EXCAVATIONS ON THE HILL FORTS OF SOUTH-EASTERN ESTONIA: NOOSKA, KALOGA, KARULA, VÕUKÜLA AND LÄÄNISTE

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In the summer of 2010 the University of Tartu continued excavations on the hill forts of south-eastern Estonia. The aim of the project, which began in 2005 and is funded by the Estonian Science Foundation, is to get a general survey about the chronology of the prehistoric power centres of the region. In 2010 trial excavations took place on five hill forts: Nooska and Kaloga in the Haanja uplands, Karula Rebäse in the Karula uplands, Võuküla on the middle course of the Võhandu River and Lääniste on the lower course of the Ahja River (Fig. 1).[1] For the overview and details of the radiocarbon analysis from the hill forts see Table 1.

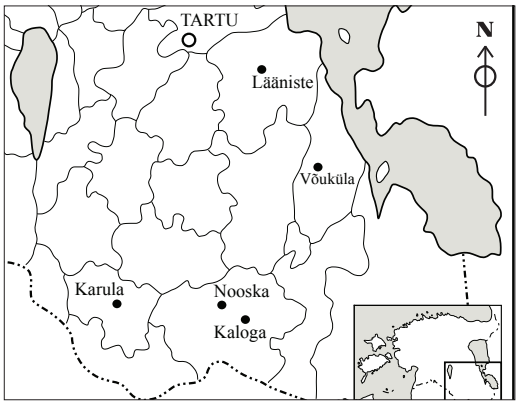

Fig. 1. Hill forts excavated in south-eastern Estonia in 2010.
Jn 1. Kagu-Eestis 2010. aastal uuritud linnamäed. Drawing / Joonis: Maria Smirnova

NOOSKA HILL FORT

The hill fort of Nooska (Talimäe/Tal(l)ima) is located in the Rõuge parish, in the northern part of the Haanja uplands, *ca.* 6 km north-northeast of the Rõuge hill fort.[2] The monument is located on a promontory, 150–250 m south-east of the Liinamäe farmstead. Just east of the fort is the upper course of the Uraoja creek that runs into Lake Vagula. The River Võhandu that runs through this lake flows down to Lake Lämmijärv. The fort is protected from three sides by a deep valley, from the fourth side – by a *ca.* 5 m high slope that has been somewhat steepened. The monument, although reflected also in earlier folklore notes, was first described in 1922 (Suik 1922, 66). Occasional finds of pottery[3] have enabled to date it preliminarily to the Viking Age.

[1] Excavations were directed in the framework of MA studies' fieldwork practice by the students of the University of Tartu: in Kaloga by Ingrid Ulst, in Võuküla by Jüri Metssalu and in Lääniste in 2009 by Anti Lillak.
[2] The plateau of the Rõuge hill fort was thoroughly studied in 1951–1955 (Schmiedehelm 1959). In 2008 smaller excavations aiming at establishing a ^{14}C-based chronology of the rampart were undertaken there (Lillak & Valk 2009).
[3] AI 4163.

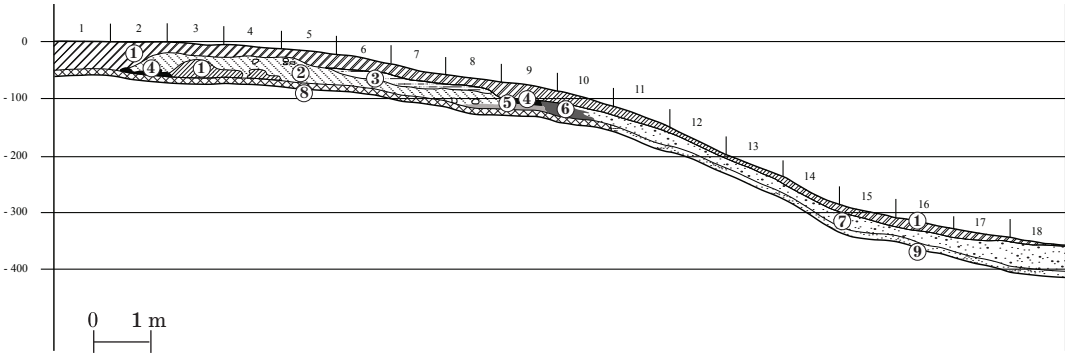

Fig. 2. Nooska hill fort. The southern profile of the excavation plot. 1 – dark greyish brown soil, 2 – brown soil, 3 – yellow loam, 4 – brands, 5 – intact original soil, 6 – dark grey sooty soil, 7 – disturbed brownish sand, 8 – intact clayish loam, 9 – intact sand.

Jn 2. Nooska linnamäe kaevandi lõunaprofiil. 1 – tume hallikaspruun muld, 2 – pruun muld, 3 – kollane saviliiv, 4 – tukid, 5 – algne looduslik alusmuld, 6 – tumehall nõgine muld, 7 – segatud pruunikas liiv, 8 – looduslik segamata saviliiv, 9 – segamata liiv.

Drawing / Joonis: Maria Smirnova

Fig. 3. Excavation plot with a layer of stone at Nooska hill fort, 30 cm from the ground.

Jn 3. Kaevand kivistikuga Nooska linnamäel, 30 cm sügavus.

Photo / Foto: Heiki Valk

The excavation plot (24 m^2) was made in the south-western corner of the fort, on the land side of the promontory. The original, 18 × 1 m trench on the edge of the plateau and the upper part of the slope (Fig. 2) was later extended on the fort yard by an area of 6 × 1 m. The thickness of the brownish grey or brown cultural layer on the edge of the plateau, almost without any finds in the first 10 cm, was 50–55 cm. At the depth of 15–35/40 cm an irregular, 1–1.5 m wide belt of small burnt granite stones (partly 1 but mainly 2 layers of stones) (Fig. 3) was revealed close to the edge of the flat plateau. The stones that covered an area of *ca.* 3 m^2 continued also out of the excavated area. Although the stones were fire-cracked, there were few charcoal particles between them and only one small fireplace (diam. *ca.* 50 cm) could be distinguished. A ^{14}C sample from charcoal between the stones (20–30 cm from the ground) gave the result 896–1160 AD (Table 1: 1). From the lower part of the cultural layer on the plateau 5 charred brands were found. The longest of them, a 1.5 m long log with a maximal preserved diameter *ca.* 15 cm (Fig. 4), lay on intact natural loam. One end of this log together with the remains of another, only partly preserved smaller log perpendicular to it seemed to designate a corner of a building, although they were not bound to each other. A ^{14}C dating from the latest tree rings (outermost 2 cm) of the long log gave the result 553–765 AD (Table 1: 2).

Close to the edge of the plateau where the ground was slightly sloping, brands of a burnt defence wall were found. Remains of charred horizontal logs that formed a 50–65 cm wide area of soot and charcoal (Figs 2: 4; 4) lay almost diagonally to the edge of the plateau, in the distance of about 1 m from the beginning of the steeper slope, i.e. from the line from where downwards the original grey soil had been removed by steepening the slope. The layer of soot and charcoal was 10–15 cm thick, but the original thickness of the logs could not be determined. A ^{14}C dating from the remains gave the result 339–591 AD (Table 1: 3). The defence wall was parallel to the mentioned long log, which may have been the wall foundation of a building. In the lower end of the trench, from the depth of 40–50 cm from eroded sand, a small brand was uncovered, which may have fallen from defence constructions. A ^{14}C analysis made from it gave the result 1041–1270 AD (Table 1: 4).

Fig. 4. Brands from the defence wall on Nooska hill fort.
Jn 4. Nooska linnamäe kaitsetara tukid.
Photo / Foto: Heiki Valk

The finds[4] included mostly fragments of hand-moulded pottery (Fig. 5) that can visually be dated to the second half of the 1st millennium AD, but also some brownish clay daubs. The shards are of greyish, brownish or reddish-brown colour, both of fine and coarse surfaces. Some of them contain sand, some stone rubble, some also mica addition. More special pottery finds are a shard of a black big rimmed vessel with smoothed surface and mica content (Fig. 5: 2), probably from the Viking Age (although found just above intact natural mineral soil), and a shard with fingertip impressions (Fig. 5: 3). Shards from the lowest layer just upon the ground (Fig. 5: 3–4, 6–7) contained rather coarse stone rubble. In addition to the pottery fragments, the finds include also a bronze spiral (Fig. 5: 1) – belonging to times prior to the first centuries of the 2nd millennium.

Although the cultural layer seemed quite homogeneous, the ^{14}C analyses reveal two usage stages of the hill fort. The first, bound to the earliest construction activities, belongs to the Migration Period: the overlapping part of the calibrated dates of construction remains immediately upon intact ground is between 553 and 591 AD. The other stage is dated from the 10th until the mid-12th century, but as the date comes from a dense cluster of burnt stones – a structure most characteristic for that period –, and as pottery is only hand-made, the post-Viking Age period can be excluded. The date of the brand from the erosion layer on the slope does not contradict the final use of the fort in the first half of the 11th century.

