



Archaeological research in Roosikrantsi street in the southern suburb of Tallinn in 2020–2021

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INTRODUCTION

Archaeological research took place in 2020–2021 in relation to the renovation of the water, canalization and drainage pipes of the whole Roosikrantsi street (Fig. 1: 1). The fieldwork began with a watching brief in the northern part of Roosikrantsi street to identify the existence of possible sites, cultural layers and/or human remains. It appeared right at the beginning of the fieldwork that the cultural layers were preserved around and between old pipes so archaeological manual excavation needed to be conducted.

HISTORICAL BACKGROUND AND EARLIER RESEARCH OF THE STUDY AREA

Roosikrantsi street lies in the historical Harju Gate suburb south of the medieval town core. The street was an important lane that connected the Harju Gate with Pärnu Road. In medieval times, the St Barbara's Chapel and its cemetery were located in the northwestern part of the street from the mid-14th century at the latest. It is also known from the written sources that the garden plots of citizens of Tallinn were located right around the chapel and the cemetery. The time of demolishing the chapel is unknown, but it is associated with large-scale earthworks in the 1530s as well as the Russian-Livonian war (1558–1583) at the beginning of the 1570s. However, burying in the cemetery continued until the beginning of the 18th century (Heinloo 2020, 9–10). Maps from 1686 by Eric Dahlberg and from 1699 by Sigismund von Staden show St Barbara's cemetery and different plots along Roosikrantsi street (Fig. 2). In the southern part of Roosikrantsi street near Pärnu Road, there was a field that belonged to Tallinn Town Councillor Georg Müller in the second half of the 17th century. The first maps depicting the dwellings originate from the 18th century when the western side of the street was more densely covered with buildings (Raid 2011, map 12).

Many archaeological investigations and minor watching briefs have taken place in Roosikrantsi street and its surroundings. In 1988–1990, 1992 and 1995 archaeological excavations were carried out on an area of about 1000 m² at St Barbara's cemetery west of



Fig. 1. Investigated area and previous fieldwork. 1 – Roosikrantsi St. (2020–2021), 2 – St Barbara cemetery (1988–1990, 1992, 1995), 3 – Roosikrantsi St. 2a (1999–2000), 4 – Kaarli Ave. (2008), 5 – Roosikrantsi St. 9/11 (1996), 6 – Pärnu Rd 22, 22a and 24 (2016), 7 – Vabaduse Square (2008–2009), 8 – Pärnu Rd 31, 33, 35 and P. Süda St. 4 (2016), 9 – Pärnu Rd 37, 41 (2019), 10 – Tatari St. 1 (2020).

Jn 1. Uuringuala asukoht ja varasemad uuringud. 1 – Roosikrantsi tn (2020–2021), 2 – Püha Barbara kalmistu (1988–1990, 1992, 1995), 3 – Roosikrantsi tn 2a (1999–2000), 4 – Kaarli pst (2008), 5 – Roosikrantsi tn 9/11 (1996), 6 – Pärnu mnt 22, 22a ja 24 (2016), 7 – Vabaduse väljak (2008–2009), 8 – Pärnu mnt 31, 33, 35 ja P. Süda tn 4 (2016), 9 – Pärnu mnt 37, 41 (2019), 10 – Tatari tn 1 (2020).

Map / Kaart: Estonian Land Board / Maa-amet

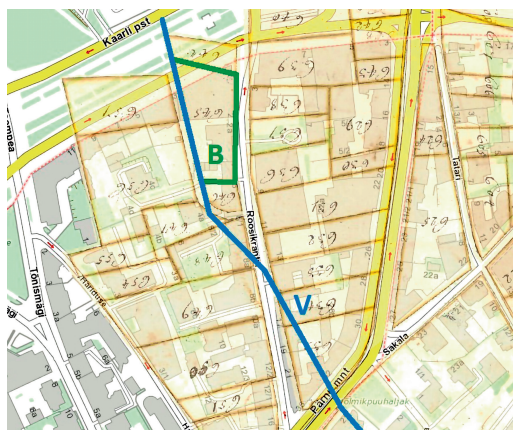


Fig. 2. Roosikrantsi street and surrounding plots on 1699 Sigismund von Staden's map. B – St Barbara's churchyard, V – medieval and early modern water conduit.

Jn 2. Roosikrantsi tänav 1699. a Sigismund von Stadeni kaardil. B – Püha Barbara kalmistu, V – keskaegne ja varauusaegne veejuhe.

Base map / Aluskaart: Tallinn map archive / Tallinna kaardiarhiiv; drawing / joonis: Ragnar Nurk

Roosikrantsi street by OÜ Tael (Fig. 1: 2). During the excavation, 2453 single burials from the 14th–18th century and 1076 skeletons from five mass graves were discovered (Sokolovski 1996b, 20–25, 42, 115, fig. 1). Furthermore, in 1999–2000 on the plot of Roosikrantsi 2a (Fig. 1: 3) burials of 1004 individuals were found (Kalman 2000). Another mass burial with about 310 individuals was found under Kaarli Avenue in 2008 (Fig. 1: 4; Sokolovski 2009, 4). In addition to the burials, a cultural layer predating the cemetery was discovered already during the very first investigations (Sokolovski 1996a, 3). The latest finds from the settlement site date from the end of the 13th century (*ibid.*, 23, 40).

In 1996 archaeological research was conducted at Roosikrantsi St. 9 and 11 plots by OÜ Tael (Fig. 1: 5; Sokolovski 1997). The earliest find of human activity was an unpaved road with wheel rails in natural soil. On both

sides of the road fields separated by rod fences were discovered. ^{14}C analysis of the wood found from wheel rails gave the date of 1212–1277 calAD¹, which could be the time when

¹ Tln-2153, 820±44BP.

the road fell out of use (Sokolovski 1997, 150–151). During the research, a cultural layer of a medieval settlement site and remnants of buildings, stoves, rod fences, a well and a wooden barrel were discovered. The settlement site was probably destroyed in a fire in the middle of the 14th century. In addition to the settlement site, human remains of three individuals were found outside of St Barbara's cemetery (*ibid.*, 152–154). Rescue excavation at the adjacent property Roosikrantsi 13 in 2002 by OÜ Tael, from which only tentative documentation is available, showed similar results (pers. comm. Erki Russow, TLÜ AT).

