

# THE MEDIEVAL MARKET TOWN AND CEMETERY IN POLTSAMAA

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## INTRODUCTION

Archaeological monuments from the early history of Põltsamaa are located on both sides of the river that runs through the town. Most of the archaeological research has so far concentrated on the territory of the medieval Order Castle. Villem Raam conducted large-scale archaeological studies in Põltsamaa. In 1971 and 1973 Jüri Kuuskemaa investigated the site of the porcelain manufacture that worked in Põltsamaa in the 1780s, and collected numerous fragments of porcelain and production residue. He also studied 9 m² of the central part of the castle yard (Keevallik 1972, 28–33; Kuuskemaa 2005, 189–197). In 1998 Andres Tvauri studied the area of the gate building (1999). Archaeological monitoring has been carried out on the castle territory by Kalvi Aluve (in 1957), Jaan Tamm (in 1975–1976) and Ants Kraut (in 1988–1989). Unfortunately quite a large part of the excavated cultural layer has been removed from the castle territory without detailed studies (Tvauri 2007, 85–110).

In 2010 a metal works factory Kitzinger Progress AS planned to extend its production plant at Linnu Street 2. Since this area is under state protection as an archaeological site, Kitzinger Progress AS commissioned from Muinasprojekt OÜ both archaeological research and monitoring of constructing the extension. The research was carried out in May 2010, conducted by Ain Lavi with Tarvi Toome and Peeter Talvar. Archaeological monitoring of constructing the extension was done by Ain Lavi and Tarvi Toome.

## HISTORIC BACKGROUND

The oldest monument on the town territory – an Iron Age settlement site – is located on the right river bank. The finds collected from beneath the monument include fragments of early Iron Age and medieval pottery, iron slag and other finds that may be connected to a settlement site. The oldest find is a round grinding stone with worn edges (Lõugas & Selirand 1989, 176). In 1939 plough work unearthed a coin hoard from the cultural layer of the settlement. Over 500 coins were hidden in a clay pot, of which 472 Arab coins reached museum collections. The hoard was dated to the 10th century and it is the largest and the oldest of the ancient hoards found in the County of Jõgevamaa (Tõnisson 1962, 203). It seems likely that the settlement site with a very intense cultural layer may have preceded the ancient centre of Põltsamaa and could have also been the so-called main village of the small county of Mõhu (Germ. *Mocha*).

The centre of medieval Põltsamaa (Germ. *Oberpahlen*) developed on the left river bank, its cultural layer may stretch from Suursilla to the out-buildings of the former Uue-Põltsamaa manor, and from there up to 300 m north-west. The market town started to develop on the left river bank probably due to the fact that in 1272 the Order built a castle on the right bank. No buildings were allowed near the fortification, since the attacking enemy could easily have taken advantage of them. The cultural layer of the medieval market town had not been archaeologically studied before. Yet some finds have been picked up there, especially by an amateur archaeologist O. Raudmets.

A written record from 1234 states that clergyman Eggehard worked in Mocha. Hence there must have been a church in the small county at the territory of present Põltsamaa, originally probably a wooden church with a cemetery. In the end of the 13th century or in the 14th century the most prominent building of the town – a stone church – was erected to the present Linnu Street 2. Its constructional characteristics have been compared with the church in Türi, built at approximately the same time. It is possible that the two churches were built by the same master (Roots & Tänav 2002, 13).

The market town had probably other stone buildings, too, along with wooden houses. For example, local people referred that when the new schoolhouse was built in Põltsamaa in 1965–1967, traces of old stone walls and cellars came to light (Lavi & Toome 2011a). Unfortunately these observations about the discovered building remains did not reach archaeologists or heritage experts, and the remains were not studied. It seems that the only visible sign of the medieval market town today is the remains of a cellar that nowadays is used as an open-air classroom. Earlier strong stone walls have said to have stood over the cellar. In 1599 Põltsamaa, that then belonged to Poland, was regarded as a town with its 50 houses, including the burgermeister dwelling. The inhabitants were Germans, Russians, Poles and Estonians (Roots & Tänav 2002, 26). In the year 1600 the Swedish army attacked the town, letting the stones of the church fall over the Poles who tried to take rescue in the church.

