



# Local shape, foreign decoration Shared cultural values in dress pins from the Viidumäe sacrificial site on Saaremaa

By *Indrek Jets and Marika Mägi*

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Weapons and other warrior attributes in the coastal areas around the north-east Baltic Sea were similar in the second half of the Viking Period. New finds from a sacrificial site of the 7–9th centuries at Viidumäe on the island of Saaremaa indicate that this common cultural sphere came into being considerably earlier, in the 8th century at the latest. This paper discusses contacts between Sweden's Svealand region and Saaremaa as indicated by nine dress pins, of local overall design but decorated with Scandinavian animal art or simplified derivations.

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The 7th and 8th centuries saw the appearance of new cultural spheres, altering the way that various regions around the Baltic Sea related to each other. The invention of the sail meant a fundamental technological push forward, and should be seen as a precondition for such shared cultural spheres coming into being. It facilitated direct journeys over open sea that earlier oar-propelled crafts would only have made rarely. In the countries to the east of the Baltic Sea the period is characterised by the appearance of a Scandinavian impact on material culture. Its intensity varied between regions.

## *Eastern Scandinavia's cultural impact on the north-east Baltic shores*

Logistical aspects probably explain why Finland was the first area on the eastern coast of the Baltic

Sea to be affected by a sort of Scandinavisation. It was comparatively easy to row a ship from Sweden's Svealand region to the Finnish coast, especially the route over the Åland Isles. Personal and family relationships probably supported this interregional communication. Along the Estonian coast and on southwards they may have played a lesser role.

How many of the inhabitants of certain parts of coastal Finland were ethnic Scandinavians has long been a bone of contention. But nearly all commentators assume at least a certain degree of immigration from across the Gulf of Bothnia. An important argument on this point has been that weapons and other items of Swedish design are always found in graves that otherwise look convincingly local. These "foreign" artefacts are usually found in male graves, while female graves are



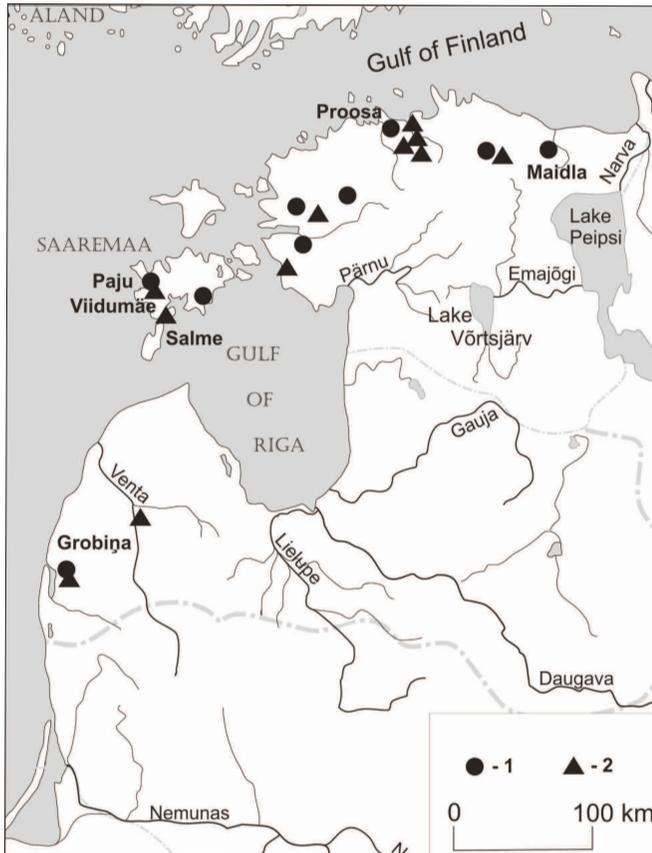


Fig. 1. The distribution across Estonia and Latvia of 5th to 9th century artefacts decorated in Scandinavian animal styles. 1) Salin's Style I. 2) Salin's Style II and Borre style. Based on Jets 2013, pp. 27–40.

almost exclusively furnished with objects of local make.

