

# DOCUMENTING AND INTERPRETING THE PICTURE STONES OF GOTLAND

## Old Problems and New Approaches

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Gotland's picture stones are a unique source for the study of pre-Christian religion. However, there are many still unsolved problems that make it difficult to use this treasure. The main problem is the current condition of the figurative carvings, which in many cases are hardly recognizable. S. Lindqvist, in his 1941/42 edition of the stones, traced the figures with paint to make them visible. More than half a century after the publication of his book, digital methods can be applied in order to improve the documentation and make it more objective. I demonstrate these methods and their relevance for iconography in this paper, including unpublished finds and discoveries. Some more issues are mentioned and finally, the possibilities and needs of future research are outlined.

*Keywords: picture stones, Gotland, iconography, Reflectance Transformation Imaging, 3D-modeling, equestrian saint, Old Norse religion, snake pit, horned warrior, Digital Archaeology*

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## INTRODUCTION: GOTLAND'S PICTURE STONES AND THEIR RELIGIOUS CONTENT

As an introduction, I would like to call to mind the particular importance of the Gotlandic picture stones for the reconstruction of Late Iron Age religion and mythology, in order to underline the necessity of an objective and complete documentation of the corpus.

The memorial stones from the island of Gotland were raised from the Migration Period until the end of the Viking Age (basic publications are Lindqvist 1941/42; Althaus 1993; Nylén & Lamm 2003; Herlin Karnell 2012). The earliest of these carved stone slabs (type A according to Lindqvist), dating approximately between AD 400 and 600 (concerning the possibilities of dating type A see Nylén & Lamm 2003:32–33, 158–159), feature a relatively small repertoire of figurative motifs (Guber 2011). Narrative sequences of figures are lacking. Nevertheless, depictions of dragon-like creatures and human figures fighting these monsters indicate that we have to reckon with mythological and heroic themes in the iconography of these stone monuments (Hangvar Austers I: Hauck 1983a:536–560; Althaus 1993:216; Nylén & Lamm 2003:30; Oehrl 2012a:98–103; Oehrl 2015:227–230). The most frequent motif on the early Gotlandic picture stones is a disc with different kinds of spiral and whirl patterns, occasionally encircled by huge serpents (Hauck 1983a:541–545; Guber 2011). These discs are commonly regarded as celestial bodies (Lindqvist 1941/42 Vol. I:91–92; Hauck 1983a; Ellmers 1981; Ellmers 1986:342–350; Ellis Davidson & Gelling 1969:140–145; Ellis Davidson 1988:168–170; Althaus 1993:77–84, 97–98, 147–149; Andrén 2012; Andrén 2014:117–139). The edges of many of these discs are decorated with short lines or spikes looking like a kind of corona, possibly the rays of the sun. On the supposed models of the early Gotlandic picture stones, sepulchral stones from the Roman provinces, exactly the same whirl discs occur, among depictions of stars and the half moon (Lindqvist 1941/42 Vol. I:91–93, fig. 238, 239; cf. Cumont 1942: fig. 54–59). The motif of a cosmic, world-encircling serpent is not only recorded in Old Norse religion (*Miðgarðsormr*) but likewise in Christian and first and foremost in eastern Mediterranean traditions (Oehrl 2013a and 2014). The boat, depicted on many Migration/Vendel Period picture stones, is interpreted on this background as a kind of cosmic ship, usually as the ship of the dead (Hauck 1983a:546, 577; Ellmers 1986; Nylén & Lamm 2003:15–16, 22, 70; Oehrl in press; Egeler 2015:113–180 with literary and archaeological references).

