



The earliest well in Estonia? Archaeological studies at Põltsamaa Kuningamägi, central Estonia

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INTRODUCTION

In October 2013 a local metal detector enthusiast, Urmas Kuusik, was searching on the top of Kuningamägi hill (Eng. *The King's Hill*), west from Põltsamaa town in central Estonia. The main reason for that was the building activity by the local municipality, to make an artificial hill on the top of Kuningamägi drumlin for a sporting and recreation centre. The topsoil was removed and an about 15 m high artificial hill of building debris was piled at the place. During the removing of topsoil a dark and round area was unearthed which clearly distinguished from the rest of yellowish clayish moraine (Fig. 1). At first the dark area was considered as a depression caused by the fall of a bomb during WWII. Surprisingly an iron axe of a distinctive type was found in the middle of the dark area. In addition also an iron knife and



Fig. 1. General view to the site. The depression, filled with meltwater is on the foreground. The central part of the soil rampart, made of ripped off topsoil on the background, is slightly darker with more stones visible.

Jn 1. Üldvaade uuringute alale. Esiplaanil sulaveega täidetud süvend. Tagaplaanil kooritud pinnasest vall, mille keskne osa, süvendist välja lükatud pinnas on ümbritsevast tumedam, samuti on näha suuremaid kive.

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bridle bits were found from the same depression. During the clearance of the topsoil the distinctively darker soil from the depression was pushed to the edge of the cleared area. From this soil a bracelet, made of three bronze wires, was found together with some burnt bones and few potsherds.

The axe (Fig. 2) was dated to the period around the beginning of the current era, the bracelet is typical to the 12th – 13th century, the bridle bits and knife are undatable (Tvauri 2013, 3). Such a set of finds obviously demanded archaeological studies and so Andres Tvauri monitored the place in the autumn of 2013 (*ibid.*). No other metal finds were collected from the depression, but just some dozens of metres eastward from the depression several remains of Early Modern Age houses and fireplaces were found; also from the area where topsoil was ripped off. Among the finds from there ceramic gaming pieces, fragments of pipe, and a gilded fragment of a decoration were collected. It was decided that house remains had not been preserved sufficiently to give any substantially new data about its construction, but the depression was considered to need a more thorough examination (*ibid.*).



Fig. 2. An iron axe, found from Kuningamäe depression.
Jn 2. Kaeluskirves Kuningamäe süvendist.
 (TÜ 2291.)

Photo / Foto: Andres Vindi

THE KUNINGAMÄGI HILL

The Kuningamägi hill has probably gained its name when the area became the residency of a small and short-time Livonian kingdom (1570–1577), ruled by duke Magnus under the permission by the Russian tsar Ivan IV. The actual residency was not on the top of the Kuningamägi hill, but the duke had chosen the place on the northern end of the hill, which is more flat. However, the presence of power has given the name to the entire hill (Fig. 3).

According to the earliest map available for that region from 1688 (EAA 308-2-213), the studied place has been a field and no buildings are marked on this or later maps. It is probable that the Early Modern constructions, found by Andres Tvauri during the monitoring of the site, are slightly earlier and were already deserted by the time of the earliest map. But taking into account the gilded decoration the place was not some ordinary farmhouse. It is possible also that the place, the highest and most prominent in the landscape, was originally chosen for the residency of the Duke, but was removed later.

The geology of the Kuningamägi hill is remarkable as well. As most of the hills in Estonia this also consists of moraine. But differently from many other moraine hills, Kuningamägi is not sandy, but clayish. From the moraine numerous pebbles of local Silurian flint could be found, still no worked pieces were recognized.

THE FOLLOWING STUDIES

The 'soil rampart'

The first attempt to study the depression was made in late May 2014, however, it was still filled by melt water then. So, attention was concentrated on gathering finds from the removed topsoil that had been heaped up into a long rampart. To collect more finds the rampart was scattered in layers and every layer was controlled with metal detector. Unfortunately, no



Fig. 3. Map of the surroundings of Põltsamaa, including Kuningamägi; the trench is marked with a red circle.

Jn 3. Põltsamaa ja Kuningamäe ümbruskond; kaevand on markeritud punase ringiga.

Drawing / Joonis: Tõnno Jonuks

other finds except nails and pieces of melted iron (most probably remains of WWII bombs) were found. The only finds – pieces of bones and some teeth of pigs – were collected from the top layer. Thus they could easily originate from the depression, but equally also from the artificial hill nearby. Even though the future recreational hill was ought to be constructed of building waste only, a lot of household garbage was present. That made the context of the bones unsure and these were not collected. According to knowledge gained later, it can be said that bones probably originated from the depression.