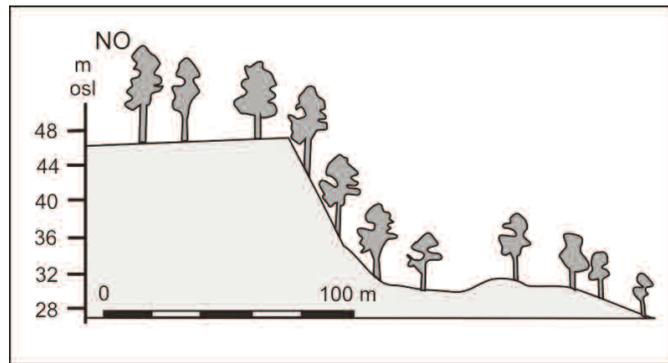
The first signs of Scandinavisation in the male sphere, as it becomes visible in Estonian grave finds, appear in the 5th and 6th centuries. The earliest obvious ones are luxurious artefacts decorated in Salin's Style I found in graves at Proosa near Tallinn and Paju on Saaremaa (Selirand 1985; Lamm 1985). Single artefacts decorated in this style, mainly clasp buttons, have also showed up at several other sites in coastal Estonia, forming a collection of about 30 items (fig. 1). A bracelet from Lügenuse Maidla near the north-eastern coast of the country stands out – an ornament of local type decorated in Style I (Jets 2013, p. 27 f). 5th and 6th century Scandinavian artefacts are considerably more common in Finland. Aarni Erä-Esko (1965, p. 8) listed 54 artefacts decorated in Salin's Style I from Finland in 1965, most of them clasp buttons or brooches. The number is

probably greater now, among other things due to the adoption of metal detectors.

This early animal art from north-west Europe also influenced the southern half of the Eastern Baltic, although on a much smaller scale. Lithuanian archaeologists believe that Style I was imitated by local artists on certain crossbow brooches. At least four brooches with Style I animal head terminals are known from Courland and former Prussia (Bliujienė 2007). Audronė Bliujienė has pointed out seven other brooches with animal heads, but their decoration shows only a vague resemblance to Scandinavian styles (Magnus 2004), with one brooch from Grobiņa as an exception (Jets 2013, p. 28).

The difference between the Estonian and Finnish archaeological evidence, and especially the cultural traits linking them to Svealand, increased greatly in the 8th and 9th centuries. This may be explained by differing burial cus-

Fig. 2. The fossil erosion scarp at Viidumäe. Landscape profile based on Ratas & Rivis 2002, fig. 20.



toms, particularly the widespread individual weapon burials of coastal Finland, where most of these finds have been made. In coastal Estonia, on the other hand, few cemeteries of the period AD 600–950 are known, even though hillforts and adjacent settlements demonstrate quite intensive activity at the time. The period AD 600–800 is particularly evasive. Such a sudden lack of grave finds can only be explained by peculiarities of the burial customs. Unfurnished cremation burials can easily remain unnoticed by archaeologists, and even more so, if the remains were not even deposited in tangible monuments but instead, for instance, spread to the wind or water (Mägi 2013).

The period AD 600–800 is the main era of abundant weapon burials in Finland (Raninen 2005). As before, many of these burials resemble graves in Svealand. A number of artefacts are decorated in Salin's Style II that characterises the first two thirds of the Merovingian period. Still, several local features characteristic of Finnish warrior culture should be emphasised. First of all, big dress pins, often with attached pendants, are often found together with Scandinavian-style weapons. At Pappilanmäki in Eura, for example, a big ring-headed pin with pendants was found together with a luxurious ring sword and other weapons, as well as belt fittings originating from the Perm area in present-day Russia (Salmo 1941). The pin belongs to a type that was common both in Finland and Estonia (Mägi 1997), and Permian mounts have also been found in both of these countries (Tvauri 2012, p. 171).

In Estonia, Style II decoration is represented

on some finds from the Salme ship burials, probably belonging to foreign warriors, and on a sword pommel from Rebala Presti, a grave with no other visible foreign traits. In addition, there are finds from coastal Estonia that are decorated in 9th century Scandinavian styles (Jets 2013, pp. 29–35). In the rest of the Eastern Baltic, on the other hand, artefacts decorated in Vendel or Early Viking Period styles are known mainly from Grobina and its surroundings (fig. 1).

The picture has become somewhat clearer through excavations in 2014 at Viidumäe on Saaremaa. The site yielded Scandinavian-style weaponry of the 8th and 9th centuries in an otherwise strongly local context and local jewellery decorated with a variant of Scandinavian animal art.