The following years of war and plague after 1600 were devastating for Põltsamaa and it stopped being a town. Although the church was destroyed in the year 1600, the old cemetery still continued to be used. This is confirmed by the penannular brooch that was found in the cemetery layer and which was in use until the end of the 17th century, and also by historic records (Vervolt 1932, 18). In the 18th century the area was joined with the Uue-Põltsamaa manor and the situation changed. The cemetery was very close to the manor and the frequent funeral processions disturbed the landlord's family. Therefore landlord Jacob Heinrich v. Lilienfeldt gave some land at the Jõgeva road for a new cemetery. First he built a wooden chapel there, surrounded the area with a fence and covered the road from the church to the cemetery with cobblestones. Having done these preparations, in 1773 he forbid burials in the old churchyard (Vervolt 1932, 18; Kuurme 2001, 79). In the same year the Russian imperial power also issued a decree that forbid burials in churches and their vicinity. New cemeteries had to be situated at least 300 fathoms (640 m) away from a church or a settlement (Valk 2001, 20). However, the cultural layer of the medieval town survived well in the manor and its park.

## **RESEARCH AT LINNU STREET 2**

In order to study the area at Linnu St 2 several trial pits were made in the location of the future extension of the metal works of Kitzinger Progress AS (Fig. 1). Additional trial pits were made outside the construction area to get a full picture of the cultural layer. Archaeological studies revealed two main objects beneath the 20th century factory.



Fig. 1. Territory of the archaeologically excavated area in Põltsamaa. View from south-west.

Jn 1. Arheoloogiliselt uuritud ala Põltsamaal. Vaade edelast.

Photo / Foto: Tarvi Toome

Fig. 2. Profile of the layer of the old market town Põltsamaa. The medieval and modern cultural layer are visible above the natural layer.

Jn 2. Põltsamaa vana alevi kultuurkihi profiil. Keskja uusaegne kultuurkiht on jälgitav loodusliku kihi kohal.

Photo / Foto: Tarvi Toome



First, in the depth of 30–60 cm a clear sandy layer mixed with soil was documented (Fig. 2). Under this layer a 50–100 cm thick natural clayey sand was traced that reached down to the bottom limestone. No datable finds were discovered from the soil layer at the construction area. However, since the mentioned layer joins the cultural layer of the medieval market town in the west, it is possible that the territory of the Kitzinger Progress AS construction site may be a peripheral settlement site. No traces of construction were detected at the researched area. All present data suggests that the medieval settlement was mainly concentrated near the river – the present gardens between the river and the Veski street display a dark intense cultural layer.

Second, the site of the medieval church and cemetery in Põltsamaa is very close to the crossing of the Veski and Metsa streets in the south-west corner of the territory of the metal works. Only very little has survived from the former impressive stone building. Possibly the stones have been used as building material over the times. Numerous human bones came to earth while building workshops near the church. Hence the cemetery has been demolished on the site of the workshops.



Fig. 3. Medieval and modern church cemetery in Põltsamaa. Remains of burial No. I. View from the west.

Jn 3. Põltsamaa kesk- ja uusaegne kirikukalmistu. Matuse nr I jäänused. Vaade läänest.

Photo / Foto: Tarvi Toome

Test pits made 35-45 m east of the church foundation revealed the central part of the cemetery. Here, in the vicinity of the church, the cultural layer was heavily mixed by graves from different times and no wholly preserved skeletons were found. However, a large amount of mixed human bones were discovered. Finds include probable coffin nails and a fragment of a bronze penannular brooch with rounded ends. This type of penannular brooches were used until the end of the 17th century (Valk 2001, 45). The cemetery layer was notably brownish. The reason for that might be the intense burials in the immediate vicinity of the church. The densely buried bodies coloured the soil gradually brownish near the church (Lavi & Toome 2011a).

On the line of the north-west wall of the planned workshop and on the territory of the trestle less disturbed burials I–IV were found during archaeological

supervision (Figs 3–4). This area was located already 75–80 cm away from the church, therefore it was not used massively for burials and the deceased rested in light clayey sand. The graves were placed in north-west–south-east directional rows with an interval of 1–1.3 m at a depth of 1–1.8 m. Burial II contained a child's skeleton, burials I, III and IV were adults (Fig. 3). The deceased were buried with their heads towards west, stretched on their backs. Hence the burials were of Christian tradition (Valk 2001, 85–86). Burials I and II were disturbed by cable trenches running through the

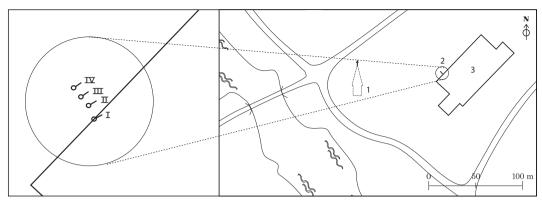


Fig. 4. Site of the medieval and modern church and cemetery on the territory of the Kitzinger Progress AS factory in Põltsamaa. 1 – site of the medieval and modern church, 2 – burials I–IV discovered in the north-west fringe of the medieval and modern cemetery, 3 – production plant erected in 2010.