[4] TÜ 1863: 1–58.

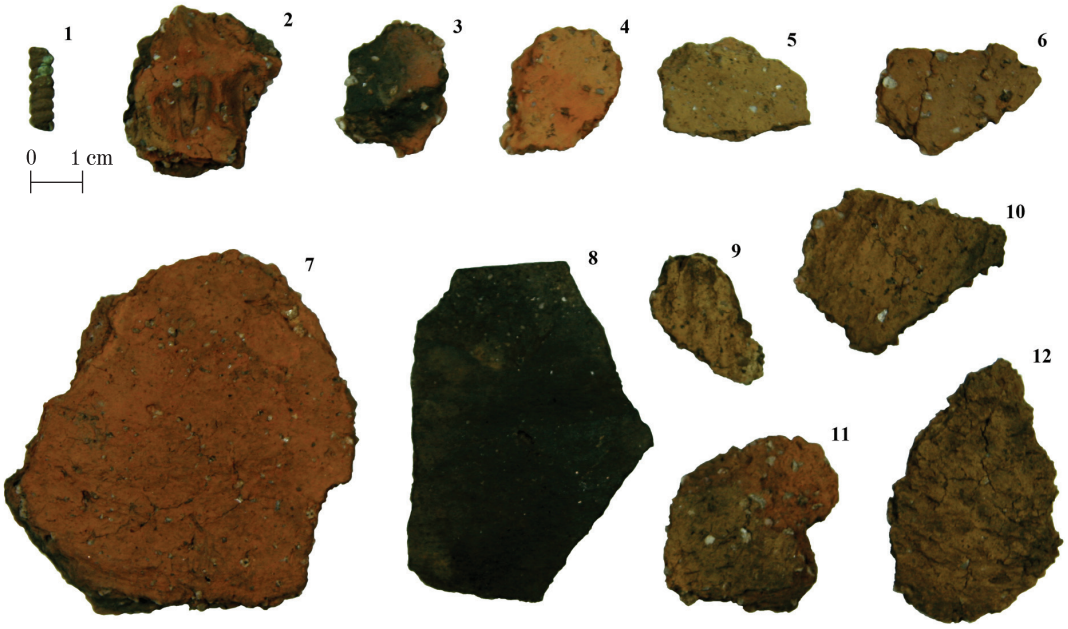

Fig. 5. Finds from Nooska (1–8) and Kaloga (9–12) hill forts.
Jn 5. Leiud Nooska (1–8) ja Kaloga (9–12) linnamäelt.
(TÜ 1863: 15, 33, 39, 40, 28, 36, 44, 55; TÜ 1864: 39, 26, 63a, 63b.)
Photo / Foto: Heiki Valk

KALOGA HILL FORT

The hill fort of Kaloga (Simula) is also located in the Rõuge parish, on the northern edge of the Haanja uplands, *ca.* 6 km south-east of the Nooska hill fort and 6 km north-east of the Rõuge hill fort, 200–400 m south-east of the Simula village centre. The hill with the relative height of *ca.* 30 m is presently called *Jaanimägi*, i.e. the hill of Jaan.[5] The original name *Liinamägi* ('Fort hill') has been transferred to the neighbouring hill in the distance of 100 m in the west. The name transfer probably occurred when the site of the deserted fort had become a place for celebrating Midsummer (St John's) Eve and this meaning became more important for local inhabitants than the knowledge of the ancient fort. The name change may refer to population discontinuity in the closest vicinity: the original name Liinamägi may have been transferred to the neighbouring hill by outsiders who were aware of its presence, but who could not identify it exactly on the landscape and to whom it was not important as a sign of local identity. The site was discovered only in 1999. Only some hand-made pottery fragments had been collected previously.[6]

The slope of the Kaloga hill is steep. The oval plateau is *ca.* 80 m long in the east–west direction. Its eastern part is flat and it has been ploughed, but the western part is uneven. The slopes and most of the plateau are covered with coniferous forest and thin brush-

[5] Jaan is the Estonian popular derivate name form of Johannes (St John). The toponym Jaanimägi that is most numerous in southern Estonia, may indicate to the saint or memories of his chapel, but also to popular gatherings around fire on Midsummer Eve, i.e. St John's Eve.
[6] TÜ 817; TÜ 854.

wood. The plateau is surrounded by a step-like horizontal belt on the upper part of the slope, *ca.* 1.5–2 m below its edge. The circular lower plateau is 6–7 m wide, slightly sloping outwards, and is formed by digging a step in the hill slope. A similar circular plateau exists also around the hill fort of Luhtõ, which has been dated to the 1st century AD (Valk 2008, 43–45).

The excavation area was in the south-eastern part of the fort. The 18 m long trench (plot I) ran the first 4 m (width 1 m) up on the hill and the rest of it (width 0.8 m) cut perpendicularly the edge of the upper plateau, the hill side and the surrounding lower plateau (Fig. 6). In order to get additional information about the cultural layer, a second plot of 3 × 2 m (plot II) was made on the plateau. Its location, 17–20 m to the north of the beginning of plot I, was based on test pits results which revealed some charcoal remains in the area at the depth of 35 cm (the other test pits had been totally empty).

Fig. 6. Kaloga hill fort, excavation plot I. Profile of the excavation plot of the surrounding plateau with the section of the supposed ditch.
Jn 6. Kaloga linnamägi, I kaevand. Alumise ringplatoo kaevandi profiil oletatava kraavi lõikega.
Photo / Foto: Heiki Valk

In the upper part of excavation plot I, i.e. on the plateau and on the hill side, the yellow sand contained some fragments of hand-made pottery until the depth of 15–20 cm, i.e. in the ground disturbed by ploughing above intact natural sand. However, the lower part of the trench on the surrounding plateau continuously revealed brownish, partially eroded soil with small charcoal particles. The brownish sandy soil became gradually darker. When digging further, it appeared that on the flat plateau there had originally been a *ca.* 6 m wide and until 0.9–1 m deep depression, dug into the intact mineral soil. As having symmetrical profiles, it probably originates from a supposed ditch (Fig. 6). From its inside, from the eroded fill from different depths tiny fragments of hand-made pottery[7], some of them with textile impressions (Fig. 5: 10) were found. In the lower part of the ditch (60–100 cm from the ground level) there was a layer of humus-containing black soil with some pottery fragments, including one with textile impressions (Fig. 5: 9). The ^{14}C analysis from rare charcoal particles in the depth of 1 m gave the result 1025–1253 AD (Table 1: 5). Considering the fact that no shards of wheel-thrown pottery were found from the layer, and that pottery

[7] TÜ 1864: 1–64.

was of most homogeneous character, the date seems unexpectedly late and could be explained only if the ditch is secondary in relation to the lower circular plateau. Under the intensively black layer there was 20–30 cm of light brown disturbed sand in the bottom of the ditch, probably resulting from the primary erosion and ground disturbances during or soon after digging. The deepest part of the ditch was 1.4 m and had a flat, 60 cm wide bottom.

In excavation plot II the weak cultural layer was also disturbed by ploughing. The sand that contained sporadic charcoal particles was somewhat darker in its northern and north-eastern part where the cultural layer stretched until 30–35 cm, being of dark colour below the plough depth. In the dark soil also some burnt stones from of a small fireplace were found. The ^{14}C analysis from the brands gave the result 567–809 AD (Table 1: 6). Plot II contained also exclusively pieces of hand-made pottery, including some big shards with textile impressions (Fig. 5: 11–12) from its very bottom.

To conclude, cultural layer in both plots on the plateau was thin, mostly disturbed by ploughing, and of low intensity – indicated just by occasional tiny shards found by sieving. Pottery found from both excavation plots was similar: it was mostly of light brown colour, contained coarse stone rubble and was often decorated with textile impressions. The character of pottery refers to short-time usage of the hill fort. Pottery with textile impressions was most common in south-eastern Estonia in the Roman Iron Age where it was in use until the 6th century AD (Laul 2001, 168–173). The date of pottery with textile impressions and the ^{14}C result from plot II enable to date the main activities on the hill to the 6th century AD. However, some activities may have taken place also in the beginning of the 2nd millennium AD.

KARULA HILL FORT

The hill fort of Karula is located in the Karula parish, in the central part of the Karula uplands, *ca*. 1.3 km south-east from the Lüllemäe village and the Karula church, half a kilometre east of the Aaroni farmstead, on the land of the former Rebäse farmstead. The fort was located on top of a *ca*. 28 m high circular hill with steep slopes and oblong plateau with the measures of approximately 30 × 50/60 m. Around the hill the slope has been steepened half-way to the top, the steepened part being *ca*. 2 m high. The site was discovered[8] in 1996 (Tvauri & Vindi 1997). At the foot of the fort there is also a cultural layer of a simultaneous settlement. A small creek (totally dry in the hot summer of 2010) that passes the foot of the fort and is running into Aheru Lake once granted boat connection with bigger waterways. Differently from all other hill forts of south-eastern Estonia, the fort in Karula does not belong to the basin of Lake Peipsi and Lake Pskov, but is bound by Lannamõtsa (Verioja) creek with the Gauja River.