#### *The sacrificial site at Viidumäe on Saaremaa*

Viidumäe is known as a nature reserve on western Saaremaa. It is renowned for a long, high moraine escarpment that indicates a shoreline of the Ancylus Lake. Nowadays a wetland stretches along the foot of the fossil scarp (fig. 2). During the 1st millennium a small lake may have filled this depression in the former sea bed. Below the highest part of the scarp, starting on the slope and continuing at its foot, a great number of dress pins and other artefacts, including weapons, have been found stuck into the sandy ground (fig. 3). Fieldwork in 2015 indicated that the wetland or former lake has also received offerings. A number of 8th or 9th century weapons, most of them similar to the ones from Salme, were found in the wetland together with several pieces of local jewellery. The



Fig. 3. View of the Viidumäe site. The pins and other artefacts had been stuck into the ground on the slope or at its foot. Photograph M. Mägi.

offerings found on the slope were spread across an area of about 1.5 ha. At one end a cluster of fragmentary unburnt bones were found. They belong to several people of both sexes and various ages. These bones had probably been deposited in a narrow ditch, but must have laid exposed on the surface for some time before that. Some of the bones show damage from edged weapons (Mägi et al. in press). Activity at Viidumäe dates to the 7–9th centuries and it has been interpreted as a sacrificial site (Mägi 2014).

Viidumäe is particularly noteworthy because the only local-style burials of the 8th and 9th centuries we have on Saaremaa are a few stone circles excavated in the 19th century by amateur archaeologists (Mägi 2002, p. 125 f). The new site and its finds offer possibly the only evidence coeval with the Salme ship burials. They were found less than 20 km from Viidumäe in 2008–11 and have been interpreted as burials of warriors from Svealand (Peets et al. 2011; 2013).

Unfortunately, the scientific value of the Viidumäe site has been seriously compromised by several groups of metal detectorists who operated illegally. According to Estonian law, the finder of a (pre)historic artefact must immediately inform the authorities. Metal detector use is allowed after one has passed special courses. The unnamed detectorists that were active at Viidumäe for at least two years did not at first inform any archaeologist about their finds. Some of them have, however, later provided us with information and photographs, enabling us to suggest a tentative interpretation. Note that we were given the pictures and information through personal connections, without any money being involved.

The weapons found at Viidumäe by archaeologists in 2014 are mainly arrowheads, spearheads and single-edged swords, most of them belonging to the same types as the apparently Scandinavian items found at Salme. As this weaponry occurred together with distinctly local jewellery, it was

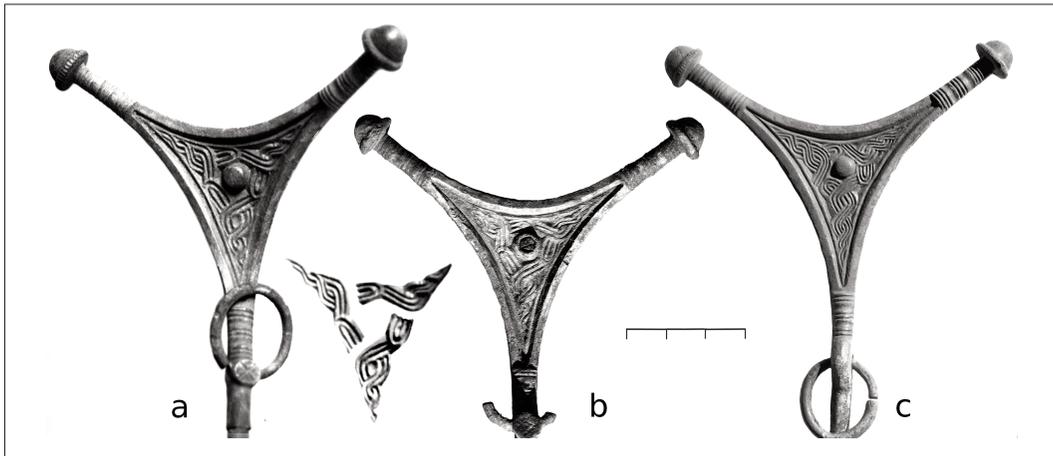


Fig. 4. Dress pins from Viidumäe in private hands.

probably also used by local Saaremaa people – in the same way as later, during the 10th and 11th centuries, Scandinavian weaponry types were the norm on the Estonian islands. Particularly remarkable is the number of arrowheads – 26 found by archaeologists – that seem to indicate a ritual during which arrows were shot. Some of the arrowheads and a large nail were also found together with human bones, where otherwise no artefacts were recorded. We shall now take a closer look at some triangular-headed pins, decorated in a fashion that may shed light on the cultural relations between Scandinavia and Saaremaa.

#### *Triangular-headed pins from Viidumäe*

We have photographs of nine triangular-headed dress pins plus one pin of the same type found by archaeologists. The real number of pins unearthed at Viidumäe is unknown, and estimates vary from 60 pins to several buckets of them. The pins belonged to various types, and not all of them had a triangular head. Ring-headed pins are reported by the detectorists as having been the most common: we have photographs of seven of those.

