



Excavations on two Late Iron Age strongholds in western Estonia: Ridala and Kedre (Leediküla)

Heiki Valk and Lisanna Lee Leiman

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

INTRODUCTION

In the summer of 2024, the University of Tartu continued its study of the late prehistoric strongholds of Läänemaa, located in western continental Estonia. The main research question was to find out if the strongholds of the region remained in use also after the crusade and Christianization of the country, i.e. after the first quarter of the 13th century, as it was the case in Saaremaa or Harjumaa (Valk 2014). Until the investigations which began in Vatra in 2023 (Valk 2024), excavations with such purpose had earlier taken place only on the Kullamaa Rohumägi hill fort in 1974, but without any definite results (Tamm 1974). In the summer of 2024, trial excavations took place on the strongholds of Ridala Tubrilinn and Kedre (Leediküla)¹ Hallimägi, located 10.5 km apart.

RIDALA RING FORT

The remains of the Ridala ring fort are ca. 1.7 km south-east of the Ridala parish church and ca. 150 m north-west of Vanamõisa stables (Fig. 1), on a higher area with numerous dispersedly located granite rocks of glacial origin. The present distance from the sea is ca. 8 km, but, considering the land upheaval as 3 mm per year, the distance might have been around 4 kilometres some 800 years ago. The circular rampart of the stronghold has almost fully been demolished for construction material in the 19th century, and it is difficult to identify even its exact former location. Only a fragment of the rampart has survived on the south-eastern side of the



Fig. 1. The location of the Ridala Tubrilinn ring fort.

Jn 1. Ridala Tubrilinna asukoht.

Map / Kaart: Estonian Land and Spatial Development Board / Maa- ja Ruumiamet

¹ In the book *Eesti muinaslinnad* (Tõnisson 2008, 262–263) the site is erroneously called Leedi Hallimägi. In fact, the hill fort relates to Kedre village and is known as Kedre Hallimägi by the locals. The toponym Leedi is also erroneous – the village is called Leediküla.



Fig. 2. The remains of the rampart of the Ridala Tubrilinn ring fort, from the north-east.

Jn 2. Ridala Tubrilinna valli jäänused kirdest.

Photo / Foto: Heiki Valk



Fig. 3. The plans of the Ridala Tubrilinn ring fort with the trenches. A – a plan from 1897 (Hausmann 1898), B – the trenches of 2024 on ortophoto of the Estonian Land and Spatial Development Board.

Jn 3. Ridala Tubrilinna üldplaanid kaevanditega. A – 1897. aasta plaan (Hausmann 1898), B – Maa- ja Ruumiameti ortofoto 2024. aasta kaevanditega.

Locations of trenches / Kaevandite asukohad: Heiki Valk

courtyard (Fig. 2). The size of the courtyard can be estimated as ca. 1100 m², but since its borders are not clearly determined, it may have been bigger.

In 2024, two trenches² were made at the site of the stronghold (Fig. 3). All soil was sieved on meshes of 5 mm eye diameter. The only earlier investigations of the site had taken place in 1897 when Richard Hausmann, the most prominent archaeologist in Estonia at that time (Valk 2019), supervised digging three trenches there (Hausmann 1898). The excavations (Fig. 3a) gave no finds, except for some animal bones, but the northern trench revealed the remains of vertical charred oak logs in the distance of 60 cm from each other.

The northern trench

The outer edge of the northern part of the rampart was designated by three big rocks located in an east–west directional line. The northern trench, with the final size of 6.85 m², was made immediately north of these rocks. The place was chosen on the basis of Hausmann's report, some 10–15 metres east of his northern trench.

The top layer, including the turf, consisted of ca. 15–20 cm of intensely dark fine sandy soil, which was very poor in pottery finds. Most likely, the soil originated from former field areas and had gathered behind the rampart as a result of wind erosion. Fire-cracked stones, which indicated the beginning of *in situ* cultural layers, came to light in the depth of ca. 15 cm and continued until the bottom of the cultural layer at the depth of 55–60 cm. Under it, on top of intact fine yellow sand, the greyish 10–12 cm thick original soil came to light.

