



ST GEORGE'S CEMETERY IN TARTU – MEDIEVAL BURIAL GROUND OF THE LEPROSARIUM?

MARTIN MALVE, ANTI LILLAK and RAIDO ROOG

Tartu Ülikool, Ajaloo ja arheoloogia instituut, Arheoloogia osakond (University of Tartu, Institute of History and Archaeology, Department of Archaeology), Jakobi 2, 51014 Tartu, Estonia; martinmalve@gmail.com

MIHKEL MÄESALU

Tartu Ülikool, Ajaloo ja arheoloogia instituut, Üldajaloo osakond (University of Tartu, Institute of History and Archaeology, Department of General History), Jakobi 2, 51014 Tartu, Estonia

INTRODUCTION

St George's cemetery (in Estonian *Püha Jüri kalmistu*) is situated in Tartu, east of the corner of the Narva road and Tuule street on an area of approximately 3000 m². The Medieval and Early Modern Times town lies ca. 0.8 km south-south-west from the cemetery. The burial ground has been excavated repeatedly between 2004 and 2012. Historical records support its medieval origin, but, as shown by the archaeological finds, it was mostly in use in the Early Modern Times. This paper gives an overview of the excavations (as of early 2013), finds and historical background of the site. Because the written and cartographical sources (Fig. 1) mention the site as the leprosarium cemetery, osteological analysis specialised in tracing infectious diseases, leprosy in particular.

ARCHAEOLOGICAL EXCAVATIONS 2004–2012

In the course of construction works, several archaeological investigations have been conducted on the cemetery (Fig. 2). The area of the cemetery has been densely settled in the 19th–20th century, thus the cemetery has been heavily disturbed.

In 2004 preliminary research took place to clarify the existence and location of burials (Sokolovski & Jaanits 2004). Four skeletons found were left in the ground. In 2005 rescue excavations in the area of about 740 m² (120 burials) took place (Piirits 2005). Next year, rescue excavations revealed 38 burials (but 42 individuals¹; Malve 2013) during the renovation of the Narva road (Tvauri & Bernotas 2007). In 2006, another archaeological monitoring took place, but



Fig. 1. Tartu St. George's leprosarium cemetery in the road atlas from 1695 (on the left).

Jn 1. Tartu Püha Jüri leprosooriumi kalmistu 1695. a teede atlases (vasakul).

(EAA 308-2-70, page 74.)

¹ Osteological analysis revealed that the 38 burials actually consisted of 42 skeletons.

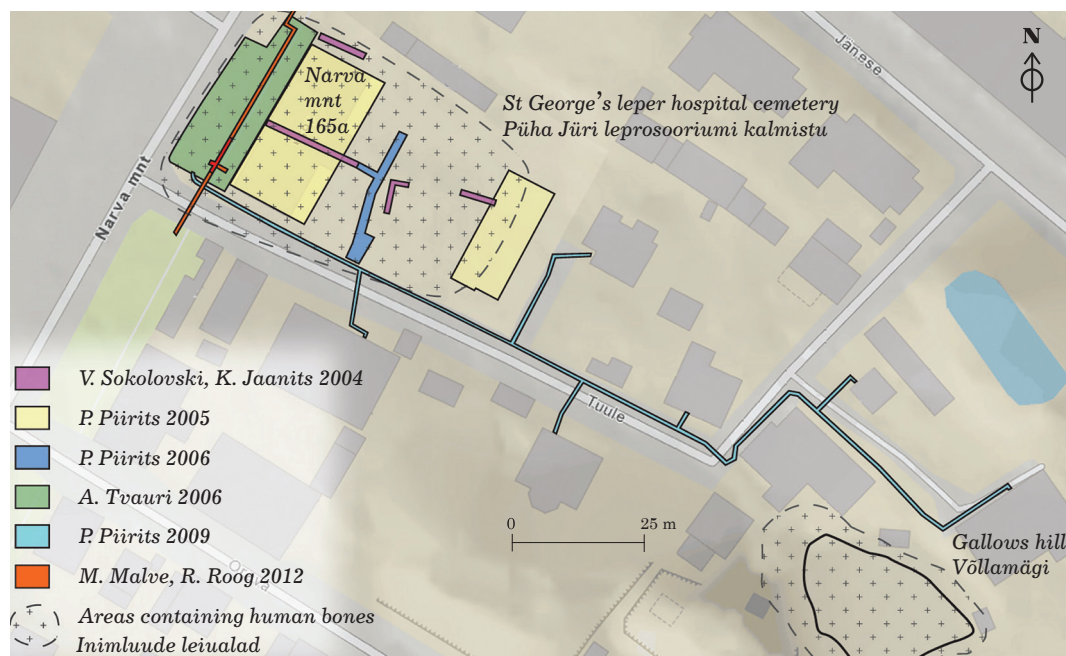


Fig. 2. Archaeological excavations on the St George's cemetery in 2004–2012.

Jn 2. Püha Jüri kalmistul toimunud arheoloogilised uuringud 2004–2012.

