



ARCHAEOLOGICAL STUDIES IN THE CHURCH AND CHURCHYARD OF LÜGANUSE

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INTRODUCTION

The article introduces primarily the results of fieldwork in the autumns of 2012 and 2013 inside and around the rural parish church of Lügánuse (Figs 1–3), presented by V. Kadakas. The monitoring and investigations took place in connection with the partial replacement of floors and reshaping the ground surface around the church to conduct rainwater away from the building. Also results of test pits dug in 1991 (Fig. 3) around the church, with the purpose to study the foundations and building stages, conducted by Toivo Aus and Erki Nuut, unfortunately undocumented and unpublished¹, are presented now by T. Jonuks.

HISTORICAL BACKGROUND OF THE CHURCHYARD

The rural parish of Lügánuse, situated in the historic county of Virumaa in north-east Estonia, coinciding with the former Late Iron Age administrative unit mentioned in *Liber Census Daniae* as *Askælae*, was established already in the 1220s (Johansen 1933, 185).

It has been supposed that an Iron Age fortress was situated in the place of the later churchyard (Tamla 1996, 229). The churchyard is located on a 6–8 m high *ca.* 200 m long and 40–70 m wide plateau, which is situated on top of a natural ridge with high and steep slopes, positioned in the north-south direction (Fig. 2). Directly



*Fig. 1. Lügánuse church from the south-west.
Jn 1. Lügánuse kirik edela poolt.
Photo / Foto: Villu Kadakas*

¹ The fieldwork of 1991 has been only shortly mentioned (Selirand & Tamla 1992, 278).

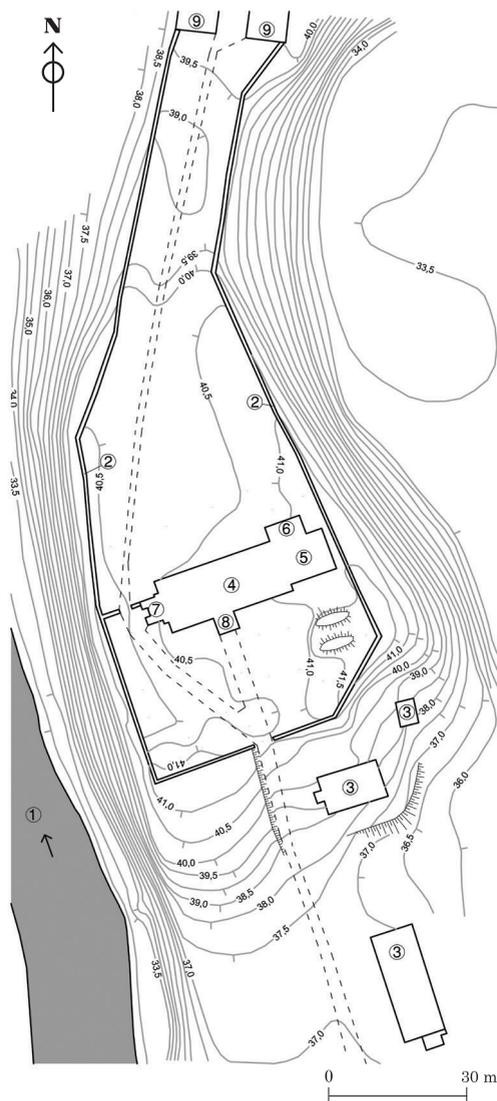


Fig. 2. Plan of Lügänuše churchyard. Based on the plan by U. Hermann (1975). 1 – Puritse River, 2 – stone wall, 3 – modern buildings, 4 – nave, 5 – chancel, 6 – sacristy, 7 – western tower, 8 – southern porch, 9 – early modern chapels.

Jn 2. Lügänuše kirikuaija plaan. U. Hermann'i plaani põhjal (1975). 1 – Puritse jõgi, 2 – kivimüür, 3 – tänapäevased hooned, 4 – pikihoone, 5 – kooriruum, 6 – käärkamber, 7 – läänetorn, 8 – lõuna-eeskoda, 9 – varauusaegsed kabelid.