The ten triangular-headed pins that we know of from Viidumäe are designated *a* through *j* here. The head of pin *j* is covered with embossed silver sheet. Parallels to that pattern and technique are known from Viking Period Couronia. The other

nine have cast relief decoration, and shall be discussed in the following.

All the nine dress pins resemble a type of mainly 10th century triangular-headed pins with leaf-shaped decoration (fig. 6:10c; Mägi 2002, p. 103), but they seem to represent an earlier version of the design. The general outline shape is widespread in the Eastern Baltic littoral region, but the leaf-shaped decoration is typical for Saaremaa and has only rarely been found outside the Estonian islands – mainly in parts of western and north-western mainland Estonia that belonged to the same cultural sphere as Saaremaa. Indrek Jets (2013, pp. 50–54) has argued that the leaf-shaped decoration was a local offshoot from Scandinavian animal art. This suggestion has, however, not been proven so far, partly because finds from the Early Viking Period have been so rare in coastal Estonia.

Certain traits distinguish the Viidumäe pins from those of the 10th century with leaf-shaped decoration. For example, the edges of the Viidumäe pin heads are bevelled and their end knobs are bigger, with more pronounced shapes (fig. 4). The earliest version of the decorative motif seems to be found on pins abc. The head of pin *a* is made of silver, the two others of bronze. The decoration on all three shows the same motif, which can be interpreted as snakes with bodies of interlaced ribbons. Characteristic traits here are chip carv-

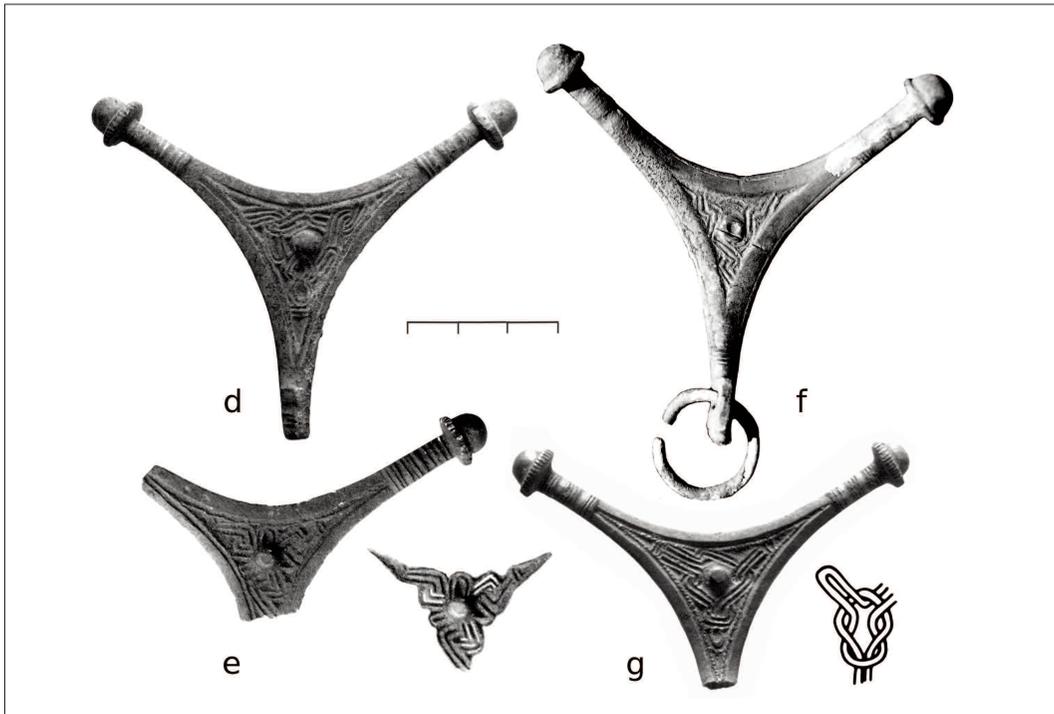


Fig. 5. Dress pins from Viidumäe. In private hands except f, Institute of History, Tallinn University, AI 7281: 3.

ing, simple interlace, and a U-shaped feature representing the ornamental animal's schematised head.

Chip carving is common in Salin's Style I, but was used in later styles as well. The simple interlace occurs already with the first north-west European interlace designs (e.g. on Early Vendel Period brooches: Nerman 1969, plate 7), but again, it was used later, when more complicated knotwork dominated (e.g. on shield fittings from Valsgårde boat burial 6, Arwidsson 1942, plate 9:163, 129, 182). The U-shaped feature was used to represent some parts of an animal's head in Style I, while in mature Style II (Vendel style C) it can form either the jaws or the brow of an animal.

