Early Christian burials at Valjala churchyard, Saaremaa

Marika Mägi
Tallinna Ülikool, humanitaarsteaduste instituut, ajaloo, arheoloogia ja kunstiajaloo keskus (Tallinn University, School of Humanities, Institute of History, Archaeology and Art History), Uus-Sadama 5, 10120 Tallinn, Estonia; marika.magi.01@tlu.ee

Martin Malve
Tartu Ülikool, ajaloo ja arheoloogia instituut, arheoloogia osakond (University of Tartu, Institute of History and Archaeology, Department of Archaeology), Jakobi 2, 51005, Tartu, Estonia

Tarvi Toome
Tallinna Ülikool, arheoloogia teaduskogu (Archaeological Research Collection of Tallinn University), Rüütli 10, 10130 Tallinn, Estonia

INTRODUCTION
Valjala Church is situated near the south-eastern coast of Saaremaa, and has often been referred to as one of the earliest stone churches in Estonia. Renovation work and archaeological digs around the church have revealed a dozen skeletons with local-type artefacts in several locations, a number of stray finds probably originating from destroyed graves have come to light from the churchyard. In addition to these, around thirty 13th century graves were unearthed right outside the present-day churchyard when a roundabout was built there in 2010. The latest small excavations were conducted in 2018–2019 around the apse. This fieldwork inspired us to present an overview of the results of all excavations at Valjala Church (Fig. 1), including the 2010 excavations that have not been published so far.

The first archaeological excavations around Valjala Church were carried out by architectural historian Villem Raam and archaeologist Jüri Selirand in the 1970s (finds AI 4647, 4648, 4674; Selirand 1973; 1974a; 1975; 1976). Rescue excavations necessitated by the road-building in 2010 were supervised by Peeter Talvar, with assistance from Marika Mägi, Tarvi Toome and Ain Lavi. The finds are stored in the Archaeological Research Collections of Tallinn University (AI 7585). Eleven additional burials were found in the course of renovation work of the apse in 2018. The archaeological part of these works were supervised by Garel Püüa and Martin Malve (finds: AI 8043). A burial, mainly under the round apse, was excavated by Marika Mägi in 2019 (finds: AI 8043).
EARLIER RESEARCH AROUND VALJALA CHURCH

For analysing the excavations in 2010, 2018 and 2019 it is necessary to give a brief overview of the earlier research. Restoration works of the church building in the 1970s revealed some skeletons with artefacts, and were followed by small-scale excavations (Selirand 1973). Along the southern wall of the very first stone building, the present-day chorus and sacristy, a woman had been buried with a number of artefacts (no 1 (1971); Fig. 2). Another, similar female grave was recorded in the neighbourhood of the first one (no 2 (1973)). A scabbard end and a sword were also found north of the church nave (no 3 (1971)), but not really excavated, so the position of the skeleton is somewhat uncertain. Other burials uncovered in the course of these digs had no grave goods (see overview in Mägi 2002, 65–66).

Both female burials on the southern side of the sacristy contained specific dress pins with a flat, blossom-formed head and four symmetrical holes (Fig. 3: 1). Such pins were probably the latest versions of cross-shaped headed pins with joint terminals, and have been dated approximately to the 13th century (Kustin 1962, 413; Mägi 2002, 66, pls. 100–101). Similar pins have been found at Pada cemetery in burial no 170, where a coin minted in the 1220s dates the grave to the middle decades of the 13th century (Myrberg 2008, 140, 280–281 and N. Myrberg Burström, pers. comm 27.08.2019). Some other artefacts in the first female grave at Valjala were probably made even in later times. A massive spiral neck-ring and a penannular brooch with stylized animal-shaped terminals have also been found in some complexes in northern Couronia, e.g. in burial no 6 of Ance cemetery, as well as in burial no 1 in the churchyard of St Peter in Riga. Both these graves are dated to the end of the 13th century or to around 1300 AD (Pāvels 1959; Lūšēns 2003). The scabbard end from the probable male grave at Valjala could have been made during a long period from the end of the 11th century up to the middle or even the second half of the 13th century (Kazakevičius 1998; Tomsons 2018, 157–164, 168).
EXCAVATIONS IN 2010
Rescue excavations were necessitated by the building of a roundabout by the present-day churchyard. All burials were found in a supine position. The majority of the unearthed graves were defined by lined limestones, in most cases limestones also covered the graves. One stone cist without the remains of a burial was also registered.

The areas between the graves clearly marked by stones or not dug through by a bulldozer were, with some exceptions, not studied. Therefore, the possibility that the area of the present roundabout actually contained more graves is high. In the 1970s, Selirand described the soil around Valjala Church as very homogeneous, where graves were difficult to spot at horizontal layers (Selirand 1973). However, the grave pits could well be observed in profiles. In 2010, altogether 26 burials were found (Russow & Oras 2011, 11 and figs 4–5). The graves described below are the ones with survived descriptions; the documentation of some graves, especially the partial ones and these without grave-goods is missing.

Burials no 1 and 1a
Female, 40–50 years old. No grave goods. Several infant bones were collected from the grave (see burial no 20). Burials no 1 and 20 may have been buried together.

No 1a: Female, 18–24 years old. No grave goods.

Burial no 2
Male, 35–40 years old, head to NW. Two iron rings, one on the left shoulder, another between the pelvis and the right femur. Below the latter there was a semi-circular iron buckle. Similar simple buckles were found in the Siksälä cemetery in SE-Estonia dated to the 14th century or even later (Valk et al. 2014, 92, 234, graves no 68 and 226). However, their use at an even earlier period cannot be excluded.

Burial no 3
Male, 40–45 years old, head to NW, stature 174.2 ± 4.05 cm (dex H). Buried in a grave lined with limestone slabs and covered with head-size stones. A bronze penannular brooch (Fig. 4) on the middle part of the body had probably been on top of an under-arm, and had held together a sort of a coat. Small bronze-spiral applications along the knees presumably marked a leg-decorations.

The penannular brooch in this grave represented a type that was widespread in several other Valjala graves, as well as in other 13th–14th century cemeteries in Estonia and Livonia. It had faceted terminals (in some other graves the terminals are faceted, but funnel-shaped), a grooved thicker middle part of the ring, and a widening end of the pin. A similar penannular brooch at Karja cemetery about 12 km north of Valjala was uncovered in burial no 7 together with a coin minted in 1238–1261 (Mägi 2002, pl. 108). Similar ones at Siksälä are dated to the time after 1300 AD (Valk et al. 2014), but in Pada

Fig. 4. Penannular brooch in burial no 3 (2010).
Photo / Foto: Marika Mägi
cemetery in NE Estonia very broadly to the end of the 12th and to the (whole?) 13th century (Tamla 2011a–c). Such penannular brooches are rare in the stone graves of Saaremaa, indicating that they mainly belong to the time after Christianisation.