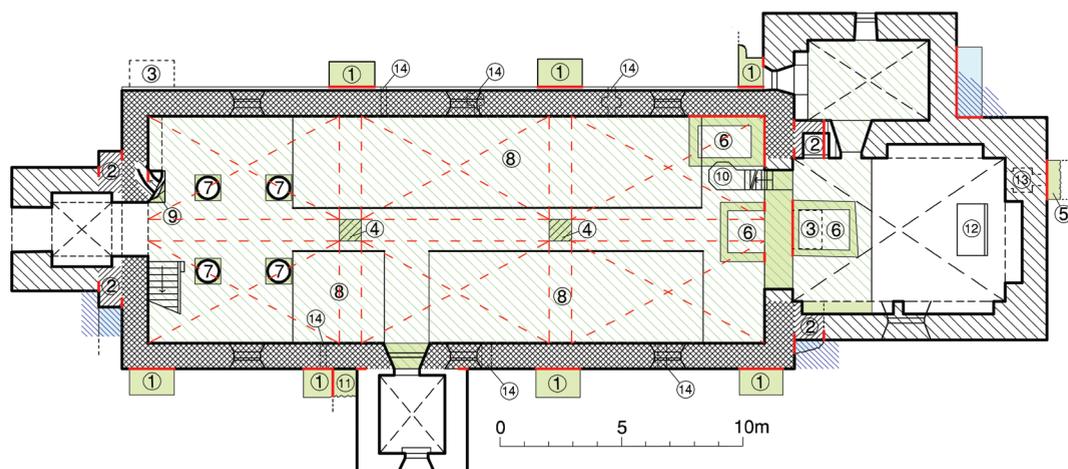
Drawing / Joonis: Villu Kadakas

in the west a steep valley of the Puritse River borders the ridge (Fig. 2: 1). On the southern, the most gentle slope, directly south of the churchyard, some sherds of local hand-made earthenware were found (AI 4986) and the existence of an Iron Age settlement site was identified in 1978 by Toomas Tamla. In the same year also a sherd of hand-made and some sherds of wheel-thrown earthenware were found from the sacristy during floor replacement (AI 4987). A bronze cross-headed decorative pin, probably from late 12th or early 13th century, has been discovered while digging a pit for a grave in the middle of the 20th century (<http://muis.ee/museaal-view/23137423>). It has been supposed that if there indeed was a hill fort in the place of the churchyard, it was probably used during the second half of the I millennium AD (Tamla 1996, 229; Tõnisson 2008, 232).

HISTORICAL BACKGROUND OF THE CHURCH

The church of Lügänuše, dedicated to St John the Baptist, is a single-nave building of local limestone, with a slightly narrower chancel and a western tower (Fig. 2–3). The church has been first mentioned in 1373. The original stone building consisted of only the present nave (Tuulse 1953, 38; Raam 1997). According to Villem Raam it was probably built approximately in the middle of the 14th century (Fig. 3). It was a simple unvaulted building (ca. 27.7 × 11.6 m) with exceptionally thin walls (ca. 0.9–1 m); the masonry of the portals and windows have not been preserved. Influence of the architecture of the Dominican Order to the layout has been supposed (Raam 1997).

The gables were provided with decorations exceptional in the medieval architecture of Old-Livonia: in the middle of the western and eastern gables there is



- Discovered vertical joints / Avastatud püstuugid
- - - Reconstruction of nave vaults/ Pikihoone võlvide rekonstruktsioon
- Area studied in 2012–2013 / 2012.–2013. a uuritud ala
- Approximate area of test pits in 1991 / 1991. a šurfile ligikaudne asukoht
- Foundations discovered in 2012–2013 / 2012.–2013. a avastatud vundamendid
- Foundation discovered in 1991 / 1991. a avastatud vundamendid
- I stage: walls of the original unvaulted stone church / I etapp: algse võlvimata kivist kiriku müürid
- II stage: vaults of the nave with pillars and buttresses / II etapp: pikihoone võlvid koos piilarite ja tugipiilaritega
- III stage: chancel, sacristy and western tower / III etapp: kooriruum, käärkamber ja läänetorn

Fig. 3. Plan of Lügänuuse church. 1 – foundations of buttresses, 2 – preserved buttresses, 3 – supposed buttresses, 4 – pillar foundations, 5 – foundation of stairs to the hagioscope, 6 – burial chambers, 7 – pillars of the organ balcony, 8 – pew areas, 9 – stairs to the tower, 10 – pulpit, 11 – older foundation west of the porch, 12 – altar, 13 – hagioscope, 14 – ventilation openings.

Jn 3. Lügänuuse kiriku plaan. 1 – tugipiilarite vundamendid, 2 – säilinud tugipiilarid, 3 – oletatavad tugipiilarid, 4 – piilarite vundamendid, 5 – hagioskoopi trepi vundament, 6 – hauakambriid, 7 – orelivääri piilarid, 8 – pingistiku alad, 9 – torni trepp, 10 – kantsel, 11 – vanem vundament eeskojast läänes, 12 – altar, 13 – hagioskoop, 14 – ventilatsioonivad.