The main finding from the trench was remains of a building which had stood directly on the outer side of the rampart. At a depth of 28–40 cm, eleven charred beams lay in the same direction almost perpendicularly to the

² The finds: TÜ 3255: 1–57.

rampart. The preserved length of the brands was 20–85 cm, they were up to 7–9 cm wide and 2–4 cm thick. Evidently, they originate from the roof or ceiling of a house which stood behind the rampart. A radiocarbon analysis from one of these chars (Table, no. 1) gave the calibrated result 1168–1269 AD.³

In the eastern part of the trench, a compact cluster of strongly burnt granite stones, indicating a stove, came to light at a depth of 15–20 cm. Since part of the structure remained out of the original trench, the investigation area was extended towards the east. The stove – its walls, the vault and the stones on top of it for heat accumulation (Est. *keris*) – was made of granite stones with the maximal diameter from 23 to 38 cm (Figs 4, 5). Its axis was parallel to the rampart, and the mouth opened towards the west. Some of the fire-cracked stones were very strongly burnt and disintegrated into rubble. The measures of the stove were 0.95 m in the east–west and 1.04 m in the north–south direction; the heating chamber with an earthen floor was ca. 50/52 cm long (without the mouth) and 45 cm wide. The earthen bottom of the heating chamber, covered with ashes and disintegrated charcoal particles, was ca. 7–8 cm below the flat threshold stone. Among the ashes, there was a brand, but no finds were gained. A radiocarbon analysis from a piece of charred tree bark from it (Table, no. 2) gave the result 1053–1075 (3.7%) or 1156–1265 (91.7%) AD. The preserved height of the structure was up to ca. 30 cm, measured from the top of the threshold stone. In front of the 21 cm wide stove mouth, there was an area of ashes with a diameter of ca. 50 cm – evidently, originating from an open fireplace for cooking (Est. *lee*). The brands from the roof or ceiling reached the fireplace and partly covered it. The stove represents the latest phase of the building – the thickness of the grey and even cultural layer under its bottom was ca. 20 cm (Fig. 4). The basic structures of the stove were not removed, but were covered with geotextile and soil, to be preserved for possible further research of the whole building.

The stove from Ridala differs from other stoves investigated in continental western Estonia, in the strongholds of Soontagana and Varbola. Differently from those (Tõnisson 1981; 2008, 131–145), horizontal limestone slabs were not used for the walls and the floor, but the whole



Fig. 4. The keris-stove in the building on the outer side of the Ridala Tubrilinn ring fort rampart, view from the west.

Jn 4. Kerisahi Ridala Tubrilinna valli välisküljel asunud hoones, vaade läänest.

Photo / Foto: Heiki Valk



Fig. 5. The base of the northern rampart of the Ridala Tubrilinn ring fort and stove remains (on the left).

Jn 5. Ridala Tubrilinna ringvalli põhjakülje alumised kivid ja ahjuvare (vasakul).

Photo / Foto: Heiki Valk

³ The analyses were done at Vilnius radiocarbon laboratory. All samples were calibrated with OxCal 4.4.4 and IntCal20 calibration curve (Bronk Ramsey 2009) and the results are provided with 95.4% probability.

Table. Radiocarbon dates from Ridala and Kedre strongholds.**Tabel.** Radiosüsinikudateeringud Ridala ja Kedre linnustelt.