Jn 4. Põltsamaa kesk- ja uusaegse kiriku ja kalmistu asendiplaan AS Kitzinger Progress tehase territooriumil. 1 – kesk- ja uusaegne kirik, 2 – kesk- ja uusaegse kirikukalmistu kirdepoolses ääreosas avastatud matused I–IV, 3 – 2010. a rajatud tootmishoone.

Drawing / Joonis: Kaja Loodesalu

factory territory. Exact dating of the burials is complicated due to the lack of datable finds. Still, smithed nails were discovered around the skeletons that probably originate from wooden coffins. Special mention should be made of burial IV that lay at the depth of 103 cm in a clayey sandy soil. No traces indicate that this layer had been penetrated when digging the grave – i.e. burial IV is older than the medieval and manor-time soil layer covering it. Therefore burials I–IV may be considered as medieval. It is possible that these burials may have been placed outside consecrated land. Yet, the burials were all in regular rows and it may mean that this area was a peripheral cemetery area (Lavi & Toome 2011b).

## **OSTEOLOGICAL MATERIAL**

Analyses of the anthropological material discovered during archaeological supervision of work carried out in the medieval market town of Põltsamaa and its cemetery were done in laboratory conditions and a detailed overview has been presented previously (Heapost 2011). The skeletons were heavily damaged during earlier excavation work, as described above. Therefore thorough anthropological overview was not possible. The present paper offers the biological age of the deceased, their sex and some pathological and other phenomena and peculiarities on the bones.

# Methodology applied

The sex of the deceased was determined following the general standards (Buikstra & Ubelaker 1994). The age of the adults at the time of their death was determined according to the stages of ectocranial and endocranial suture closure (Recommendations 1980; Brothwell 1982). Also the degree of teeth wear due to aging was considered (Miles 1963; Alekseev & Debets 1964). The age of the child at the time of death was determined applying the method of the dental eruption (Ubelaker 1978).

All pathological changes both in the dental system (caries, tooth stone, reduction of alveolar arches etc.) and the skeletons as a whole were fixed according to respective methodology (Brothwell 1982; Roberts & Manchester 1995). The height (stature) of the individuals was reconstructed following the method of Trotter and Gleser (1952).

# General description of the bones

The main results of analyses are presented in Table 1. The number of analysed skeletons was four.

Skeleton I belonged to a middle-aged man (the age was determined according to the degree of obliteration of skull sutures on the few preserved skull fragments). Post-cranial skeleton bones are characterized by a strong development of muscle attachments sites. Especially developed was the lesser trochanter of the femur (trochanter minor), which had an uneven surface and bony outgrows that refers to strong physical stress on the muscle attached to it – musculus iliacus. This is first and foremost connected with activities that require constant bending forward of the thigh (stepping up?). The hypertrophy of tuberculum conoideum of the clavicle can be observed. The development of tuberculum conoideum varies individually and is hereditary. In the case of skeleton I tuberculum conoideum may be influenced by the strong physical stress on the muscle attached to it (lig. conoideum) on clavicle and scapula. From pathology osteoarthrosis was noted, some age-related or degenerative changes occurred on the joint surfaces of bones and porosity of vertebra. Also a pathological phenomena – Pommer's knots, small holes – occurred around the humerus head. The reconstructed height of the man was 172 cm (Heapost 2011).

**Skeleton II** belonged to a 5–6 year old child. Very little bone material had survived. **Skeleton III** belonged to an elderly (over 50 years) woman. The left part of the cranial vault, dolichocranic by form, was preserved, its sutures were entirely closed, which refers to old age. Despite of the age, the teeth both on the upper and

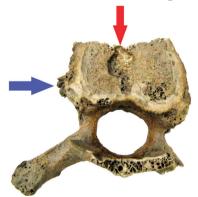


Fig. 5. Burial No. 3. Signs of Schmorl's nodes (red arrow) and osteophytes (blue arrow) on a lower thoracic vertebra.

Jn 5. Luustik nr III. Rinnalüli, millel on näha Schmorli sõlmed (punane nool) ja osteofüüdid (sinine nool).