Drawing / Joonis: Villu Kadakas

a recessed depiction of a cross with a shape of a crosslet and a painted text line of minuscule letters below. The meaning of the poorly preserved or partly screened texts is not clear: '(h)elp got un(d maria)' has been proposed by the text on the western gable (Tuulse 1953, 38). These gable decorations have been compared with the churches of southern Finland and northern Germany (Tuulse 1953, 38–39; see also Hiekkänen 1992, 23). No direct influence of these areas has been proven and Finnish researchers have even excluded the possibility of Finnish influence (Alttoa 2003, 50).

According to V. Raam probably in the first quarter of the 15th century the master masons from Tallinn covered the original nave with vaults, dividing the room into two aisles, which until 2012 was indicated only by a limestone corbel preserved in the middle of the western wall (Tuulse 1953, 38; Alttoa 2014, 54, fig. 10). Two-aisled medieval churches are rare in Estonia: rural parish churches of Risti (about the church of Risti see also Kadakas *et al.* 2012), and Keila in Harjumaa, Kaarma on the island Saaremaa, and Pühavaimu (Holy Spirit) in Tallinn. Probably none of these, except for Pühavaimu, which was rather an almshouse, have been planned as two-aisled churches from the beginning but as a solution of optimized adaptation: the previously existing nave was assumedly considered to be either too wide for a single nave or too narrow for three aisles.

Probably in the second quarter of the 15th century a slightly narrower rectangular chancel (*ca.* 10.4 m long, *ca.* 9.3 m wide) with a sacristy on the northern side and the western tower were added (Fig. 2: 5–7). The shape of the tower, quadrangular in its lower and round in the upper part, has only two analogies in Estonia: the former town church of Narva, destroyed in the WWII and the Risti church in Harjumaa (Raam 1997). In Lügänuuse church the portal of the sacristy and the two large sitting benches recessed into the chancel walls and the masonry decorations of the main altar are all characteristic to master masons who worked in Tallinn and the Risti church in the period. The vaults were destroyed probably during the Livonian War (1558–1583) or the war between Sweden and Russia in 1657 (Raam 1997).

In August 1941 the roofs and interiors were destroyed in fire during the advance of German troops. The congregation restored the function of the church by 1951 but the tower got a new spire only in 1985.

INVESTIGATIONS OF 1991 IN THE CHURCHYARD

In 1991 investigations took place in the churchyard of Lügänuuse with the purpose to study the foundations and building stages of the church, conducted by T. Aus (1945–1999) and E. Nuut (1967–1991). Unfortunately, no excavation report has been made and the finds have probably not reached any museum. Reconstruction of the fieldwork results of 1991 is relevant, because the excavations provided rather important information regarding the building history of the church and occupation of the site. The present overview might include inaccuracies as it has been written based on recollections of a 17-year-old schoolboy who took part in digging the test pits and was trained as an archaeologist later (i.e. T. Jonuks, one of the authors of present paper). The overview is also based on the recollections of architect Raul Vaiksoo, who was engineering the restoration work in the church and initiated the investigations. He made observations and took some notes about the information obtained from test pits regarding the building sequence of the church. He has later published a short overview of the building history of the church with drawings depicting some of the discoveries among the main building stages (Vaiksoo 2011, 264–267). It is possible that the work was also inspired by the investigations of Toomas Tamla at the neighbouring parish church Viru-Nigula, which had taken place previously and had provided new data for both dating the church building and about early burials in the churchyard (Tamla 1991).

In addition to removing up to 0.5 m of soil from the immediate vicinity of the church of Lügänuuse to improve the interior climate, three test pits were dug next to

the building (Fig. 3). A 2 m deep test pit was situated directly south of the western tower to specify the stratigraphic sequence of the nave and the tower. The soil consisted mostly of sand. R. Vaiksoo identified two vertical joints in masonry, revealed in the test pit: one between the wall of the nave and the buttress, the other between the buttress and the tower. It confirmed the conclusion of V. Raam that the tower is a secondary addition to the nave but also specified that the system of buttresses is a secondary addition to the nave as well. He also noted a very wide step (*ca.* 105 cm) of the foundation of the western wall of the church. Possibly it was only a foundation for the buttress but it cannot be excluded that the wall of the nave had a wide step.

The other test pit was dug into the corner between the wall of the chancel and the sacristy. A mass of bones was discovered directly below the topsoil, reaching at least 1 m deep. The bones were disturbed, many broken: obviously the bones had been reburied, but some bones of forearm had green residue of copper oxide on the surface, probably indicating to former contact with copper artefacts (e.g. bracelets). A foundation with plan measures of *ca.* 290 × 105 cm, visible in the ground even nowadays, was unearthed in the corner between the sacristy and chancel. R. Vaiksoo noted that the foundation has been built secondarily towards both building parts and does not reach deep. The function of the foundation remains unclear.