Despite of the lack of any finds a clearly observable selection of rocks was found (see Fig. 1). The rampart in general consisted mostly of pure soil and no rocks could be found. It was only in the area, where the soil from the depression was heaped, where numerous large rocks (around 60 cm in diameter) occurred in an area of 3–4 metres. In addition a lot of small pebbles, around 15 cm in diameter occurred as well, some of them carrying clear signs of burning. It is quite obvious that rocks and stones originated from the depression and had been placed there deliberately. Unfortunately no rocks were preserved in the depression and thus it was not possible to study their original layout.

The depression

By the beginning of August the depression had dried enough to start working there. Considering the rather hot and dry July in 2014 such slow drying of water on the top of the hill is remarkable.

The depression was measured 7 × 8 metres, taken from the highest preserved level. It must be noted here that as the top layer was moved already, it was not possible to measure the original dimensions of the depression.

In the north-east slope of the depression a small area of 30 × 30 cm was discovered, which was covered with 1 cm thick layer of fish scales, belonging to the carp family (*Cyprinidae*).¹ Right beside the fish remains a small piece of Early Modern Age ceramics (TÜ 2443: 1) was found. Still, the find context of the pottery is not clear – it may, but does not necessarily have to be connected with fish remains. The fish remains probably derive from a fish that has been descaled at the place and it is most likely not a waste thrown away.

¹ Determined by Lembi Lõugas (AI).

To study the large depression a 1-metre-wide NE–SW-directional trench was dug through it and three main layers were distinguished in the centre (Fig. 4):

- 1) A 15 cm layer of grey and clayish mud mixed with garbage from the created hill;
- 2) A 45 cm layer of thick, very dark and humid mud, which was mixed with a lot of small pebbles, some burnt. Some remains of charcoal were present between the stones. Unexpectedly, pieces of striated pottery (Fig. 5) and some barely preserved bones were found between the stones;
- 3) Under that a natural, yellow and clayish moraine started.

According to the results of the trench it was decided that it is not only a natural depression, but at least partly human-shaped. The soil between the stones was very humid and thus extremely dense. The combination of this kind of mud and small pebbles made the excavation very complicated and it was almost impossible to clean something *in situ*. The intense smell of the layer probably refers to the strong presence of organic material in the layer.

As a result of the excavation of the trench it appeared that the bottom of the depression was conical, with a slope of about 20 degrees. In the middle of the depression a clearly distinguishable hollow appeared, with the dimensions of 100 × 110 cm; its sharp edges indicate that it was artificially deepened. The deepening was very clearly observable at the western side, where a 12 cm high step appeared. The bottom of the deepest central point was 1.5 m below the surface.

While the higher and conical part of the depression was filled with mud, the central and deeper section was in addition filled with pebbles, also pottery and bones were found from there. In addition, the iron axe, mentioned in the beginning of the article, was also found from the same place. While the axe was probably obtained a bit higher (it was excavated according to the metal detector signal and thus it is difficult to reconstruct its original depth), all the potsherds and bones were situated only in the bottom of the pit and were covered with stones. In the very bottom, partly in the natural clayish moraine layer a 10 × 3 cm piece of charcoal was found. Unfortunately it was so poorly preserved in this extremely humid environment that it was impossible to collect a sample for dating. Charcoal was also found from the slopes of the depression.

Animal bones that were collected from the pit were poorly preserved as well, but could still be determined as belonging to a bovid.²

To study the soil itself and particularly the smelling essence of it, two soil samples were taken for measuring the level of organic residues in it. Sample 1 was collected from the smelliest section in the very bottom of the depression, between the stones, pottery and bones. The sample for reference was collected from the eastern slope, about 40 cm higher. Both samples were dried, weighed and heated to burn out organic material and weighed again. A study conducted by a PhD student Triine Post from the Geology Department of the University of Tartu surprisingly revealed no difference and thus the smell of the layer had to originate from some other source and not the decomposing of organic material.

INTERPRETATION OF THE SITE AND WELLS IN ESTONIAN PREHISTORY

As a conclusion of fieldwork an interpretation formed that the depression was used for collecting rainwater. Probably some sort of natural depression formed the origin of this practice. Unfortunately the original dimensions of the depression cannot be followed any more.

² Pers. comm. Eve Rannamäe (TÜ).

According to the studies it can be stated that the depression had to be at least 8 m in diameter. The conical depression was reshaped by humans and most definitely a deeper pit was dug in the middle of the depression. This 1 m² pit was most likely dug to make the collected water more easily available. Due to the rich amount of clay in the consistence of the moraine hill the rainwater was preserved and available for a longer period.