Compiled by / Koostanud: Heiki Valk

No. / Nr	Sample / Proov	Trench / Kaevand	Context / Kontekst	Sample ID / Proovi ID	Date / Dateering
1	Ridala-1	N	House, brand no. 2, outer tree rings	FTMC-CK47-5	828±30 BP 1168–1269
2	Ridala-2	N	Stove bottom, charred bark	FTMC-CK47-6	854±30 BP 1053–1075 (3.7%) 1156–1265 (91.7%)
3	Ridala-3	S	Courtyard cultural layer, -50–60 cm, animal bone	FTMC-XK89-4	1166±27 BP 772–902 (70.4%) 915–975 (25.0%)
4	Ridala-4	S	Courtyard cultural layer, -20–30 cm, animal bone	FTMC-XK89-5	1252±28 BP 673–779 (65.9%) 786–834 (23.6%) 850–876 (5.9%)
5	Kedre (Leediküla)-1	Courtyard	Bottom of cultural layer, -30–40 cm	FTMC-CK47-7	877±30 BP 1046–1085 (15.0%) 1095–1103 (1.0%) 1123–1229 (78.3%) 1245–1256 (1.1%)
6	Kedre (Leediküla)-2	Courtyard	House, -50–60 cm, brand no.1	FTMC-CK47-8	853±30 BP 1053–1064 (1.9%) 1156–1265 (93.6%)
7	Kedre (Leediküla)-3	Rampart	Brand no. 2, -25–30 cm	FTMC-CK47-9	886±30 BP 1045–1086 (20.6%) 1092–1105 (2.2%) 1120–1224 (72.6%)

structure was made of granite. The simple *keris*-stoves made of granite stones only, although bigger, were in use in ethnographic smoke sauna buildings of Estonia until the 20th century (Tihase 1974, 80, 256). The smoke cottage remains from Ridala is an addendum to the information on Late Iron Age and Early Medieval buildings in Estonia (Lavi 1997; 2005).

In the northern part of the trench, the soil was not intensely black, but of a light brownish colour. Probably this area remained outside the building. The brown soil contained irregularly located bigger stones (diameter of 25–40 cm) with no traces of fire. Probably, these stones, although likely removed from their original place, were in some way connected with the northern edge of the building.

The trench was poor in finds. From the dark soil, only 43 small fragments of pottery were found. Finds were most numerous at the bottom of the cultural layer on intact original soil. The sherds come from hand-made vessels. However, from the layers stratigraphically connected with the stove, two fragments with line ornamentation were discovered.

The excavations also revealed the side of the lower part of the rampart which was constructed on intact natural soil and had preserved up to a height of 1.1 m (Fig. 5). It was made of big granite rocks. The maximal diameter of the three biggest stones was 0.75 m, 0.8 m and 1.05 m. The stones were placed with their flat side outwards, forming a vertical surface.

The southern trench

The southern trench, with the dimensions of 8 × 1 m, cut the remains of the southern part of the circular rampart. The investigations involved 3.4 m² of the courtyard area, 2.2 m² of the rampart, and 2.4 m² outside.

Within the courtyard area (Fig. 6), the uppermost 15–20 cm, disturbed by ploughing, consisted of even black soil which did not yield any finds. The dark cultural layer below it was 30–35 cm thick, containing numerous burnt granite stones with the diameter of up to 10–12 centimetres. A radiocarbon date from an animal bone from the depth of 20–30 cm indicated three possible time ranges from between 673 and 876 AD (Table, no. 4). Differently from the northern trench, no original soil could be observed under the cultural layer that gradually transferred into yellow limestone gravel (rubble with a diameter of up to ca. 2–5 cm). From the courtyard area, 20 fragments of hand-made pottery, including some dark sherds with a smoothed surface containing tiny mica particles, were found. The lowest sherds were gained from the gravel, the top part of which was mixed with a dark cultural layer, evidently tramped into it. A radiocarbon analysis from an animal bone from its bottom in the depth of 50–60 cm gave the result from between 772 and 975 AD (Table, no. 3).

The rampart (Figs 6, 7) was more profoundly demolished than in the northern trench, and the structure of its outer sides could not be examined. It was made of granite stones with the diameter of 40–78 cm and had preserved until the height of one metre in its central part. Between the bigger rocks, smaller granite stones of 10–20/25 cm in diameter were used to fill the gaps between them. The rampart also contained some very small granite stones with a diameter of ca. 7–10 cm. The light brown sandy soil between the stones did not yield any finds, except for a few animal bones, which probably were deposited there at the time of building the rampart.