The excavation area, first a 12 m long and 0.8 m wide east–west-directional trench, was in the western part of the hill fort plateau, slightly sloping towards the edge (Figs 7–8). Its upper end was broadened on the plateau, since only in the uppermost metre charcoal remains were discovered, and as a result of that a 3 × 4 m rectangular plot was formed there. The whole excavated area was thus 20.8 m^2 in size.

[8] The finds TÜ 379.

Fig. 7. Excavation plot on Karula hill fort with the outlined area of black sooty soil 30 cm from the ground. View from the east.
Jn 7. Kaevand Karula linnamäel musta nõgise alaga 30 cm maapinnast. Vaade idast.
Photo / Foto: Heiki Valk

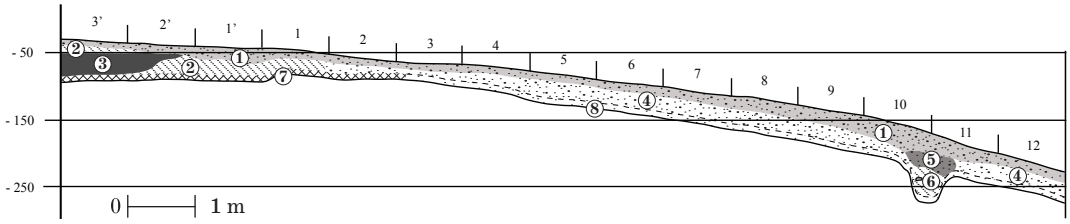

Fig. 8. Karula hill fort. Southern profile of excavation plot. 1 – greyish brown soil, 2 – brown soil, 3 – sooty black soil, 4 – brownish yellow disturbed sand, 5 – dark brown soil, 6 – brown soil mixed with sand, 7 – intact clayish loam, 8 – intact natural yellow sand.
Jn 8. Karula linnamägi. Kaevandi lõunaprofiil. 1 – hallikaspruun muld, 2 – pruun muld, 3 – nõgine must muld, 4 – pruunikaskollane segatud liiv, 5 – tumepruun muld, 6 – pruun, liivaga segatud muld, 7 – puutumata looduslik liivsavi, 8 – puutumata looduslik kollane liiv.
Drawing / Joonis: Maria Smirnova

In the top 10–15 cm the soil was brown, disturbed by ploughing, but deeper it gradually turned dark brown or brownish grey and contained tiny charcoal particles. In the south-eastern corner of the plot the soil became intensively black in the depth of *ca*. 30 cm, being most intensive until its bottom (Figs 7–9). In the dark grey soil also small granite stones, some of them strongly burnt and fragmented, occurred irregularly in different depths, being most numerous in the depth of 20–30 cm from the ground (Fig. 7).

Fig. 9. Excavation plot on Karula hill fort 40–50 cm from the ground. View from the north-west.
Jn 9. Karula linnamäe kaevand 40–50 cm maapinnast. Vaade loodest.
Photo / Foto: Heiki Valk

The depth of the cultural layer stretched until 40–50 cm (Fig. 8).

From the rectangular plot on the plateau a large number of clay daubs was found. Their average diameter was 2–4 cm in the layer disturbed by ploughing, but their size increased in deeper layers. The daubs were found in all parts of the cultural layer, until the intact clayish loam which began in the depth of 40–45 cm. The total weight of the daubs was 28.7 kg whereby 28.3 kg of them came from the rectangular plot area (12 m^2). The rectangular 3 × 4 m area obviously represents the site of a building. The border between the darker soil (in the area of the rectangular plot) and the light brownish sand (in the trench area) was most clear below the depth of ploughing. In the trench the top layer, brownish-greyish eroded soil gradually transferred into light brown sand which ended with fine yellow sand in the depth of *ca.* 35 cm.

From the cultural layer 33 fragments of animal bones were found, most of them were tiny, calcinated pieces that could not be determined (Rannamäe 2011). From the

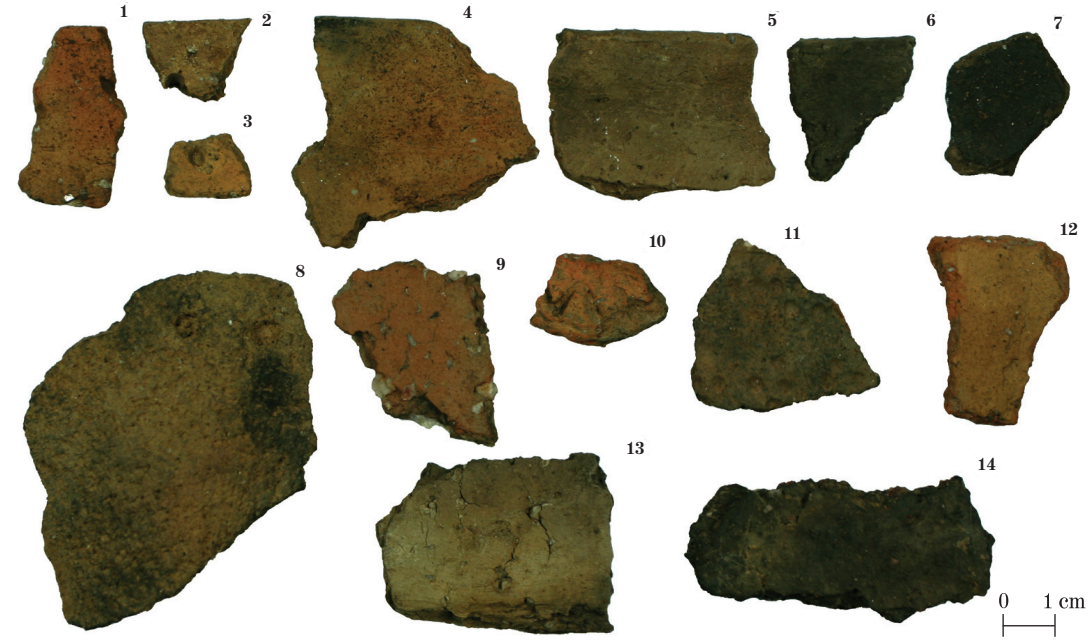

Fig. 10. Pottery fragments from Karula hill fort.
Jn 10. Savinõukilde Karula linnamäelt.
(TÜ 1865: 135, 136, 171, 232, 317, 159, 324, 195, 320, 180, 351, 225, 269.)
Photo / Foto: Heiki Valk

12 cases that could be determined, 3 belonged to big cattle, 5 to small cattle, 2 to small cattle/pig and 1 to pig; 2 were beaver teeth, one of them a fragment of incisor. The other fragments belonged probably mostly to big and small cattle and maybe also to pig.

Pottery fragments, mostly of hand-made vessels (Fig. 10: 1–4, 7–9, 11–14), occurred in different depths, being smaller in the upper layers because of ploughing. They were numerous also in the erosion layer in the trench. The shards were of different colour, mostly dark brown, light brown, grey or black. Most of them had a coarse surface and contained coarse stone rubble, but also some shards of fine vessels, in rare cases with smoothed surface, and some with penetrating holes (Fig. 10: 1, 2) or dots (Fig. 10: 3) at the rim were found. One big shard was decorated with dot ornamentation (Fig. 10: 8). Also some shards of wheel-thrown pottery of primitive character (Fig. 10: 5, 6, 10) were found whereby one of them had wave ornamentation. The character of pottery found from the cultural layer was similar in different depths.

Other artefacts from the plot were an iron knife that might belong, deciding by its size and shape, to the very end of the Iron Age (Fig. 11: 3), a beaver heel bone pendant (Fig. 11: 4) and a cylindrical clay bead (Fig. 11: 5). Such pendants are most characteristic for the Viking Age hill forts of southern and eastern Estonia, being evidently connected to the Viking Age beaver fur trade (Leimus & Kiudsoo 2004). From the bottom of the dark area in the south-eastern corner of the plot (Fig. 7) with numerous clay daubs, two crossbow bolts were found close to each other, one almost from the very bottom of the cultural layer. One of the bolts (Fig. 11: 1) is most characteristic for the period of crusades (Mäesalu 1991, type A I; Valk 2001, 67–68; fig. 14; Valk 2003, fig. 4) and also the other (Fig. 11: 2) can be from the same period (pers. comm. Ain Mäesalu (TÜ)).

A ^{14}C sample from the vicinity of the bolts, gave the result 1015–1273 AD (Table 1: 7) and a sample from the bottom of the plot, from the edge of the dark area 1034–1259 AD (Table 1: 8). The building on the spot, most likely also the reason for the numerous clay daubs, had evidently a floor slightly deepened into the ground (see also Fig. 8, depression in squares 1–3). The ^{14}C dates from rare smaller brands from the upper layers were older, indicating to the Viking Age and the 11th – 12th centuries. A brand from the depth of 15–20 cm was dated to 987–1208 AD (Table 1: 9) and a decomposed brand from the depth of 20–30 cm to 891–1156 AD (Table 1: 10). The occurrence of earlier dates in the upper layers covering the house layout can be explained by the dislocation of brands from their original position due to ploughing on sloping ground.