In the Livic material in Latvia, such penannular brooches are normally considered as artefacts from the turn of the 13th and the 14th century (Mugurēvičs 2008, pl. XXVII). An exception is grave no 57 near the choir of Riga Cathedral that has been dated to the middle of the 12th century by Andris Caune (Caune 2007, 332–341). The woman, buried with her head to the west, had however with her jewellery that resembles that in other 13th–14th century Livic graves in Riga, including a penannular brooch similar to the ones in Valjala. The particular date was based on ¹⁴C analysis from a piece of wood that may have been a part of a coffin, but may also come from the 12th century cult-place that was found aside the later cathedral. The study of coffin remains from the 13th century Livic cemetery near St Peter’s Church in Riga also revealed that pieces of old wood, e.g. planks of ships or boats, or old doors, had been re-used for the coffins (Celmiņš 2002). The very early date of grave no 57 and the artefacts in it is, accordingly, not fully justified.

Burial no 4 (Fig. 5)
Female, 40–50 years old, head to W, stature 167.8 ± 4.45 cm (sin H). Only the upper part of the burial, down to the pelvis, had survived, while the rest was destroyed by a ditch dug in the course of the road building. The burial had been in a wooden coffin, lined and covered with stones. In several places, also pieces of bark had preserved.

The woman had worn a very luxurious head-dress that had consisted of several layers of textile, richly decorated with bronze spirals and rings, perhaps over a frame made of bark. A braid made of bronze spirals had hung down the right side of her neck. Part of the head-dress or a piece of textile covering the face reached out up to dozens of centimetres from both sides of her head. The bronze decoration on the left side and at the back of the head was more modest than on the right side. As such, it resembled the old reconstruction of ‘kaarihuntu’, a Finnish late prehistoric head-dress (Lehtosalo-Hilander 1984, fig. 46). However, a more detailed reconstruction of the head-dress in this grave, as well as in some other graves at Valjala, is subject to future research.

Around the woman’s neck had been a double neck-ring. Her front part was decorated with a double chain, fixed on her shoulders by a triangular-headed and a spiral-headed pin. The triangular-headed pin was covered by the head-dress decoration. On her left shoulder some garment had been fixed with a penannular brooch, and the spiral-headed pin had been stuck through the ring of the brooch. Aside the left elbow a collection of finds was uncovered, consisting of a belt and two silver bracelets (Fig. 6). The belt had two buckles and was decorated with small round bronze fittings. It had originally been folded together and placed under the left hip of the dead woman. Two bracelets had been stuck under the body from the left side. In the finger of the skeleton’s right hand was a finger-ring; another finger-ring was found under the left elbow.

The lower part of the body had been covered with some garment, a shawl or an apron, perhaps folded together. A zone of bronze decorations with some organic remains indicated where the garment had been; however, most of it probably remained in the destroyed part of the grave. It is possible that some other items found from the soil dug out from the ditch actually belonged to the same abundantly supplied burial – e.g. a knife in a bronze-plated sheath, and perhaps another penannular brooch.
The artefacts in this grave can be dated to different periods. The triangular-headed pin is a typical artefact from the 12th century, which can frequently be found in stone graves of Saaremaa. The bracelets resemble similar ones in grave no 17 at Siksälä, which is dated to 1200–1225 (Valk et al. 2014, 35). Similar bracelets were also found in grave no 5 at the cemetery of Loona in western Saaremaa, where they have earlier been dated to the 12th century (Mägi 2002, 65). However, this date must be re-considered in the light of new excavations and publications. As in Valjala, the Loona grave also contained a penannular brooch similar to the one in Valjala burial no 3 (2010), and perhaps a knife sheath. A neck-ring in grave no 5 at Loona similar to the one in the Valjala grave resembled the one in grave no 6 at Loona, where it was together with a massive spiral neck-ring (see in burial no 1 (1971)) and a finger ring with an oval front shield. The latter also occurs e.g. at Siksälä, where such items are dated to the second half of the 13th century at the earliest (Valk et al. 2014), or Mārtiņšala near Riga, where they are dated to the 14th century (Mugurēvičs 2008, pl. XXVII).

The belt with round fittings in the Valjala burial no 4 (2010) has a counterpart in burial no 152 at Pada (Tamla 2011c), but a similar one has also been found in grave no 7 near St Peter’s Church in Riga, where it is dated to the end of the 13th century (Pāvele 1959). Similar finger-rings in the deposit of Lõhavere in southern Estonia have, however, been dated to the first quarter of the 13th century (Laul & Tamla 2014, 87–90). We can conclude that the woman in burial no 4 (2010) in Valjala was presumably buried around the middle of the 13th century, and with her, among the other things, a pin was placed that originally had belonged to her mother or some other deceased relative.
Burial no 5
Child, 10 years ± 30 months old. Buried in a grave lined and covered with limestones. Only the lower part of the skeleton, the legs, had preserved.

Burial no 6
Adult male, head to NW, stature 175.0 ± 3.27 cm (dex F). The grave was lined and covered with limestones. Only legs of the skeleton had preserved. No grave goods. Some additional human bones were found in the upper layer of the grave, under and between the covering stones.

Burial no 7
Male, 35–50 years old, head to W, stature 163.2 ± 3.27 cm (dex F). There was a big limestone in the foot part of the grave that otherwise was not lined or covered with stones. No grave goods were detected.

Burial no 8
Female, 40–45 years old, head to NW, stature 155.3 ± 3.72 cm (dex F). Pieces of bark and/or wood were preserved in several places around the skeleton. No stones marking the grave were registered.

The woman had a zone of bronze decorations around her head, marking a head-dress over a bark frame. Most of its decoration was concentrated on the back side of the head, with also a richly decorated braid hanging down the neck. The front part of the head-dress had not been decorated with bronze or other preserved material.