East of Roosikrantsi street, at Pärnu Rd 22, 22a and 24 (Fig. 1: 6) archaeological excavations were conducted in 2016 by OÜ Agu EMS. Here, the earliest layer of permanent human activity dates from the beginning of the 13th century. During the research, over 1000 sherds of Slavonic and/or Baltic ware were found from the pits in the natural soil. Probably at the beginning of the 13th century the area was divided into plots, marked by different ditches. Since the second half of the 13th century and during medieval times the area was used as a field (Russow *et al.* 2017, 179–180).

In 2008–2009 large-scale archaeological excavations directed by OÜ Agu EMS took place at Vabaduse Square (Fig. 1: 7) where a Neolithic settlement site was discovered on an area of 2200 m². The settlement site was dated 3300–2900 BC according to the shore displacement chronology and ¹⁴C analysis (Kadakas *et al.* 2010a, 29). During the excavation, 2010 Stone Age artefacts were discovered, most of which were Late Combed Ware fragments. Animal bones and stone tools (mostly of quartz), but also bone tools were found. No signs of buildings or fire pits were discovered in the excavation area, although there were some pits dug into the surface of the upper sand layer, which could be interpreted as household pits (*ibid.*, 46–47).

During the archaeological research at Vabaduse Square on an area of 3500 m², also a sub-urban cultural layer was found. The cultural layer contained finds from the 13th to the 17th centuries and was 20 cm thick. On the western side of the excavation area, a medieval pavement made of gravel was discovered. The pavement was about 10 m wide and began from the Harju Gate and headed towards Pärnu Road along Roosikrantsi street. The pavement was constructed probably in the 14th century and was used until the Great Northern War when the moat around the walled town was built. From the eastern side of the road, a line of postholes was found, which originated probably from the plots that lay alongside the road (Kadakas *et al.* 2010b, 70). In addition, remains of at least six wooden and stone cellars that were in use until the 17th century were unearthed. As the cellars were situated alongside the road it is possible that these buildings were used as inns, workshops, or shops (*ibid.*, 71).

In 2016 on the plots of Pärnu Rd 31, 33, 35, and P. Süda 4, OÜ Arheox conducted archaeological investigation on an area of about 3000 m² (Fig. 1: 8). During the research, a 20–30 cm thick cultural layer consisting of darkened sand was discovered on top of natural soil. Several man-made pits were found in the natural soil. The earliest finds from the pits date from the Neolithic Corded Ware Complex (2900–2300 BC), and the Early Iron Age (1st millennium BC). In addition, a medieval and early modern water conduit was unearthed (Bernotas *et al.* 2017). According to the historical plans it ran through Roosikrantsi street towards the walled town.

In 2019 archaeological excavations on the plots of Pärnu Rd 37 and 41 (Fig. 1: 9) were conducted by OÜ Arheox. The earliest finds date back as far as the 4th millennium BC (Bernotas *et al.* in prep.). During the research, two fire pits and a burial from the 1st millennium BC and a pit of a house from the Neolithic Corded Ware Complex (2600–2400 BC) were found (*ibid.*).

Moreover, ca. 200 m northeast of Roosikrantsi street at Tatari St. 1 property (Fig. 1: 10), a dark brown layer of sand up to 40 cm thick was observed during the archaeological

excavations directed by MTÜ AEG in 2020. About a hundred pottery fragments were found in the layer, which can be dated to the Late Bronze Age or Pre-Roman Iron Age (second half of the 1st millennium BC) (Heinloo 2021, 216). The oldest object found on the property of Tatari street was a stone adze which can be dated to the Stone Age. Although the object was found in mixed soil, it cannot be ruled out that the Stone Age settlement has reached Tatari street as well (*ibid.*, 218–219).

In conclusion, based on historical data and earlier research it was expected that cultural layers from different periods as well as possible finds associated with St Barbara's cemetery and Medieval and Early Modern period water conduit would be found during the excavations at Roosikrantsi street. As archaeological data shows, the road and plot structures of Roosikrantsi street have been significantly different at the beginning of medieval times as opposed to what is depicted in later maps. They are probably marked by the direction of the medieval town water conduit to a certain extent (Heinloo 2020, 197).



Fig. 3. Aerial view of the archaeological excavations in the northern part of Roosikrantsi street.

Jn 3. Aerofoto arheoloogilistest kaevamistest Roosikrantsi tänava põhjaosas.

Photo / Foto: Rivo Bernotas

EXCAVATION METHODS

As the cultural layers were preserved between old pipes only partially, the almost 300 m long research pit was divided into north-south-directed excavation areas (0–32) for the simplification of documentation. The areas were opened in the order of installation of the utility lines. 19th–20th-century cultural layers were removed with the backhoe during a watching brief. In one go up to a 50 m long section of the street was opened (Fig. 3). In addition to the main water pipe, excavating branches of the trench was also archeologically supervised.

In summer 2020 the northern part of Roosikrantsi street was excavated (areas 0–12), followed by the rest of Roosikrantsi street (areas 13–32) in 2021. In 2021 most of the work was done during wintertime and early spring, therefore archaeological excavations were carried out under heated tents. In the northern part of Roosikrantsi street, in front of Roosikrantsi 1, 2, and 2a the depth of the pipes reached natural soil, hence making it possible to excavate all the cultural layers. In the rest of the research area archaeological survey was conducted to the necessary depth for the utility lines. In the areas where utility lines did not reach natural soil, 17 small test pits were manually dug with shovels to find out the stratigraphy of the deeper cultural layers.

The cultural layers were excavated using shovels and trowels according to the deposited soil layers. Discovered constructions (pavements, sets of stones, a well, a limestone water channel, etc.), pits, and postholes were excavated and cleaned using trowels and brushes. Bearing in mind the possibility of finding a Stone Age cultural layer, the top 10 cm of natural sand was also excavated. The prehistoric deposits and the upper part of the natural sand were sieved. The finds and animal bones were collected by layer and context. The excavated soil was checked with a metal detector.