Fig. 11. Finds from Karula hill fort. 1, 2 – crossbow bolts, 3 – knife, 4 – beaver heal pendant, 5 – clay bead.
Jn 11. Leide Karula linnamäelt. 1, 2 – ammunooleotsad, 3 – nuga, 4 – kopra kannaluust ripats, 5 – savihelmes. (TÜ 1865: 310, 320, 246, 292, 170.)
Photo / Foto: Heiki Valk

Fig. 12. Post hole of defence wall on Karula hill fort.
Jn 12. Karula linnamäe kaitsetara postiauk.
Photo / Foto: Heiki Valk

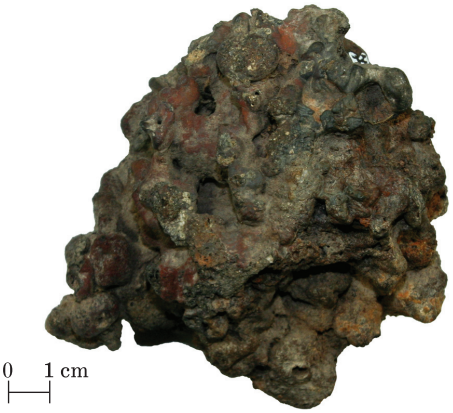

Fig. 13. Karula hill fort. Piece of iron slag from the post hole of defence wall – presumable votive gift.
Jn 13. Karula linnamägi. Šlakitükk kaitsetara postiaugust – tõenäoline ehitusohver.
(TÜ 1865: 346.)
Photo / Foto: Heiki Valk

In the trench from the edge of the slightly sloping plateau, at transition to a steeper slope, a post hole filled with disturbed sand and dark soil was found (Figs 8; 12). The pit with the depth of *ca.* 95 cm from present ground surface (65 cm of it in intact mineral ground) was of an oblong shape (90 × *ca.* 65 cm; bottom diameter 32 cm) that indicates to erecting the post from a slant position. Deciding by its location, the post hole originates from a defence wall – evidently made of vertical posts and horizontal logs between them. From the post hole, *ca.* 20 cm higher from its bottom a fist-size piece of iron slag was found (Fig. 13). As only rare tiny pieces of similar slag were found from the whole plot, the find is probably not of occasional character, but can be interpreted as a votive gift for the building, meant to strengthen the post and defence wall. Parallels to the case where iron slag can be interpreted as being used for foundation deposits can be drawn from Vendel Age southern Scandinavia (Carlie 2004, 165–167) and from 17th century northern Finland (Herva & Ylimaunu 2009).

Some test pits made on the hill fort plateau showed that the cultural layer was of very uneven thickness. In some pits intact mineral ground appeared in the depth of 20 cm, but occasionally in the depth of 40–50 cm. In one of the pits located on the flat plateau the cultural layer was even 90 cm thick. From the trial pits also some pottery fragments, including a shard with dotted ornamentation (Fig. 10: 11) from the bottom of the deepest pit were found.

Excavation results give evidence of long-term life activities on the hill whereby most of the pottery seems to be from the Viking Age. Finds of wheel-thrown pottery, referring to the begin-

ning of the 2nd millennium were rare. The finds of crossbow bolts give evidence of besieging the fort by the German crusaders, probably during the big uprising of 1223 (see Lang & Valk, In print). Also dates of brands from the undisturbed lower layers indicate the latest use and destruction of the fort in the period of crusades. As finds from the final stage of prehistory are not numerous, it seems likely that the last use of the fort was only episodic and short-term.

VÕUKÜLA HILL FORT

The hill fort of Võuküla is located in the Räpina parish, 1 km north of Võuküla village on the high bank of the Võhandu River. On the river side of the fort there is an almost vertical high sandstone cliff. In the local tradition the place is called *Kindralihaud* (General's grave), and a Swedish general was believed to have been buried there with great treasure (Sepp 1931, 50–51, (2)). According to another story a golden town had sunk underground there (Vahtra 1937). The monument is on a promontory between the deep river valley and a dry creek valley falling into it. The partly levelled plateau is surrounded by a *ca.* 90 m long semi lunar rampart, which is 2.5 m high in its southern and 0.5–1 m high in its western and northern part. The ends of the rampart, which reach the steep river bank, have fallen down into the valley. Along the inner side of the rampart a *ca.* 10 cm deep shallow ditch can be observed. On the southern side of the hill there is a *ca.* 6 m wide and 1–1.5 m deep depression, from where soil for the rampart was taken. The size of the fort plateau is 650–700 m^2. It may have been larger before, because part of it seems to have fallen down to the river valley. On the plateau several pits made by treasure hunters are visible. The hill and its surroundings are covered with coniferous forest.

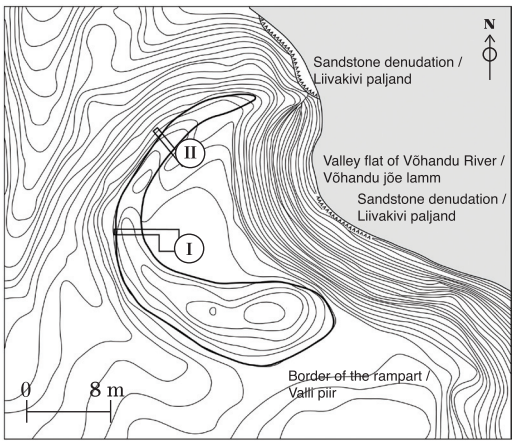

Fig. 14. Võuküla hill fort with excavation plots.
Jn 14. Võuküla linnamägi kaevanditega.
Drawing / Joonis: Maria Smirnova

In the 19th century some charcoal pieces were found from the rampart of Võuküla Kindralihaud (Mss 107b, 1, VI (38)). In 1922 the site was described by Oskar Urgart (Urgart 1922, 22–25). In 1951 Harri Moora studied the hill with 2 days' trial excavations (Moora 1951, 13–14). Under the rampart a layer that contained charcoal and reached its outer side was found.

In 2010 two excavation plots were made on the hill fort (Fig. 14). Plot I consisted of a 13 × 1 m trench that cut the plateau and the rampart on the west side of the hill, and of an adjoining area of 3 × 4 m on the yard plateau (Figs 15–16). The second excavation plot, a 9 × 1 m trench, cut the northern side of the rampart, also reaching the plateau (Fig. 17). In addition two 1 × 1 m trial pits were made on the flat, evidently levelled area of the plateau – near the highest part of the rampart in its southern part and near the steep river bank in its eastern part.

Fig. 15. Võuküla hill fort, excavation plot I, 30 cm from the ground.
Jn 15. Võuküla linnamäe I kaevand, 30 cm maapinnast.
Photo / Foto: Heiki Valk

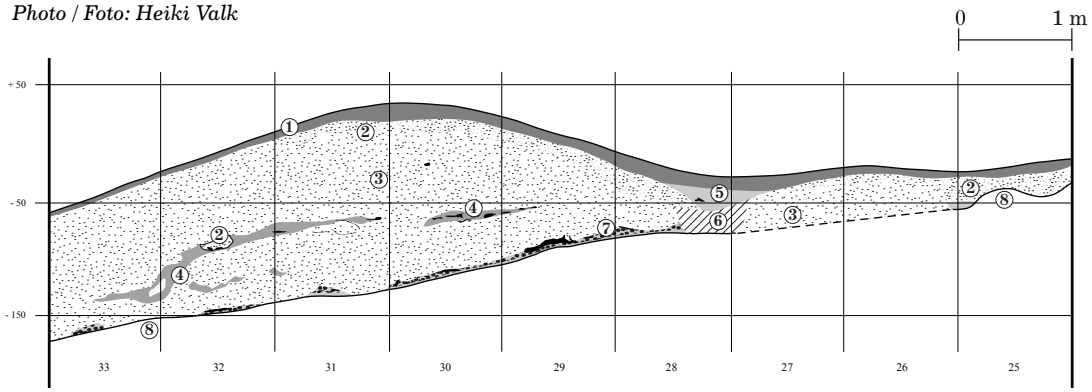

Fig. 16. Võuküla hill fort, excavation plot I. Northern profile. 1 – light brown sandy soil, 2 – light brown sand, 3 – disturbed sand, 4 – white disturbed podzol sand, 5 – dark eroded soil, 6 – disturbed loam, 7 – brands, 8 – intact natural sand.
Jn 16. Võuküla linnamäe I kaevandi põhjaprofiil. 1 – helepruun liivmuld, 2 – helepruun liiv, 3 – segatud liiv, 4 – segatud valge leeteliiv, 5 – tume erosioonimuld, 6 – segatud liivsavi, 7 – tukid, 8 – segamata looduslik liiv.
Drawing / Joonis: Maria Smirnova