The Viking Age picture stones (type C and D according to Lindqvist) instead offer an abundance of figurative depictions and narrative scenes

(Figure 1). Even though most of these figures are still enigmatic, it is beyond doubt that their iconography includes mythological and heroic motifs, which in certain cases can reliably be interpreted on the background of Old Norse literature. In the book *Gotlands Bildsteine*, written by Sune Lindqvist, the stones of that type were dated to the 8th century. Recent research, however, has shown that these monuments were mainly erected in the 9th and 10th centuries (Eshleman 1983:307–308; Hyenstrand 1989:31; Varenius 1992:52, 82; Wilson 1995:64; Wilson 1998; Imer 2001; Imer 2012; Herlin Karnell 2012:7, 14–15). As a matter of fact, this is the period of the earliest known skaldic and eddic poetry. Thus, there is a kind of chronological overlap of both traditions, the written sources from medieval Iceland and the figurative sources from the Baltic island of Gotland. As a result, it can be reasonable to connect these very disparate traditions in order to interpret the carved figures and scenes.

One of the most common motifs on the Viking Age picture stones is the horseman, welcomed by a woman with a drinking horn (Figure 1). This motif is based on ancient Roman traditions (Vierck 1981:72–81; Heizmann 2015; Oehrl in press). For instance, the 3rd-century sarcophagus of the Roman knight Titus Flavius Verus from Ostia (Vatican Museums, Museo Gregoriano Profano, Inv.-No. 10659; CIL XIV 166) shows the dead hero on horseback, performing a kind of *adventus* ceremony, crowned with a wreath of victory and welcomed by two ladies, one of whom is holding a cornucopia, a horn of plenty (Benndorf & Schöne 1867:381–382; Lindqvist 1941/42 Vol. I: fig. 249). The Roman emperors *adventus*, the *adventus principis* (Lehnen 1997), is often depicted on gold medallions of Late Antiquity. A medallion of Emperor Magnentius from AD 350, for instance, shows the emperor on horseback, welcomed by a personification of Aquileia bowing before him and with a horn of plenty in her hand (Kent *et al.* 1973:Taf. 143:672; Vierck 1981:Abb. 6,5; Vierck 2002:25, Abb. 5.4; Heizmann 2015:94). The woman with the horn as well as the wreath of victory (concerning the wreath in the Roman *triumphus*: Bergmann 2010:37–109) seem to recur in the iconography of the Gotlandic picture stones, as it is shown by Klinte Hunninge I (Figure 1) (Lindqvist 1941/42 Vol. I: fig. 128–131, Vol. II:80–81, fig. 428) and Lärbro Tängelgård I (Lindqvist 1941/42 Vol. I: fig. 86–88, Vol. II 9–93, fig. 448, 450). Nevertheless, it is very likely that the welcome motif was reinterpreted in Scandinavia on the basis of indigenous ideas. Most scholars agree that the woman with the drinking horn represents a Valkyrie, welcoming a fallen hero in *Valhöll* and serving him a welcome drink (Nordin 1903:150; Lindqvist 1941/42 Vol. I:96; Weber 1973:94; Ellmers 1973, 1986:354, 1995; Oehrl 2010:7, in press). This interpretation is based on the skaldic poem *Eiríksmál*



Figure 1. Klinte Hunninge I. Source: ATA.

(edition: Finnur Jónsson 1912–1915 A1:174, B1:164 [with translation]), in praise of the Norwegian King Eric Bloodaxe (Eiríkr blóðøx), written after 954, thus during a period when picture stones were still erected on Gotland (concerning the poem: von See 1981a; Kreutzer 1989; Marold 1972; concerning the Valkyries, serving drinks: Zimmermann 2012).