Although the woman’s head-dress had been richly decorated, the rest of her costume lacked preserved decorations or ornaments. However, a collection of jewellery, a belt with fittings and some garment decorated with a bronze pattern was uncovered under the skeleton (Fig. 7). Under the right side of the body had been a bronze-plated sheath with a knife, and a belt decorated with round fittings and folded together. Under the back of the deceased had been two belt-chains of big rings and a double chain-arrangement where the chains had merged into a cluster. Two simple spiral-headed pins had functioned as fixers of the chain-arrangement, which was additionally decorated with three finger-rings fixed to the chains. Under these deposited artefacts a garment with bronze decoration in three edges (and especially in two corners), probably an apron, had been

![Fig. 7. Belt chain, belt, knife sheath and bronze decoration of an apron in burial no 8 (2010) after the bones have been removed.](http://example.com)

Photo / Foto: Marika Mägi
spread. Under the woman’s feet there was a penannular brooch.

Several items in this grave were similar to these in burial no 4 (2010) and were discussed above. Similar belt chains occurred in other Valjala graves and also in stone graves, and one such chain was in grave no 19 at Karja together with a coin pendant minted between 1245 and 1277 (Mägi 2002, pl. 120). The braid decoration resembled the one from grave no 5 at Loona, where a similar knife sheath was found, too. The grave at Valjala can probably be dated to the middle decades of the 13th century.

_Burials no 10 and 10a_

Burial no 10 was lined with big limestone slabs and covered with stones. In the upper layers of the NW corner of the stone cist a skull and several other bones (including a femur) were found in anatomic disorder (10a). Next to the skull, a limestone slab originally lining the grave had sliced down to the grave (Fig. 8). Skeleton no 10 was found right under the other bones, indicating that the bones of burial no 10a had originally been placed on top of the wooden coffin of burial no 10.

No 10: female, 45+ years old, head to NW, stature 162.1 ± 4.45 cm (dex H). Several wood remains indicated that the woman was buried in a coffin.

A small cross-shaped headed pin with joint terminals (Fig. 3: 2) was uncovered at the right side of the skull, and had probably fixed a head-dress on the back of her head. Under the upper part of the thighbones and between them was a decorative zone of bronze spirals and rings. It had probably been a bronze-decorated garment spread under the body of the deceased. Under the right femur there was a belt-chain consisting of big rings.

The belt-chain resembled the others in the Valjala graves and can probably be dated to quite a long period. The small cross-headed pin with joint terminals was a very common find in North Estonian 13th century graves, but also occurred in Saaremaa. Two such pins were, for example, found in burial no 13 at Karja, where they were dated to the 13th century. A pendant made of such a pin was recorded in the female burial no 7 at Viru-Nigula Church in NE Estonia where it could not be dated earlier than the second half or the end of the 13th century (Tamla 1991). The pin type is rare in stone graves, indicating that it probably was used mainly during the 13th century, after the 1220s, when people were not buried in Pagan stone graves any more.
No 10a: no grave goods.

Burial no 11
Child, 1 year ± 4 months old, head to NW. Buried in a wooden coffin between big stones. A knife was placed in the left side of the leg bones.

Burial no 12
Child, 6–12 years old, head to NW. Buried in a wooden coffin between some bigger stones. Near the left shoulder, four glass beads were found. A knife had been placed to the right side of the child’s body.

Burials no 13 and 13a
The grave was lined with limestone slabs, and partly also covered with stones. In the middle of the north-eastern side of the grave, among the stones covering it, a skull and some commingled vertebrae were uncovered. The skeleton of burial no 13 was recorded at the level about 15–20 cm under the skull of 13a. In the head part of the grave, at a level about 20 cm higher than the skull 13a, a knife was found in an almost vertical position among the lining lime stones.

No 13: child, 4–6 years old, head to NW. Under the right elbow was a simple bronze arm-ring that may have been around the arm.

No 13a: the skull of an adult male. The skull had a trepanation hole.

The position in the grave, below the upper edges of the almost vertical lime stones suggest that the bones of 13a were placed in the clearly indicated grave, or deposited in the upper layer of the grave fill intentionally. It is also difficult to see how the skeleton could have been destroyed by later burials, when framed and covered with stones.

Burial no 14
Female, 40–50 years old, head to NW, stature 154.6 ± 3.72 cm (sin F). The grave was lined and covered with big stones (Fig. 9).

On the right shoulder of the woman, a penannular brooch was found almost in a vertical position. On top of the left shoulder and under her jaw was a chain in a cluster, as well as some bronze spirals and a ring indicating a bronze decoration of some garment. About 10 cm from her left shoulder a bronze artefact with rings was documented. Remains of some iron artefact could also be detected near the chain. By the left side of the skeleton there was a finger-ring.

Under the woman’s thigh bones and right outside the left hip remains of several bronze-decorated garments were registered,
that had been spread under the body in a wooden coffin. Under her right femur a belt chain consisting of big bronze rings was found.

Artefacts similar to the ones found in burial no 14 (2010) were registered in graves no 4, 8 and 10 (2010). Hence burial no 14 (2010) can be dated to the 13th century, probably to the middle part or the second half of it.

Burials no 15, 15a, 15b and 15c
Remains of four persons were found inside the same grave lined with stones. At the upper layer was the burial no 15 with some bones of 15a by its left side. Below these burials another double grave (Nos 15b and 15c) came to light (Fig. 10). The stone cist had clearly been built for burials no 15b and 15c, a woman and a toddler, and the other burials (a man with a small child) were added later. The man and the woman were approximately of the same age and may have formed a family. The woman had her left arm under the toddler’s head, indicating that these two persons had been buried together. Unfortunately, no DNA analyses have been made of these burials so far.

No 15: male, 18–20 years old, head to NW, stature 164.7 ± 3.27 cm (dex F). No grave goods were detected with this burial.

No 15a: child, 3–14 months old, without grave goods.

No 15b: female, 20–25 years old, head to NW, stature 155.4 ± 4.45 cm (dex H). Bronze spirals on both sides of the skull indicate that she probably had worn a head-dress that stretched horizontally to both sides (Fig. 11). Two small pins with double spiral heads and a chain fixed to them that was found in a cluster between the skull and the bones of the left shoulder had presumably been meant to fix and to decorate the head-dress. The head-dress may have resembled the one from burial no 8, but had less preserved metal decoration.