Photo / Foto: Tarvi Toome

lower jaw were intact, apart from the upper incisors that were lost post mortem. A characteristic feature is the absence of the third molar or the so-called wisdom tooth (bilaterally) in the lower jaw. This tooth had never appeared during her lifetime, which may be a hereditary feature. The teeth have a severe and uncommon attrition - the teeth in the lower jaw have heavily worn outwards, the teeth on the upper jaw on the contrary have worn inwards due to an uncommon bite. The post-cranial skeleton bones had a rather strongly developed muscle attachments sites. The hypertrophy of tuberculum conoideum is apparent on the left clavicle. Degenerative changes were observed on the joint surface of the sternal

side of the clavicle, which was heavily deformed, the acromial side of the clavicle was extremely porous, the costal cartilage of the first rib was ossified – all these refer to the old age. Age-related changes may be noted also on other bones, like porosity, changes around joints, osteophytes on spinal vertebrae, one of the preserved dorsal vertebrae (9th?) displayed a cartilage hernia on both the upper and the lower side – the Schmorl's nodes (Fig. 5). A healed wound was observed on one of the ribs. The alveolar bone was remarkably reduced, which again refers to the old age of the deceased. The teeth had a moderately developed tooth stone. No teeth displayed any signs of caries. On the left side of the frontal bone of the skull a healed indent, approximately  $10 \times 10$  mm, with some porosity on the inner side of the skull, could be observed approximately 1 cm from the sagital suture. This may be a trace of an old wound penetrating the bone, a trauma.

Skeleton IV belonged to a 40–50 year-old man. Of the skull only the braincase, mesocrane by form, was preserved. The length and breadth of the braincase were large, but the cranial height was small. The upper jaw was missing. The lower jaw had its teeth, apart from the right canine and the first premolar, which had got lost post mortem. The premolar tooth had an anomalous position, being salient from the teeth row. Only very few post-cranial skeleton bones had preserved. Pathologically the bones display signs of degenerative age-related changes like porousness around the humerus head; the third and fifth vertebrae have ostephytes, deformity of inflammatory origin on the wrist. Moderate cribra orbitalia occurred in the upper part of the orbit, referring to iron deficiency. Generally, this is more common in women than in men. Some tooth stone was observed. The alveolar bone was moderately reduced, which refers to an older age. From hereditary, discretely varying characteristics the skull had supplementary bones between the parietal bones and the occipital. The reconstructed stature of the man was 169 cm.

In conclusion, four skeletons were anthropologically analysed. These skeletons included one child and three adults (one woman and two men). Pathological changes included both age-related deformations on the bones and also changes due to illnesses

Table 1. Data about the burials.

Tabel 1. Andmed matuste kohta.

Compiled by / Koostanud: Leiu Heapost

Burial no./ Matuse nr	Sex/ Sugu	Age / Vanus	Approximate depth of burial / Matuse umbkaudne sügavus	Stature / Pikkus-kasv	Pathologies/ Patoloogiad
I	Male	40–45	128 cm	172 cm	Osteoarthrosis, Pommer's knots, hypertrophy of tuberculum conoideum.
II	?	$5-6~\mathrm{yrs}$	100 cm	_	Porosity on mandibulae
III	Female	50+	110 cm	_	Considerable reduction of alveolar bone, unusual and heavy attrition, unusual bite, moderate tooth stone, osteoarthrosis, spondyloarthrosis, Schmorl's nodes, healed fracture of a costae, ossification of (costal) cartilage, healed wound (trauma?) on frontal bone, hypertrophy of tuberculum conoideum.
IV	Male	40–50	120 cm	169 cm	Cribra orbitalia, moderate reduction of alveolar bone, slight tooth stone, osteoarthrosis

and accidents. The strong development of bone reliefs (especially in the case of the I and the III person) refers to high muscular tension or physical stress that the deceased had to suffer during their lifetime, doing heavy physical work. Remarkable is the lack of infectious dental diseases, although determined on only two adults. Neither of them had any signs of caries or bone damages around the teeth. This may be a chance phenomenon or may also be connected with the nutrition habits of the time, when people ate a lot of meat and not so much sugar or products containing carbohydrates.

The height of men compared to other populations in Estonia (Heapost 2003) was rather large for the Middle Ages. The analysed individuals do not offer sufficient material for making generalisations about the population. The gathered data is essential for further research of the population in the Põltsamaa area.

### **CONCLUSION**

The old church cemetery in Põltsamaa was established in the 13th century. The cemetery was continued to be used after the demolition of the church until the last quarter of the 18th century. Hence the Põltsamaa churchyard may be dated from the last quarters of the 13th century until the year 1773. The buildings of the medieval settlement seem to have stood near the river banks, in addition to timber houses there were also some stone buildings.