On the picture stones Alskog Tjängvide I (Lindqvist 1941/1942 Vol. I: fig. 137–138, Vol. II:15–17, fig. 305–306) and Ardre kyrka VIII (Lindqvist 1941/1942 Vol. I: fig. 139–140, Vol. II:22–24, fig. 311) (both type D according to Lindqvist) a man riding an eight-legged horse is depicted. Written sources from medieval Iceland dating to the 13th century tell about Sleipnir, the miraculous steed of Óðinn that was born with eight legs (*Edda*, *Gylfaginning* ch. 42; edition: Faulkes 2005:34; translation of Snorri's *Edda*: Faulkes 1987). Sleipnir is described as the best and fastest of all horses. Its most special feature seems to be its ability to cross the border between the world of the living and the world of the dead. It is very likely that the horse on these picture stones represents Sleipnir – not less than three centuries before it was recorded in written texts. Another mythological narrative, known from Old Norse literature, can be seen on Ardre VIII – a smithy, two beheaded men behind the building, a bird-like creature and a woman, in the lower part of the slab. This is a depiction of Wayland the smith (Old Norse *Völundr*) and his cruel revenge (Nedoma 1988:27–31; Oehrl 2012a:284–287), first recorded in the eddic poem *Völundarkviða* (Neckel & Kuhn 1983:116–123; for the eddic poems see also Dronke 1969–2011 and Larrington 1999 with translations), composed in Iceland probably in the 10th century (Nedoma 1988:116).

Examples like these show that the carved stone slabs from Gotland are an important and unique source for Germanic religious history, Scandinavian mythology, and heroic legend, shedding light on the Norse pre-Christian mindscape during an almost non-literate period. Unfortunately, there are many fundamental but still unsolved problems, which make it very difficult to make full use of this iconographic treasure. These are the basic problems I will deal with in this paper. In the following section, I give attention to the most urgent problem – the bad condition of the carved figures and the difficulties of the current edition. After that, I demonstrate digital methods and their benefits for iconographic research, discussing three examples in more detail. Some more problems will be touched upon: the location of the stones, which is quite unfavourable in many cases, the missing edition of newly discovered material and the problem of lost polychromy. Considering the urgency of these many problems and open questions, it will become clear that

a modern (digital) re-edition of the entire corpus is needed, in order to enable in-depth iconographic analysis.

## PROBLEMS OF DOCUMENTATION AND NEW DIGITAL METHODS

The major problem simply is: The depictions on the monuments are often very hard to identify. The stone reliefs are very low and the carved lines are faint, almost invisible to the naked eye. In addition, they are often degraded by weathering or polished by footsteps. This was the main problem of Sune Lindqvist and his forerunners who prepared the edition of the Gotlandic monuments in 1941/1942 (Vol. I:12–15). Sune Lindqvist, father of picture stone research, traced the figures on the stones with paint in order to make them visible. He used the light of an electric lamp, which was placed in varying positions, causing different kinds of shadowing on the stone surface. In preparing the photographs for his book, he then painted the grooves he regarded as carved by the artist's hand. Undoubtedly, Lindqvist was the most competent specialist using the best available tools at the time and his work is of outstanding importance up to the present day. Nevertheless, these images of the painted stones reflect the individual view and estimation of one single person. They still provide the main basis of research (cf. Kitzler Åhfeldt 2015:407–408). Subsequent studies, however, realized that certain parts and details on the stones can be interpreted in several ways, while Lindqvist's illustrations represent only one conceivable perception (Hauck 1957a:354–356; Oehrl 2012b, 2015). This becomes obvious by comparing Lindqvist's paintings of the stones with the drawings made by Olof Sörling, Gabriel Gustafsson and Fredrik Nordin.

On the top of Klinte Hunninge I Lindqvist identified, as we have already seen, a horseman crowned with a wreath of victory, welcomed by the woman with a drinking horn (Figure 1). The equestrian is accompanied by a dog and two warriors are fighting each other above. In Sörling's drawing from about 1910, the swordsmen are absent, and a curling snake takes their place (Lindqvist 1941/42 Vol. II: fig. 428). The woman with the drinking horn and the man with the wreath of victory are missing, too. It is important to mention that even Lindqvist himself was not always sure about the correctness of his paintings. He was well aware of the problems (Lindqvist 1941/42 Vol. I: 13–15). In some cases Lindqvist tried to improve his results, changed his mind concerning certain details and published several quite different images of the figures. A good example is the upper part of Lärbro Stora Hammars III (Lindqvist



Figure 2. Lärbro St. Hammars III (head section). Lindqvist's second painting. Source: ATA.