There were no other jewellery or bronze fittings fixed to the costume of the woman, but a number of artefacts and a garment with bronze decoration were uncovered under the skeleton. Under and aside the left hip there were big round silver sheet pendants and

Fig. 10. Burials no 15b and 15c (2010).
Photo / Foto: Tarvi Toome

Fig. 11. Bronze decoration of a head-dress and a small double-spiral-headed pin in burial no 15b (2010).
Photo / Foto: Tarvi Toome
blue glass beads that probably had formed a necklace. Under her spine and pelvis a belt with two bracelets and round bronze fittings was spread along the body. Under the upper part of the right femur was a belt chain consisting of big bronze rings. There were details of bronze decoration of some garment in several places under the lower part of the skeleton.

No 15c: child, 2–4 years old, head to NW. A necklace consisting of eight silver coin pendants¹ and blue glass beads was found around the right elbow. Diagonally over the right side of the child’s body, and partly under the woman’s left knee was a dagger, wrapped in a bronze-decorated garment (an apron or a shawl; Fig. 12).

The belt with round fittings resembled the ones in the above discussed graves no 4 and 8 (2010). The chain with two small double-spiral-headed pins has a counterpart in grave no 170 in Kaberla, North Estonia (Selirand 1962), where they were found together with a chain arrangement containing two small cross-shaped pins with connected terminals (as in burial no 10 (2010)). Both these types occurred also among stray finds from Saha near Tallinn, probably originating from an inhumation cemetery around the Saha chapel (Lang 1996, 247). A single double-spiral-headed pin was also found in a 13th century grave near St Nicholas Church in Tallinn (Talvar 2000; Mägi et al. 2019, 186–187).

The most significant find was a dagger with a specific hilt that resembles Couronian Viking Age swords (Tomsons 2018, 42–43). The dagger from Valjala has not been properly studied so far, but its blade is too short for being a sword. Daggers with similar antenna-shaped pommels were widespread in western Europe during the second half of the 13th century (Oakeshott 1960/1999, 254, fig. 122), which fits with the probable date for the burials of the woman and the child. It is, however, possible, that an old sword hilt was re-used for the dagger in this medieval grave.

Burial no 16
Male, 30–40 years old, head to NW, stature 169.6 ± 3.27 cm (dex F). A knife with a bronze plaque of a sheath was uncovered between and under the lower part of his thighbones.

¹ The necklace was taken up as a monolith, and the pendants are only visible on X-ray picture that makes it difficult to define the exact date of them. However, the coins are probably older than the grave.
Burial no 17
Subadult, the skeleton was disturbed by earthworks.

Burial no 18
Child, approximately 1–2 years old. The skeleton was disturbed by earthworks.

Burial no 19
Female, adult, the skeleton was disturbed by earthworks.

Burial no 20
Infant, 0–6 months, the skeleton was found from grave no 1. Burials no 1 and 20 may have been buried together.

Burial no 21
Child, approximately 4–8 years old, the skeleton was disturbed by earthworks.

EXCAVATIONS IN 2018
Excavations in 2018 were carried out in connection with restoration works of the church building and covered the area immediately around the apse of the church.

Graves no 1 and 2
The grave contained two skeletons, a woman and a child, who had been buried together (Fig. 13). The child was by the woman’s left side, in the embrace of the adult.

No 1: female, 40+ years old, head to NNW, stature 154.3 ± 3.72 cm. Buried in a coffin. Her head-dress had been decorated with bronze; a braid formed by spirals had hung down the neck. On the right side of her chest a big flat pin with joint cross-shaped terminals was found together with a chain (Fig. 14). Somewhere in her front part a penannular brooch had fixed pieces of her garment.

The pin represented an earlier version of pins as in graves no 1 (1971) and 2 (1973). A similar one has been found in grave no 52 at Pada cemetery, together with a coin minted between 1208 and 1212, as well as in grave no 80 at the same cemetery (Tamla 2011b). Pins of the same type in grave no 6 at Kukruse (Lõhmus et al. 2011) were recorded together with belt buckles as e.g. in the Valjala burials no 4 and 15b. Single pins of such type have
also been found as stray finds at the Tammiku cemetery (Tõnisson 1975) and in the settlement near Tõnismägi in Tallinn (Bernotas et al. 2017). The pin type is rare in stone graves, although it sometimes occurs there. The penannular brooch had irregularly faceted terminals as several other brooches found in Valjala, but it was decorated with the same ornament as several 12th century brooches, and can, therefore, be dated to the beginning of the 13th or even to the end of the 12th century. A very similar brooch has been found, for instance, in the Town Hall Square in Tallinn (Tarakanova & Saadre 1955, fig. 6: 4).

The somewhat earlier date of the grave, compared with other graves in Valjala, is supported by the fact that the lower leg bones of the skeleton were destroyed when digging the foundation for the round apse of the earliest Valjala stone church. Architectural features of the apse suggest that it may have been erected not later than in the 1230s (Raam 1977). Accordingly, burials no 1–2 (2018) can be dated to the first decades of the 13th century, probably to the 1210s or 1220s.

No 2: child, 1 year ± 4 months old, head to NNW. A necklace made of white beads had been around the neck. The child's feet had been removed due to the construction of a polygonal apse of the church built in the middle of the 14th century.

Burial no 3
Male, 39–44 years old, head to WSW, stature 179.9 ± 3.27 cm. A bronze buckle was uncovered on the left pubic bone.

Burials no 4 and 5
A skeleton of a child was found right on top of a skeleton of an adult man.

No 4: male (?), 25–40 years old, head to WSW, stature 163.9 ± 3.27 cm (Dex F). Small applications formed of bronze spirals were found under the proximal ends of the tibiae. A knife parallel to the spine was on the left side of the chest, the tip of the knife pointed towards the skull.

No 5: child, 2–4 years old, head to WSW. Two knives were found along the left side of the body, under the proximal end of the right femur and near the left side of the chest.

Burial no 6
Child, 4–8 years old, head to WSW. No grave goods.

Burials no 7–8; 12–13
These burials did not obstruct the renovation work and thus were left unexcavated.

Burial no 9
Child, 1–2 years old, head to WNW. No grave goods.

Burial no 10
Child, 5 years ± 16 months old, head to W. A bronze artefact with a sheath, a belt divider and a knife were found between the knees. A similar divider has been found in Maidla cremation grave, interpreted as a bridle divider and dated to the end of the 12th and the beginning of the 13th century (Mandel 2017, 75, pl. XXXII). In Couronia, such round dividers belonged mainly to the 13th century (Selirand 1974b, 124).
Burial no 11
Female, 44–50 years old, head to WNW, stature 154.8 ± 3.72 cm. No grave goods.