Outside the rampart, intact mineral ground appeared at a depth of ca. 40–45 cm. On top of the pre-construction ground level, there were loose granite stones in greyish brown soil, but no traces of a cultural layer – neither fire-cracked stones nor pottery fragments or animal bones were found. The diameter of the stones was mostly from 10/20 to 30–45 cm, two big rocks measured 70–75 cm in diameter. The stones originate, evidently, from the demolition of the rampart.

KEDRE HALLIMÄGI HILL FORT

Kedre Hallimägi (Est. ‘Hill of Grey’) lies in the distance of 3.9 km south of Lääne-Nigula medieval parish church, between the historical Kedre and Kirimäe villages. The stronghold was located on a natural oblong 4–5 m high north-east–south-west directional hillock with the plateau of ca. 2100 m². The hillock belonged to a major area of dunes, which were removed



Fig. 6. The courtyard part of the southern trench in the Ridala Tubrilinn ring fort, view from the north-west.

Jn 6. Ridala Tubrilinna lõunakaevandi õuepoolne osa, loodest.

Photo / Foto: Heiki Valk



Fig. 7. The outer side of the rampart bottom of the Ridala Tubrilinn ring fort, view from the south-west.

Jn 7. Ridala Tubrilinna valli väliskülg, edelast.

Photo / Foto: Heiki Valk

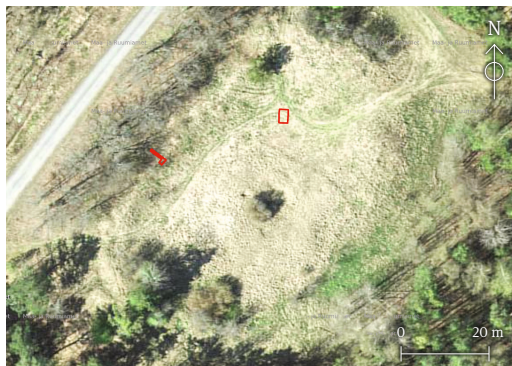


Fig. 8. Trenches on the Kedre Hallimägi hill fort.

Jn 8. Kaevandid Kedre Hallimäe linnamäel.

Ortofoto / Ortofoto: Estonian Land and Spatial Development Board / Maa- ja Ruumiamet

for road construction in the 1970s.⁴ The plateau is bordered on the northern, western and southern sides by a ca. 1–1.5 m high rampart which is ca. 6 m wide, flat on the top and seems to be a suitable location for buildings. On the eastern side, the rampart has not preserved. In the centre of the plateau, there is a depression up to ca. 1.5 m deep – a well site.

The first trial investigations on the hill fort took place in 1982 (Tõnisson 2008, 262). The trench on the inner side of the southern part of the rampart⁵ revealed a dry wall made of limestone slabs. During the excavations of 2024, two trial trenches were made on the hill fort (Fig. 8).

Trench I – the courtyard trench

The first trench (6 m²) was made at the inner foot of the rampart where drilling indicated cultural layers with a depth from 40 to 65/70 cm (Fig. 9). Like in Ridala, a layer of black sandy soil without stones, here 25–30 cm thick, was discovered under the turf. The layer disturbed by ploughing yielded some fragments of hand-made pottery and a damaged finger-ring, probably from the first post-Crusade century (Fig. 10: 1).⁶ Deeper, the undisturbed dark cultural layer contained fire-cracked stones and some pottery fragments. This layer, which lay on intact white sand, was 10–15 cm thick. From the layer, a knife blade (Fig. 10: 3) and a scabbard tip from the 12th or 13th century (Fig. 11) were found. A calibrated radiocarbon date from a brand in the bottom of the cultural layer (Table, no. 5) indicated four possible time spans from between 1046 and 1256, most likely from between 1123 and 1229 (78.3% probability).



Fig. 9. The courtyard trench on the Kedre Hallimägi hill fort, from the south-west.

Jn 9. Kedre Hallimäe linnamäe õuekaevand, edelast.