1941/42 Vol. I: fig. 84–85, Vol. II:87, fig. 441). In the first row, on the top of the stone, Lindqvist was unable to identify any figurative carvings when he examined the monument in 1940 (published in Lindqvist 1941/42: fig. 85). In 1946, however, Lindqvist examined the carvings again and identified a horse and a man holding its reins (Figure 2) (published in Lindqvist 1948:21–24). Even more important are the changes in the second row. The painting published in 1942 visualizes a huge bird of prey and a woman with a cup or horn as well as a man with a sword in front of it. In 1946, however, Lindqvist added a human head with a pointed chin beard under the bird's beak (Figure 2). This is an important detail. It reveals that we are not faced with an oversized bird but with a kind of hybrid being. This observation seems to confirm Lindqvist's often quoted interpretation of the figure as Óðinn, in the shape of an eagle, stealing the mead of poetry (Lindqvist 1941/42 Vol. I:95, 1948:24–25, 1970:22; Hauck 1957a:370–371; Nylén & Lamm 2003:50–52). The most detailed record of this myth is preserved in Snorri's *Edda* (in *Skáldskaparmál*) from about 1220 (Faulkes 1998:3–5).

There are different digital methods available today – about 80 years after Lindqvist's careful analysis and pioneering publication – which can be applied in order to improve the picture stone documentation. As a guest researcher at the National Heritage Board in Visby and the Swedish History Museum in Stockholm I analysed and documented a range of picture stones from Gotland with digital methods in 2013. My forthcoming monograph about the picture stones of Gotland and the possibilities of reinterpreting their carvings will be based on this digital data (accessible online: <http://data.ub.uni-muenchen.de/93/> and <http://data.ub.uni-muenchen.de/94/>). One of these methods is 3D-modelling (Kitzler Åhfeldt 2009, 2012, 2013, 2015). I apply the *structure-from-motion-photogrammetry* method which means creating 3D-models on the basis of photographs captured from different angles (see e.g. Remondino & Campana 2014:65–87). I use the software Photoscan from Agisoft to create point clouds and textured 3D-models, which I analyse with the open source software Meshlab. This software offers a large number of useful tools for inspecting, rendering and texturing 3D-models. With a set of shaders and illumination tools the surface structure of the monuments can be rendered in different ways, improving the visibility of certain details. By fading out the texture and colour information of the model we can look at the carvings without being influenced by the secondary paint.

The second technique I apply is called *Reflectance Transformation Imaging* (RTI) (Oehrl 2015:233, Abb. 42–43; see also Andreeff & Potter 2014). It was invented by engineers at Hewlett Packard (as *Polynomial Texture Mapping* [PTM]) and developed for archaeological and cultural heritage conservation purposes by the non-profit corporation *Cultural Heritage Imaging* in California (Malzbender *et al.* 2001; Earl *et al.* 2010; recently e.g. Díaz-Guardamino *et al.* 2015). Basically, the image capture for obtaining the digital image data from which RTI (or PTM) files can be produced, is performed as follows: A sequence of images of the object is taken with a specific set of lighting angles. Thus, the flashlight changes its position step by step after every single shot while the camera does not move. On the monument, a reflective sphere is fixed. As a result, one obtains a set of images of the same subject with different shadow impacts and with a reflection on different positions of the sphere. On this basis, the open-source RTI software creates a single high-resolution image that can be analysed on the screen, applying different rendering modes and a virtual light beam, which can be controlled with a trackball. Ultimately, this is a quite simple but rather helpful tool when it comes to detecting and documenting single details and objectifying or disproving questionable readings.

In the following I would like to present three examples of how new surface analysis on the basis of RTI and 3D-modelling can result in completely new viewpoints and iconographic interpretations.