PREHISTORIC PERIOD

The earliest cultural layer discovered in the research area was 20–25 cm thick brownish darkened sand on top of natural subsoil. The oldest finds from the layer were sherds of hand-made pottery, which can be dated to the 3rd and 1st millennium BC. Taking into account the intensity of the layer in the northern part of Roosikrantsi street it is likely that it was the human activity layer of the Neolithic Corded Ware Complex and an Early Iron Age settlement site where no distinctive separation between the deposits could be observed. As the prehistoric cultural layer was present in the northern, middle and southern parts of the street and not all over the research area, it could be concluded that prehistoric settlement must have occurred in spots, not everywhere on the investigated territory. The latest finds from the upper part of the prehistoric cultural layer consisted of pottery from the 12th–13th century.

In addition to these spots of occupation layer, several man-made pits were found in natural subsoil. Most of the pits were empty of finds – only four pits out of 18 contained pottery fragments, three of these pits date from the prehistoric period. Two sherds of hand-made pottery were found from pits 2 and 3 (Fig. 4). The ^{14}C analysis of pit 3 dates to 2470–2284 cal BC² which shows that this pit is from the Neolithic Corded Ware Complex. In addition, pit 12 contained sherds of hand-made pottery from which at least one could be associated with the Corded Ware Complex as well. These pits could be interpreted as household pits that were dug inside the dwellings or around them. Pits 4 and 6 (Fig. 5) were straight-lined and formed a right angle which could mark the position of log buildings. Unfortunately, it was possible to see only a small part of the probable dwellings in the trench. As the trench did not contain any finds, it remained unclear whether these dwellings date from the Neolithic or Early Iron Age.

Some pits that were of round shape could be interpreted as postholes. Only two of them (5 and 13) contained finds – sherds of hand-made pottery probably from the Early Iron Age.

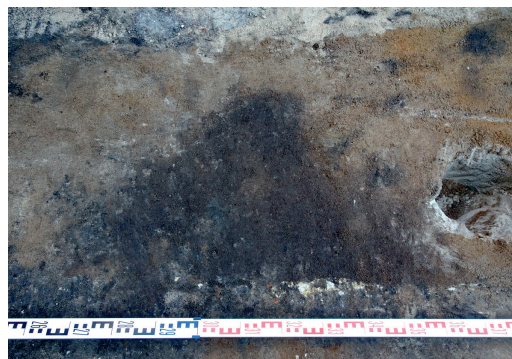


Fig. 4. Neolithic period Pit 3 before excavation.

Jn 4. Neoliitikumi dateeritud Lohk 3 enne kaevamist.

Photo / Foto: Keiti Randoja



Fig. 5. Pits 4 and 6, remains of Neolithic or Early Iron Age dwelling.

Jn 5. Lohud 4 ja 6, neoliitikumi või varase rauaaja hoonestuse jäljed.

Photo / Foto: Keiti Randoja

² Poz-143878, 3895±35 BP, calibration OxCal v4.4.2 Bronk Ramsey (2020); r:5 with 95.4% probability.

EARLY URBAN PHASE (13TH–14TH CENTURY)

The next documented cultural layer was dark brown slightly soggy and manure-rich soil dated to the 12th–14th century. Its thickness varied from 35 cm in the northern part of the research area to 1 metre in the southern part of the street. The layer could be mainly associated with a local medieval settlement outside the town core, and was deposited during the 13th century when the town wall and the road directing from the Harju Gate towards Pärnu Road were not yet constructed and this area was used as an early urban settlement site. The content of organic material and manure indicates that the area might have been used as dwelling sites/regular plots of inhabitation instead of a road.

From this period different constructions were discovered in the northern part of the research area. Three fire pits dug into the natural subsoil could be associated with local households. Collected potsherds and ^{14}C analysis date the fire pits 1 and 2 to the 13th century.³ Fire pit 3 contained pottery from the 12th century – the first half of the 13th century. A probable household pit in the natural subsoil containing two sherds of pottery from the first quarter of the 13th century was also found. In addition, sets of limestone were discovered in the dark brown soggy medieval cultural layer. Sherds of 13th–14th century pottery were found from stone sets 1 and 2. Some of the limestone sets were laid only in the medieval cultural layer (stone sets 5–7) which could be interpreted as part of the local courtyard pavement, but some were dug slightly into the natural sand which indicates that they could have been part of a medieval household or constructions associated with the auxiliary buildings.

ROAD PAVEMENTS AND OTHER CONSTRUCTIONS

On top of the 12th–13th/early 14th-century cultural layer, Late Medieval and Early Modern period road pavements were discovered (Fig. 6). The pavements were constructed of limestone and in between the pavements different levelling and filling layers made from soil and sand existed. Between Roosikrantsi St. 2a and 11 plots, an up to 39 cm thick and probably the earliest layer of pavement was discovered. It consisted of thinly laid limestone and flat

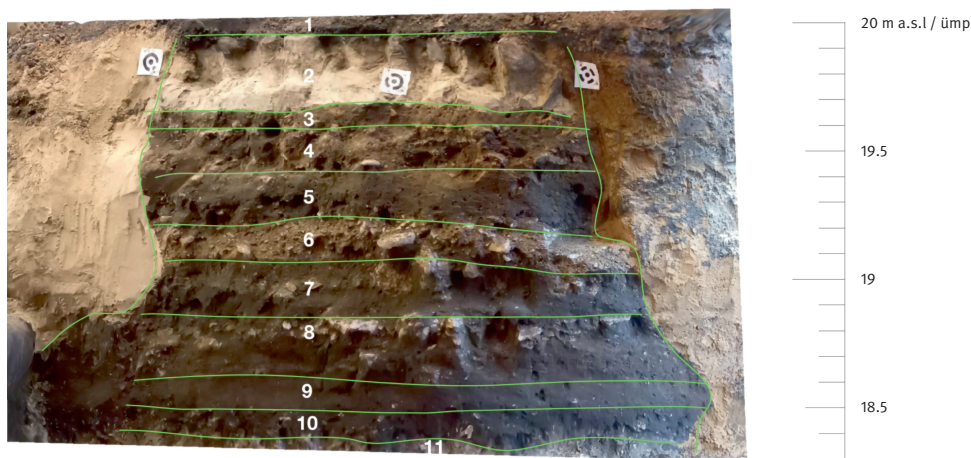


Fig. 6. Different levels of pavements (layers 2, 4, 6, 8) at Roosikrantsi street.