The third test pit of 1991 was excavated into the corner between the southern wall of the chancel and the nave, with a purpose to specify the building sequence of these parts. The foundation of the nave had been built with a straight vertical surface, whereas the foundation of the chancel, more precisely the very western part of it had a protruding step. R. Vaiksoo identified a vertical joint in the masonry of the chancel: *ca.* 1.1 m eastwards from the nave, where the protruding step finished. He supposed that the 1.1 m long western part of the south wall of the chancel has originally been a buttress, built against the eastern wall of the nave before erecting the chancel.

In the third test pit different soil layers were not identified or at least it cannot be remembered, although the lack of human bones was noted. Only in the bottom of the pit two intact burials were discovered, laid with their heads towards the west, but only parts of the skeletons could be cleared in the pit. One had a necklace of glass beads with remains of a textile or leather ribbon preserved, the other had a round openwork pendant. Probably both burials could be dated to the first half of the 13th century, based on the dates of round openwork pendants (Ligi 1993, 60). Unlike in the churchyard of Viru-Nigula where burials had been discovered tightly next to the foundation, which enabled to conclude that the foundation was older than the burials (Tamla 1991), the stratification of the burials discovered in Lügänuše did not allow to make such direct conclusions. The burials were not in close contact with the foundation of the nave but remained approximately in a 0.5 m distance and thus cannot be used to date the church. Thus both options are possible – the church might have been built to the site of a former cemetery, but equally both burials could have been buried after the building of the church. It can be concluded that definitely the plateau of the steep ridge was used for burials during the first half of the 13th century.

It is also interesting to notice the similarities of complexes of Viru-Nigula and Lügänuše. In the vicinity of both churches the occupation layer of Late Iron Age set-

lements is known and around both churches burials from the early 13th century have been identified. Nevertheless, there is still no direct proof that the top of the ridge in Lügånuse was used as a fortress in the Iron Age.

INVESTIGATIONS OF 2012–2013

Floors and soil inside the church

The church floor was replaced in most parts of the building, except the eastern part of the chancel, the western tower and the southern porch (Fig. 3). In most parts of the nave, the chancel and the sacristy the top part of soil under the floor was removed in *ca.* 10–15 cm depth, in some places even less. Thus only debris of the 1941 fire and debris from Early Modern reconstruction periods was removed. Some deeper test pits were dug to specify the original floor level of the rooms, but structures hidden deep and burials were not reached, except pillar foundations. The original floor level of the chancel and the sacristy has probably been situated approximately on the same level as the present one, *ca.* one 25 cm step higher than the one of the nave, but in the nave it has probably been *ca.* half metre deeper of the present floor.

A protruding step in the nave foundation was discovered in two test pits *ca.* 65 cm deeper from the present floor. It probably marks the original floor level, because on the same level the soil changes: the upper part is filled with various demolition debris, whereas the lower part includes predominantly mixed natural gravel and organic material, including single human bones – i.e. a typical soil of churches and churchyards, mixed while digging pits for the burials underneath. The demolition debris from after the fire of 1941 reaches much deeper in the areas which have been covered with timber pew platforms (Fig. 3: 8), than in the areas covered with limestone slabs – the middle walkway and the eastern and western end of the nave – which probably have been laid in the 18th or 19th centuries and survived the fire of 1941.

After removal of the pews a row of small openings resembling loopholes, visible already previously in the exterior, almost on the ground level, in both the southern and northern walls of the nave was temporarily exposed also in the interior during the reconstruction of the floor (Fig. 3: 14). It has been supposed that the openings have been made to ventilate the medieval burial chambers supposedly existing under the floor of the nave (Raam 1997). It appeared that no burial chambers have existed next to the openings. These have been roughly broken into the wall. Hardly the openings could be medieval and obviously these have been made only to ventilate the Early Modern timber floor.

A large fragment of an Early Modern limestone grave slab – the single one that has been preserved in the church – was discovered in the north-western corner of the nave. It has a depiction of a chalice – typical to a grave slab of a pastor – and some hardly readable text incised, characteristic probably to the 16th century.

In the test pit dug under the floor it appeared that there is a vertical joint between the western wall of the nave and the wall of the staircase (Fig. 3: 9) which has been built next to the inner face of the northern part of the western wall. There is even plaster of the original nave interior preserved in the joint between the two walls. The staircase, resting on a wide lancet arched niche in the interior, leading from the nave to the tower is obviously a later addition from the period of adding

the tower. As the walls of the nave are extremely thin for a medieval church, it was necessary to make the wall wider by thickening it towards the interior, in order to fit a staircase into the wall. How the attic of the original nave could be reached from the ground, remains unclear.