## EXAMPLE 1: THE WOMAN IN THE SNAKE PIT ON KLINTE HUNNINGE I

My first example is a prominent figure on Klinte Hunninge I, a very tall type C stone that I have mentioned above. In the lower part of the monument, a rectangular enclosure can be seen (Figure 1). Inside the enclosure, a man is lying supine, surrounded by serpents. He is characterized by a chin beard and a tunic-like dress, typical of male figures on the picture stones. A woman is approaching from the right and seems to reach into the enclosure. This well-known depiction on Klinte Hunninge I is interpreted by most researchers as the legendary hero Gunnarr, dying in the snake pit (von See 1981b:118; Althaus 1993:204; Reichert 2003:33; Nylén & Lamm 2003:52; Oehrl 2006:109; Staecker 2006:365; Heinzle 2010:24; Aðalheiður Guðmundsdóttir 2012:1032ff., 2015:359–360). The story of Gunnarr is recorded in the *Völsunga saga*, in Snorri's *Skáldskaparmál* and in eddic heroic poetry: *Atlamál*, *Atlakviða*, *Oddrúnargrátr* and *Dráp Niflunga* (the written and figurative sources are discussed in Aðalheiður Guðmundsdóttir 2012 and 2015; Blindheim 1972/1973, 1973:21–23; Margeson 1980; von See *et al.* 2009:914, 928; Oehrl 2006:107–110.). The oldest of these written sources is the eddic poem *Atlakviða*, which is dated to the ninth or tenth century. The outline of the story is as follows: Guðrún is the sister of Gunnarr, king of the Gjúkungar/Niflungar, and the wife of Sigurðr, the legendary hero and dragon slayer. After Sigurðr's death, Guðrún marries Atli, king of the Huns. Atli invites Gunnarr to a feast in order to gain possession of the legendary hoard of gold that Sigurðr had won from the dragon. However, Gunnarr refuses to reveal its hiding-place. As a result, Gunnarr is put in chains and thrown into a snake pit or snake yard (*ormgarðr*). Guðrún brings him a harp, with which he is able to put the serpents to sleep. Nevertheless, he is finally killed by the animals. On this background, the person lying in the enclosure depicted on the Klinte Hunninge stone is regarded as representing Gunnarr in the snake pit, while the woman who reaches into the enclosure is regarded as being Guðrún, supposed to be handing over the harp.

However, my re-analysis of the stone led to a surprising conclusion: As a matter of fact, the person in the enclosure *cannot* represent Gunnarr in the snake pit. By fading out Lindqvist's paint and by illuminating the

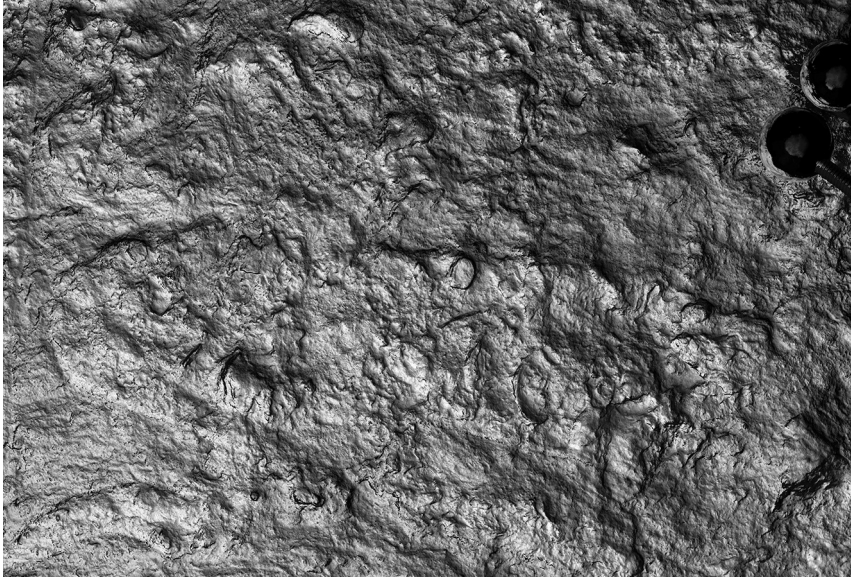


Figure 3. Klinte Hunninge I (figure in the snake pit), shown in the RTIViewer. Rendering mode 'Specular Enhancement'. Figure: Sigmund Oehrl.