EXCAVATIONS IN 2019
Excavations in 2019 were carried out in connection with supplementary restoration work of the church building. Only one burial was found, mainly under the foundation of the round apse.

Burial no 1
Male, 25–40 years old, head to NW. The man had been buried in a comparatively low grave (approximately 50 cm under the surface), in a loamy soil. No remains of a coffin were detected, but the grave had been filled with a dark layer characterised by tiny charcoal pieces and some burnt stones. It is possible that the layer indicated some fire of the first church building, before the round apse was erected.

Only shinbones and feet could be uncovered; the rest of the skeleton is presumably still preserved under the round apse. On top of the right knee a penannular brooch was detected upside down. It resembled the brooch in burial no 1 (2018), but lacked a terminal in one end, being replaced by a simple hook. Between the knees of the deceased was a knife sheath lined with bronze plaques and fitted with a chain of iron links, placed in the grave with its tip towards the head of the man. On top of the sheath, but in the opposite direction a knife had been placed. The burial can be dated to the first decades of the 13th century, probably to the 1210s or 1220s.

HUMAN REMAINS
36² partially or entirely preserved skeletons were osteologically analysed. Several skeletons had been damaged during earthworks, different construction phases of the church, and also by later burials. During the 2018 excavations, only the parts of the skeletons that were endangered by the renovation work of the church’s apse were removed.

The sample consisted of 15 subadult and 21 adult skeletons (Table 1)³. There were 10 male and 10 female skeletons; for one skeleton, it was not possible to determine the sex due to the high level of fragmentation. The proportion of adults and subadults is characteristic to Middle and Early Modern Period rural churchyards. Age at death of the adults buried was mostly between 35 and 50 years. There were only a few young adult burials. There were no adolescent burials; the largest part of subadult burials were 2 to 12 years of age at the time of death. Only one infant skeleton was found. The small number of infant skeletons is probably partially due to the excavation methods (soil was removed with an excavator). The presence of limestone in the soil also reduces the preservation of smaller bones.

The length of the femur of six men and five women could be measured. The ranges and means were as follows: 163.3–180.1 ± 3.27 cm, 169.4 ± 3.27 cm; 154.3–155.4, 154.9 ± 3.72 cm.

² During the 2010 excavations, 26 burials (Malve 2019a), in 2018, nine burials (Malve 2019b), and in 2019, one skeleton (Malve 2019c) were found. The material from the three excavations are studied in entirety.
³ The sex of the burials was determined according to the morphological traits on the pelvis and cranium (Buikstra & Ubelaker 1994, 16–20) and the maximum length of the long bones (Garmus & Jankauskas 1993, 6–8) and tarsal bones (Garmus 1996, 2). The age at death was determined according to wearing of the teeth (Brothwell 1981, 72), pubic symphyseal face (Todd 1920; 1921; Brooks & Suchey 1990) and age caused changes on the limb joints (Ubelaker 1989, 84–87). The age of subadults was determined by examining the development and eruption of the teeth (Ubelaker 1989, 63), the maximum length of the long bones (Allmäe 1998, 183–184), the epiphyseal fusion (Schaefer et al. 2009). Pathological conditions were identified with the aid of Ortner & Putschar (1985) and Roberts & Manchester (2012). On teeth the degree of dental calculus and alveolar reduction was estimated (Brothwell 1981, 155 and fig. 6.14 a, b). Stature was calculated according to the formula of Trotter and Gleser (Trotter 1970) using the measurements of the humeri and femora.
Dental pathologies were the most prevalent pathologies. Eleven adults and one child presented with dental calculus. Dental caries was registered in eight skeletons, most of whom were middle-aged adults. Only one 4–6-year-old child had dental caries. Alveolar reduction and periapical lesions were found on five adult burials. The lower right 2nd premolar of burial no 1 (2018) had an eruption defect: the distal surface was facing the cheek.

Schmorl’s nodules or intraosseous disk herniation were present in ten adults: six females, two males, and one of undetermined sex. Most of them were older than 40 years; one female was a young adult and it is likely that she had been engaged in hard labour in an early age. Schmorl’s nodes are thought to be caused by trauma, intensive hard labour, a repeated motion, or a congenital feature. One adult female presented with a sideways curvature of the spine, scoliosis (burial no 4 (2010)).

Fractures were present in three adults: an adult male (burial no 2 (2010)) presented with a healed fracture of the right fourth metacarpal and another adult male with a healed fracture of the right fifth metacarpal (burial no 3 (2018)) and with a healed fractures of the right IX–XI ribs, and one adult female (burial no 4 (2010)) with a healed fracture on the distal ⅓ of the left ulna. Two female adults had pits (parturition scars) on the dorsal surface of the pubic body indicative of a difficult childbirth. No signs of violence were observed on the skeletons.

Cribra orbitalia was present in the orbits of one child (burial no 21 (2010)) and one male young adult (burial no 15 (2010)). It is not indicative of a certain disease, but is used to describe the porous bone tissue of the orbital roof. The porosity of the roof can be caused by diet deficiencies or a metabolic disorder.

Two adults presented with an inflammation of the periostem, periostitis. Burial no 7 (2010) presented with periostitis on the tibiae, and burial no 15 (2010) with an active periostitis on the dorsal side of the ilia and on the tibial and fibular diaphysis. Active and healed changes of the periostem can be caused by a mild infection, stress, mild trauma, or varicose veins (Cowie et al. 2008, 52). One child presented endocranial lesions on the inner surfaces of frontal, parietal, and temporal bones. These lesions can be caused by metabolic disorders due to nutrient deficiencies (e.g. scurvy) or infections.

