Äripäev, Tallinn.

**Leimus, I.** 2017. = **Леймус И.** О датировке рижских шиллингов времени «свободного престола» (Sede vacante). – Девятнадцатая всероссийская нумизматическая конференция, Великий Новгород, 18–22 апреля 2017. Тезисы докладов и сообщений. Москва, 107–109.

**LEKUB I.13** = Liv-, Est- und Kurländisches Urkundenbuch. Erste Abteilung, 13. Böhlau, Köln, Weimar, Wien, 2018.

**LEKUB I.14** = Liv-, Est- und Kurländisches Urkundenbuch. Erste Abteilung, 14. Böhlau, Köln, 2020.

**LEKUB II.1** = Liv-, Est- und Kurländisches Urkundenbuch. Zweite Abteilung, 1. Riga, Moskau, 1900.

**Molvyygin, A.** 1967. = **Молвыгин А.** Денежное обращение и монетное дело на территории Эстонии в XIII – первой половине XVI вв. Диссертация на соискание ученой степени кандидата исторических наук. Таллин. (Manuscript in AM.)

**Paszkievicz, B.** 2013. Moneta w dawnym Gdańsku. Badania archeologiczne w latach 1997–2009. (Archeologia Gdańska, 6.) Gdańsk.

**Ross, H.** 1994. Lokal-, Privat- und Notgelder in Estland. Eesti kodurahad. Väike-Viru Kirjastus.

**Russow, E., Randoja, K., Bernotas, R., Tvauri, A., Rammo, R., Reppo, M., Ratas, J., Kreem, J. & Lõugas, L.** 2019. A late medieval treasure trove of Tallinn. Salvage excavations of the 15th-century landfill between the Jahu and Väike-Patarei streets. – AVE, 2018, 185–218.

**Spufford, P.** 1988. Money and Its Use in Medieval Europe. Cambridge University Press, Cambridge, London, New York, New Rochelle, Melbourne, Sydney.

**Tammet, M.** 2020. Detektorileiud: Anija vald, Lilli küla, Kaerapõllu KÜ. Eksperdi hinnang. Tallinn. (Manuscript in the archive of the National Heritage Board of Estonia.)

**Tvauri, A.** 2000. Pihkva pottsepad Viljandis ja Tartus 13. sajandil. – EAA, 4: 1, 21–30.

**Tvauri, A.** 2004. Liivi sõja aegne Vene keraamika Eesti linnustes ja linnades. – Linnusest ja linnast. Uurimusi Vilma Trummali auks. Toim A. Haak, E. Russow & A. Tvauri. (MT, 14.) Tartu, Tallinn, 395–419.

**Valk, H., Kiudsoo, M. & Malve, M.** 2018. The village cemetery and chapel site of Loosi: a spot on a Late Iron Age and medieval road from south-eastern Estonia to Izborsk and Pskov. – Saints, Bishops, Towns and Castles. Time Travels into Middle and Early Modern Ages. Studies in Honour of Jaan Tamm. Eds E. Russow & V. Lang. (MT, 27.) Tallinn, Tartu, 145–183.

**Voionmaa, J.** 1945. Der livländische Münzfund von Uusiportti. (SMYA, 46: 2.) Helsinki.

**Vossberg, F. A.** 1843. Geschichte der preußischen Münzen und Siegel von frühester Zeit bis zum Ende der Herrschaft des Deutschen Ordens. Berlin.

**Waschinski, E.** 1952. Die Münz- und Währungspolitik des Deutschen Ordens in Preussen. Ihre historische Probleme und seltenen Gepräge. Der Göttinger Arbeitskreis.

**Ivar Leimus ja Andres Tvauri****TALLINNA KALAMAJA EESLINNAST 15. SAJANDI PRÜGILAST  
LEITUD MÜNDID JA MAKSUMÄRGID***Resüme*

Tallinnast kesk- ja varauusaegse Kalamaja eeslinna alalt Jahu 6 krundilt koguti 2018.–2019. aastal vähemalt 35 000 leidu, mis on nende ladestuskohta toodud koos jäätmete ning prügiga linnamüüri piiratud linnast.

Saadi ka 249 münti 14.–15. sajandist, need koguti valdavalt metallidetektori abiga (tabel 1). Sedavõrd suuri keskaegseid prügiladestuskohti pole kuskil varem uuritud. Kalamaja prügila müntide tähtsust uurimisainesena rõhutab asjaolu, et Liivimaalt on 15. sajandi keskpaigast ja teisest poolest teada vähe mündileide. Seega on Jahu 6 ajalisel kompaktnel ja suhteliselt arvukas mündikogum täiesti unikaalne ajalooallikas. Tõenäoliselt on tegemist peamiselt igapäevaste toimingute käigus maha pudenenud ja koos prügiga tänavatelt, turgudelt, poodidest ning käsitöölise töökodadest kokku pühitud müntidega.