Jn 6. Erinevad sillutisetasandid (kihid 2, 4, 6, 8) Roosikrantsi tänaval.

Photo / Foto: Angelina Jerjomina, Keiti Randoja

³ Poz-143616 and Poz-143617, both 770±30 BP.

cobblestones (Figs 6: 8; 7). As the research area was limited, it remained unclear whether it was the earlier level of the road that led from the Harju Gate to Pärnu Road or whether it was a local courtyard pavement. The material found from the pavement dates from the 13th–15th century. The foundation of this pavement layer is likely from the 14th century. This, probably the earliest pavement was covered with dark brown soggy soil, which appeared in front of Roosikrantsi St. 2a and south from there across almost the entire research area. Most of the material collected from this layer dates from the 14th–15th century. It is possible that it was the local human activity layer of the area, but it might have been brought as a fill layer before the construction of the road leading from the walled town to Pärnu Road.

The next layer was an up to 53 cm thick road pavement consisting of limestone and pieces of red bricks (Fig. 6: 6). The earliest finds from the pavement were sherds of wheel-thrown pottery from the 13th century. Most of the finds consisted of 14th–15th-century stoneware and 15th–18th-century redware. This is likely the same pavement layer that was found during the archaeological excavations at Vabaduse Square in 2009 (see Kadakas *et al.* 2010b, 57–58). The pavement was constructed when Tallinn's city wall and the road from the Harju Gate towards Pärnu Road were already built, probably relatively soon after the street layer mentioned above, likely in the late 14th century. The road was in use until the Great Northern War in the early 18th century.

On top of the pavement, a beige filling sand layer or dark brown soggy sandy soil was documented. The layer contained finds until the 18th–19th century. It was brought to Roosikrantsi street probably in the 18th century after the initial pavement was left out of use. The next pavement layer consisted of pebble-like limestone and granite stones with a thickness up to 57 cm. This level of the road was constructed after the Great Northern War (i.e., post-1721) and it contained finds from the Medieval times up to the Modern period (19th–20th century). 18th–19th-century pavement layers had been repaired numerous times.

The youngest layers documented in the research area were 19th–20th century cobblestone pavement and gravel and sand filling of different utility lines in Roosikrantsi street.

In front of Roosikrantsi St. 2a plot a round well laid of limestone with mortar with the inner diameter of 83 cm was discovered (Fig. 8). As the research area was limited and the cultural layer next to the well disturbed



Fig. 7. Fragment of the medieval road pavement.

Jn 7. Keskaegse teesillutise katke.

Photo / Foto: Keiti Randoja



Fig. 8. Possible late medieval limestone well.

Jn 8. Arvatav hiliskeskaegne paekivideest kaev.

Photo / Foto: Keiti Randoja



Fig. 9. Modern period limestone channel.

Jn 9. Uusaegne paekivikanal.

Photo / Foto: Keiti Randoja

with an earlier utility line, the construction time of the well remained somewhat unclear. The well was probably built in the 14th–15th century or later.

In addition, a water channel laid of limestone plates was unearthed (Fig. 9). Its length in the trench was 5.47 m and its width was up to 0.99 m. As the cut of the channel was quite close to the surface and the material found from it contained finds from the Modern period, it could be assumed that the channel was built sometime in the 18th–19th century and was probably used for directing sewage away from the surrounding plots.

ARTEFACTUAL EVIDENCE

During the excavation, 4607 finds⁴ were collected, most of them were fragments of pottery. Metal (iron, copper alloy, tin or lead), bone, stone and glass items or their details were also found. Finds of organic material were made only of leather production residue and a few pieces of wooden items.



Fig. 10. A selection of prehistoric finds. 1 – sherd of a Neolithic Corded Ware pot, 2 – sherds of the Pre-Roman Iron Age Ilmandu-type pottery, 3 – early 13th-century coarseware.

Jn 10. Valik muinasaegeid leide. 1 – nöörikeramilise savinõu katke, 2 – Ilmandu tüüpi savinõude katked, 3 – 13. saj alguse lihtkedrakeraamika.

(AI 8288: 440, 10, 35, 213, 205, 14, 15, 17–19.)

Photo / Foto: Jaana Ratas

Prehistoric period

The oldest find is a rim of a hand-made ceramic vessel decorated with slashes (Fig. 10: 1) which could belong to a Late Neolithic Corded Ware beaker. Ten sherds of hand-made pottery are from the Prehistoric period. Three of them (Fig. 10: 2) are decorated with characteristic hollows which indicate that these probably belong to Ilmandu-type ceramic vessels from the Late Bronze Age or the Pre-Roman Iron Age. Six of these sherds were found in excavation area 0 from a posthole and around it. The rest of the Ilmandu-type ceramics were found in the pits in the natural sand or from the lower part of the prehistoric cultural layer. Similar sherds of Corded Ware ceramics and Ilmandu-type ceramics have been found near Roosikrantsi street at Pärnu Rd 31 and 35 plots (see Bernotas *et al.* 2017, 158, figs 6–7) and at Pärnu Rd 41.

A bit over one hundred sherds are from wheel-thrown earthenware of which several are decorated with straight or wavy lines made with a stick (Fig. 10: 3). These types of pots were used in the Baltic region in the Late Iron Age (Tvauri 2005, 53–60). Most of the potsherds from the Late Iron Age were found in the

⁴ AI 8288: 1–4607.

prehistoric cultural layer, 33 of them were found in fire pit 3 in excavation area 9. Wheel-thrown pottery with line and wave decoration was probably produced until the end of the first quarter of the 13th century. Therefore, it is not possible to say whether the ceramics from the transition period from antiquity to the Middle Ages is from before the Danish conquest of Tallinn in 1219 or after that. Similar pottery has been found in larger quantities from the nearby Pärnu Rd 22, 22a and 24 site (see Russow *et al.* 2017, fig. 3).