The ground in the yard area was disturbed. It consisted of greyish, light yellow and darker yellow sand and contained tiny charcoal particles. In the depth of 20–30 cm two different zones could be observed – a greyish area with a higher content of tiny

charcoal particles closer to the rampart, and an area of yellow sand with less charcoal on the yard side of the excavation plot. The grey zone with slightly pinkish hue was original, undisturbed podzol soil, which had preserved on the rampart side of the excavation plot (Fig. 15). In the yard part of excavation plot I three details must specially be noted. In the depth of 20–40 cm some brands of a fireplace (diam. *ca*. 50 cm; Fig. 15, at the trowel) were found; their surface appeared at the depth of the original grey soil. The brands were dated to 1016–1251 AD (Table 1: 11). In the north-western part of the excavation plot two circular post holes could be distinguished (Figs 15; 18). Both were slightly notable already in the depth of 10 cm and were dug into the intact natural loam. The southern pit that was 1 m deep (bottom diam. *ca*. 41 cm) and had brands within it in different depths, was dated to 691–980 AD (Table 1: 12). The northern pit (bottom diam. *ca*. 43 cm) was 90 cm deep and it contained darker soil with some charcoal particles in the depth of 20–40 cm. In the lower part of the pit there was a stone (diam. 20 cm).

In both excavation plots the rampart (Figs 16–17) was heaped up in one stage on natural intact ground – white podzol sand – that was covered by a thin dark layer of charcoal particles. ^{14}C analysis from excavation plot I dates this layer to 135–404 AD (Table 1: 13). Just above the dark layer remains of two decayed charred boards were found in plot I (Fig. 19). The bigger of them was 1.4 m long, 14–15 cm wide and 3–4 cm thick; the measures of the smaller board were 59 × 19 × *ca*. 3–4 cm. A ^{14}C analyses from the bigger board gave the result 256–542 AD (Table 1: 14).

Fig. 17. Võuküla hill fort, excavation plot II. View from north-northeast.
Jn 17. Võuküla linnamäe II kaevand. Vaade põhjakirdest.
Photo / Foto: Heiki Valk

Fig. 18. Võuküla hill fort, excavation plot I. Post holes in the bottom of the excavation plot.
Jn 18. Võuküla linnamäe I kaevand. Postiaugud kaevandi põhjas.
Photo / Foto: Heiki Valk

Fig. 19. Võuküla hill fort, excavation plot I. Charred boards on the bottom of the rampart.
Jn 19. Võuküla linnamägi, I kaevand. Söestunud plangud valli all.
Photo / Foto: Heiki Valk

Within the rampart at the depth 50–80 cm from the ground a layer of disturbed white podzol sand appeared, partly mixed with brown sand (Fig. 16: 4). This layer was noted also by Harri Moora (1951, 14). The sand below it seemed more disturbed and contained more tiny charcoal pieces than sand in the top part of the rampart. In excavation plot I, from the upper part of the centre of the rampart, *ca.* 60 cm from its top a single brand was found from yellow sand. It was dated to 432–639 AD (Table 1: 15). A brand from the upper, eroded part of the rampart (10–20 cm from the ground) on its outer side in excavation plot II, probably fallen from a constructions on its top, was dated 1014–1215 AD (Table 1: 16).

The shallow, almost invisible ditch on the inner side of the rampart had originally been *ca.* 50 cm deep in excavation plot I and *ca.* 30 cm deep in plot II (Figs 16–17). In both cases the bottom of the ditch was flat and *ca.* 60 cm wide. The ditch was filled with darker soil that contained rare tiny charcoal particles and some small stones in plot I, and with eroded, disturbed sand in plot II.

The two 1 m^2 trial pits on the plateau contained no traces of the cultural layer: under the moss light grey, almost white natural podzol sand with some tiny charcoal particles appeared. In the depth of 25–30 cm it gradually transferred into intact yellow sand.

The excavations clearly showed that there is no permanent dwelling related layer on the Võuküla hill fort. No finds were discovered from the excavated area, although the soil was sieved completely. Different ^{14}C dates show, however, long-term human activity on the site. The rampart was heaped up in one stage in the Late Roman Iron Age or the Migration Period (the overlapping part of the 2 samples is 432–542 AD). Before that there had been a fire, traces of which could be observed on the ground in both excavation plots, in the Roman Iron Age, between 135 and 404 AD. The post hole in the yard dates from the Pre-Viking or Viking Age (691–980 AD). The fireplace on the yard (1016–1251 AD) and brand from the upper, eroded part of the rampart (1014–1215 AD), refer to human activities in the final centuries of prehistory. The brand also shows that in that time there had been some timber constructions on the top of the rampart.

The lack of cultural layer, the rampart with the shallow but definite ditch on its inner side, supposed earthworks of concentric character on the yard, post holes and a fire place on a site of long-term use enable us to suggest that on the hill some kind

of practices that have not left any other material traces may have occurred. Thus, the site may represent, in fact, not a real hill fort. The 'henged mountains' without a cultural layer, interpreted as sites of cult or ritual purpouses are most typical for eastern Sweden (Olausson 1995). Parallels can be drawn also with the Early Iron Age ring forts with a low rampart of western Estonia (Tõnisson 2008, catalogue nos 14, 44, 52, 55, 63, 71). Also considering traditional folk narratives about hidden treasures and an underground city it is possible to assume that the site surrounded by the rampart may have had a sacral and ritual meaning.

LÄÄNISTE HILL FORT

The hill fort of Lääniste (Võnnu parish) is situated on the western bank of the Ahja River *ca*. 600 m south-west from the village centre and *ca*. 200 m south-southeast of a former schoolhouse. The monument was first described in 1921 (Karu 1921, 1–4). In the oral tradition the site was known as 'a Swedish fort' (E 811, 63 (113)), the battery site from the Russian-Swedish War (activities in eastern Estonia 1700–1704) (Tilk 1929, 1 (1)) or the grave of a general (Mss 119 (1a)).

On the hill fort three excavation plots were made in 2009 and 2010 (Fig. 20). An 8 × 1 m trench was made on the southern slope of the northern rampart (Figs 20: I; 21). On the plateau of the hill fort, to where the southern end of the trench reached, two additional square metres were opened west of it. Although the hill was used as a Russian Old Believer's cemetery since the 18th century – some grave marks, e.g. metal crosses

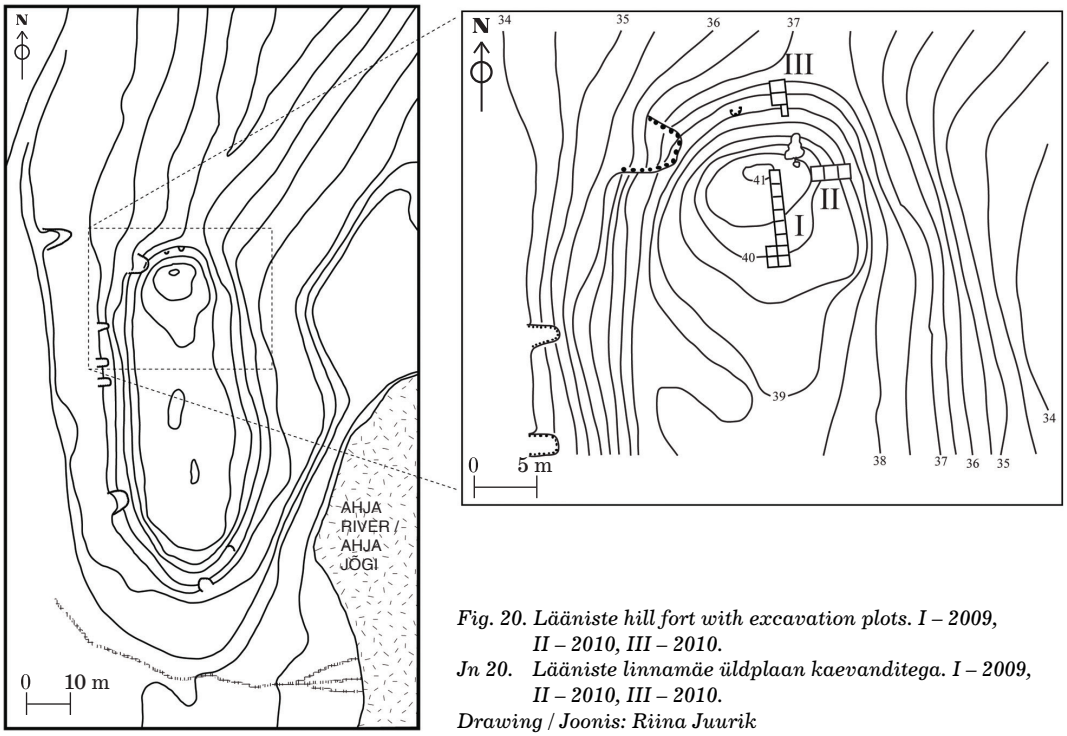

Fig. 20. Lääniste hill fort with excavation plots. I – 2009, II – 2010, III – 2010.
Jn 20. Lääniste linnamäe üldplaan kaevanditega. I – 2009, II – 2010, III – 2010.
Drawing / Joonis: Riina Juurik