Burial chambers

In the chancel and the eastern part of the nave limestone walls of several burial chambers (Fig. 3: 6) were uncovered, probably built during the 17th or 18th centuries by the owners of the local manors. All of these had lost the grave slabs once laid on top and had been filled with various debris, partly only during the reconstruction works after WWII. Thus only the top surface of the chamber walls was cleaned and the plan of the chambers recorded, except for the largest burial chamber (170 × 210 cm) in the western part of the chancel, positioned exactly on the symmetry axis of



Fig. 4. Burial chamber emptied in the chancel. Sacristy portal in top left.

Jn 4. Kooriruumis tühjendatud hauakamber. Vasakul ülal käärkambri portaal.

Photo / Foto: Villu Kadakas

the church, which was emptied and made accessible through a hatch in the new timber floor (Fig. 4). It appeared that the coffins and burials had been removed before filling the chamber. There is not enough information in the present research stage to relate any chamber to a specific manor or noble family.

Foundations of the northern and southern buttresses in the churchyard

During reshaping the ground surface around the church with an intention to conduct rainwater away from the building up to 30 cm of topsoil was removed. This was in most parts enough to reveal a series of compact and symmetrically aligned foundations (Fig. 3: 1; 5) positioned along the northern and southern walls. Apparently these quadrangular foundations (110–120 × 180–185 cm) have borne a system of eight buttresses which once supported the vaults. Remains of seven buttresses were found but the north-western one (Fig. 3: 3) has not been preserved, at least not to the height as the others: in the depth of ca. 0.5 m no remains were discovered. The windows have been positioned exactly in the middle of the buttresses, which indicate that the medieval windows were located in the same places as the present ones. All the foundations of the buttresses, except the one directly west of the southern porch, are separated from the nave with a vertical joint (Fig. 3) which is in accordance with the supposition of V. Raam that the vaults were erected secondarily to the original nave: the buttresses have been erected secondarily as well. The buttresses have probably been demolished

after the collapse of the vaults when the buttresses became redundant, except for the eastern and western ones (Fig. 3: 2) which had been integrated into the walls of the western tower and the chancel.

Exceptionally, the foundation of the buttress directly west of the southern porch has been built in two stages. The eastern part of it (Fig. 3: 11) probably belongs to some earlier structure as it has been built together with the nave. Its masonry continues also under the wall of the porch which must have been built later than the older part of the buttress or even after it had been demolished. The older part of the buttress protrudes 115 cm from the nave, but it has extended further south. The original extent could not be specified in the shallow test pit. Possibly this older part of the buttress once belonged to an older porch, erected together with the original nave. The western part of the buttress has been added later, secondarily both towards the nave and the earlier foundation in the east. As another exception, the north-western corner of the north-eastern pillar next to the sacristy had a narrow (*ca.* 30 cm wide and *ca.* 55 cm long) extension towards the north, which does not fit the layout of other buttresses. It has extended from the nave even further north but the extension had not been preserved in the upper part of the soil and the intense construction work did not allow to dig a deeper pit. Possibly this extension might belong to an eastern wall of an older sacristy, which might have existed next to the nave in the period prior to building the chancel and the present sacristy. Such an earlier sacristy could not have been built together with the original nave, but rather during the same period as the buttresses. As supposed already by V. Raam and proven by the identification of the eastern buttresses (see below), the vault system with the buttresses was built before erecting the chancel and the present sacristy. Thus it must have been reasonable to at least plan a sacristy next to the nave, although it might have never been completed because of the rather short time span between building the vault system and the chancel. The western wall of the supposed earlier sacristy was searched for with an iron rod in the area of the neighbouring buttress, appropriate for the western wall, but without success. A hypothetical walled up doorway of the supposed earlier sacristy was unsuccessfully searched for inside the nave, observing the underground unplastered section of the wall, revealed temporarily during the floor replacement in the north-eastern part of the nave.

The eastern and western buttresses

R. Vaiksoo identified already in the first test pit of 1991 that the southern buttress of the western wall of the nave has been built secondarily towards the nave and the western tower in turn secondarily towards the buttress (see above). The same sequence of stages was identified in 2012 on the northern side of the tower. These western buttresses, as well as the two eastern ones (Fig. 3: 2) are the only ones that have been preserved from the system, obviously because these have been integrated into the walls of the tower. Although the original nave was vaulted as a two aisled building, no single buttress was erected towards the centre of the western wall, as it would have been expectable regarding statics, but instead two buttresses, obviously with an intent to leave enough room for the central western portal.