Medieval cultural layer

In the deeper part of the medieval cultural layer mostly 13th–14th century pottery was found. One particularly interesting find is an animal-shaped leg (Fig. 11: 1) of a local coarseware tripod which is joined to the vessel by a clay tenon. Furthermore, from the lower part of the medieval cultural layer stoneware and decorated redware with an outer glaze were collected. These include a larger body sherd of a beaker imitating contemporary Waldenburg stoneware with a bearded face (Fig. 11: 2). Up to date this is only the fourth vessel of such kind, the previous items come from Bergen, Helsingör and Tallinn (see Russow 2004). Medieval Mediterranean pottery is represented with three sherds of early 15th-century Valencian lustreware (Fig. 11: 3) and with a fragment of 15th or 16th century Portuguese redware, previously known as Merida-type ware (Russow 2006, 126). Not very common in Tallinn are also the three fragments of air humidifying brickware bowls (Russow & Gaimster 2017, fig. 6) that were used in medieval hypocaust ovens.

Moreover, a limestone mould for casting rumbler bells or loop buttons (Fig. 11: 4), a bone button or bead making waste (Fig. 11: 5) and a processed horn core of cattle were found from the medieval cultural layer. 13th–14th century bone production residue has also been found previously in the vicinity (see Luik & Maldre 2003, 29–30).



Fig. 11. Medieval finds. 1 – Animal-shaped leg of a 13th-century local tripod, 2 – body sherd of a late 15th-century redware, 3 – fragment of a Valencian lustreware, 4 – mould, 5 – production waste of bone buttons or beads.

Jn 11. Keskaegseid leide. 1 – kohaliku 13. saj graapeni jalg, 2 – 15. saj lõpu glasuurkeraamilise peekri katke, 3 – Valencia majoolika katke, 4 – valuvorm, 5 – luu-nööpide või helmeste valmistusjääk.

(AI 8288: 242–244, 2504, 1111, 2430, 331.)

Photo / Foto: Jaana Ratas

Early Modern and Modern period fill layers

The fill layers of Roosikrantsi street included finds from the Medieval period as well as the Early Modern period. The most numerous were finds from the 17th century. The material found is probably waste brought from the walled town, but includes also substance originating from the medieval deposits of the neighbouring plots. Among the collected medieval and Early Modern domestic pottery, the most numerous are the sherds of glazed redware tripod pots, to a lesser extent fragments of German stoneware, southern Baltic greyware, European porcelain and faience are represented.



Fig. 12. Reassembled stove tile fragments.
Jn 12. Katketest kokku pandud ahjukahhel.
 (AI 8288: 2524–2530.)
 Photo / Foto: Jaana Ratas



Fig. 13. Fragment of a ceramic horn.
Jn 13. Keraamilise pasuna katke.
 (AI 8288: 1666.)
 Photo / Foto: Jaana Ratas



Fig. 14. Fragment of a limestone sundial.
Jn 14. Lubjakivist päikesekella katke.
 (AI 8288: 4370.)
 Photo / Foto: Jaana Ratas

The most noteworthy among the finds of the second half of the 16th century – 17th century are sherds of glazed stove-tiles (Fig. 12). A rare find is a fragment of a medieval ceramic horn made of white clay with slip decoration (Fig. 13). These types of musical instruments were manufactured in Germany in the 15th–16th century (see Kluttig-Altmann 2013). Among the commodities, whetstones, iron knives, scissors, thimbles, barrel taps and even a fragment of a limestone sundial (Fig. 14) were found. Items of clothing are represented by different buttons and buckles of copper alloy. Lead bullets and gunflint were collected from the fill layer as well. Among the few bone artefacts, there is a decorative plate engraved with a plant ornament which was used to adorn mostly firearms in the 16th–17th century. All of the collected 11 coins are copper change of which four are Swedish 1/6 öres minted in the 1660s–1670s, the rest are Russian coins from the 18th century. In addition, 22 oyster shells were found from the upper fill layers that contained material from the 18th century, a rather usual element of suburban deposits of that period in Tallinn (Lõugas *et al.* 2022).

Beside the above-mentioned bone working waste the fill layers contained other production residue and defective items. Not surprisingly, the fieldwork unearthed a fragment of a disposable clay mould used for casting metal cauldrons or tripods – another material proof of the 14th-century smithy and bronze workshop at Roosikrantsi St. 9/11 (Saage & Russow 2020, 335). At least eight crucible fragments refer to non-ferrous metals processing. Wasters of redware tripods characteristic of the 17th century show the production of these types of vessels in Tallinn. Furthermore, a lot of leather waste from shoemaking from the 17th or 18th century was found.

OSTEOLOGICAL EVIDENCE

Animal bones

During the excavation, almost 660 animal bones and bone fragments were collected. Most of the material (Fig. 15; Table 1) consisted of the most common domestic animals – bones of the cattle (*Bos taurus*), the sheep (*Ovis aries*), the goat (*Capra hircus*) and the pig (*Sus domesticus*). A few bones of the dog (*Canis familiaris*) and the horse (*Equus caballus*) were also found. In addition to domesticated animals, one bone of the seal (Phocidae), one bone of the rodent (Rodentia) and two bones of a smaller animal, probably the mustelid (Mustelidae) were present. In addition to mammals, bird (Aves) and fish (Pisces) bones were found. A big part of the fragments of the mammal bones was indefinite (Mammalia indet.) (Fig. 15), especially the ones found from the prehistoric cultural layer. The indefinite bones consisted of fragments of ribs which are difficult to determine and also fragments of tubular bones etc. which probably belonged mostly to the cattle, the sheep/goat and the pig.

Most of the determined material is from the medieval cultural layers. Only a few bones originated from other periods, therefore the results could be random. Considering the anatomic composition of the bones, it could be said that the material is a typical mixture of food and slaughtering waste.