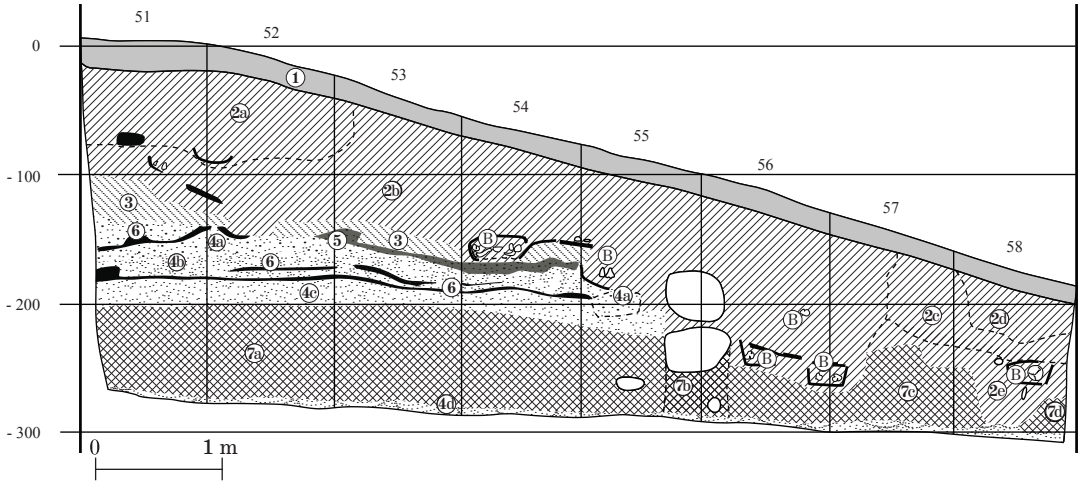

Fig. 21. Lääniste hill fort. Profile of excavation plot I. 1 – dark soil, 2 – disturbed brown soil / loam, 3 – pink loam, 4 – yellow disturbed sand, 5 – sooty dark sand, 6 – black sooty sand, 7 – hard clay / loam. B – bones from burials.

Jn 21. Lääniste linnamägi. I kaevandi profiil. 1 – tume muld, 2 – segatud pruun muld / saviliiv, 3 – roosa saviliiv, 4 – kollane liiv, 5 – tume süsine liiv, 6 – must nõgine liiv, 7 – kõva liivsavi. B – inimluud.

Drawing / Joonis: Maria Smirnova

and gravestones, are still present on the plateau –, at the beginning of the excavations it was expected that the burial area does not extend to the rampart. Nevertheless, the remains of 25 burials and a number of scattered human bones were revealed in the trench (see Lillak & Malve, this volume). The upper part of the rampart stratigraphy is therefore relatively disturbed by the graves up to 1.65 m from the ground level, but the lower layers have mostly been preserved untouched from secondary disturbances.

The present rampart is *ca.* 2 m high, as measured from dense brownish red clay below it (Fig. 21: 7) that evidently is natural intact soil, and two different stages could be distinguished in plot I. Remains of the first phase (Figs 21: 4–6; 22) consisted mainly of somewhat different layers of yellow sand (in all 0.5–0.6 m thick). The sand contained two parallel sooty layers of tiny charcoal particles (Fig. 21: 6, both 4–12 cm thick), the upper layer covered by up to 20 cm thick layer of sand that bore sporadical traces of fire. The dark layers were separated from each other by 15–20 cm of clean sand (Fig. 21: 4a) and there was *ca.* 20 cm yellow sand (Fig. 21: 4c) below the lower layer of soot.

Both layers with high charcoal content seem to originate from the destruction of the first constructions. A ^{14}C sample from the upper sooty layer gave the date 133–389 AD (Table 1: 17), i.e. the Roman Iron Age. Right south of the edge of the sand zone two large granite stones (45–50 cm in diameter) were revealed, which were probably placed there to fix the inner edge of a construction to avoid it from straggling. As the layers of yellow sand and soot/charcoal were intact, horizontal and of even thickness everywhere, the broadness of the structure – it was at least 6 m wide – was not caused by some secondary levelling works. It seems unlikely that in the first building phase there was a compact and high sand rampart on the north end of the hill: the remains rather seemed to originate from some quite broad timber construction

where also sand was used for covering or levelling.

Some time after the burning of the first constructions soil was carried on top of their remains and the rampart obtained its present size. In spite of erosion and possible levelling works for the cemetery, the top of the rampart rises for *ca.* 1.3 m above the level of the first building phase. As no traces of humus could be detected between the yellow sand and the body of the later stage of the rampart, there seems to have been no long-time temporal difference between the fire and new phase of construction. The trench of 2009 did not reveal any charred brands or charcoal from the high rampart, probably because of the modern period burials that had disturbed its upper part.

Finds of 2009[9] consist of a few small shards of hand-moulded pottery (Fig. 23: 1–7), including the one with striated surface (Fig. 23: 3). The fragments of pottery were found from the upper part of the rampart, thus indicating that the rampart was heaped up using earlier cultural layer of the hill fort (or a settlement site). Sooty sand from the first construction phase did not contain any finds.

Fig. 22. Lääniste hill fort. Upper layer of sooty sand in excavation plot I in the rampart, partly disturbed by the modern period grave pit. View from north.
Jn 22. Lääniste linnamägi. I kaevand. Tumeda söeseguse liiva kiht, osalt lõhutud uusaegse hauaga. Vaade põhjast.
Photo / Foto: Anti Lillak

The works of 2010 were undertaken in Lääniste to get additional information about the construction time of the higher part of the rampart. Now a trench (3 × 1.25 m) was made on the external side of its eastern end – on strongly sloping ground, just above the possible gateway to the fort (Fig. 20: II). The rampart was made of yellowish pink

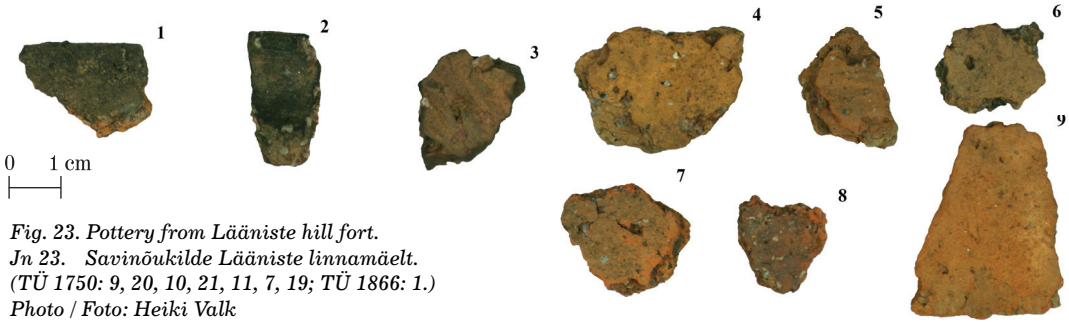

Fig. 23. Pottery from Lääniste hill fort.
Jn 23. Savinõukilde Lääniste linnamäelt.
(TÜ 1750: 9, 20, 10, 21, 11, 7, 19; TÜ 1866: 1.)
Photo / Foto: Heiki Valk

[9] TÜ 1750.

Fig. 24. Lääniste hill fort, excavation plot II.
Jn 24. Lääniste linnamäe II kaevand.
Photo / Foto: Heiki Valk

loam (Figs 24–25) from where only one pottery fragment (Fig. 23: 8) was found.[10] The soil contained rare tiny charcoal particles and also decayed remains of two small thin decayed brands from the depth of 60 and 70 cm (length of the sooty area 10 and 27 cm, diam. 2–5 cm).[11] Within the rampart a layer of uneven sooty sand (Fig. 25: 5) with the thickness of *ca*. 30 cm appeared more-or-less at the ground level of fort yard. The sand contained thin intensive soot layers and patches, which all seem to result from the same fire. Below the sooty sand a compact layer of soot with the thickness of 2–5 cm, sloping towards the east, was revealed in the whole opened area (Fig. 25: 6). Under that layer sand with some rare charcoal particles followed and under that natural intact ground was revealed. The character of the sooty layer was similar to that found under the rampart in the excavation plot I. However, differently from the excavations of 2009, under the sooty sand there was not clay, but disturbed yellow sand in the eastern end of the rampart. Evidently, the layers of yellow sand and soot or decayed charcoal in both excavation plots originate from the same constructions, made of timber and sand. In plot II also clay similar to that in plot I appeared below the sand in the bottom of the trial pit.