On pins *abc* from Viidumäe the entire head is represented by this U-shaped feature. This simple solution too has parallels in the core areas of animal art. A Langobardic brooch can be mentioned (Haseloff 1979, p. 45, fig. 31b), and somewhat U-shaped animal heads also occur on Got-

landic picture stones from Sanda churchyard and Havor in Hablingbo (Nylen 1978, pp. 10, 12). Several Vendel Period sword pommels from England have snake motifs with U-shaped heads – e.g. three from the Staffordshire hoard (nos 669, 393 and K170; [www.staffordshirehoard.org.uk/wp-content/uploads/2013/03/Image7S.jpg](http://www.staffordshirehoard.org.uk/wp-content/uploads/2013/03/Image7S.jpg)), one from Ardleigh ([finds.org.uk/database/artefacts/record/id/144896](http://finds.org.uk/database/artefacts/record/id/144896)), one from Wellingore ([finds.org.uk/database/artefacts/record/id/68081](http://finds.org.uk/database/artefacts/record/id/68081); Fisher & Soulat 2011) and a decontextualized one from Gotland (SHM 9566; Nerman 1969, plate 200, fig. 1669).

These examples demonstrate that the decoration on pins *abc* is derived from Scandinavian animal art, although it is a schematised version. The above-mentioned parallels belong to Salin's Style II, and so the decoration on pins *abc* can be grouped with that style although not actually representing any mainstream designs. Salin's Style III (Vendel style E) has a markedly different character.

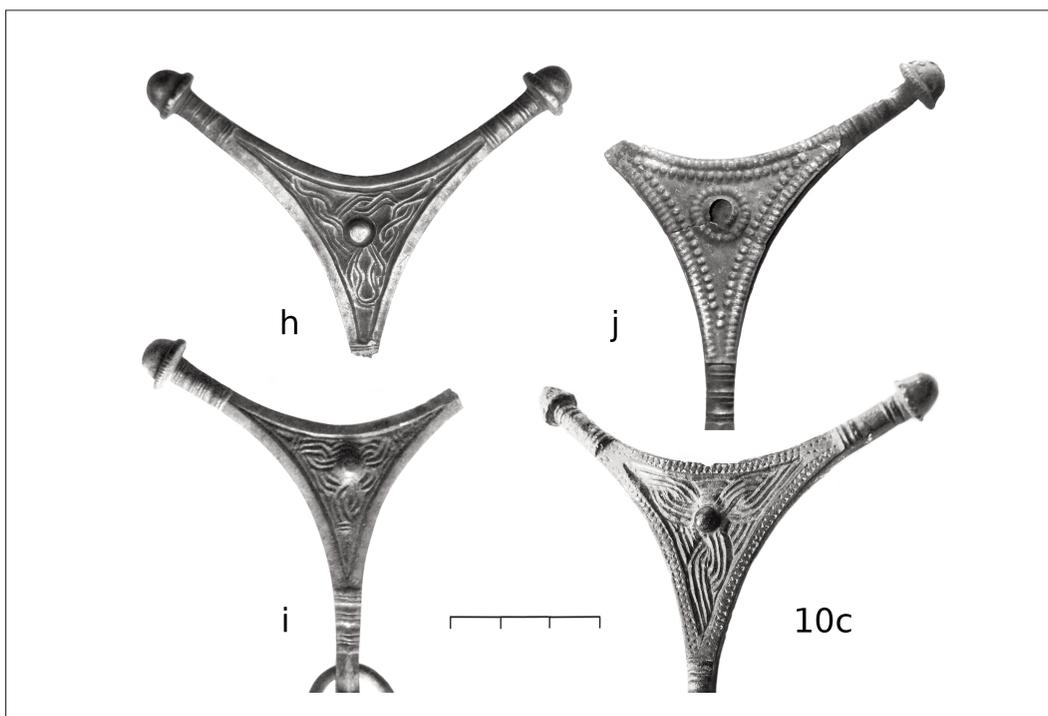


Fig. 6. hij) Dress pins from Viidumäe in private hands. 10c) A typical 10th century Saaremaa-type pin with leaf-shaped decoration from Kolu in western Estonia (Haapsalu Museum 8045:219).

Style II is as already mentioned well represented at Salme in the middle of the 8th century. The mid-8th century is the latest possible date for the ornamentation of pins *abc* as well. The shape of the pins, e.g. their end knobs and necks, offer no more precise date than c. AD 700–975 (Mägi 1997).