The prehistoric material was quite rich in species. In addition to the cattle, the sheep/goat and the pig, also one bone of the seal, one probable mustelid and one rodent bone were found; there were four bird bones and five fish bones. The rate of the sheep/goats was very high but compared to the Medieval period there could have been even more. For example, from the archaeological excavations at Pärnu Rd 31 and 33 plots, 34.7% of all the bones of the mammals collected from the prehistoric cultural layer belonged to the sheep/goat (Maldre 2017). From the whole material, the occurrence of the bird bones and the fish bones is quite

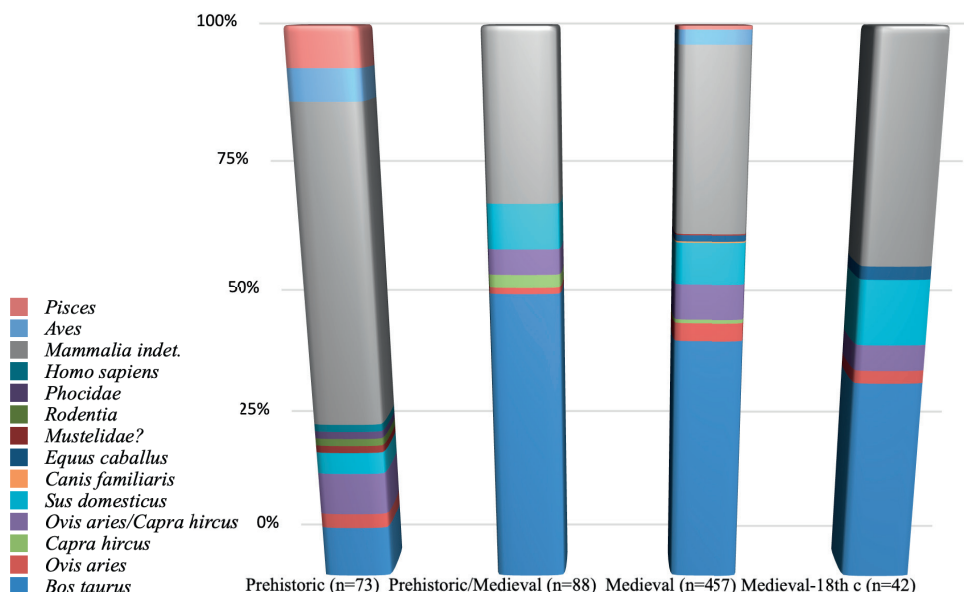


Fig. 15. The composition of bone material by the periods.

Jn 15. Luuainese koostis perioodide kaupa.

Compiled by / Koostaja: Liina Maldre

similar: among the bones from the prehistoric layer from Roosikrantsi street respectively 5.5% and 6.8%, Pärnu Rd 31 and 33 respectively 4% and 7%.

The material dated to the Prehistoric/Medieval period was also few in number. There were a lot of bones of the cattle, but no bird or fish bones were found. Among the bones of the cattle all the body parts are represented, only the horn cores are absent.

Table 1. Taxonomic and anatomic composition of determined mammal bones.

Tabel 1. Määratud imetajaluude taksonoomiline ja anatoomiline koostis.

Compiled by / Koostaja: Liina Maldre

	<i>Processus cornualis</i>	<i>Craniale</i>	<i>Mandibula</i>	<i>Dentes</i>	<i>Vertebrae</i>	<i>Costa</i>	<i>Scapula</i>	<i>Humerus</i>	<i>Radius</i>	<i>Ulna</i>	<i>Os antebrachii</i>	<i>Os carpal</i>	<i>Metacarpus</i>	<i>Os coxae</i>	<i>Femur</i>	<i>Patella</i>	<i>Tibia</i>	<i>Os tarsale</i>	<i>Metatarsus</i>	<i>Metapodium</i>	<i>Phalanges</i>	Total	%
Prehistory																							
<i>Bos</i>			1	1	1							1		1				2				7	31.8
<i>Ovis</i>			1	1																		2	36.4
<i>Ovis/Capra</i>			1		2								3									6	
<i>Sus</i>		1	1			1																3	13.6
<i>Mustelidae?</i>															1							1	4.5
<i>Rodentia</i>															1							1	4.5
<i>Phocidae</i>													1									1	4.5
<i>Homo</i>		1																				1	4.5
Total	0	2	4	2	3	1	0	0	0	0	0	1	4	1	2	0	0	2	0	0	0	22	100
%	0.0	9.1	18.2	9.1	13.6	4.5	0.0	0.0	0.0	0.0	0.0	4.5	18.2	4.5	9.1	0.0	0.0	9.1	0.0	0.0	0.0	100	
Prehistory/Middle Ages																							
<i>Bos</i>		3	2	5	7	2	2	1	1	1	2		4	3	3		1	2	4		5	48	77.4
<i>Ovis</i>															1							1	11.3
<i>Capra</i>			1																		1	2	
<i>Ovis/Capra</i>					2									1				1				4	11.3
<i>Sus</i>		2	1			2		1						1								7	
Total	0	5	4	5	9	4	2	2	1	1	2	0	4	5	4	0	1	2	5	0	6	62	100
%	0.0	8.1	6.5	8.1	14.5	6.5	3.2	3.2	1.6	1.6	3.2	0.0	6.5	8.1	6.5	0.0	1.6	3.2	8.1	0.0	9.7	100	
Middle Ages																							
<i>Bos</i>	2	10	10	4	43	39	10	11	5	4	3	5	6	7	10	1	12	4	6	3	15	210	70.5
<i>Ovis</i>	4							1			1		5					3			1	15	15.8
<i>Capra</i>	2												1									3	
<i>Ovis/Capra</i>	1			3		1	2	2	1	1			5	3			6		4			29	11.4
<i>Sus</i>	3	4	3	2	4	2	4	2	1				2	2	3		2					34	
<i>Canis</i>								1														1	0.3
<i>Equus</i>		1	1	1	1																1	5	1.7
<i>Mustelidae</i>															1							1	0.3
Total	8	15	15	11	46	44	14	19	8	6	4	5	19	12	14	1	20	4	13	3	17	298	100
%	2.7	5.0	5.0	3.7	15.4	14.8	4.7	6.4	2.7	2.0	1.3	1.7	6.4	4.0	4.7	0.3	6.7	1.3	4.4	1.0	5.7	100	
Middle Ages – 18th century																							
<i>Bos</i>		1	1	1	1		2	3	1	1	1			1			1				2	16	64.0
<i>Ovis</i>																		1				1	12.0
<i>Ovis/Capra</i>																	2					2	
<i>Sus</i>			1		1	1											1				1	5	20.0
<i>Equus</i>					1																	1	4.0
Total	0	1	2	1	3	1	2	3	1	1	1	0	0	1	0	0	4	0	1	0	3	25	100
%	0.0	4.0	8.0	4.0	12.0	4.0	8.0	12.0	4.0	4.0	4.0	0.0	0.0	4.0	0.0	0.0	16.0	0.0	4.0	0.0	12.0	100	