The existence of the eastern buttresses was supposed already by R. Vaiksoo in 1991 after the discovery of the vertical joint in the second test pit in the southern wall of the chancel *ca.* 110 cm east of the corner of the nave (Vaiksoo 2011, 264–267). While replacing the floors of the chancel and the sacristy in 2012 a similar vertical joint was discovered in the northern wall of the chancel on exactly the same line (Fig. 3). The buttress in turn has been erected secondarily towards the eastern wall of the nave, as indicated by another vertical joint. It appears that the chancel walls have been planned and built as extensions to the eastern buttresses. As the nave was vaulted as a two-aisled building, a third buttress may have existed, located in the middle of the eastern wall (Fig. 3: 3) to support the pressure of the vaults. Its foundations must have been completely removed while building the central burial chamber described above. Such a system of buttresses positioned next to the eastern wall of a nave is unique in the medieval churches of Estonia.

Pillars inside the church

In 2013 during replacement of the limestone slabs under the central walkway of the nave foundations and lower parts of two quadrangular pillars (Fig. 3: 2; 6) were discovered, as quite expectable after the discovery of the buttresses in the previous year. The pillars have been built with a square plan measuring *ca.* 90 × 90 cm and have preserved in the height of two stone layers. Although this dimension corresponds exactly to the nave pillar of Risti church, the ones of Lügänuuse have been built of roughly worked limestone, unlike the nicely worked pillar of Risti. It appears that the nave has been covered with six very oblong vaults.



Fig. 5. Foundation of a buttress near the southwestern corner of the nave.

Jn 5. Tugipiilari vundament pikihoone edelanurga juures.

Photo / Foto: Villu Kadakas



Fig. 6. Foundation of the eastern pillar in the nave.

Jn 6. Idapoolse piilari vundament pikihoones.

Photo / Foto: Villu Kadakas



Fig. 7. Foundation of the stairs to the hagioscope.

Jn 7. Hagioskoobi trepi vundament.

Photo / Foto: Villu Kadakas

Stairs for a hagioscope

Next to the northern part of the eastern wall of the chancel, in the exterior a *ca.* 160 cm wide foundation, built secondarily towards the chancel wall was discovered (Fig. 3: 5; 7). It is protruding at least 90 cm, but has originally extended more eastwards. Its location fits exactly with the location of a hagioscope (Fig. 3: 13) – a small opening framed with nice limestone masonry, penetrating the chancel wall more than 2 m above the ground level. Obviously the foundation has been made for a small staircase to reach the hagioscope, used in the Catholic period to see the elevation of the host by lepers or other people not desirable in the church during the mass. The above ground part of the supposed staircase – the steps, has not been preserved. Steps to hagioscopes have not been discovered before in Estonia.

Finds

A single find – a glass bead from the test pit next to the southern wall of the tower – survives from the excavations of 1991 (Fig. 8: 6). Among the few Early Modern finds obtained in 2012 and 2013 nine

gilded copper buttons (Fig. 8: 1) from the central burial chamber of the chancel deserve attention. One double button, also of gilded copper, has two glass imitations of cut gems inserted (Fig. 8: 2). These must have belonged to a burial of a high-ranking person.

Less than ten Swedish or Russian copper coins (Fig. 8: 3) from the 17th – 19th centuries were discovered from under the floor slabs and from the soil removed from around the church. Lack of medieval coins can be explained by the rise of the floor level in the nave, rising the ground level around the church and building large burial chambers in the studied part of the chancel. A number of medieval coins, once lost or sacrificed in the nave might be preserved *ca.* 0.5 m deep under the present floor in the nave, on the medieval floor level.

A trapezoid copper pendant, with diagonal grid ornamentation (Fig. 8: 4), found from the churchyard, probably represents the Middle Ages. A round silver pendant (Fig. 8: 5), found from late debris filling the central burial chamber of the chancel, probably originates from a burial of the 12th century or the first part of the 13th century, disturbed when building the chancel or a burial chamber. No finds were obtained from the supposed Iron Age hill fort period.



Fig. 8. Finds from Lügänuše church and churchyard. 1 – gilded copper button, 2 – double button with glass ‘gems’, 3 – Russian 5-kopeck coin, 4 – trapezoid pendant, 5 – round pendant, 6 – bead.

Jn 8. Leide Lügänuše kirikust ja kirikuaiaast. 1 – kullatud vasknööp, 2 – klaasist “kividega” kaksiknööp, 3 – Vene 5-kopikaline münt, 4 – trapetsripats, 5 – ümarripats, 6 – helmes.

(AI 7105: 15, 11, 4, 10, 1; TÛ 654: 1.)