Photo / Foto: Heiki Valk

In the eastern edge of the trench, the cultural layer was thicker. Here, a ca. 20 cm deep depression with a 2 m long straight western end and two other sides stretching out of the trench at an almost right angle came to light (Fig. 12). It seemed that the site of a cottage, slightly deepened into the ground, was discovered. The calibrated radiocarbon date from a brand in the house site (Table, no. 6) gave the results of 1053–1064 or 1156–1265 AD. In the north-western corner of the structure an irregular assemblage of bigger stones (diameter from 25–30 to 40–50 cm), probably remains of a stove, was found. The cultural layer within the depression contained pottery finds, including some big

⁴ Recollections of local archaeology enthusiast Saamo Heldema (born in 1939), from Koela village.

⁵ Although there is no excavation report, the location of the trench could be established in 2024 with the help of Saamo Heldema.

⁶ Finds from Leedi: AI 7055. Archaeologist Mati Mandel estimates the ring to date from a later period than the Iron Age.

sherds of a hand-made vessel, an S-shaped twisted iron belt hook (Fig. 10: 2), and some tiny fragments of mammal bones.⁷ When it became clear that the remains of a building had been discovered, digging was stopped and the structure was conserved, to be fully excavated in 2025.

At the western border of the trench, the edge of a pit with a diameter of over 1 metre and stretching for at least 30 cm into intact sand came to light. From the pit, a fragment of a mould (: 37) was found. The XRF analyses performed by Ragnar Saage at the archaeology laboratory of the University of Tartu showed that it had been used for casting silver. Digging the pit was also stopped, and its opening to full extent was left for the next fieldwork session.

Although the pottery from Kedre was also hand-made, it differs from that found in Ridala. The sherds are often from vessels with rather thick walls and well-smoothed surfaces, imitating wheel-thrown pottery. Local hand-made imitations of Slavonic pottery are numerous in western and north-western Estonia, forming the majority of Final Iron Age pottery in the region (Tvauri 2005, 66–67) and occurring in big variations in the region, being hard to date.⁸ Hand-made ware remained in use in western Estonia up to the end of the Final Iron Age, and its continuous use cannot be excluded also in the post-conquest period.

Trench II – the rampart trench

The second trench, originally 4 metres long and 30 cm wide, was made in the central and inner part of the rampart top, ca. 25 m south-west of Trench I, perpendicularly to the rampart axis. It was dug in the hope of finding burnt structures from the flat rampart top, but no remains of structures were discovered there. Even sandy black soil, similar to



Fig. 10. A ring, a belt hook and a knife blade from the Kedre Hallimägi hill fort.

Jn 10. Sõrmus, vöökonks ja noatera Kedre Hallimäe linnamäelt.

(AI 7055: 6, 35, 14.)

Photo / Foto: Heiki Valk



Fig. 11. A scabbard tip from the Kedre Hallimägi hill fort.

Jn 11. Mõõgatupeotsik Kedre Hallimäe linnamäelt.

(AI 7055: 15.)

Photo / Foto: Heiki Valk



Fig. 12. Edge of a house bottom from the Kedre Hallimägi hill fort. View from the north.

Jn 12. Hoonepõhja serv Kedre Hallimäe linnamäel. Vaade põhjast.

Photos / Foto: Heiki Valk

⁷ Reviewed by Eve Rannamäe (TÜ), the species could not be identified.

⁸ Oral comment by Andres Tvauri (TÜ).

that in the top layers of the courtyard, came to light to the depth of at least 50 cm. Drilling with a light hand-drill showed that similar ground continued even to the depth of 1.2 metres. Sieving the soil from the rampart top gave no finds.

At the inner edge of the rampart top where the ground surface began to slant, an assemblage of granite stones with the diameter of 10–15 cm came to light under the turf. A bigger stone with traces of fire was of at least 60 cm long. Because of the stones an extension of 1×0.8 m was added to the original trench. Some sparsely situated stones appeared also there and two brands which followed the axis of the rampart appeared in the depth of 25–30 cm. A radiocarbon date from one of them (Table, no. 7) indicates three possible time ranges from between 1045 and 1224 AD. At that depth, digging was stopped and the trench was conserved for the next fieldwork session.