Drawing / Joonis: Raido Roog

this time only mixed human bones were found (Piirits 2006). Small-scale investigations took place in 2009, but neither burials nor artefacts were found (Piirits 2009). During the latest rescue excavations in 2012 altogether 14 skeletons were unearthed (Malve & Roog 2013). The current paper gives an overview of all these excavations.

Among historically known leprosarium cemeteries, the St John's hospital cemetery in Tallinn has been thoroughly studied (Sokolovski 2002), giving a certain comparable material to the cemetery in Tartu. In addition, the Cistercian St Michael monastery, the cemetery of which has been excavated (see Tamm *et al.* 1998) also served as a care-taking institution for the poor and disabled.

HISTORICAL BACKGROUND

Hospitals in Medieval Europe

Taking care of the infirm – the ill, old and poor members of the community, was a task of *caritas*, of the Christian love for the fellow man. The medieval mind found many different ways to express this central Christian idea and one among these was the medieval hospital (Le Goff & Truong 2007, 131–132). The late Middle Ages saw an increase in the number of hospitals, which were founded by towns or private persons. Hospitals were not foremost for treating illnesses, but were mainly for separating the lepers from the other members of the community, as well as for housing and taking care of the old, the sick and the poor, even offering temporary accommodation for

pilgrims and travellers. Their inmates had to follow strict rules of conduct imposed by the hospital authorities (Moraw 1985, 298–299; Gustavson 1969, 149–152; Kala 2006, 228–229; 233–235). The hospitals also housed corrodians – wealthy individuals who used the place as an old-age home and donated a capital to it for their upkeep (Kala 2006, 230–231; Mänd 2007, 256–257).

Thanks to the donations (in land, real-estate, or cash) the hospitals became rich landowners and property holders in towns and in the countryside. The hospitals used their property to make money by renting and by offering long-term loans on a small interest, thereby fulfilling another important role in the medieval town, that of a credit-giving early capitalist institution. The economical activities of the hospitals were under the supervision of the wardens, usually two, who were routinely appointed by the city council. Supervising the everyday functions of the hospital and collecting its revenues from donations, last wills and the interest due from its loans, was a task of the court-master, appointed either by the wardens or by the city council, depending on the traditions in each town (Pölsam 2002, 175–182; Kala 2006, 210–211, 215–226; Mänd 2007, 250–254).

Hospitals in medieval Livonia

The first hospital in medieval Livonia was founded by Bishop Albert in 1220 in Riga. Five years later there were already two hospitals in Riga: one dedicated to the Holy Spirit and the other to St Lazarus, the latter a leper house situated on the other side of the town wall (Mänd 2007, 236–239). St John's hospital, a leper house in the vicinity of the town of Tallinn, was first mentioned in written sources in 1237, whereas the Holy Spirit hospital in Tallinn was probably founded in the beginning of the 14th century (Kala 2006, 212–217). New hospitals were founded in Riga and Tallinn in the 15th and the first half of the 16th centuries (Gustavson 1969, 158–165; Pölsam 2002, 177–178; Mänd 2007, 239–240, 247–248).

Hospitals in Tartu

There were two hospitals in medieval Tartu – the Holy Spirit inside the town walls and St George's hospital for lepers on the northern side of the river, somewhere in the area of the present Tuule street (Freymuth 1927, 7; Kalnin 1980, 52). The earliest written record mentioning both Tartu hospitals dates from the year 1364. The documents make a distinction between two specific institutions: the St George's hospital (in the sources simply *hospital* or *spita(e)l*) and the Holy Spirit hospital (in the sources *Sanctus Spiritus* or *tome hiligen geist*). The latter was mentioned in 1365 as an institution for the poor (*pauperibus*). Bearing this in mind one could say that the hospital housing the sick (*infirmis*) mentioned in 1345 was probably St George's hospital or a leper house and not the Holy Spirit. So it seems that in the middle of the 14th century each of the hospitals of Tartu had a specific focus: either towards mainly taking care of the sick, as in St George's, or mainly taking care of the poor, as in the Holy Spirit.² The hospitals of Tartu were under civic patronage as far as we know (Kalnin 1980, 52) and had to work closely together with the city council, if they wanted to ensure that they got what was allotted to them in the last wills of burghers and noblemen of different towns and territories.

² LECUB V, No. 2151; LECUB VI, No. 2891, 2941, 3212, b and 3212, c. The hospital mentioned in 1345 has previously been identified with the Holy Spirit hospital (Kalnin 1980, 52; Mänd 2007, 248; Mänd *et al.* 2012, 373), although some doubts have been raised on the subject (Altoa 2008, 312).

In 1514 Pope Leo X gave permission for founding a convent of the Third Order of St Francis in Tartu (Lemmens (ed.) 1913, No. 203). The Holy Spirit hospital was given over to the Franciscans of the Third Order with the obligation to attend to the hospital and its inmates, whereas the city council continued appointing its own members as wardens of the hospital, who looked after its assets, its property, and fulfilled all of the fiscal and economical duties (Altoa 2008, 311–312; Freymuth 1931, 15–17).