Since unfortunately ¹⁴C analysis could not be made, the dating of the site has to be decided according to the find material. The iron axe was identified by prof. Valter Lang (TÜ), who dated it to the period around the beginning of the current era (Tvaauri 2013); while the striated pottery only confirms this dating. It is remarkable that no more finds came from the pit and all the potsherds belonged to the same type. So it can be safely stated that the ‘well’ was dug at some point around the beginning of the current era. A ceramic vessel might have dropped while in use or deposited into the ‘well’, where some pieces might have been removed, others preserved.

There are several interpretations available for pebbles. The first plausible interpretation could be that the well was filled when it was not required and not in use any more. It could also explain the pottery between the stones and even the iron axe as some waste material. But the thick layer of stone pebbles could have also served for making fresh water more easily accessible. While filling the pit with stones the water level could be raised higher and so the well could be used even without emptying it of sediments.

As the oldest finds come all from the deeper pit, it could be assumed that the well was filled sometimes during the first centuries AD. But the larger depression that still collected rainwater remained in use. That would help to interpret later finds, like the 12th – 13th century bracelet and others, which came from the soil rampart and were moved there from the higher layers of the depression. But it seems likely that the place then rather served as a ‘pool’. Possibly the large stones that were pushed to the ‘soil rampart’ from the depression formed some sort of a border, stepping stones or some other construction in the pool to make it easier to collect water? Probably carp was prepared for food at the bank of it at some point and the pool-water was used for cleaning it. It remains unclear if the pool was still in use



Fig. 4. Section through the depression. Three different layers are observable and a sharp edge on the left side of the hollow, marking clearly an artificial deepening of the depression.

Jn 4. Profiilkraav läbi süvendi. Selgelt on jälgitavad kolm ladestunud kihti ning keskse süvendi vasakul servas järsk sissekaeve jälg, osutades, et keskne osa on kunstlikult sügavamaks kaevatud.

Photo / Foto: Tõnno Jonuks



Fig. 5. Pieces of striated pottery from the central depression.

Jn 5. Riibitud keraamika killud kesksest süvendist. (TÜ 2443: 2–6.)

Photo / Foto: Tõnno Jonuks

during the Early Modern Ages. According to the construction remains in the immediate vicinity the place could still have been used for collecting water, as there are no other sources for water on top of that hill. But it seems that by the 17th century the whole site was abandoned, as otherwise it should have been marked on the map.

If that interpretation holds true, Põltsamaa Kuningamägi represents the earliest dated construction for collecting water in Estonia known at the moment. The location of prehistoric settlements has usually been chosen close to an available fresh water body, thus there has not been any need for digging wells. Special wells in towns were started to be dug during the Medieval period in Estonia. Open-air settlements have been furnished with wells probably somewhat later as these were situated at water sources anyway and there was no urgent need for special wells.

Somewhat closer examples to Kuningamägi come from Late Iron Age hill forts, where also wells are sometimes observable on the top of the hill or on flat but dry ground. Only single examples have been excavated in Valjala, Lõhavere and Varbola (see Tõnisson 2008, 146 ff in more detail), but they all differ from the example above as wells of hill forts are dug until they reach the groundwater level in the depth of 5–14 metres. Examples from excavated wells offer also different styles for constructing the shaft, ranging from wooden frames to stone walls.

At some hill forts, depressions can be found on several occasions, which probably have originally been wells, similar to the Põltsamaa example for collecting rainwater. Sometimes those wells have given inspiration for later oral tradition. For example, at Tammiku hill fort Rahaaugumägi (Eng. *A Hill of Treasure Hole*) a large depression has been explained in folk tradition as remains of treasure hunting.

CONCLUSION

The unique situation of Põltsamaa Kuningamägi, provided by a rich clayish moraine hill that preserved water for a long time, probably favoured a permanent settlement. As the topsoil has been removed from most of the hill, it is not possible any more to study what the essence of the settlement could have been. Valter Lang has suggested hill-top settlements in Early Iron Age Estonia as a special kind of sites (Lang 2007, 71ff). The data for those have been gathered during the excavations of later hill forts at the same place. The settlement at Kuningamägi probably functioned as an open settlement on top of the hill. At the moment no evidence has been found to suggest a fortified settlement there and the hill itself with gentle slopes is not the best for this purpose. It is difficult to estimate what could have been the reasons to choose this location for the settlement. Might the prominence of the landscape be the key issue here? The site is located at the highest point of the landscape. Considering the prominent location, the site of Kuningamägi could be compared with 'dominant farms' that Lang has discerned already from the Late Bronze Age onwards (Lang 2007, 228). Unfortunately the surroundings of Põltsamaa are still lacking data from Bronze Age to Late Iron Age. As many authors have stressed, the archaeological 'emptiness' of Central Estonia is first of all the result of the research situation and does not indicate the lack of people (Lätti 2005; Lang 2007, 87). The area becomes important during the Medieval Times, when it controlled one of the major routes between South and North Estonia. The importance of the place during the Early Modern Age has been referred to already, when it became the residency of the representative of a small local kingdom.