strongly weathered and indistinct carvings in the RTIViewer and in Meshlab it becomes visible that the figure is wearing a long pigtail (Figure 3–4; snapshots as reproduced in this article cannot be regarded as ultimate proof of my suggested interpretations – the reader is explicitly invited to use my digital documentation for checking, available freely on the web page mentioned above). According to Lindqvist's painting the figure's head, neck and back are formed by one single line. However, the RTI image shows that there is a second carved line, separating the figure's long hair from its neck/back. In addition, the clothing of the figure is a bit longer and broadens towards the foot section. The supposed leg and foot cannot be verified. Evidently, the figure is wearing a trailing dress. Thus, the person lying in the enclosure has exactly the same gender characteristics as the female figures depicted on the very same stone. It is not a man but a *woman* in a snake pit we are dealing with.

A possible interpretation may be that the stone depicts the punishment of the wicked god Loki, as supposed by a few scholars (e.g. Swanström 2010:9; Oehrl 2011:139). According to Snorri's *Gylfaginning* ch. 50 (Faulkes 2005:49), Loki caused the death of Baldr, son of Óðinn. For this reason he is brought into a cave and fettered by the gods. The goddess Skaði takes a poisonous snake and affixes it above Loki's head in such a way that the serpent's venom drips onto his face. Loki's wife Sigrn, however, is waiting beside her husband and holds a bowl over his

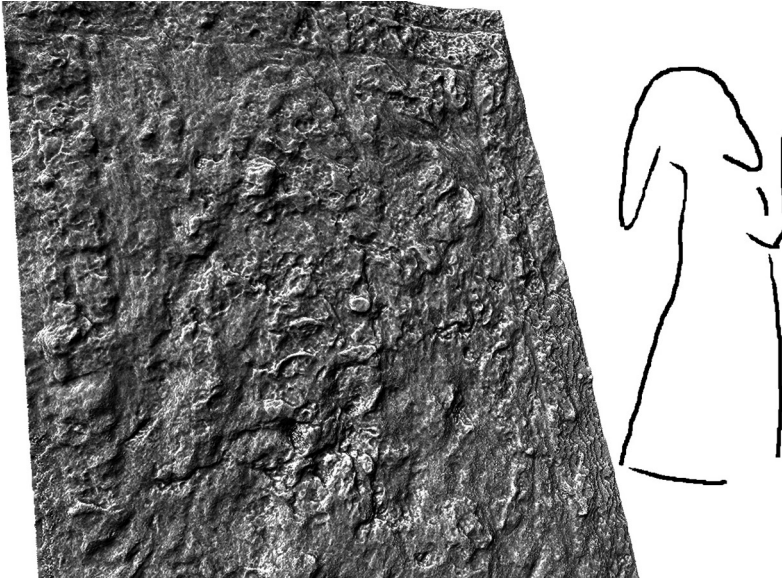


Figure 4. Klinte Hunninge I (figure in the snake pit, turned 90° to the right), 3D-model shown in Meshlab, without colour information. Figure: Sigmund Oehrl.

face, so the venom is caught in the vessel instead. Nevertheless, when the bowl is full, Sigyn has to go and empty it. In that moment the venom can still drip onto Loki's face and the pain makes him flinch so violently that the entire earth shakes.