Iconoclastic riots broke out in Tartu during the Reformation. Many churches and monasteries, the Holy Spirit among them, were looted in January 1525. The city council disbanded the convent of the Third Order of St Francis thereafter and the hospital of the Holy Spirit was changed into a house for the poor (Arbusow 1921, 381–385; Freymuth 1931, 18–20). The Dominicans and the Franciscans were driven out of the city and their houses were used as hospitals at first, but were later changed into an arsenal and a limekiln respectively (Arbusow 1921, 599). So it seems that the number of hospitals in Tartu doubled for a short while. It is difficult to reconcile these events with the information found in the *Historia Belli Livonici* by Tilmann Bredenbach, where it is said that in 1554 the Lutherans of Tartu demolished the leper house of St George with its church (*leprosorium, cidemque adiuncta Ecclesia D. Georgio martyri sacra*), they threw out the altars, the statues, the divine cult, and the priests and changed the leper house into a tavern and the church into a stable (Bredenbach 1564, 23).³ It is clear that what for Bredenbach was a demolition of the hospital was in fact the change from a catholic institution to a Lutheran one. After the Reformation St George's continued its functions as a hospital.

The Holy Spirit had been abandoned at some point after 1558 due to the Livonian War (1558–1583) and its church was used as a granary at the end of the century. St George's hospital on the other hand was still functioning in 1589 (Kalnin 1980, 94). The chapel of the hospital was listed as still existing in 1618 (*Visitatio Livonicarum ecclesiarum facta Anno* 1613, 34; Beise 1856, 44). According to Otto Freymuth (1927, 9), the hospital was closed at some point during the first half of the 17th century.

BURIAL TRADITIONS

Grave orientation

The majority of the graves were orientated northwest – southeast (with heads in the NW), crosswise with the Narva road, northwest from the cemetery (Tvauri & Bernotas 2007, 171). It is likely that the graves were actually oriented after the chapel that might have been built in accordance with the direction of the road. Only some graves deviated from the general orientation, including two burials with the heads in the east (*ibid.*).

³ Bredenbach is manifestly anti-Lutheran and also has numerous errors in dating the events, mainly because of the oral nature of his primary source (Vahtre 2001, 15–18). The date of 1554 is a bit late for that kind of an event. Leonid Arbusow therefore linked the description of the demolishing of the hospital with peasant unrest in late 1525, when some of the churches in the vicinity of the town were looted (Arbusow 1921, 432). As another possibility, one could consider 1554 as the date when the court-master of the hospital may have opened a tavern, as there used to be one in St John's hospital in Tallinn before 1503 (Kala 2006, 224; Mänd 2007, 253). This is of course nothing more than pure speculation.

Finds

Already in 1844 a gold-covered silver crucifix and 13 beads (4 of them made of colourless glass and 9 of amber) were found in the neck of an unearthened skeleton.⁴ The glass beads were decorated with small knolls.

Among the 175 burials distinguished in the course of the excavations⁵ of the early 21st century, 81 (46.3%) contained artefact finds (not including coffin nails). All of the finds⁶ (Fig. 3) can be dated to the Early Modern Times whereas artefacts from the medieval period have not been found. The finds include coins