In addition, the breakdown of limb joints (osteoarthritis), wearing of the vertebrae caused by degeneration of the vertebral column (spondylosis), and wearing of the vertebral joints

---

### Table 1. Age at death of the burials found in the Valjala churchyard.

<table>
<thead>
<tr>
<th>Age groups / Vanuserühmad</th>
<th>Age / Vanus</th>
<th>Number of individuals / Indiviidide arv</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infant I / Imik</td>
<td>0–1 y</td>
<td>1</td>
<td>2.8</td>
</tr>
<tr>
<td>Infant II / Väikelaps</td>
<td>1–2 y</td>
<td>4</td>
<td>11.1</td>
</tr>
<tr>
<td>Child / Laps</td>
<td>2–12 y</td>
<td>9</td>
<td>25</td>
</tr>
<tr>
<td>Young adult / Noorem täiskasvanu</td>
<td>18–35 y</td>
<td>3</td>
<td>8.3</td>
</tr>
<tr>
<td>Young adult / Middle adult / Noorem / küpses eas täiskasvanu</td>
<td>25–40 y</td>
<td>3</td>
<td>8.3</td>
</tr>
<tr>
<td>Middle adult / Küpses eas täiskasvanu</td>
<td>35–50 y</td>
<td>9</td>
<td>25</td>
</tr>
<tr>
<td>Middle adult / Old adult / Küpses eas / vanem täiskasvanu</td>
<td>40+ y</td>
<td>2</td>
<td>5.6</td>
</tr>
<tr>
<td>Adults (indeterminate age) / Täiskasvanud (kindlaksmääramata eaga)</td>
<td>18+ y</td>
<td>4</td>
<td>11.1</td>
</tr>
<tr>
<td>Alaealine / Subadult</td>
<td>under 18 y</td>
<td>1</td>
<td>2.8</td>
</tr>
<tr>
<td>Total / Kokku</td>
<td></td>
<td>36</td>
<td>100</td>
</tr>
</tbody>
</table>
(spondyloarthrosis) was present in middle and old adults. There were also some congenital peculiarities present: Os trigonum, sternal foramen, sacralization, Os acromiale, and spina bifida. Os trigonum and Os acromiale could also be caused by a stress fracture.

One young female (burial no 15b (2010)) had thick deposits of pitted lamellar bone on the visceral surfaces of the heads and necks of the fifth to twelfth ribs on both sides (Fig. 15). These deposits were covered by thin layers of finely pitted grey woven bone. The lesions suggest that this female had a chronic bilateral pulmonary infection, which was in active phase at the time of death. The location and bilateral nature of bone deposition suggest that death may have been caused by pulmonary tuberculosis. There was also lytic destruction of the cortical and trabecular bone of the centre of the seventh cervical vertebra and first thoracic vertebra (scooped-out lesions; Fig. 16). In the seventh cervical vertebra, there was lytic destruction to the right side of the centrum. In the first thoracic vertebra there was a large lytic destruction to the right side of the superior surface of the centrum. There was no spinal collapse. The spinal lesions were characteristic, though not pathognomonic, of pulmonary tuberculosis. Features characteristic to pulmonary tuberculosis are rarely found on the upper part of the vertebral column (Aufderheide & Rodrigues-Martin 1998, 135). The lytic destruction of vertebrae and the pitted lamellar bone on the left side ribs indicate that the woman could have suffered from pulmonary tuberculosis.

In addition to a possible case of pulmonary tuberculosis, the skull of burial no 13a (2010) was found upside down in the grave of burial no 13 (2010). The left parietal bone of the skull presented with a hole indicative of skull surgery (Fig. 17). For a long time, there had been no finds of trepanned skulls in Estonia, but during the last couple of years, a few interesting cases have been found. Trepanation is a surgical procedure in which the soft tissues of the skull and the underlying bone are cut and removed. The
The region's oldest trepanned skull was found in Latvia and had three healed trepanation sites, the largest of which was 120 × 60 mm (Derums 1979, 459–464). Skull surgeries are thought to originate from Central and Northern Europe (Roberts & Manchester 2012, 125). In addition to the find from Valjala, one trepanned skull has been found at St John’s Hospice cemetery in Tallinn and one at St Jacob’s cemetery in Tartu (Malve 2016, 12–13).

The trepanned skull found in Valjala is the oldest known skull with surgery marks found in Estonia. Unfortunately, the skull was found in a damaged grave where the skull was the only preserved part of the skeleton; the rest of the skeleton had been dislocated by later burials or earthworks. Most of the facial bones were also missing. Based on the protruding glabella, large mastoid processes, and the nuchal crest, the skull belonged to a male. Since the cranial sutures were completely fused on the skull’s inner surface and partially fused on the outer surface, we can assume that the deceased was most likely an older adult (40+ years). On the inner surface of maxillary sinuses there was new bone caused by chronic maxillary sinusitis. Sinusitis can be caused by different respiratory infections. Respiratory infections may develop as a result of poor living conditions, air pollution (smoke), lack of hygiene, and polluted water (Krenz-Niedbala & Łukasik 2016, 103).

A regular round hole (15.3 mm in diameter) was found on the right parietal (Fig. 18). Since the surface of the cut was the same colour as the rest of the skull, the cut was made perimortem. A healed cut has round edges, whereas the cut on the parietal had sharp edges characteristic to an unhealed injury. The patient had died during or right after the procedure. It is possible that something else was the cause of death, but since the rest of the skeleton is missing, this cannot be determined. What is even more interesting: the bone surrounding the hole was also round (42.49 × 40.05 mm) and noticeably lower than the rest of the parietal. It is possible that the same part of the bone was removed once before or the man had lived through several surgeries. The hole was most likely cut with a blade.

Several researchers have pointed out that trepanations could have been used to treat both real and imagined diseases; people could have been referred to a surgical intervention for head traumas (e.g. fractures, sharp force traumas) and also for headaches and migraines (Roberts & Manchester 2012, 126–127). In the case of the skull found in Valjala, it is not clear what the reason for the trepanation was. It is possible that the injury was removed during the surgery.

In addition to in situ burials, all collected human bones were osteologically analysed. During the 2010 and 2018 to 2019 excavations, 819 commingled human bones or bone fragments and 43 teeth were collected. The bones had been dislocated during later burials and both excavations and earlier earthworks. Several bones were stained green due to adjacent copper items (coins, brooches, garment fasteners, spiral tubes, etc.) The main pathologies

![Fig. 18. The sharp edges of the wound indicate that the man did not survive the operation.](image-url)
found on commingled bones were also dental pathologies (dental calculus, dental caries, periapical lesions, alveolar reduction and ante mortem tooth loss), age-related diseases (osteoarthrosis, spondylosis, and spondyloarthrosis), and diseases of the vertebral column (Schmorl’s nodules). Several tibiae presented periostitis. One adult ilium showed signs of active periostitis on the ventral and dorsal surfaces. This includes layers of dense porotic bone and mature lamellar bone. The acetabulum was completely dissolved. These kind of changes in the bone indicate a long-term infection (e.g. tuberculosis). A skull of an adult male presented with a healed blunt force trauma on the frontal bone above the left eyebrow, and one left rib had a healed fracture on the body. Occipital bones of two children had new bone and endocranial lesions on the inner surface. These might be caused by a metabolic disorder, nutrient deficiencies, or an infection. Spondylosis was the only congenital peculiarity present.