Vaadeldavas leiukogumis on ülekaalus Liivimaa mündid. Nendest omakorda kõige arvukama grupi moodustavad Tallinna rahad (149 eksemplari). Nende kõrval leidub ka Tartu piiskopkonna (77 eksemplari) ja Riia peapiiskopkonna (15 eksemplari) münte (jn 2). Lõviosa Liivimaa müntidest on löödud pärast 1420. aastate rahareformi, millest varasemaid münte oli vaid kümme. Võõraid rahasid oli vaid 2,4%. Ainulaadne täiendus Eesti senistele mündileidudele on kolm Novgorodi vabariigi hõbedengat (jn 5). Vene tolleaegseid münte on Eestis arheoloogilises kontekstis varem leitud vaid kaks. Rootsi münte leiti vaid üks brakteaat: kuningas Albrekt av Meklenburgi valitsemisajal (1364–1389) Västeråsist löödud penn (jn 6). Kas Rootsi müntide sekka arvata ka 15. sajandi algul Ojamaal Visbys vermitud öörtugit (jn 7), on maitseküsimus. Kalamaja prügimäe keskaegsetest müntidest kaugema päritoluga, omal ajal hinnalisim ja ühtlasi noorim münt on Madalmaades Liège'i piiskopi Jean de Horne'i nimel umbes 1485–1505 löödud postulaatkulden (jn 8).

Jahu tänava leidude hulgas on ülekaalus pennid (202 eksemplari) (jn 3 ja 4). Nendele võib lisada kolm vanemat lübischet. Killingeid leiti 20, nendele eelnenud artigeid viis. Väikseimat, 15. sajandi mündisorti šerfe oli ladestuses 13.

Vaadeldud mündikogumi koosseis kinnitab niihästi oma päritolu kui ka nomaalse jaotuse järgi senist, mündiaarete ja kirjalike allikate võrdleval analüüsil põhinevat teadmist Liivimaa 15. sajandi mündikäibe kohta. Et nii kihi pealmistest kui ka sügavamatest osadest avastatud müntide ajaline jaotus on suhteliselt ühtlane, näib, et suurem osa prügist toodi kohale üpris lühikese aja jooksul, 1470.–1480. aastail. Prügi ladestamine näib olevat lakanud enne 1490. aastat.

Numismaatilises analüüsis pälviv tähelepanu Tallinna müntide pealiskirjades alates 1480. aastaist esinev kuue- või viieharuline täht, mis võib tähendada, et müntmeister saabus Tallinna kas Riiast või koguni Königsbergist.

Pärismüntide kõrval leiti prügikihist kolm valeraha (1,2% keskaegsete müntide koguhulgast). Neist vanim (jn 9: 1) jäljendab umbkaudu aastail 1417–1420 löödud Tallinna artigit. Võltsing on valmistatud sulamist, milles on umbes pool tina ja pool pliidi. See on kas valatud õigest rahast võetud vormis või koguni vermitud õigete templitega. Kaks valeraha (jn 9: 2, 3) matkivad 15. sajandi Tallinna penni. Üks neist koosneb põhiliselt tinast, mille hulgas on vähesel hulgal pliidi ja vaske. Leitud võltsingud jäljendavad Tallinna münte ja on järelikult valmistatud kohapeal.

Põnevad prügikihist saadud leiud on ka kaks tina- ja pliisulamist maksumärki. Neist paremini tuvastatav märk (jn 10: 1) on mündikujuline valatud veskiraha seitsme laevanaela vilja jahvatamiseks Tallinna linnale kuuluvates veskites. Veelgi huvitavam on teine Jahu tänavalt avastatud maksumärk (jn 10: 2), mille ühel küljel kujutatakse arvatavasti ristatud õlleteoriistu (linnasekasvatuse labidat ja meski-segamise mõla), teisel gooti V-d. Kui tööriistade tõlgendus osutub õigeks, on tegemist varaseima kohaliku pruulimärgiga, mille kohta oli seni andmeid vaid 16. sajandist. Kuid ei saa välistada, et kujutatud on hoopis ristatud labidat ja kirkat, mis olid iseloomulikud tööriistad kindlustustööde arvestuseks välja antud nn vallimärkidel.

Prügi ladestamise järgsest ajast pärinevaid rahasid saadi 27 eksemplari. Talletatute hulgas on viis Liivimaa killingit 16. sajandi esimesest poolest. 16. sajandi teise poole müntide hulgas on kaks Riia vabalinna killingit ja neli Rootsi kuningas Johan III nimel vermitud münti: kaks Tallinna killingit ja kaks Stockholmi ööri. 17. sajandist pärinevad viis Rootsi münti. Samast sajandist on ka kaks Poola-Leedu münti: kuningas Zygmunt III nimel Riias löödud killing ja Jan II Kazimierz Waza vaskkilling.

Jahu 6 krundilt leitud uusaegsete rahade valik on ootuspärane, peegeldades siinset igapäevast peenraha. Natuke ootamatu on vaid Poola-Leedu vaskkillingi esinemine Tallinna raharingluses, sest nende käibeareaal jäi palju kaugemale lõuna poole.