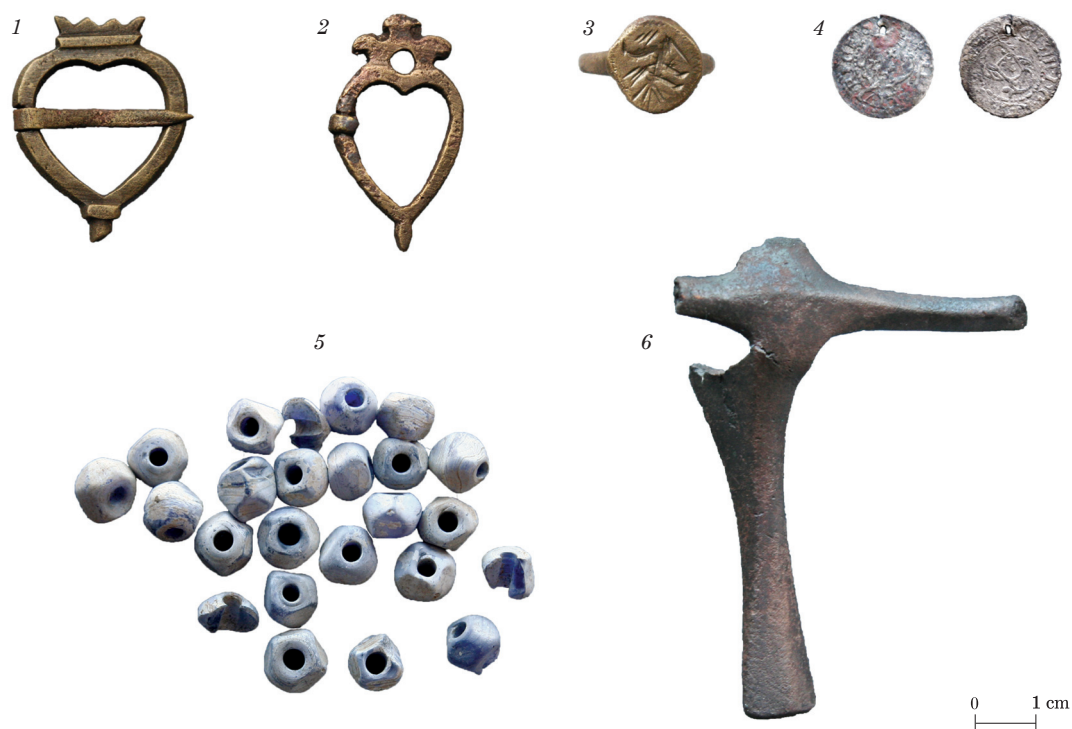


Fig. 3. Finds from the burials and mixed soil: 1–2 – heart-shaped brooches, 3 – signet ring, 4 – Riga solidus of Polish king Sigismund III, 5 – set of glassbeads, 6 – fragment of a guard of rapier.

Jn 3. Matustest ja segatud pinnasest leitud esemeid: 1–2 – südamekujulised sõled, 3 – pitsatsõrmus, 4 – Poola kuningas Sigismund III aegne Riia solidus, 5 – klaashelmeste komplekt, 6 – mõõga või pistoda kaitseraua katke.

(TM A-138: 139, 117, 37; TM A-164: 29, 11, 5.)

Photo / Foto: Anti Lillak, Raido Roog & Martin Malve

⁴ The finds (AI 2635: 576–577) were bought by the Learned Estonian Society in 1845. Unfortunately, the authors of this paper did not have a possibility to see the crucifix due to its unknown location.

⁵ In this case the number of burials, not that of individual skeletons is used for the calculation of the percentage of burials with grave goods.

⁶ The finds are stored in Tartu City Museum (from the excavations of 2005 – TM A-138; from 2006 – TM A-164; from 2012 – TM A-204).

(in total 91 items) from the second half of the 17th century to the third quarter of the 18th century consisting of Swedish *ores* and Russian kopecks and *dengas*. Brooches form the second numerous find group (27 items). Most of these are simple small round brooches of copper, but also some heart- (Fig. 3: 1–2) and star-shaped items occur. Some round brooches were also made of silver. Other ornaments, like rings (Fig. 3: 3) and glass beads (Fig. 3: 5) are scarcer – respectively 5 and 79, but the latter belonged to sets of only five individuals. In addition, some simple copper buttons as the remains of clothing were found from the graves. In one case, the placing of the 11 buttons on the skeleton allowed the archaeologist to conclude that the body was buried in a uniform (Piirits 2005, 6). One burial may have had a fragment of a horse-shoe placed between the legs (*op. cit.*, 4).

Besides the intact burials, two assemblages of bones were found, one of which contained a round copper brooch and four coins. Two of these, the Swedish *ores*, were dated to the years 1656 and 1666 and the third one was a solidus of Riga from the era of Polish king Sigismund III (1587–1632) (Fig. 3: 4). The latter, used as a pendant, is thus the oldest coin found from the cemetery. The bone assemblages probably originated from the Soviet period, when the human bones found in the course of earthworks were reburied there (Tvauri 2006, 3). A lot of finds were found in the mixed soil, but originally most of these, if not all, in all likelihood had belonged to certain burials. The stray finds represented mostly the same artefact types as described before, for example, coins, brooches, buttons, and a bead, but also bronze and copper decorations, a knife, and a fragment of a guard of a rapier⁷ (Fig. 3: 6).

It is noteworthy that compared to the cemetery of Tallinn St John's hospital, where about 14–16% of the graves dated to the end of the 16th century – first half of the 18th century contained artefact finds (Sokolovski 2002, 77), nearly half of the burials in Tartu St George's cemetery were accompanied with artefacts. At the same time, contrary to the material of the Tallinn St John's hospital cemetery, the graves in Tartu did not contain any remains of the special funerary headdresses. These differences may reflect broader cultural differences between North and South Estonia that have longstanding historical background (Valk 2004, 103–104). In the southern part of Estonia, the tradition of putting several items like coins, ornaments, and small tools into the grave was viable throughout the medieval times and the 17th–18th century (Valk 2001, 72–78). The level of immigration of the local Estonian peasants to towns increased in the second half of the 16th century and the beginning of the 17th century due to the Livonian War (1558–1583) and the Polish-Swedish War (1600–1629) (Palli 1996, 52). The newcomers continued to practice their old traditions, including burial rites (see Valk 2004, 108).

SKELETONS

In total 180 *in situ* skeletons have been documented in the excavations of the St George's cemetery: 124 in 2005 (Piirits 2005; Kalling 2005), 42 in 2006 (Tvauri 2006) and 14 in 2012 (Malve & Roog 2013). Osteological material of the cemetery has previously been studied twice.⁸ The majority of the skeletons belonged to adults – 68% – from which females formed 41% and males 27%. The number of children and juveniles

⁷ Pers. comm. Ain Mäesalu (TÜ) 22.05.2013.