The osteological material from Valjala church cemetery clearly differs from the osteological material excavated at other rural church cemeteries in the last ten years. The most remarkable finds from Valjala are the oldest documented possible trepanned skull and the possible case of pulmonary tuberculosis. A few skeletons with signs of tuberculosis have been found in rural church cemeteries (e.g. Kose church cemetery (Malve 2018, 6)), but none from such an early period. Most of the skeletons of people with tuberculosis have been found in urban cemeteries (St Mary’s cemetery in Tartu (Malve et al. 2012, 145), St George’s cemetery in Tartu (Malve et al. 2013, 201)) and date from a later period, from the Early Modern Period (16th to 18th century). Most of the skeletons with tuberculosis have been dated to the 18th century and this has been explained by the rapid expansion of towns, strong commercial connections, and military manoeuvres. Only a few cases of infection have been found during the examination of osteological material from Estonian rural church cemeteries and village cemeteries dating from the Middle and Early Modern Period. The low prevalence of infectious diseases in rural areas could have been affected by several factors: e.g. the spread of pulmonary tuberculosis was hindered by low population density and rare contact to outsiders. It is possible that rural population was more susceptible to outbreaks and died faster with the disease not having enough time to affect the bones and this is why no signs of infectious diseases have been found. Infectious diseases had more effect on urban population with aristocrats, merchants, and soldiers being most affected.

The case of pulmonary tuberculosis found at Valjala church cemetery is also remarkable due to the dating: it indicates that the disease reached the region during the 13th century. The find might reflect the wide-reaching connections of locals and frequent contact to people from other locations. The male skull found in Saaremaa is one of the oldest skulls with signs of surgery and therefore gives information on the difficult medical procedures performed in the area. Leaving the possible tuberculosis and trepanation cases aside, the pathologies observed on the bones are characteristic to rural cemeteries.

**DISCUSSION**

**Dating**

Several earlier researchers in Estonia have emphasised that grave goods in the coastal Estonian inhumation cemeteries tend to differ from the fragmented artefacts that are normally found in the 12th – early 13th century stone graves. It probably suggests that these two types of burial places are only little overlapping in time, and these particular inhumation cemeteries should, accordingly, mainly belong to the 13th century or later (e.g. Kustin 1958; Selirand 1962).
New excavations and the publications of earlier excavated Estonian and Livic cemeteries that have become available during the last two decades offer much better possibilities for interpreting such burials than before. However, finds from these burial places are still normally dated to a long period from the end of the 12th century to the 13th century, and considered characteristic for pre-Christian society. It is certainly justified for some inhumation cemeteries. Nevertheless, cemeteries used during a comparatively long period throughout the whole 13th century and later clearly single out – e.g. Karja, Viira and Loona in Saaremaa, or Kaberla, Pada and Kukruse in North Estonia. The cemetery around Valjala Church belongs to this group. As is indicated by South Estonian and Livic medieval burials with numerous grave goods, the local inhabitants did not see a contradiction between Christianity and artefacts in graves.

Burials in Valjala and in other inhumation cemeteries are characterised by artefact types that are rare or absent in stone graves. As for the finds in Valjala, e.g. some certain pins with almost blossom-like cross-shaped heads (Figs 3: 1 and 14), some bracelets and penannular brooches should be mentioned in this connection. However, some artefact types can be found both in stone graves and in inhumation cemeteries, and were accordingly used during a comparatively long period – e.g. some types of buckles and belt-chains consisting of big rings.

The earliest burials in the Valjala churchyard were probably burials no 1 (2018) and no 1 (2019) that can be dated to the time before 1240, perhaps even before 1230. In the course of several decades a number of stray finds, probably originating from destroyed burials, have been registered in the Valjala churchyard (AI 4674, SM A 691–693), but all of them represent the same artefact types that were uncovered in the excavated burials and can be dated to the time after the Christianisation of Saaremaa.

The burials no 1 (1971) and 2 (1973) in the southern side of the first church building can probably be dated to the 1230s or 1240s. The other excavated burials with artefacts in Valjala presumably belong to the middle or the second half of the 13th century.

**Burial rites**

Although the burials in Valjala can be characterised as Christian, certain features originating from the earlier, Pagan burial customs were obvious in them, too. First of all, artefacts in Christian graves can be considered as somewhat unusual. A certain gender aspect was conspicuous as well – artefacts were registered mainly in female graves where they, however, were often rather offerings than attributes belonging to the costume. As is known from the burials of the 12th century, men used to be equipped with numerous ornaments as well, and some 13th-century sculptures in Saaremaa churches depict men with clear-cut penannular brooches. The number of artefacts in the male graves of the other Estonian 13th century inhumation cemeteries tends to be bigger than in Valjala, too. We can conclude that the 13th century Estonian men probably decorated themselves with ornaments when alive, but were, at least in the cemetery around Valjala Church, normally buried without them. As such, the burial rites of the males in Valjala can be considered more similar to the West European customs, while women were buried in more traditional ways during quite a long period after the Conversion.

In four of the excavated female burials in Valjala, ornaments and decorated belts, as well as garments with bronze decorations had been placed under the body (burials no 4, 8, 14, 15b (2010)). Such artefacts that were not fixed to the costume may be considered offerings. In burial no 8 (2010) no jewellery belonging to the costume could be seen during the funeral,
except a richly decorated head-dress. Similar phenomenon has been detected in grave no 38 in Kukruse, and partly also in grave no 22 of the same cemetery, where an additional set of ornaments had been placed at the distance of 20 cm of the femur (Lõhmus et al. 2011). In the female grave no 75 in Pada, a chain arrangement with pins was found in cluster under the spine bones (Tamla 2011b). In burial no 2 in Karja a belt had been placed under the knee of the dead woman, and in several cases garments with bronze decorations were, as in Valjala, probably spread on the bottom of the coffin under the body (see also Mägi 2002, 66–70).

Adding some jewellery or decorated belts to the grave as gifts may simply be a relic from Pagan burial customs, but it may also reflect more practical calculations. The grave goods under the body were not visible during the funeral. The burials thus followed Christian principles, as much as the partakers of the funeral could observe, while they at the same time also took into account Pagan visions of the Afterlife.