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KAS EESTI VANIM KAEV? ARHEOLOOGILISED UURINGUD PÕLTSAMAA KUNINGAMÄEL

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2013. a oktoobris leidis kohalik metallidetektorismi entusiast Urmas Kuusik Põltsamaa Kuningamäelt rauast kaeluskirve (jn 2), kolmest pronkstraadist käevõru ja veel mõned metallesemed. Leiukohalt oli kamar koos kasvupinnasega eemaldatud seoses rajatavale spordikeskusele kunstliku mäe ehitamisega. Pärast pinnase eemaldamist paljastus alla 10 m läbimõõduga tumedam ala (jn 1), mille seest või millest väljalükatud pinnasest leiud pärit olidki.

Sama aasta sügisel tegi leiukohal arheoloogilisi eeluuringuid Andres Tvauri (TÜ). Uuringute käigus ei kogutud küll uusi muinasaegseid leide, küll aga leiti paiga vahetust ümbrusest uusaegsete hoonete põhjad. Viimased olid säilinud niivõrd fragmentaarselt, et nende põhjalikumal uuringul ei nähtud vajadust. Käesoleva artikli autor korraldas ulatuslikumad uuringud muinasaegseid leide pakkunud alal 2014. aastal. Esimese tööna laotati vallidesse kooritud kasvupinnas õhukeste kihtidena laiali ja kontrolliti igat kihti metallidetektoriga. Kahjuks ei pakkunud see töö uusi leide, samuti ei saadud läbivaadatud pinnasest savinõukilde jmt. Korjamata jäeti ka loomaluud, kuna nende puhul oli suur tõenäosus, et need pärinevad vahetult kõrval oleva kunstliku mäe materjalist. Küll aga leiti tumedast alast väljalükatud pinnasest arvukalt nii väikeseid (osaliselt tules põlenud) kui ka suuremaid kive, samas kui mujal vallides esines kive väga vähe.

Tume ala, kust leiud olid pärit, oli pea terve 2014. a kuuma ja kuiva suve täidetud sula- ja sadevetega ning ala kuivas alles augusti alguseks. Alast kaevati läbi 1 m laiune proovitransšee (jn 4), mille tulemusel selgus, et algselt vähemalt 8 m läbimõõduga süvendil oli kooniline põhi ja selle keskel paiknes umbes 1 × 1 m suurune kunstlik sissekaeve. Viimasest leiti ka ülalmainitud kaeluskirves, kuigi kirve algset leiukõrgust ei olnud enam võimalik tuvastada. Suurem osa süvendist sisaldas musta ja tihedalt settinud muda. Keskne sissekaeve oli aga täidetud väiksemate, osaliselt põlenud kividega. Kivide vahelt leiti riibitud keraamika kilde (jn 5) ja loomaluid. Viimased kuulusid kõik veisele.

Uuringute tulemusel kujunes tõlgendus, et tegemist on ohtra savisisaldusega moreenioosiga, mille laele oli kujunenud kas looduslikult või inimtegevuse tulemusel u 10 m läbimõõduga kooniline tiik. Selle keskosa oli aga kindlasti kunstlikult süvendatud, ilmselt sadevee kogumiseks ja säilitamiseks. Kuna kesksest süvendist saadi vaid riibitud keraamikat ja samast kohast ka ajaarvamise vahetusse dateeritud kaeluskirves, võib sellise kaevu rajamise dateeridagi ajaarvamise vahetuse paiku. On võimalik, et keskne süvend on aetud täis kive ja asulamaterjali. Kuna kive oli keskse süvendis aga palju ja laiemal alal vähe, on ka võimalik, et kive visati kaevu, et tõsta puhta vee taset kõrgemale ilma setetest puhastamiseta. Laiem süvend on aga jäänud veevõtukohana kasutusele pikemaks ajaks, millele osutab hilisrauaaegne käevõru. Võimalik, et lõplikult täideti tiik alles 16.–17. sajandil, mil oosil oli väike asula. 1688. a kaardil ei ole nimetatud oosile aga markeeritud ei asulat ega veesilma.