⁸ Anthropologist Ken Kalling investigated skeletons found in 2005 and these human remains were reburied thereafter (Kalling 2005). BA student Ülle Agurauja analysed osteological material excavated in 2006 (Agurauja 2008), but she did not investigate pathologies. These skeletons were rechecked for this paper and the results (Malve 2013) can differ remarkably from the previous examinations.

was more than two times smaller than adults – 32%, thus being considerably smaller than the number of children/juveniles in the Medieval and Early Modern Times cemeteries in general (see Kalling 1995; Malve 2012).

LEPROSY AND OTHER INFECTIOUS DISEASES

Leprosy reached Estonia presumably in the 13th century with the European crusaders (Kalling 2006), but the written sources mention leprosy only from the second half of the 14th century onwards. The exact number of the lepers is difficult to establish because in the earlier times several skin diseases were believed to be leprosy. In later times, on the contrary, lesions of leprosy have been misdiagnosed as quite harmless skin diseases (Gustavson 1969, 36).

The osteological material from various places in Europe shows that the victims of leprosy have been buried also in the parish cemeteries and cathedral burial grounds (Roberts 2011, 263). Among the skeletons excavated in the medieval (1250–1550) leprosarium cemetery of Næstved, Denmark, altogether 68% bore the changes of leprosy (Møller-Christensen 1978). Leprosy flourished in the medieval period; its decline is in accordance to the rise of tuberculosis, but the exact reason of the fadeout of leprosy remains unclear (Roberts & Manchester 2012, 204–205).

Leprosy or Hansen's disease (*Leprosy*) is a chronic infectious disease that has both benign (tuberculoid), and severe (lepromatous) form that damages skeleton. Bone changes occur mainly on facial bones and the front teeth fall out, but hands, feet, tibiae and fibula are also affected (Roberts & Manchester 2012, 195). Only 3–5% of people with leprosy have their bones affected. Due to that, most of the infected died without any signs of pathology on their bones (Roberts 2011, 265). Contrary to the popular belief, leprosy is not very easily communicable and progresses very slowly.

No cases of leprosy have been previously documented in the Estonian archaeological material. For this paper bone assemblages from different sites of Tartu were controlled (M. Malve). A cranium of a 40–50 year old woman (skeleton no. 29) from the Tartu Cathedral (excavated in 2001) showed typical leprosy-driven changes on the maxilla and hard palate. The osteological material of St John's hospital cemetery in Tallinn also contained two possible cases of leprosy (skeletons nos. 95 and 346) that had classical stigmas of the disease on the facial bones.⁹ The skeletons of St George's cemetery in Tartu did not reveal any symptoms of leprosy, but several other specific (like tuberculosis and syphilis) and non-specific infectious diseases were found.

Tuberculosis (*Tuberculosis*) of the skeleton can damage bones considerably. The body of the vertebrae weakens in the progress of the disease to the point of eclipse, resulting with visible angled kyphosis, known as Pott's disease (Roberts & Manchester 2012, 188–189). A child's skeleton with Pott's disease was found from the St George's cemetery (Fig. 4). **Veneral syphilis** (*syphilis*) is a sexually transmitted infectious disease that has three consecutive stages. Only in the third stage clear changes occur on the bones. Tibiae are the most affected, but the most characteristic symptoms (the so-called *caries sicca*) develop on the cranium, especially on the frontal bone (Roberts & Manchester 2012, 210). The osteological analysis revealed three cases of syphilis on the adults with the symptoms on the crania (Fig. 5). Besides, a probable case of **brucel-**

⁹ Identified by M. Malve.



Fig. 4. Skeleton of a 12–18-year-old child with the typical destruction of tuberculosis, the so-called Pott's disease, on the lower spine.

Jn 4. 12–18-aastase lapse luustiku selgroo alaosa tuberkuloosi kahjustustega (nn Potti tõbi).

Photo / Foto: Raido Roog



Fig. 5. Male cranium with characteristic syphilitic lesions (caries sicca) on the frontal bone.

Jn 5. Täiskasvanud mehe kolju otsmikuluu süüfilisele omaste haiguskolletega (caries sicca).

Photo / Foto: Raido Roog

losis (*Brucella*) was noted. It is an infection of animals that is passed to humans and only a small number of individuals develop bone changes (Waldron 2009, 96; Roberts & Manchester 2012, 216). **Non-specific periostitis** (inflammation of the periosteum), caused by infection (syphilis, tuberculosis, or leprosy), tumour, metabolic, inflammatory, or traumatic disorders (Resnick & Niwayama 1981, 2997) were distinguished in the osteological material. The skeletons had several changes caused by ageing (for example, osteoarthritis), injuries (like healed fractures), and other pathologies.

DISCUSSION

The area of the cemetery has been densely settled and many burials have been disturbed. At the moment this place is the only one that can be associated to the leprosarium cemetery mentioned in the written sources because no human bone finds are known in the vicinity.

The cemetery is marked on a map of 1695 as a burial place of the leprosarium (Fig. 1). The finds originate from the middle of the 17th century to the third quarter of the 18th century (with one coin from the late 16th – early 17th century), but the medieval part of the cemetery has not been found yet. Several medieval artefacts that have been found from *Võllamägi* (The Gallows Hill) (see Malve *et al.*, this volume) situated near the cemetery could originate from the medieval part of the cemetery that is either destroyed or not found to this day. It is also possible that the excavated burial ground is not in fact the original St George's cemetery and its name has been transferred from one cemetery to another. As mentioned before, no bones with the signs of leprosy were identified in the course of the osteological analysis.