The decoration of most other triangular-headed pins from Viidumäe (fig. 5–6) represents modified versions of the one on pins *abc*. These can be seen as different development phases of the original motif, possibly dating from a rather long period. The leaf-shaped decoration on 10th century pins (fig. 6:10c) is based on the same design as well. Only one pin head from Viidumäe (*g*) has completely different decoration.

The decoration on pin *d* basically resembles that of *abc*, with the same, although somewhat shorter, interlace motif, and the same U-shaped heads. Only the lowest corner of the pin head differs, being decorated with an 8-shaped non-interlacing motif. It may be an erratic version of the

same snake body, or something derived from the design on pin *g*.

More changes can be seen on pin *e*. It still has the U-shaped elements, but smaller and turned to face the central knob. This design's connection with angular intertwining ribbons seems problematic, and it is not clear if the motif would have retained its initial meaning as serpents. Around the central knob is a triskele motif intertwining with the presumable snakes.

The decoration on pin *f* is abstract interlace. No U-shaped elements survive and instead the interlacing ribbons have been connected up. On the left-hand side is a twist or break in the ribbon and the interlacing is irregular in some places. The overall impression is still similar to pins *abc*. The pinhead has a cut from an edged implement, presumably a sword or scramasax.

Pin *g* is decorated with interlace arranged almost symmetrically. The only irregularity is seen in the right-hand corner, where a single ribbon crosses a loop instead of two. This kind of inter-

lace may be connected with ring-chain motif, best known from the Borre Style. This connection with Borre Style, however vague and indirect, suggests that the item can perhaps be dated to after AD 850. Still, in the Borre Style the ring chain is usually more complicated, and certain simpler ring-chain motifs pre-date it. Lennart Karlsson (1976, p. 142) presented a Langobardic 8th century example from Cividale. Another example is found carved on a 7th century ski from Kinnula in Finland, dated by radiocarbon (Vilkuna 1984). Anyway, the ring-chain motif seems to have spread from the west of the Baltic Sea to the east. On the other hand, the possibility that a real knot, used in everyday life (e. g. for sailing) served as an example and the motif thus was an occasional result of local creativity, cannot be ruled out either.

The silver pin *h* has somewhat carelessly executed decoration consisting of two interlaced ribbons around the central knob. The lowest part of the ornament is similar to that of pin *g*. A pin with similar design is known from Raisio Kaana, Finland (KM 12 192; Kivikoski 1973, p. 99, plate 81:721).

The decoration on pin *i* consists of an interlacing ribbon, resembling 10th century leaf-shaped decoration. This design probably derives from the version on pin *e*. The only difference is that the U-shaped elements on pin *i* have been replaced by a ribbon.

Dress pins with leaf-shaped decoration appear in the decades around AD 900 and are numerous on Saaremaa. Their numbers can be explained by changed burial customs that began to include abundant grave goods. The finds from Viidumäe indicate that the motif on these pins began as three snakes in the Vendel Period and was developed through various offshoots in the course of the following centuries. Some resemblance to the original design remained however.

#### *Interpreting the dress pins*

Decorative dress pins seem to have possessed a special meaning both among the offerings at Viidumäe and in the minds of the pre-Viking and Early Viking Period warriors of Saaremaa. This holds true not only for the triangular-headed pins, but also for ring-headed pins, whose heads

are often wrapped in silver wire, as well as for various kinds of smaller pin also found at Viidumäe. Some pins were however worn by women, as hinted by additional female-gendered finds, e.g. chain dividers. In any case, decorative dress pins appear to have been the most common form of object sacrificed at Viidumäe.

Big decorative dress pins have been found in rich weapon burials of the 7th and 8th centuries in Finland (Kivikoski 1973, pp. 67–69, Pl. 48, 448). Impressive dress pins with attached pendants are also known as stray finds from Püssi, Parasmaa and Keila in coastal Estonia (Mägi 1997, Pl. V, 1–3), indicating that these artefacts probably formed a significant element of Estonian warrior culture as well, where weapon types were mainly international, i.e. “Scandinavian”. The finds of such pins at Viidumäe confirms their earlier symbolic importance. (Note however that at Keila, another big ring-headed pin was found together with probably female jewellery, e.g. a chain arrangement. Several triangular-headed pins with leaf-shaped decoration have also been found linked to chain arrangements – Mägi 1997, pp. 49–52, Pl. IV; V, 4–5. A great number of artefact types without specific gender connotations is a characteristic of the Estonian Iron Age.)