In several graves in Valjala, as well as in other Estonian and Livic medieval Christian graves, a knife or sometimes several knives were found in different places near the skeleton. The knives probably functioned as protecting items. The custom was older than the 13th century – sharp items demarcating burials have been recorded in Saaremaa stone graves, as well as in late prehistoric graves in Middle-Sweden and Finland (Mägi 2002, 131–132 and references). The most conspicuous case of this custom in Valjala was registered in burial no 13 (2010), where a knife had been almost vertically stuck to the head part of the stone cist, perhaps for protecting the child buried there. Somewhat unusual was the find of a dagger, wrapped in a bronze-decorated female garment, between burials no 15b and c (2010). Parallels to this custom can be found in medieval Livic cemeteries. A dagger was found, for instance, in grave no 5 near St Peter’s Church in Riga, where it had been placed between the deceased woman’s body and her right arm. In another female grave, no 7 of the same cemetery, a dagger in a sheath with bronze decorations was found together with a knife (Pāvele 1959).

More than half of the burials excavated in Valjala in 2010 were actually in stone cists – in graves lined and covered with stones. Inhumation burials in stone cists or just stones in inhumation graves have been interpreted as relics of the earlier burial customs, when cremated bones of the deceased were spread between stones (Selirand 1974b, 76–77). Inhumations in the Maidla cemetery in West Estonia were often buried in similar graves lined and covered with stones (Mandel 2017, 36–41), and some stones in inhumation graves have also been recorded in other Estonian cemeteries, e. g. in Pada (Tamla 2011a–c). Several stone cists in Valjala contained not only the original burial, for which the cist was constructed, but on top of it also another burial or some selected human bones were found. A notable example was grave no 15 (2010), where a young man with a child was buried in the upper part of a stone cist that originally had been built for a woman and a child. A certain parallel to the custom can be seen in the location of burials no 5 and 6 near St Peter’s Church in Riga, where the well-preserved wooden parts of coffins enabled to identify that the male burial no 6 had been laid right on top of the female burial no 5 (Pāvele 1959).

The first Christians in Saaremaa
Early Christian burials were normally characterised by supine position, with arms laying in different ways. Head to the west (with divergences) is the prevailing custom. It is generally believed that the place of burial was more important for a true Christian than the position of the body in the grave – it was essential to be buried in a consecrated land that in most cases could be found around churches or chapels.
As in many other recently Christianised countries, some earliest churches and private chapels were probably erected in magnates’ estates (the best example in Estonia is Saha, see Markus 2006). The 13th–14th century inhumation cemeteries known in Saaremaa were all, except Valjala, very close to (later) manors, in the middle of the best arable lands, where elite families probably resided both before and after the Conversion. According to the Christian tradition, members of such families were buried in the churchyard of the manor’s church or chapel that was abandoned after some time (Kieffer-Olsen 2018, 85–422, especially 190–212 and references).

Valjala Church was built on a higher place two kilometres from one of the mightiest hillforts in Saaremaa, approximately in the same distance from surrounding late prehistoric stone graves, and thus from the elite residences that these graves marked (e. g. Mägi 2001b). Approximately 2 km towards NW of Valjala was Lööne stone grave (Mägi, this volume), at the same distance towards NE the big and excavated Rahu stone grave (Mägi 2002, 53–58 and references), 3 km towards ENE Veeriku stone grave (Mägi 2001a) and 3 km towards SE Jursi grave (registered in spring 2019). A medieval manor some few hundred metres from these stone graves is known in all cases. Abundant finds in these stone cemeteries suggest that people were cremated with similarly many metal artefacts as we see in the inhumation graves near the church, even though the artefact types were different, and the number of weapons was higher in the heathen cemeteries. The same families, who had buried their dead in these stone graves before, probably moved their burial grounds to the churchyard after the (official) Christianisation, while still following the custom to give artefacts to the Afterworld. Especially the burials around the very first stone building of Valjala Church suggest a high social position of the deceased.

The erection of the first stone churches in Saaremaa was in the 13th century presumably supported by the local elite families (Mägi 2002, 154–157; Markus 2003). The active role of the local magnates is also pointed out by some grave stones in Saaremaa churches, where Christian symbolism is intermingled with local features. Such stones in Valjala can be dated to the middle or the second half of the 13th century (Markus 2003). We may assume that the stone church was preceded by a wooden one. It is hard to believe that the inhabitants of Saaremaa suddenly changed their collectivistic cremations against still heathen individual inhumations without recognising the Christian element in them, and that during the Eastern Baltic Crusades. It is hardly a coincidence that these individual inhumations were made exactly on the same place where a dozen, but perhaps only some years later a stone church was built. The possibility that the three burials in Valjala churchyard that certainly date from the time before 1240 actually were Christian graves near a wooden church is, therefore, very likely.

Several counterparts to the burials in Valjala churchyard are known in both Estonia and Latvia. 13th–14th century graves with Livic artefacts around the Cathedral and St Peter’s Church in Riga were mentioned before, but a medieval cemetery with grave goods has also been excavated, for instance, around St Martin’s Church on the Island of Mārtiņšala (Mugurēvičs 2008). In northern Estonia, 13th–14th century burials with Estonian artefacts have been found by Viru-Nigula Church, as well as St Nicholas Church in Tallinn (Tamla 1991; Mägi et al. 2019, 186–187). A female skeleton with 13th century jewellery has been uncovered by St Mary’s Church in Tartu, South Estonia. 13th–14th century stray finds, probably originating from destroyed graves, have been collected from several churchyards. In South Estonia, cremated human bones have also been reported from churchyards, although the
11th–13th century artefacts from the same places predominantly do not seem to have been in fire (Valk 2017). However, the exceptional 12th century artefacts found in otherwise 13th century graves in Valjala point to the possibility that similar finds in other Estonian churchyards may also come from the earliest Christian burials.

Further study of the 13th–14th century inhumations require a number of scientific analyses of the skeletons, which in coastal Estonian cemeteries have only seldom been conducted so far. Nevertheless, the medieval burials around Valjala Church, with locally produced and ethnically significant artefacts in them, enable us to reconstruct the role of the Estonian pre-historic elite families in the 13th century political processes in many aspects more active than generally believed so far.

ACKNOWLEDGEMENTS
This paper has been supported by research projects of the Estonian Research Council IUT20-7 and IUT18-8, by the Estonian Research Council grant no PRG29 and OÜ Arheograator. The authors are grateful to everyone who has participated in the excavations and conservation work.
REFERENCES


Siiskal kalme leiulinesega kinnitab samuti Ranniku-Eesti laibamatustega kalmistute kululumist perioodi alates 13. sajandist.