It is known that the infected persons were also buried in the ordinary cemeteries, so the chances of finding them specifically from this cemetery are small, especially when taken into account that the signs of the leprosy on the bones can occur only on a small number of infected individuals. The future research on the site and its surroundings may give further details in this question.

CONCLUSIONS

The St George's cemetery in Tartu has been repeatedly excavated between 2004 and 2012. 180 skeletons have been distinguished in the osteological material, the rate of sub-adults remaining lower than in historical cemeteries in general. The grave goods (coins, brooches, etc.) indicate that the studied part of the cemetery was mainly in use from the second half of the 17th century to the third quarter of the 18th century. So the question arises whether the site served as a medieval leprosarium cemetery as indicated in historical records. So far no certain evidence from this period is found. In addition, the human bones gathered from the excavations show no traces of leprosy. Other pathologies (various infectious diseases, like tuberculosis and syphilis) are also typical to the other Early Modern Times cemeteries. It cannot be ruled out that the original hospital cemetery was situated somewhere else in the nearest vicinity, but it may have been destroyed.

Acknowledgements: This paper was supported by Estonian Research Council (PUT107) and by the European Union through the European Regional Development Fund (Centre of Excellence in Cultural Theory (CECT)). The authors would like to thank student Freydis Ehrlich who participated in the excavations and cleaning of the bones and archaeology MA student Liivi Varul who assisted in osteological analysis. We would also like to thank Professor Rimantas Jankauskas from Faculty of Medicine, University of Vilnius, Andres Vindi, Andres Tvauri, and Ain Mäesalu from the Archaeology Department of the University of Tartu, Tuuli Kurisoo from AI, Kristiina Zadin from the Tartu City Museum, Tõnis Tärna from Estonian Historical Archives, and Liisa Pöld for their help and useful comments.