The decoration of the earliest triangular-headed pins from Viidumäe clearly incorporates Scandinavian animal art, although a comparatively simple variant. Three of the nine dress pins with such decoration from Viidumäe are made of silver, which suggests ornaments held in high esteem. The adoption of animal art on Saaremaa points to close interaction with Scandinavia. The same is indicated by several sword hilts with animal art from Finland, as well as by the aforementioned sword pommel in Salin’s Style II style from Rebala Presti in North Estonia. Estonian and Finnish warriors seem to have identified themselves on one hand as members of Middle Swedish martial culture, while on the other hand they also added their own attributes to this identity, notably the decorated dress pins.

#### *The beginnings of a shared cultural sphere*

The recent find at Salme of two ships containing killed Swedish warriors has already been called the very first sign of the Viking Period, or at least of

the Vikings' eastern expeditions (e.g. Curry 2013). An important argument has been that weapons and other attributes found at Salme are of Scandinavian origin, and the burial custom itself has no local parallels. The finds from Viidumäe, including pins with animal art, let us consider the situation in a somewhat different light.

Roughly during the period when the cult site at Viidumäe was in use, the 7th and 8th centuries, a remarkable change in burial rites took place on Saaremaa. Until c. AD 650 we see deliberately intermingled inhumation burials accumulated in funeral buildings, the latest known one being that at Lepna (Mägi 2005). This burial custom was in many aspects similar to Salme, where tens of corpses were piled up in an enclosed space, probably a burial chamber onboard the ship. Approximately at the same time, in the 8th century, the collective inhumations gradually gave way to individual cremations on Saaremaa, often surrounded by a stone kerb or covered with a cairn. These stone circle graves resemble a grave type on Gotland, where it appeared approximately at the same time. The adoption of this new custom coincided with changes in cultural spheres: the former intensive communication between Saaremaa and the eastern and south-eastern coast of the Baltic was replaced by close contacts between the islands of Saaremaa and Gotland, as well as with Svealand (Mägi 2006).

Weapons found at Viidumäe indicate that local people used more or less same weaponry as the men buried at Salme, particularly when one looks at spearheads and arrowheads. Nearly a hundred arrowheads were found at Salme, a great deal of them in close proximity with ship rivets. Showers of arrows had been shot at the boards of the ship, which has been interpreted as a sign of battle (Peets et al. 2013). However, an alternative interpretation could be that the arrows were shot in the course of some funeral ritual. A remarkably similar ritual, including showers of arrows shot at the interred, seemingly took place at the Viidumäe site about the same time.

The use of rather similar weaponry and the adoption of Scandinavian animal art by local warriors suggest that the 8th century was not characterised simply by random Viking raids on Saaremaa. We should instead see it as the begin-

ning of a shared culture within a martial sphere, so characteristic for the northern Baltic Rim in later centuries. Chris Gosden, who has dealt with colonialism in prehistory, has termed such a situation *colonialism within a shared cultural milieu*, which he finds particularly difficult to distinguish from cultural contacts in general. The system of a shared cultural milieu can, according to Gosden, best be seen as "colonialism without colonies", where acculturation processes played an essential role. Links were established between elite groups rather than between any other social groups, and the system developed a polyglot and hybrid nature. Material culture often played a paramount role in the acculturation processes. There was often a "symbolic centre" of material culture, but not all elite items had to emanate from this centre, being largely produced outside it (Gosden 2004, pp. 26, 39–81).

#### Conclusion

It has long been known that the weapons and other attributes of the late 10th century Saaremaa warrior were indistinguishable from those of his Gotland and Svealand contemporaries (e.g. Mägi 2002). The situation in the Late Vendel and Early Viking Period has been more obscure, due to a lack of grave finds. Certain finds however, along with the appearance of stone circle graves with parallels on Gotland, now indicate a considerable Swedish impact on Saaremaa's insular culture before the 10th century. With the finds from Viidumäe, a new picture emerges of a long poorly understood period. It might have been considerably clearer if more information from this exciting new site had been obtained by archaeologists right from the start.

#### Acknowledgements

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#### References

- Arwidsson, G., 1942. *Valsgärde 6. Die Gräberfunde von Valsgärde I*. Uppsala.
- Bliujienė, A., 2007. The greatest impersonations, or, some aspects on the origin of animal style in the