DISCUSSION AND CONCLUSIONS

The church in Ridala is one of the oldest stone churches in western continental Estonia. The stone church is dated to the second half of the 13th century (Raam 1996, 35), but most likely, it was preceded by a wooden building. The short distance between the stronghold and the parish church indicates the continuity of the local administrative and power centre. However, the excavations could not firmly prove temporal continuity between the ring fort and the church. The overlapping part of the radiocarbon dates from the cottage on the outer side of the rampart gave a broad period from 1168 to 1265. The few pottery finds also do not allow to date the final use of the ring fort. Thus, based on excavation results, the continuous use of the stronghold in post-conquest time could not be proved, but it also cannot be excluded.

An indication that may refer to the continuity of a power centre related to the stronghold can be found, however, in the name and location of Vanamõisa (i.e. 'old manor') farm, which lies 400 m south-east of the ring fort. Such a toponym in the immediate vicinity of the stronghold is probably not occasional. The closest manor to the stronghold is Parila (Germ. *Pargel*), which lies ca. 850 m south-west of the stronghold. The toponym Vanamõisa refers to a manor site, which is older than the manor of Parila. It cannot be excluded that when the stronghold ceased to function as a local administrative and power centre, its functions were transferred to the manor in the vicinity.

The radiocarbon dates from the courtyard show that the Ridala ring fort was founded in the late Pre-Viking or early Viking Age. Considering the stratigraphy of the samples from the courtyard trench, a bone from the upper part of the cultural layer can be dated to the time ranges of 786–834 or 850–876 AD (the latter being more likely), and another from its bottom – to the last quarter of the 8th (after 772 AD) or the first quarter of the 9th century. However, it must also be noted that the character of pottery from the courtyard and the trench on the outer side of the rampart was greatly similar. Since the pottery from the Kedre hill fort originates from thicker vessels with a smoothed surface and imitates wheel-thrown pottery, the stronghold has evidently been founded later than that in Ridala. This is also indicated by the absence of hand-made pottery with a coarse surface and high contents of stone rubble, as well as by radiocarbon dates.

The overlapping part of the radiocarbon dates from Kedre covers the time spans of 1053–1064 or 1156–1224, but the last of them should be considered, judging by the character of finds. For radiocarbon dates it also must be remembered that they indicate the time of cutting the timber, and not the time of getting charred which may be much later, and for the cultural layer on the courtyard, the date of 1245–1265 AD cannot be excluded. Although the pottery

from the Kedre hill fort seems to be later than that from Ridala, the question of post-conquest use of the site remains open. The forthcoming excavations in 2025 are expected to give new information.

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KAEVAMISED KAHES LÄÄNEMAA LINNUSEKOHAS: RIDALA TUBRILINN JA KEDRE (LEEDIKÜLA) HALLIMÄGI

Heiki Valk ja Lisanna Lee Leiman

2024. aastal tegi Tartu Ülikool kaevamisi kahes Läänemaa linnusekohas – Ridala Tubrilinnas ja Kedre (Leediküla) Hallimäel, mis asuvad üksteisest linnulennul 10,5 km kaugusel. Uuringute eesmärk oli leida vastust küsimusele, kas Läänemaa linnused püsisid eestlaste halduses ka pärast vallutust 13. sajandil.

Ridala Tubrilinn asub kirikust 1,7 km kaugusel loodusliku kivituleviga kõrgendikul (jn 1). Linnuse ringvall on juba 19. sajandil peaaegu täielikult ehitusmaterjaliks laiali kantud, nii et maapinnal on osaliselt säilinud vaid selle üks lõik valli kaguosas (jn 2). Tehti kaks kaevandit (jn 3), neist põhjapoolse asukoha valimisel olid pidepunktiks Richard Hausmanni 1897. aasta kaevamistulemused.