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#### PÕLTSAMAA KESKAEGNE ALEV JA KALMISTU

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Põltsamaa vanema ajalooga seotud arheoloogiamälestised asuvad linna alal, kahel pool jõge. Seni on arheoloogilisi uurimisi läbi viidud jõe paremkaldal asuva keskaegse ordulossi alal, kus on eri aegadel uuringuid teostanud mh Villem Raam, Jüri Kuuskemaa ja Andres Tvauri.

Põltsamaa jõe paremkaldal asub rauaaegne asulakoht, mille kultuurkihist on pinnaleidudena saadud asulakohale omast materjali (keraamika, rauaräbu jms). 1939. a leiti asulakihist künnitöödel 10. saj aare, kus savinõusse oli peidetud üle 500 araabia hõberaha. Tundub, et siinne asulakoht kujutab endast Põltsamaa muistset eelkäijat ja võis ühtlasi olla Mõhu väikemaakonna keskuseks.

Keskaegse Põltsamaa alevi keskus kujunes jõe vasakkaldale. Seda tingis tõenäoliselt 1272. a paiku paremkaldale rajatud ordulinnus. Alevi kultuurkihti ei ole seni arheoloogiliselt uuritud, kuid alalt on saadud pinnaleide.

1232. a on kirjalikes allikates märgitud, et Mochas, tänapäevase Põltsamaa alal, tegutses vaimulik Eggehard. Seega pidi seal olema kirik koos kalmistuga. Tõenäoliselt algse puukiriku asendas 13. saj lõpul – 14. saj ehitatud kivikirik, mida on rea ehituslike joonte poolest võrreldud Türi kirikuga. 1600. a rootslaste poolt hävitatud kiriku ase paikneb tänapäeval Kitzinger Progressi AS metallitehase territooriumil. Kuigi kirik 1600. a hävis, jätkus matmine vanale kalmistule. Seda kinnitavad nii 17. saj lõpuni dateeritav hoburaudsõlg, kui ka ajaloolised andmed. 1773. a keelas Uue-Põltsamaa mõisnik matmise keskaegsele kalmistule ja rajas Jõgeva mnt äärde uue matmispaiga.

Seoses tehase tootmishoone laiendamisplaaniga toimusid Muinasprojekt OÜ juhatamisel eeluuringud (jn 1). Selgus, et tehase alal võib eristada kahte arheoloogilist objekti: sügavusel 30–60 cm eristus mullasegune liivakiht, mis liitub lääne pool selgeilmelise alevikihiga (jn 2), ning keskaegne kirikuase ja kalmistu. Viimase uurimisel avastati kirikuasemest 35–45 m ida pool kalmistu tuumikala, kus pinnases esines rohkesti segatud inimluid. Leidudeks olid kirstunaelad ja kuni 17. saj lõpuni dateeritava hoburaudsõle katked.

Kirikuasemest 75–80 m kaugusel avastati nelja maetu luustikud (jn 3–4). Hauad paiknesid ridastikku, 1–3 meetriste vahedega, sügavusega 1–1,3 m. Maetud olid orienteeritud peaga lääne suunas, lebasid selili-siruli asendis, viidates kristlikule matmistraditsioonile. Kuigi haudade uurimisel leiti vaid sepanaelu, on tõenäoliselt tegemist keskaegsete kirstumatustega.

Maetutest kuulus luustik nr I keskealisele, 172 cm pikkusele mehele. Luustik nr II oli 5–6 aastane laps. Luustik III kuulus vanemaealisele (üle 50-aastasele) pikapealise koljutüübiga naisele. Luustik IV oli 40–50-aastane mees. Patoloogilistest nähtustest esines täiskasvanute luustikel nii vanusega seonduvaid muutusi luudel kui ka haiguslikke, õnnetusjuhtumitega seotud nähtusi (III luustik). Luureljeefi tugev areng (eriti I ja III indiviidil) viitab kõrgele lihaspingele ehk füüsilisele stressile, mida maetud eluaja jooksul tugevat tööd tehes läbi elasid. Kuigi määratud vaid kahel täiskasvanud indiviidil, väärib tähelepanu infektsiooniliste hambahaiguste puudumine. See nähtus võib olla juhuslikku laadi või olla seotud toitumusharjumustega. Meeste pikkuskasv võrreldes teiste Eesti populatsioonidega oli keskaja kohta võrdlemisi suur.

Kokkuvõtteks võib väita, et Põltsamaa kirikukalmistu tekkis ilmselt 13. saj teisel kolmandikul ja see püsis kasutusel 1773. aastani. Keskaegse alevi hoonestus näib põhimiselt olevat asunud jõe ääres, kus esines puithoonete kõrval ka kiviehitisi.