REFERENCES

- Agurauja, Ü. 2008.** Tartu Püha Jüri kalmistu paleoantropoloogiline analüüs. Tartu. BA thesis. (*Manuscript in TÜAK*)
- Alttoa, K. 2008.** Kloostritest keskaegses Tartus. – Ajalooline ajakiri, 4 (126), 295–316.
- Arbusow, L. 1921.** Die Einführung der Reformation in Liv-, Est- und Kurland. Leipzig.
- Beise, Th. 1856.** Geschichtliches zur Verfassung der Kirchen-Gemeinden Dorpat's. – Verhandlungen der gelehrten Estnischen Gesellschaft zu Dorpat, Band 3, Heft 2, 41–62.
- Bredénbach, T. 1564.** Historia belli Livonici quod magnvs moscovitarvm dvx, contra livones gessit. Per Tilmannym Bredénbachivm conscripta. Vna cum breui narratione præclaræ eius victoriæ qua paucis abhinc mensibus Lituani vicissim, contra Moschouitas potiti fuerunt. Antverpiæ.
- EAA 308-2-70, page 74.** Ny Inrättad Mätning Öfwer Landzwägar och Broar uthi Dörptska Kreyszen i Liffland. Landzwägen ifrån Dörpt äth Narwen [Tartumaa road atlas]. 1695. (*Map in EAA*.)
- Freytmuth, O. 1927.** Tartu välisilme kujunemine. – Tartu koguteos. Tartu, 3–11.
- Freytmuth, O. 1931.** Das Jungfrauenkloster zu St. Claren in Dorpat. – Beiträge zur Kunde Estlands, Band 17, Heft 1, 1–34.
- Gustavson, H. 1969.** Meditsiinist vanas Tallinnas kuni 1816. a. Tallinn.
- Kala, T. 2006.** Johan Kullert, seegieestseisja. – T. Kala, J. Kreem, A. Mänd, Kümme keskaegset tallinlast. Tallinn, 207–235.
- Kalling, K. 2005.** Tartu, Narva mägi. Antropoloogilise leiumaterejali analüüsi aruanne. – Arheoloogilised uuringud Tartus Narva mnt. 165a / Tuule tn. 2b kaevandeis. Tartu, 18–21. (*Manuscript in MA*.)
- Kalling, K. 2006.** Pidalitõbi – vari minevikust. Horisont, 1, 10–17.
- Kalnin, V. 1980.** Tervishoid. – Tartu ajalugu. Ed. by R. Pullat. Tallinn, 52, 94–95, 130–132, 149–153, 199–202.
- LECUB V–VI** = Liv-, Esth- und Curländisches Urkundenbuch. Hrsg. von Friedrich Georg von Bunge. Bd. V–VI. Riga, 1867–1873.
- Le Goff, J. & Truong, N. 2007.** Die Geschichte des Körpers im Mittelalter. Stuttgart.
- Lemmens, L. (ed.) 1913.** Urkundenbuch der alten sächsischen Franziskanerprovinzen, I. Die Observantenkustodie Livland und Preussen. Düsseldorf.
- Malve, M. 2012.** Osteological analysis of human remains from the cemeteries of St Alexander Nevsky Russian garrison and St Nicholas church, Pärnu. – AVE, 2011, 167–174.
- Malve, M. 2013.** Püha Jüri kalmistu matuste osteoloogiline ülevaade. Tartu. (*Manuscript in TÜAK*.)
- Malve, M. & Roog, R. 2013.** Arheoloogilised päästekaevamised Tartu Püha Jüri kalmistul 2012. aastal. Tartu. (*Manuscript in TÜAK*.)
- Moraw, P. 1985.** Von offener Verfassung zur gestalteter Verdichtung. Das Reich im späten Mittelalter. Berlin.
- Mänd, A. 2007.** Hospitals and tables for the poor in Medieval Livonia. – Mitteilungen des Instituts für Österreichische Geschichtsforschung. Band 115, Heft 3–4. Themenschwerpunkt Europäische Spitäler. Wien; München, 234–270.
- Mänd, A., Põltsam-Jürjo, I. & Russow, E. 2012.** Linnakultuur. – Eesti ajalugu II. Eesti keskaeg. Ed. by A. Selart. Tartu, 355–382.
- Møller-Christensen, V. 1978.** Leprosy Changes of the Skull. Odense.
- Palli, H. 1996.** Eesti rahvastiku ajalugu aastani 1712. Tallinn.
- Piirits, P. 2005.** Arheoloogilised uuringud Tartus Narva mnt. 165a / Tuule tn. 2b kaevandeis. Tartu. (*Manuscript in MA*.)
- Piirits, P. 2006.** Arheoloogiline järelvalve Tartus Narva mnt. 165a hoone trassidega seotud kaevandeis. Tartu. (*Manuscript in MA*.)
- Piirits, P. 2009.** Arheoloogilised uuringud Tartus Tuule tn. elektritrassi rajamisel. Tartu. (*Manuscript in MA*.)
- Põltsam, I. 2002.** Vaestehoolekanne Tallinnas (1346–1561). – Vana Tallinn, XIII (XVII), *Modus vivendi*. Ed. by R. Pullat. Tallinn, 174–188.
- Resnick, D. & Niwayama, G. 1981.** Diagnosis of Bone and Joint Disorders. Philadelphia.
- Roberts, C. 2011.** The bioarchaeology of leprosy and tuberculosis. A comparative study of perceptions, stigma, diagnosis, and treatment. – Social Bioarchaeology. Ed. by S. C. Agarwal & B. A. Glencross. Chistester, 252–281.
- Roberts, C. & Manchester, K. 2012.** The Archaeology of Disease. Third Edition. Stroud.
- Sokolovski, V. 2002.** Aruanne arheoloogilistest uuringutest Tallinnas, Tartu mnt. pikenduse alla jääval maa-alal Liivalaia tänavast kuni Tornimäe tänavani. I–III köide. Tallinn. (*Manuscript in AI*.)
- Sokolovski, V. & Jaanits, K. 2004.** Aruanne arheoloogilistest eeluuringutest Tartus, Narva mnt. 165a. Tallinn. (*Manuscript in MA*.)
- Tamm, J., Toos, G., Kalman, J. & Mäll J. 1998.** The construction-archaeological investigations in the Cistercian St. Michael's Convent. – AVE, 1997, 130–142.
- Tvauri, A. 2006.** Aruanne päästekaevamistest Püha Jüri kalmistul Tartus Narva maantee 165a esisel alal 2006. aastal. Tartu. (*Manuscript in TÜAK*.)
- Tvauri, A. & Bernotas, R. 2007.** Archaeological investigations in Tartu and Vorbuse settlement site. – AVE, 2006, 167–181.

- Vahtra, S. 2001.** Tilmann Bredenbachi Liivimaa sõdade ajalugu. – Ajalooline ajakiri, 1/2 (112/113), 15–24.
- Valk, H. 2001.** Rural Cemeteries of Southern Estonia 1225–1800 AD. 2nd edition. *CCC Papers*, 3. Visby; Tartu.
- Valk, H. 2004.** Artefacts in Estonian urban churchyards: reflections on different traditions and ideologies. – *Der Ostseeraum und Kontinentaleuropa 1100–1600. Einflussnahme – Rezeption – Wandel. CCC Papers*, 8. Schwerin, 103–112.
- Visitatio Livonicarum ecclesiarum facta Anno 1613 a die Transfigurationis Domini usque ad 11am Octobris per R. D. Archidiaconum Vendensem et Rmi. Episcopi Livoniae Vicarium.** – *Archiv für die Geschichte Liv-, Esth- und Curlands*. Ed. by F. G. von Bunge. Dorpat 1842, 23–77.
- Waldron, T. 2009.** *Palaeopathology. Cambridge Manuals in Archaeology*. Cambridge.