The bone material of the Medieval period was noticeably larger. Bones of the cattle dominate, the sheep/goat come second and the pig comes third. The horse, the dog and the mustelid are also represented. There are 11 bird bones and three fish bones. The importance of the cattle is quite big in the Roosikrantsi street material. Among the bones collected from the excavation of 1996 (Roosikrantsi St. 9/11) cattle bones made up 57.7% of the whole identified mammal bones from the 13th–14th century cultural layers (Maldre 2008, 279, table 1), and 64.3% of the 14th–15th century material collected from the plot at Pärnu Rd 22 (Maldre 2018). The medieval context was the only one where horn cores of cattle, goats and sheep were found. Most of the metacarpals and metatarsals of cattle were also found from the medieval cultural layer. One phalange of cattle had a hole bored in its proximal end. Similar phalanges with holes in them have been found from the archaeological excavations at Roosikrantsi St. 9 and 11 (Luik & Maldre 2003, 9).

The bones found from the southern part of excavation area 23, layer 9 distinguished a bit from the rest of the medieval archaeozoological material. A part of a cattle skeleton was found which consisted of six consecutive lumbar vertebrae, the sacrum and the right hip bone. A femur with its head cut off seems to belong to the same individual. Altogether, bones of at least two cattle were collected in the same place. Remains of dead animals have been found from Roosikrantsi street earlier as well. During the excavation of 1996 a part of a horse's skeleton was found (Maldre 1997, 14). Among other interesting finds from the medieval cultural layer are two fragments of metatarsals of a lamb fetus or a newborn lamb and horn cores of a goat kid and two lambs.

Disarticulated human remains

During the fieldwork between Roosikrantsi St. 1, 2 and 3 plots (areas 5–9) numerous disarticulated human remains were gathered from disturbed cultural layers. Altogether, 217 complete and fragmented elements belonging to a minimum number of 15 individuals (White 1953) were found.

Age at death could be determined for three elements – a right maxilla belonging to an individual aged 9 ± 2 years, a mandible of a 15 ± 3 -year-old (Schour & Massler 1944), and a humerus belonging to an individual ca. 16–20 years old (Scheuer & Black 2000). No adult bones with sexually dimorphic traits were identified.

Of pathological conditions, osteoarthritis was present in two elements. Both cases were diagnosed in the spine. Two cases of periostitis were also recorded (Waldron 2009). Regarding dental pathology, the maxilla of the 9-year-old (± 2 years) had no signs of caries, however, the mandible of the 15-year-old (± 3 years) was heavily affected (Fig. 16), with most lesions having developed from stains into cavities (Hillson 2007).



Fig. 16. Caries on the buccal surface (red) of the tooth of the juvenile and linear enamel hypoplasia (blue).

Jn 16. Kaaries nooruki hamba bukaalsel pinnal (punane) ja lineaarne emaili hüpoplaasia (sinine).

Photo / Foto: Mai-Britt Tomson



Fig. 17. False joint of the vertebra.

Jn 17. Rinnaüli ebaliiges.

Photo / Foto: Mai-Britt Tomson

Traumatic lesions were identified in the sternal part of one fragmented clavicle. The injured end of the bone had thickened and the articular surface and its margins had become deformed. The injury was sustained sometime before death, however, as it evidenced signs of healing (Waldron 2009).

In addition to pathological and traumatic alterations to the bone, non-metric variation was recorded. These included a cervical vertebra with double transverse foramina on

the right side and thoracic vertebra which had formed a 'false joint' on its dorsal surface as a result of friction with the spinal process of the preceding vertebra (Fig. 17).

CONCLUSION

During the watching brief and archaeological salvage excavations in 2020–2021 in Roosikrantsi street, cultural layers with the oldest finds from the 3rd millennium BC and the youngest from the 19th century were unearthed. Cultural layers were manually excavated in trenches in the length of ca. 300 m and an area of 368 m². The fieldwork conducted in Roosikrantsi street is an important example of the necessity of doing archaeological research in the trenches of the utility lines. Even though pipeline work had been previously done in several cases and old pipes were present in almost all of the research area, archaeological investigation showed that the cultural layers were very well preserved between and around the pipes. Salvage excavations carried out there provided us with a better understanding of the use of the area in the Prehistoric period, at the beginning of the town development in the 13th century and the following centuries. Although it was not possible to excavate until natural subsoil in all of the research area, it could be said that the prehistoric cultural layer is present in different spots of Roosikrantsi street and the oldest traces of human activity in that area date at least from the Neolithic Corded Ware Complex.

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ARHEOLOOGILISED UURINGUD TALLINNAS ROOSIKRANTSI TÄNAVAL 2020–2021

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2020.–2021. aastal toimusid Tallinna ajaloolises Harju värava eeslinnas Roosikrantsi tänaval seoses torustike uuendamisega ulatuslikud arheoloogilised uuringud (jn 1). Mööda Roosikrantsi tänavat kulges oluline tee, mis ühendas linnasüdant Harju värava kaudu Pärnu maanteega. Tänavalaodeosas paiknes keskajal Püha Barbara kabel koos seda ümbritseva kalmistuga. Kabel ning naabruses asuvad kinnistud on märgitud ka Tallinna vanematel plaanidel (jn 2). Esimesed hoonestust kujutavad plaanid pärinevad 18. sajandist.

Kuna Roosikrantsi tänaval oli kultuurikiht säilinud varasemate trasside vahel laiguti, jaotati ligi 300 m pikkune uuringuala põhja-lõunasuunalisteks lõiku-

deks (alad 0–32). Korraga avati kuni 50 m pikkune lõik (jn 3). Säilinud ladestused kaevati läbi labidate ja keldudega ning muinasaegsed ladestused ja loodusliku pinnase ülaosa sõeluti läbi. Leiud ja loomaluud võeti üles kihi- ja kontekstipõhiselt.