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- Eastern Baltic region during the Migration period. Fransson, U. et al. (eds). *Cultural Interaction Between East and West*. Stockholm Studies in Archaeology 44. Stockholm.
- Curry, A., 2013. The first Vikings. *Archaeology*, 10 June 2013. www.archaeology.org/issues/95-1307/features/941-vikings-saaremaa-estonia-salme-vendel-oseberg
- Erä-Esko, A., 1965. *Germanic animal art of Salin's Style I in Finland*. Suomen Muinaismuistoyhdistyksen Aika-kausikirja 63. Helsinki.
- Fischer, S. & Soulat, J., 2011. The Typochronology of Sword Pommels from the Staffordshire Hoard. *Portable Antiquities Scheme*. finds.org.uk/staffshoard-symposium/papers/svantefischerandjeansoulat.
- Gosden, C., 2004. *Archaeology of Colonialism. Cultural contact from 5000 BC to the present*. Cambridge.
- Haseloff, G., 1972. Salin's style I. *Medieval archaeology* XVII. York.
- 1979. *Kunststile des Frühen Mittelalters. Völkerwanderungs- und Merowingerzeit*. Stuttgart.
- Jets, I., 2013. *Lahingu maod. Skandinaavia 9.–11. sajandi sajandi kunstistiilid Eesti arheoloogilistel leidudel*. Tallinn.
- Karlssohn, L., 1976. *Romansk träornamentik i Sverige*. Stockholm.
- Lamm, J.P., 1985. Föremålsfynd från östskandinavisk folkvandringstid ornerade i Salins stil I och funna i Proosa i norra Estland. *Fornvännen* 80.
- Kivikoski, E., 1973. *Die Eisenzeit Finnlands*. Helsinki.
- Mägi, M., 1997. Eesti merovingi- ja viikingiaegsed rinnanöölad – vööpärased ja omad. *Eesti Arheoloogia Ajakiri* 1. Tallinn.
- 2002. *At the Crossroads of Space and Time. Graves, Changing Society and Ideology on Saaremaa (Ösel), 9th–13th centuries AD*. CCC papers 6. Tallinn.
- 2013. Corporate power structures as indicated in archaeological evidence: the case of Estonia in the Middle Iron Age and Viking Age. *Fennoscandia Archaeologica* 30. Helsinki.
- 2005. Mortuary houses in Iron Age Estonia. *Estonian Journal of Archaeology* 9:2. Tallinn.
- 2006. Changing connections, changing society. Burial rites on Iron Age Saaremaa. Bertašius, M. (ed.) *Transformatio Mundi. The Transition from the Late Migration Period to the Early Viking Age in the East Baltic*. Kaunas.
- 2014. *Eksperthinnang, inspektiooni ja proovikaevamiste aruanne. Viidumäe Mäepea ohverdamiskoht*. Manuscript in the archives of the National Heritage Board, Estonia. Tallinn.
- Mägi, M.; Jets, I.; Riiel, R.; Allmäe, R. & Limbo-Simovart, J. in press. Pre-Viking and early Viking Age sacrificial place at Viidumäe, eastern Saaremaa. *Archeological fieldwork in Estonia* 2014. Tallinn.
- Magnus, B., 2004. Brooches on the move in Migration Period Europe. *Fornvännen* 99.
- Nerman, B., 1969. *Die Vendelzeit Gotlands* II. Stockholm.
- Peets, J.; Allmäe, R. & Maldre, L., 2011. Archaeological investigations of Pre-Viking Age burial boat in Salme village at Saaremaa. *Archeological fieldwork in Estonia* 2010. Tallinn.
- Peets, J.; Allmäe, R.; Maldre, L.; Saage, R.; Tomek, T. & Lõugas, L., 2013. Research results of the Salme ship burials in 2011–2012. *Archeological fieldwork in Estonia* 2012. Tallinn.
- Raninen, S., 2005. Big men on the river banks. Some thoughts on the middle Merovingian Period weapon burials in Finland. Mäntylä, S. (ed.). *Rituals and Relations. Studies on the Society and Material Culture of the Baltic Finns*. Suomalaisen Tiedeakademian Toimituksia, Humaniora 336. Saarijärvi.
- Ratas, U. & Rivis, R., 2002. Maastikud. Kään, H. et al. (eds). *Saaremaa 1. Loodus, aeg, inimene*. Tallinn.
- Salmo, H., 1941. Merovinkiaikaisen ratsusotilaan hautakalusto Euran pitäjän Pappilanmästä. *Suomen Museo* XLVII (1940). Helsinki.
- Selirand, J., 1985. Völkerwanderungszeitliche Gegenstände mit ostskandinavischen Ornamenten von Proosa (Nordestland). *Fornvännen* 80.
- Tvauri, A., 2012. *The Migration Period, Pre-Viking Age, and Viking Age in Estonia*. Estonian Archaeology 4. Tartu.
- Vilkuna, J., 1984. Ancient Skis from Central Finland. *Fennoscandia Archaeologica* I. Helsinki.