TARTU PÜHA JÜRI KALMISTU – KESKAEGNE HOSPITALIKALMISTU?*Martin Malve, Anti Lillak, Raido Roog ja Mihkel Mäesalu*

Tartu Püha Jüri kalmistu asub Tartu põhjaosas, Narva mnt ja Tuule tänava nurgal, u 0,8 km kesk- ja varauusaegsest linnast. Ala on pikka aega olnud tihedasti hoonestatud, mistõttu on kalmistut tugevasti lõhutud. Kalmistut on peetud keskaegse hospitali matmispaigaks, see on ka 1695. a kaardil märgitud leprosooriumi kalmistuna (jn 1). Varasemad andmed Püha Jüri hospitalist Tartus pärinevad 1345. aastast ning see asutus tegutses kuni 17. saj esimese pooleni. Kesk- ja varauusaegsetel hospitalidel oli ühiskonnas mitmekülgne roll – lisaks nakkushaigete isoleerimisele pakkusid nad peavarju vanuritele, puuetega inimestele ja vaestele ning majutasid teelisi.

Päästekaevamistelt on Tartu Püha Jüri kalmistult 2004–2012 (jn 2) kogutud hulgaliselt matuseid (eristatud on 175 matust ja 180 indiviidi). Luustike seas domineerivad täiskasvanute luustikud 68%, millest naisi oli 41% ja mehi 27%. Lapsi/noorukeid oli täisealistest poole vähem, 32%; nende osakaal oli väiksem ka võrreldes teiste kesk- ja varauusaegsete kalmistute luuaineses esinevate alaealistega. Haudadest ja segatud pinnast kogutud leiud (mündid, sõled, helmed jm) saab enamikus dateerida 17. saj keskpaigast kuni 18. saj kolmanda veerandini (jn 3). Vaid üks ripatsina kasutatud münt (Poola kuningas Sigismund III ajal vermitud Riia solidus) kuulub 16. saj lõppu või 17. saj algusesse (jn 3: 4). Kindlalt keskaega dateeritavad leiud puuduvad.

Kuna tegemist võib olla hospitali matmispaigaga, siis pöörati inimluude uurimisel erilist tähelepanu neil esinevatele patoloogiatele, eriti nakkushaigustele. Leepra ehk pidalitõbi on krooniline nakkushaigus, mille halvav loomuline vorm kahjustab skeletti. Luukahjustused tekivad peamiselt ninapiirkonnas ja suulae osas, ent ka käe- ja jalalaba-, sääre- ja pindluudel. Tegemist on aeglaselt progresseeruva haigusega, mis mõjutab luid vaid 3–5% nakatanutest. Kirjalikud allikad mainivad pidalitõbiseid Eestis alates 14. saj teisest poolest, ent on arvatud, et haigus jõudis siia ristsõdijate vahendusel juba 13. saj algul. Arheoloogilises ja osteoloogilises materjalis pole leprat kuni viimase ajani Eestis tuvastatud. Mujalt Euroopast on teada, et leprasse surnuid maeti ka kihelkonna surnuaedadesse ja toomkirikutesse. Tartu linnast kogutud ajalooliste inimluude uuel ülevaatamisel selgus, et ka Tartu toomkiriku 2001. a kaevamiste materjalis esineb üks leepra juhtum (luustik nr 29, keskealine naine). Kaks võimalikku haigusjuhtu on teada ka Tallinna Jaani seegist (luustikud nr 95 ja 346). Leepra arvukuse langemine hiliskeskaegses Euroopas langeb kokku tuberkuloosi esilekerkimisega, kuid selle hääbumise põhjus pole otseselt teada.

Püha Jüri kalmistu luuaineses puuduvad lepratunnustega skeletid. Küll aga leiti mitmeid teisi spetsiifilisi infektsioonhaigusi (tuberkuloosi (jn 4), süüfilist (jn 5) ja brutselloosi) ning mitte-spetsiifilisi nakkushaigusi (periostiiti). Kõigi nende puhul pole aga tegemist ainult hospitalikalmistutele iseloomulike patoloogiatega, vaid neid esineb ka n-ö tavalistes kesk- ja uusaegsetes matmispaikades.

Väärrib märkimist, et kirjalikest allikatest tuntud Püha Jüri kalmistu keskaegset osa pole seni veel leitud. Tõsi, lähedal asuvalt Võllamäelt on leitud keskaegseid sõlgi, mis võivad pärineda Püha Jüri kalmistu varasemast osast, mis on praeguseks hävinud või leidmata. Ka on võimalik, et antud kalmistu puhul pole üldse tegu keskaegse Püha Jüri surnuaiaga, vaid nimi on vanalt (hävinud?) kalmistult kandunud üle uuele. Luustike osteoloogilise analüüsi käigus ei leitud ühtegi leepra tunnustega luustiku. Kuna pidalitõbiseid maeti ka tavakalmistutele, ei pruugi neid ka seetõttu siin esineda. On ka võimalik, et kaevamistega ei satutud üldse leeprahaigete matustele. Liiatigi avalduvad haigusetunnused luudel vaid väga vähestel inimestel. Sestap jääb küsimus, kas korduvalt uuritud Püha Jüri kalmistu ja keskaegne hospitalikalmistu on üks ja sama objekt, praeguses uurimises kindla vastuseta. Selgust võivad tuua edaspidised uuringud kalmistualal ja selle lähiümbruses.