Põhjapoolses kaevandis (6,85 m²) moodustas pealmise, u 15–20 cm paksuse pinnasekihi kivide ja leidudeta must liivakas muld, mille all tulid nähtavale vahetult linnusevalli välisküljel olnud hoone jäänused – 11 kas katuse- või lae konstruktsioonist pärinevat, valliga ristisuunas olevat tukki ning raudkividest ahju vare (jn 4, 5). Muldpõrandaga ja 95 × 104 cm mõõtme-

tega ahju suu oli suunatud lääne poole, väikese küttekambri (45 × 51 cm) põhjas oli tuha ja söese pinnase lade. Ahjusuud markeeris tasane lävekihi, mille ees oli leekoht. Kultuurikiht kaevandis oli 55–60 cm paksune ning sisaldas üksikuid käsitsi tehtud savinõude kilde. Ahju horisondist leiti ka kaks joonornamendiga kildu. Hoone ühest tukist võetud sõeproov (tabel, nr 1) andis kalibreeritud tulemuseks aastad 1168–1269 pKr, ahjus olnud sõestunud puukoorest tehtud proov (tabel, nr 2) aga 1053–1075 või 1156–1265 pKr. Ahjuga hoone jäänuste all jätkus u 20 cm paksune hall kultuurikiht. Valli väliskülje alus koosnes väga suurtest kividest.

Lõunapoolne kaevand (8 × 1 m) lõikas 3,4 m ulatuses õueala serva ja 2,2 m ulatuses vallipõhja, jätkudes 2,4 m võrra valli välisküljel (jn 6, 7). Linnuse õuel moodustas pinnase ülaosa samasugune leidudeta must muld nagu põhjapoolses kaevandis. Sellele järgnes u 30 cm paksune leide ja tugevalt põlenud väiksemaid raudkive sisaldav kultuurikiht, mis läks sujuvalt üle lubjakiviveeristest koosnevaks kruusaks. Kultuurikihi ülaosast, 20–30 cm sügavuselt leitud loomaluust

võetud radiosüsinikuproov (tabel, nr 4) viitab ajavahemikele 786–834 või 850–876 pKr (viimane on tõenäolisem), teine samalaadne proov kultuurkihi põhjast 50–60 cm sügavuselt (tabel, nr 3) aga 8. sajandi lõpuveerandile või 9. sajandi algusele. Savinõukilde, eranditult kätsikeraamikat, leiti väga vähe.

Vall koosnes suurtest raudkividest, mille pikem mõõt jäi 0,5 ja 0,9 m vahemikku ning mille vahel leidsid väiksemaid raud- ja paekive (jn 7). Pruun muld kivide vahel oli leidudeta, kuid sisaldas üksikuid loomaluid, mis võisid olla sinna sattunud valli ehitamise käigus. Ka valli välisküljele varisenud kivide vahel oli helepruun leidudeta muld. Looduslik mineraalpinnas, millel oli säilinud algne mullakiht, algas seal 40 cm sügavusel.

Kedre Hallimäe linnamäele tehti kaks proovikaevandit (jn 8). Esimene neist (3 × 2 m) asus õueala servas, valli jalami läheduses (jn 9). Ülemise, kuni 30–35 cm paksuse pinnasekihi moodustas siingi tume kivideta, nähtavasti tuuleerosiooni toimel valli taha kandunud liivmuld, millest leiti tõenäoliselt keskaja algusest pärinev sõrmus (jn 10: 1). Musta liivmulla all asuvast, maapinnast enamasti 35–45 cm sügavusele ulatuvast tumedast ja üksikuid põlenud kive sisaldavast kultuurkihist, leiti 12.–13. sajandi mõõgatupe otsik (jn 11) ja noatera (jn 10: 3). Samas olnud tukist võetud sõeproov (tabel, nr 5) andis tulemuseks neli erinevat ajalõiku aastate 1046–1256 vahemikust. Kaevandi idaservas ulatus kultuurkiht vähemalt 65–70 cm sügavuseni. Siin asus looduslikku mineraalpinnasesse ulatuva hoonesüvendi ots (jn 12), mille nurgas oli suurtest raudkividest vare – võimalik ahjukoh. Hoonest leiti rauast vöökonks (jn 10: 2) ja kedrakeraamikat imiteeriva, kuid käsitsi tehtud nõu kilde. Majaasemest leitud tuki dateering (tabel, nr 6) viitab aastatele 1053–1064 või 1156–1265.