The third plot (3 × 0.5–1.25 m) was opened on the external northern foot of the hill slope (Fig. 20: III). Within the layer of eroded soil remains of a decayed brand

[10] Finds from 2010: TÜ 1867: 1–6.

[11] The amount of extracted charcoal was too small for ^{14}C date without an accelerator.

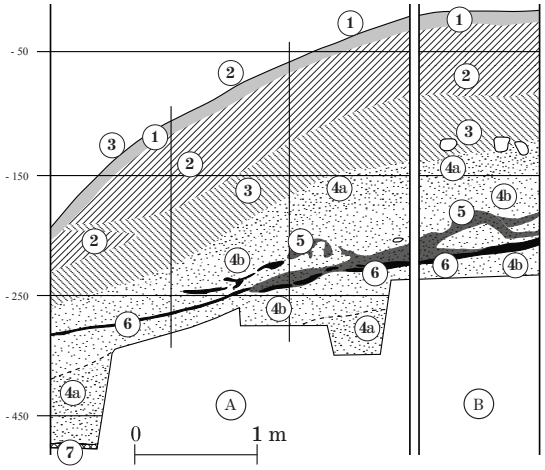

Fig. 25. Lääniste hill fort, excavation plot II. A – southern profile, B – western profile. 1 – dark soil, 2 – disturbed brown soil / loam, 3 – pink loam, 4 – yellow disturbed sand, 5 – sooty dark sand, 6 – black sooty sand, 7 – hard clay / loam.

Jn 25. Lääniste linnamägi, II kaevand. A – lõunaprofiil, B – lääneprofiil. 1 – tume muld, 2 – segatud pruun muld / saviliiv, 3 – roosa saviliiv, 4 – kollane segatud liiv, 5 – tume süsine liiv, 6 – must nõgine liiv, 7 – kõva liivsavi.

Drawing / Joonis: Maria Smirnova

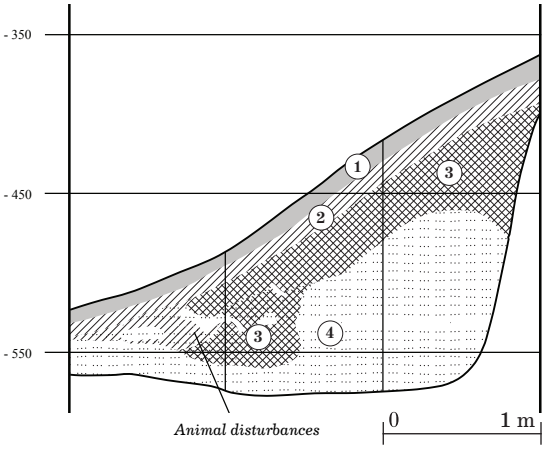

Fig. 26. Lääniste hill fort. Excavation plot III, eastern profile. 1 – dark soil, 2 – disturbed eroded brown soil, 3 – hard clay / loam, 4 – red intact sand.

Jn 26. Lääniste linnamägi, III kaevand, idaprofiil. 1 – tume muld, 2 – pruun erosioonimuld, 3 – kõva roosakas liivsavi, 4 – punane puutumata liiv.

Drawing / Joonis: Maria Smirnova

were found in the depth of *ca.* 40 cm. As the brand lay parallel to the rampart, it may originate from fallen and burnt defence constructions of its later, second stage.[12] The only finds from the plot were some tiny shards of hand-moulded pottery from the eroded ground, originating from the soil used for heaping up the high rampart. Below the eroded soil a layer of disturbed pink/brown clayish loam (Fig. 26: 3) was found. Because ground was hard and sticky, it was evidently not formed by erosion, but represents the original body of the rampart edge. Under the clayish hard loam intact red fine sand appeared, reflecting the natural original body of the hill that was chosen for constructing the fort.

It also appeared that soil for heaping up the later stage of the rampart was taken from a rather broad, *ca.* 10 m wide area north of it where a shallow moat-like depression could be observed (Fig. 20). However, no real moat which might have had defence purposes was constructed, although preconditions for making it were most favourable on the back of the ridge.

[12] The amount of extracted charcoal was too small for ^{14}C date without an accelerator.

The excavations of 2009 and 2010 give evidence of similar construction of the rampart of Lääniste hill fort in its central part and eastern end. The first construction stage, dating from the Roman Iron Age, was made mainly of timber, although also yellow sand was used. After perishing in fire it was replaced by a higher rampart made of sand and sandy loam.

CONCLUSION

The field work of 2010 gave new information about the chronology and defence constructions of the hill forts of south-eastern Estonia. Remains of timber walls were found at the edge of the hill fort plateau in Nooska and Karula where, likewise in Kaloga, no earthen rampart existed. The rampart, made in one stage, was cut in two places in Võuküla and the external part of the rampart was studied with two trial pits in Lääniste. At Kaloga hill fort the main trench cut the edge of the hill fort plateau and the circular lower plateau that surrounds the hill. The earliest settlement traces come from the Roman Iron Age in Võuküla and Lääniste. The hill fort originates from the middle or third quarter of the 1st millennium AD in Nooska, Kaloga and Karula whereby in the last case intensive use in the Viking Age can be noted. The last, probably short-time functioning of Karula fort dates from the period of crusades of the early 13th century. The fort of Võuküla without a cultural layer, but with ^{14}C samples stretching continuously from the Roman Iron Age until the Latest Iron Age is a most exceptional site, probably of ritual character. As excavations on the hill forts of south-eastern Estonia will continue, a more profound synthesis of the obtained field work data will be presented in the future.

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Table 1. Radiocarbon datings from the hill forts of South-East Estonia.[13]
Tabel 1. Radiosüsinikudateeringud Kagu-Eesti linnamägedelt.

No. / Nr	*Site / Muistis*	*BP / Radiosüsinikaastad*	*Sample no. / Proovi number*	*Cal. AD / Kal. pKr*	*Context / Kontekst*
1	Nooska	1007 ± 55	Tln-3268	896–1160	Among fire-cracked stones
2	Nooska	1395 ± 50	Tln-3264	553–765	Log on original ground
3	Nooska	1596 ± 55	Tln-3267	339–591	Defence wall
4	Nooska	850 ± 55	Tln-3269	1041–1270	Sand from collapsed rampart
5	Kaloga	892 ± 60	Tln-3270	1025–1253	Ritual ditch (?)
6	Kaloga	1350 ± 60	Tln-3271	567–809	Fireplace
7	Karula	890 ± 80	Tln-3275	1015–1273	At crossbow bolts
8	Karula	873 ± 60	Tln-3275	1034–1259	On intact ground close to the bolts
9	Karula	963 ± 55	Tln-3272	987–1208	Cultural layer, 15–20 cm
10	Karula	1027 ± 60	Tln-3273	891–1156	Cultural layer, 20–30 cm
11	Võuküla	917 ± 60	Tln-3257	1016–1251	Fireplace
12	Võuküla	1181 ± 55	Tln-3258	691–980	Post hole
13	Võuküla	1750 ± 55	Tln-3259	135–404	Above podzol sand
14	Võuküla	1645 ± 55	Tln-3263	256–542	Board above podzol sand
15	Võuküla	1510 ± 50	Tln-3260	432–639	Within the rampart, 60 cm from the top
16	Võuküla	939 ± 55	Tln-3261	1014–1215	Sand from collapsed rampart
17	Lääniste	1763 ± 50	Tln-3223	133–389	Layer of burning

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[13] For calibration OxCal 4.1. (Bronk Ramsey 2009) was used. All calibrations are with 95.4% probability.

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KAEVAMISED KAGU-EESTI LINNAMÄGEDEL: NOOSKA, KALOGA, KARULA, VÕUKÜLA JA LÄÄNISTE

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2010. aastal võttis Tartu Ülikooli arheoloogia kabinet Kagu-Eesti linnamägede uurimise ja dateerimise projekti raames (ETF grant 8510) ette proovikaevamisi viiel linnamäel (jn 1): Nooskas ja Kalogas (Rõuge khk), Karulas (Karula khk), Võukülas (Räpina khk) ja Läänistes (Võnnu khk).