Photo / Foto: Villu Kadakas (1–5), Tõnno Jonuks (6)

FURTHER RESEARCH

Several research related issues, especially regarding the original nave and its possible predecessors, still remain unanswered. The results of fieldwork did not challenge the existing absolute dates of the building parts or provide any new. Stratification cannot explain whether the tower or the chancel complex was built first. Nothing is known about the masonry details of the portals and the windows of the original nave. It appeared that the portal of the southern door had been completely removed, but the place of the western portal, where the base stones might theoretically be preserved under the floor, could not be studied. The floor of the original nave, with the possible remains of altars could not be investigated, because it is situated *ca.* 0.5 m below the floor and debris. Unfortunately the most logical places of the altars in the eastern part of the nave have been disturbed by building burial chambers in a later period.

A foundation fragment, discovered west of the southern porch (Fig. 3: 11) and built together with the original nave indicates that a protruding building part, perhaps an earlier porch, has existed there. Its extent could be studied with a test pit. Several irregularities in the foundation, discovered in the test pits in the interior of the nave, enable to speculate that walls of an earlier, smaller stone church might have been integrated into the walls of the present nave which was probably built only in the middle of the 14th century.

The shape of the steep ridge on which the churchyard (Fig. 2) is located does not enable to speculate only about a prehistoric hill fort on the site, but also about a medieval fortified churchyard, surrounded by a palisade or even a stone wall. The natural

conditions for fortifying the churchyard are even better than in the neighbouring parish centre Jõhvi, where a fortified churchyard has been supposed to have existed and remains of a possibly medieval limestone curtain wall were discovered in 2007 (Kadakas *et al.* 2008, 201–202). Although a bit further away from the border of Novgorod, later of Muscovy, the church of Lügänuuse was one of the first targets during a war. The existing limestone wall surrounding the churchyard of Lügänuuse (Fig. 2: 2) is probably of Early Modern origin, but its buried lower part might come from an earlier period and deserves archaeological study.

CONCLUSIONS

Fieldwork of both 1991 and 2012/2013 increased significantly the knowledge of the building history of Lügänuuse church as well as about the early burial activities on the site. The two burials with grave goods from the 13th century, discovered in 1991 next to the southern wall of the chancel (Fig. 3) prove that the area was used for burying already in this period. A network of Early Modern burial chambers consisting of limestone walls was mapped in the chancel and the eastern part of the nave (Fig. 3: 6). Of the oldest finds, a round silver pendant (Fig. 8: 5) is notable, probably coming from a disturbed burial of the 13th century. Gilded copper buttons (Fig. 8: 1–2) from a burial chamber of the 17th or 18th century deserve attention among the newer finds.

The fieldwork of 2012/2013 revealed several unknown foundations: the system of eight buttresses (Fig. 3: 1; 5) built next to the southern and northern walls of the nave and two pillars in the nave interior (Fig. 3: 2; 6). These results proved the hypothesis of V. Raam that this vault system was a secondary addition to the original nave, built in a second building stage: now it appears that a system of six vaults with two quadrangular pillars and probably 13 buttresses was built. It was confirmed with several discovered vertical joints in masonry that the western tower and the chancel with a sacristy form the third building period as supposed previously by V. Raam.

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ARHEOLOOGILISED UURINGUD LÜGANUSE KIRIKUS JA KIRIKUAIAS*Villu Kadakas ja Tõnno Jonuks*

Artikkel tutvustab eeskätt 2012. ja 2013. a sügisel Virumaal Lüganuse kirikus ja kirikuaias (jn 1–3) seoses pöranda osalise vahetuse ja hoone lähiümbrusest vihmavett eemale juhtiva vertikaalplaneeringu tegemisega toimunud arheoloogilist järelevalvet ja uuringuid (V. Kadakas). Lisaks antakse ülevaade 1991. aastal Toivo Ausi ja Erki Nuudi juhatamisel toimunud ehitusarheoloogilistest uuringutest, mille eesmärk oli uurida kiriku vundeerimist ning täpsustada erinevaid ehitusetappe (T. Jonuks).

Kõrgel järskude nõlvadega seljandikul Purtse jõe (jn 2: 1) ääres paikneva Lüganuse kirikuaia (jn 2) puhul on oletatud, et seal võis paikneda I a. t. II poole linnus. Kirikuaiast vahetult lõuna pool on leitud vähesel määral nii käsitsi- kui ka kedrakeraamikat ning tuvastatud rauaaegse asulakoha olemasolu. V. Raam on praeguse kirikuhoone vanima osana määratlenud praeguse pikihoone (jn 2: 4; jn 3) – pikliku võlvimata kastitaolise ehitise, mis on püstitatud u 14. saj keskpaiku. Arvatavasti 15. saj I veerandil võlviti pikihoone kahelöövilise ruumina. Tõenäoliselt 15. saj II veerandil ehitati kitsam nelinurkne kooriruum koos käärkambriga ja püstitati läänefassaadi ette torn (jn 2: 5–7). Võlvlaed purustati tõenäoliselt Vene-Liivi sõjas (1558–1583) või 1657. a Rootsi-Vene sõjas.