Kaevandi edelanurgast avastati vähemalt meetri sügavuse augu serv. Süvendist leitud tiiglitüki (: 37) XRF-analüüs näitas, et sellega on valatud hõbedasulameid.

Teine kaevand, 4 × 0,3 m mõõtmetega proovitranshee, asus maanteepoolse ligi 5,5 m laiuse ja pealt tasase valli lael, ulatudes selle õuepoolsesse serva. Vallilt ei õnnestunud leida hoonete jälgi. Pinnas koosnes vähemalt kuni 50 cm sügavuseni ühtlasest

peenest mustast leidudeta liivmullast ja mullapuuri põhjal ulatus selline pinnas maapinnast u 1,2 m sügavusele. Transhee õuepoolses otsas paljandus 10–15 cm sügavusel raudkividest vare, milles oli suur, vähemalt 60 cm pikkune ja põlemisjälgedega kivi. Valli serva tehtud 0,8 m² suuruses ja kuni 30 cm sügavuseni avatud laiendis leidsid lisaks kividele 20–30 cm sügavusel väiksemaid tukke. Neist ühe dateering (tabel, nr 7) andis tulemuseks kolm ajavahemikku perioodist 1045–1224 pKr. Kaevandist ei saadud ühtegi leidu. Mõlemas kaevandis jätkatakse uuringuid 2025. aastal.

Ei Ridalas, kus kultuurkiht on hakanud tekkima eelviikingiaja lõpul või viikingiaja alguses, ega Kedrel ei andnud kaevamised selget vastust linnuse kasutamise lõpuajast: mõlemal juhul ulatus hilisem dateering 12. sajandi keskpaigast 13. sajandi keskpaigani, kusjuures Ridala põhjavalli taga uuritud hoone dateeringute ühisosa jääb aastate 1168 ja 1265 vahemikku. Võimu- ja kihelkonnakeskuse järjepidevusele Ridalas üleminekul muinasajast keskaega viitab Tubrilinna ja kihelkonnakiriku lähedus – viimane on kiviehitise rajatud juba 13. sajandi teisel poolel. Märkimist väärib ka Ridala linnusest u 400 m kaugusel asuva Vanamõisa talukoha nimi. Ehk võiks kohanimi paigas, kus uusajal pole mõisat olnud, viidata mõisale, mis on vanem kui linnusest 850 m kaugusel asuv Parila mõis? Ei saa välistada, et Vanamõisa mõis oli kohaliku võimukeskusena vahetus läheduses asunud linnuse järeltulija.

Kedre Hallimäe linnus on nii radiosüsinikudateeringute kui ka keraamika iseloomu põhjal Ridala Tubrilinnast hilisem. Sealsed savinõukillud pärinevad paksematest ja sileda pinnaga nõudest ning leidub ka kedrakeraamika imitatsioone. Samuti puuduvad jämedat kivipurdu sisaldavate konarliku pinnaga nõude killud. Linnuseõue õhuke, vaid 10–15 cm paksune kultuurkiht näitab üsna lühikest kasutusaega. Kedre dateeringute ühisosa jääb aastate 1053–1064 või 1156–1224 vahemikku. Keraamika iseloomu põhjal on viimane neist tõenäolisem. Samas ei saa linnuseõuelt leitud tuki osas välistada aastatesse 1245–1265 pKr langevat dateeringut. Kedre vanusemäärangute puhul tuleb arvestada ka sellega, et radiosüsinik dateerib puidu langetamise, mitte söestumise aega, mis võib olla hilisem.