Varaseima ladestusena avastati looduslikul liival muinasaegne kultuurikiht (jn 4–5), mille vanimad leiud pärinevad III ja I aastatuhandest eKr. Arvestades kihi intensiivsust uuringuala põhjaosas, on tõenäoline, et sinna ulatus juba Vabaduse väljaku uuringuilt teada neoliitilise nõorkeraamika perioodi ja varase metalliaja asulakoht. Ajaliselt järgmise ladestusena kaevati 35–100 cm paksust tumepruuni nätske mul-

laga sõnnikust kihti, mille vanimad leiud pärinevad 12.–13. sajandist ja hilisemad 15. sajandist. Kiht seostub piirkonna keskaegse eeslinnalise asustusega.

Keskaegsel kultuurkihil paiknesid kesk- ja varauusaegsed ning uusaegsed teetasandid (jn 6). Nendeks olid paekividest sillutiste kihid ning erinevad tasandus- ja tätekihid. Varaseima tasandina doku menteeriti tõenäoliselt 14. sajandil rajatud sillutis (jn 7). Uuringute piiratuse tõttu jäi lahtiseks, kas tegemist oli varasema Pärnu maanteeaga või lokaalse hoovisillutisega. Sellel lasus tumepruun nätske muld, millest kogutud leiumaterjal pärineb 14.–15. sajandist. Tegemist võis olla kohaliku eeslinnalise elutegevuskihiga, kuid ei saa välistada, et see toodi sinna täitena enne Pärnu poole suundunud maantee rajamist.

Järgmine sillutisetasand oli kuni 53 cm paksune ning koosnes paekividest ja tellisetükkidest. Valdavate leidudena koguti 14.–15. sajandi kivikeraamikat ja 15.–18. sajandi glasuurkeraamikat. Teetasandi rajamisaeg jääb ilmselt 14. sajandi lõpukümnenditesse ja see oli kasutusel Põhjasõjani.

Varasemat teetasandit kattis beeži täiteliiva või tumepruuni nätske liivase mulla kiht, mis oli alale toodud tõenäoliselt 18. sajandil pärast algse teetasandi kasutuselt ärajäämist. Järgmine, kuni 57 cm paksune sillutisetasand koosnes veeriselaadsetest pae- ja maakividest ning pärineb Põhjasõja järgsest ajast. Kõige hilisemateks kihistusteks uuringualal olid 19.–20. sajandi munakivisillutis ja erinevad ehitus- ja torustiku seotud tätekihid.

Uuringute käigus avastati ka paekividest kaev (jn 8), mille rajamisaeg jääb 14.–15. sajandisse või sellest hilisemasse aega. Konstruktsioonidest paljandus veel paekiviplaadidest laotud veekanal (jn 9), mis rajati tõenäoliselt 18.–19. sajandil ja mida kasutati ümbritsevatelt kinnistutelt reovee ärajuhtimiseks.

Uuringutel koguti 4607 numbrit leide, millest valdav osa oli keraamika. Vanim leid on käsitsikeraamilise nõu serva katke (jn 10: 1), mis võib pärineda nõorkeraamilisest peekrist. Muinasaegsed on kümme käsitsikeraamilise nõu katket, millest kolm (jn 10: 2) kuuluvad tõenäoliselt Ilmandu tüüpi keraamikale. Veidi üle saja savinõukilli pärineb kedral vormitud lihtkeraamilistest pottidest (jn 10: 3).

Keskaegse kultuurkihi alumisest osast saadi peamiselt 13.–14. sajandi keraamikat, sh kohaliku kolmjalg nõu loomakäpa kujuline jalg (jn 11: 1). Hili-

semast keskaegsest ainesest on märkimisväärsesimad Waldenburi kivikeraamika glasuurkeraamiline imitatsioon (jn 11: 2) ja Vahemere piirkonnast pärit Valencia majoolika katked (jn 11: 3). Leiti ka kuljuse või aasaga nõõbi valamiseks mõeldud lubjakivist valuvorm (jn 11: 4) ja loomaluutükk, millest on välja puuritud nõõpe või palvehelmeid (jn 11: 5).

Põhjasõjajärgsed tätekihid sisaldasid nii kesk- kui ka varauusaegseid leide, kõige arvukamad olid 17. sajandi leiud. Enim esines punast glasuurkeraamikat, tarbekeraamika kõrval ka rohkelt ahjukeraamikat (jn 12). Haruldased leiud on keskaegse savipasuna (jn 13) ja varauusaegse lubjakivist päikesekella katke (jn 14).

Loomaluudest koguti ligikaudu 660 luud ja luu fragmenti. Valdava osa määratavast materjalist (jn 15; tabel 1) moodustasid veise, lamba, kitse ja sea luud, üksikute leidudega olid esindatud ka koer ja hobune. Lisaks koduloomadele saadi ka üks hülge luu, üks närilise luu, kahe luuleiuga on esindatud väiksem loom, ilmselt kärplane. Peale imetajaluude leiti ka lindude ja kalade luid. Luude anatoomilise koostise põhjal võib öelda, et tegemist on tüüpilise toidu- ja tapajäätmete seguga.

Muinasaegne materjal oli võrdlemisi liigirikas, veise, lamba/kitse ja sea kõrval leiti ka hülge, tõenäolise kärplase, närilise, linnu ja kala luid. Lammaste/kitse luude osatähtsus on siin väga suur. Keskaegne luuaines oli märgatavalt arvukam. Arvuliselt domineerivad veiseluud, teisel kohal on lambad/kitse ja kolmandal siga, esindatud on ka hobune, koer ja kärplased (nugis?). Lisaks leiti linnu- ja kalaluid.

Uuringutel koguti ka 217 irdset inimluud või inimluu fragmenti mis kuulusid vähemalt 15 indiviidile. Patoloogilistest muutustest tuvastati kahel selgroolülil osteoartroos, lisaks esines luukogumis ka perioostiit. Kaariest esines ühe 15±3a indiviidi alumistel hammasel (jn 16). Jälgi traumast oli näha ühe indiviidi rangluu liigespiinl. Morfoloogiliste eripärasustega luudest tuvastati topelt ristjätkemulguga kaelalüli ning rinnalüli, millel oli tekkinud ebaliiges (jn 17).

Roosikrantsi tänaval toimunud välitööd on heaks näiteks, kui oluline on teostada uuringuid ka torustikutöödel. Tänu uuringutele suurenes teadmine kõnealuse ala kasutuse kohta nii muinasaajal, keskaja algul kui ka sellele järgnevatel sajanditel.