1991. a uuringute käigus kaevati proovisurfid uurimaks kiriku vundamendi kolme kohta – torni ja pikihoone nurka, kooriosa põhjakülge ning pikihoone ja kooriosa lõunakülge (jn 3). Esimesega leiti kinnitust, et torn on rajatud pikihoone suhtes sekundaarselt. Teises šurfis leiti vähemalt 1 m paksune segatud inimluude kiht, mis ilmselt on pärit suuremast inimluude ümbermatmisest. Kolmandas šurfis leiti idaseina kontraforsi vundament ning šurfi põhjast kaks luustikku. Viimased jäid šurfi vaid osaliselt ning mõlema juurest leiti panuseid, mille järgi matused võib dateerida 13. sajandisse.

2012.–2013. a välitöödel pikihoones, käärkambris ja kooriruumi lääneosas eemaldati pöranda vahetuse käigus kuni 15 cm paksusel täiterusu (jn 3). Pikihoone lääneosas dokumenteeriti mitme uusajal rajatud paeplaatidest pöranda jäänused. Kaevati mõned madalad šurfid eemärgiga teha kindlaks algse pöranda tase: pikihoones on see olnud ligikaudu poole meetri sügavusel praegusest, kooriruumis u praegusel tasandil. Pikihoone põhja- ja lõunaseinas pörandast madalamal paiknevate laskeava meenutavate avade uurimisel selgus, et tegemist ei ole keskaegsete hauakambrite avadega, vaid need on ilmselt raiutud sisse alles uusaegse puutpöranda tuulutuseks (jn 3: 14). Kooriruumis ja pikihoone idaosas avastati ja kaardistati varauusaegsete paekivist hauakambrite plaanilised kontuurid (jn 3: 6). Kambreid katnud plaate pole säilinud, need on rusupinnast täis ning neid ei ole praeguses uurimisseisus võimalik konkreetsete mõisate või suguvõsade seostada. Rusust tühjendati kooriruumi lääneosa keskel asuv hauakamber ning muudeti see pörandaluugi kaudu ligipääsetavaks.

Pikihoone interjööris oli kõige olulisemaks avastuseks kahe keskaegse võlve kandnud piilari leidmine kiriku keskeljel (jn 3: 4; 6). Need on olnud ruudukujulise plaaniga u 90 cm läbimõõduga, viimistlemata kividest ja ilma soklita. Välisküljel pikihoone seinte vastas mättakihi eemaldamise järel avastati seitsme tugipiilari vundamendid (jn 3: 1; 5). Need tulemused kinnitavad V. Raami oletust, et võlvisüsteem lisati algsele pikihoonele hiljem, teise ehitusetapina. Nüüd on võimalik väita, et rajati kuuest piklikust võlvist ja kahest ruudukujulise plaaniga piilarist ning arvatavasti kokku kolmeteistkümnest tugipiilarist koosnev süsteem. Mitmed avastatud püstvugid kinnitasid V. Raami oletust, et läänetorn ja kooriruum koos käärkambriga on lisatud kolmandal ehitusetapil. Võlvlae hävimise järel arvatavasti kas Liivi või Põhjasõjas muutusid ka tugipiilarid üleliigseks ning lammutati. Ainsana on säilinud kaks läänepoolset tugipiilarit (jn 3: 2), mille vastu on hiljem ehitatud torn ning kaks idapoolset, mille pikendusena on laotud koori lõuna- ja põhjasein.

Kooriruumi idaseinas paikneva hagiokoobi (jn 3: 13) kohalt välisküljelt leiti vundament (jn 3: 5; 7), mis arvatavasti on kuulunud hagiokoobi juurde pääsemist võimaldanud trepile. Lõunaküljel, eeskojast vahetult lääne pool, leiti ka ühe koos pikihoonega ehitatud müüri vundament (jn 3: 11), mis võib-olla kuulus praeguse eeskoja eelkäijale.

Uusaja leidudena väärivad märkimist kooriruumi hauakambrist leitud üheksa kullatud vasknööpi (jn 8: 1–2), mis arvatavasti pärinevad mõne mõisniku matusest. Kirikuaiast koguti kümme Rootsi ja Vene 17.–18. saj vaskmünti (jn 8: 3). Varasematest leidudest on tähelepanuväärne pronksist keskaegne trapetsikujuline ripats (jn 8: 4), samuti üks ümmargune hõberipats (jn 8: 5), mis arvatavasti kuulus algselt mõne 13. saj matuse juurde. Kirikuaia kohal oletatavasti paiknenud muinaslinnuse ajast leide ei saadud.