Nooska (Talimäe/Tal(l)ima) linnamäel tehti kaevand mäe edelanurka. Platoole tehtud 2 × 6 m põhikaevandis (jn 2–3) oli kultuurkiht 0,5 m paksune, tume ja võrdlemisi leiuvaene. Kaevandi nõlvapoolses servas paljandus 15–35/40 cm sügavusel rusikasuuruste põlenud raudkivide vöönd (jn 3). Kaevamistel leiti I a.t. II poolele omast käsikeraamikat (jn 5: 2–8), sh musta kiilapinnalise nõu tükke, ja pronksspiraal (jn 5: 1). Kivilasu vahelt 20–30 cm sügavuselt saadud süsinikudateering (kalibreerituna 896–1160 pKr; kõik resümees esitatud dateeringud on kalibreeritud, 95,4% tõenäosusega) asetab kivistiku ja kultuurkihi ülaosa 10. sajandisse. Looduslikult aluspõhjalt leiti 1,5 m pikkune, u 15 cm jämeduselt säilinud söestunud palk (jn 4) ja külgnev ristuva palgi säilinud ots, mis võiksid pärineda mingist hoonealusest. Pika palgi välistest aastarõngastest saadud söeproov andis tulemuseks 553–765 pKr. Mäenõlvale tehtud, põhikaevandi nurgast jätkavas tranšees (12 × 1 m) tulid platoo servalt, u 1 m enne nõlvalanguse algust nähtavale põlenud kaitsetara jäänused dateeringuga 339–591 pKr (jn 4). Mäenõlva on kindlustustööde käigus järsemaks kaevatud. Looduslikul aluspõhjal oleva palgi ja kaitsetara süsinikudateeringu ühisosa lubab arvata, et linnus rajati 6. saj II poolel. Tranšee alaotsast erosioonikihist 50 cm sügavuselt leitud tuki vanus dateeriti vahemikku 1041–1270 pKr.

Kaloga Jaanimäel uuriti mäeplatoo kaguossa tehtud 16 m pikkuse proovitranšeega (jn 6) platoo serva ja lõigati mäeserva pealispinnast 1,5–2 m madalamal ümber kogu mäe kulgevat 6–8 m laiust astangut. Mäeplatoo serval oli kultuurkiht läbi küntud. Ilmnes, et astangul on algselt paiknenud pealt 5,75 m ja põhjast 0,6 m laiune ning keskel kuni 1,4 m sügavune, mõlemas profiilis ühtlaselt kolmnurkse lõikega kraavitaoline sissekaeve (jn 6). Kraavi alaosa oli täitunud pinnasega juba ehituse ajal või kasutamise algjärgus; järgnev 0,3–0,4 m paksune tume kultuurkiht võiks seostuda linnuse toimimise aegse inimtegevusega, ülaosa aga hilisema erosiooniga. Tumedast kihist saadud süsinikuproov andis ebaootuspäraselt hilise tulemuse: 1025–1253 pKr. Võimalik, et süvend või kraav ei ole platooastanguga samaaegne, vaid märksa hilisem. Teisest, paarkümmend meetrit ida poole tehtud proovikaevandist (3 × 2 m) leiti künnikihi alt veidi segamata kultuurkihti ja tulease. Sealt saadud söeproov andis tulemuseks 567–809 pKr, kuid tekstiilkeraamikakillud (jn 5: 11–12) viitavad pigem mainitud vahemiku algusosale. Tekstiilkeraamika väikseid käsitsi tehtud jämedapurruliste nõude kilde (jn 5: 9–10) saadi ka I kaevandist, nii mäeplatoolt kui kraavist. Mõlema kaevandi keraamika väga ühtlane üldilme viitab selle pärinemisele lühikesest ajavahemikust. Tekstiilkeraamika ajalise ülempiiri kõrvutamine II kaevandi söeprooviga viitab linnuse kasutamisele 6. sajandil, kuid I kaevandi söeproov osundab inimtegevusele veel ka II a.t. alguses.

Karula Rebäse linnamäel tehti mäeplatoo servale kaevand (4 × 3 m) ja sellest lähtuv 11 m pikkune, nõlva ülaservale ulatuv proovitranšee (jn 7–9). Kaevandist leiti rohkesti põlenud hoonele viitavaid savitihendeid, samuti valdavalt käsikeraamika tükke (jn 10: 1–3, 6–9, 11–12). Enamasti oli tegu krobelise pinna ja jämeda kivipurruga kildudega, kuid esines ka silutud pinnaga, peenkeraamiliste ja lohkornamendiga nõude ning servas olevate augukestega peenkeraamika katkeid. Kultuurkihi ülaosa tukkidest võetud söeproovide tulemused (891–1156, 987–1208 pKr) viitavad viikingiajale või hilisrauaajale, kuid savinõukillud on valdavalt viikingiaegse üldilmega. Siiski leiti ka mõned kedrakeraamika killud (jn 10: 4, 5, 10). Kaevandi edelanurgast, rohkesti savitihendeid sisaldavast intensiivselt mustast ja nõgisest kultuurkihist (jn 7–9) – nähtavasti hoone sisemusest – saadi kaks 13. saj I veerandi ammunooleotsa (jn 11: 1–2). Linnuse hilise, vallutusaegse kasutusaja ja hävingu kasuks räägivad ka kaks hoonesüvendist, nooleotste lähedusest võetud söeproovi (1034–1259 ja 1015–1273 pKr). Ilmselt piirasid linnust ristisõdijad. Veel saadi kaevandist hilisrauaaja lõpule omane raudnuga (jn 11: 3), silindrikujuline väike savihelmes (jn 11: 5) ja kopra kannaluust ripats (jn 11: 4). Mäeservalt, järsema nõlvalanguse piirilt leiti maapinna suhtes 95 cm sügavune postiauk (jn 12), mis pärineb mäeserval olnud kaitsetarast. August leitud šlakitükk (jn 13) võiks endast kujutada ehitusohvrit.

Võhandu oru kaldapaljandi kohal paiknevale **Võuküla linnamäele** tehti kaks proovikaevandit (jn 14). Esimene neist hõlmas 4 × 4 m ala mäe lääneservas (jn 15); kaevandist lähtus 9 × 1 m tranšee, mis lõikas mäeserva ja valli (jn 16). Teine kaevand (9 × 1 m) lõikas valli mäe põhjaservas (jn 17).

Linnamäe õueplatool kultuurkihti polnud; pinnas koosnes segatud, peeni söekübemeid sisaldavast liivast. Looduslik leeteliiv üldiselt puudus, kuid oli jäänud kaevandi vallipoolses osas, nähtavasti valliga kontsentriliselt, eemaldamata. Kaevandist leiti lõkkease (1016–1251 pKr) ning kaks kõrvuti paiknevat postiauku (jn 18), millest üks pärineb söeproovi põhjal eelviikingi- või viikingiajast (691–980 pKr).

Mõlemas kaevandis on õuepinna suhtes 0,5–0,6 m kõrgune vall kuhjatud ühekorraga. Valli all paikneb algsel looduslikul maapinnal olev põlengukiht, millest saadud söe analüüs viitab rooma rauaajale (135–404 pKr). Vallikuhjatises olnud tuki söeproov andis tulemuseks 432–639 pKr. Vahetult maapinnalt leiti esimesest kaevandist kaks söestunud ja nõgiliivaks lagunenud plangujuppi (neist üks 1,4 m pikkune) (jn 19), kust saadud dateering oli 256–542 pKr. Seega on vall rajatud rooma rauaaja lõpul või rahvasterännuajal. Teises kaevandis valli välisküljelt erosioonipinnasest leitud tukk, mis on arvatavasti alla varisenud valli harjal paiknenud põlenud rajatistest, dateeriti hilisrauaaega (1014–1215 pKr). Valli siseküljel madala vööndina jälgitav kraav oli I kaevandis 50 cm, II kaevandis 30 cm sügavune. Söeproovidest nähtuv pikk kasutusaeg, samas aga kultuurkihi täielik puudumine viitavad linnuse võimalikule rituaalsele tähendusele ja otstarbele.

Lääniste linnamäele tehti 2009. ja 2010. a kaevandid valli sisekülje (jn 20: I; 21), valli idaotsa välisnõlva ülaossa (II) ja põhjaküljе välisjalamile (III) (jn 20: 2, 3). 2009. a kaevandis (I) oli pinnase ülaosa segatud 18.–19. saj vanausuliste kalmistu matustega, kuid valli all olid säilinud esimesest ehitusjärgust pärit kollase, nõe ja söepuru viirgusid sisaldava liiva ladestused (paksus kuni 50–60 cm; jn 22). Kollast nõeviirgudega liiva leidus valliga ristuvas tranšees ühtlase kihina vähemalt 6 m laiuselt (jn 21: 4–6). Põlengu söeproov (133–389 pKr) viitab rooma rauaajale. Söese liivalademe õuepoolses servas oli kaks suurt raudkivi, mis võiksid pärineda rajatise piirdest. 2010. a kaevamised tulenesid asjaolust, et aasta varem ei saadud selgust vallikuhjatise rajamisaja kohta. Valli idaotsa tehtud kaevandis II (jn 24–25) paljandus linnuse õuepinna kõrgusel samasugune peene söepuru ja nõe viirgudega kollase liiva lade nagu I kaevandis. Valli välisnõlva algusesse tehtud III kaevandis (jn 26) algas erosioonipinnase all samalaadne puutumatu kõva punane savi nagu I kaevandis põlenguliiva all. Kõik kaevamistel leitud savinõukillud (jn 23), saadi valli teise ehitusjärgu kuhjatisest ning on algselt kuulunud varasemasse, nähtavasti linnuse õuealal olnud kultuurkihti. Tavaliseks söeprooviks piisavas koguses sütt vallikuhjatisest leida ei õnnestunud.