However, why should the god Loki be depicted with female attributes? Indeed, according to Old Norse literary tradition, Loki features some crucial ambisexual characteristics (De Vries 1933:215–223; Ström 1956:69–73; Meulengracht Sørensen 1983:24; Mundal 1998–2000; North 2001). In Snorri's *Gylfaginning* (ch. 42) he turns into a mare in order to give birth to the horse Sleipnir (Faulkes 2005:34–35). He also turns into a woman before he talks to Baldr's mother Frigg in order to find out how Baldr can be injured (ch. 49, *ibid.* 45). In the shape of a giantess he refuses to grieve for Baldr (*ibid.* 48). According to the eddic poem *Lokasenna* (stanza 23, 33) Loki gave birth to children (Neckel & Kuhn 1983:101, 103) and according to *Hyndluljóð* (stanza 41) he became pregnant after eating a roasted heart (*ibid.* 294). In fact, this is the reason why the carver of the Anglo-Scandinavian stone cross from Gosforth in Cumbria (Northumbria), erected in the first half of the 10th century, decided to depict Loki with female hairstyle (Collingwood & Parker 1917: fig 4). The cross shows Loki lying on his back, fettered on his legs, arms and neck, a serpent's head in front of his face and Sigyn sitting on a chair, holding a crescent-shaped bowl in her outstretched hand.

There is no doubt that this is a depiction of Loki's punishment (Calverley 1883:378–381; Stephens 1884:20–21; Bugge 1899:262; Olrik 1922:12; Reitzenstein 1924:46; Shetelig 1933:223; Ellis Davidson 1950:130; Bailey 1980:128; Bailey & Cramp 1988:102–103; Lang 1989; Bailey 1996:87–88, 2003:21; Fuglesang 2004:219–220; Kopár 2012:90–101). Loki is shown with a braid, exactly the same hairstyle that characterizes his wife above him. Significantly, no other male figure on the high cross has similar hair. It must be considered as a particularly female feature. As a result, it is a reasonable assumption that the woman in the enclosure on Klinte Hunninge I represents the ambisexual god Loki, fettered in the snake-filled cavern. The two women surrounding the enclosure can also be interpreted accordingly. They could be regarded as Skaði, holding a serpent in her hand (below the enclosure) and Sigyn, approaching from the right, with the collecting bowl in her hand, reaching it into the room.

Klinte Hunninge I is probably not the only Gotlandic picture stone with a depiction of Loki's punishment. The famous picture stone Ardre kyrka VIII also shows a human lying in an *ormgarðr*, a rectangular enclosure filled with snakes, with two female figures standing next to it. There is good reason to believe that the image on the Ardre stone represents the punishment of Loki (Lindqvist 1941/42 Vol. I:96; Buisson 1976:65). The woman directly left to the enclosure is grasping at the tail of one of the serpents. This is possibly Skaði, taking a serpent in order to fix it above Loki's head. The woman next to her is turning away from the scene instead, holding a bowl-like vessel in her uplifted hand. Very likely, this figure represents Sigyn, emptying the bowl with the collected venom.

## EXAMPLE 2: AN 'EQUESTRIAN SAINT' ON SANDA KYRKA IV?

The second monument I would like to present here is the picture stone Sanda kyrka IV. The large stone slab dates to the period *c.* AD 400–600 (type A). Only the upper half of the slab is presented in Lindqvist's seminal book (Lindqvist 1941/42 Vol. II:110, fig. 481). The lower part of it, which is to be discussed here, was found in 1956, under the church floor. Lindqvist traced the carvings on the stone with black paint and published a photo of the entire monument in 1962 (Lindqvist 1962 with fig.; cf. Nylén & Lamm 2003:29). According to Lindqvist's painting, a horizontal line divides the front side into two halves. In the upper half, a big disc with a whirl motif is depicted, as well as a pair of two smaller discs, encircled by serpents. A simplified small tree rises from the horizontal line (Figure 5). Beneath the line the forepart of an animal with

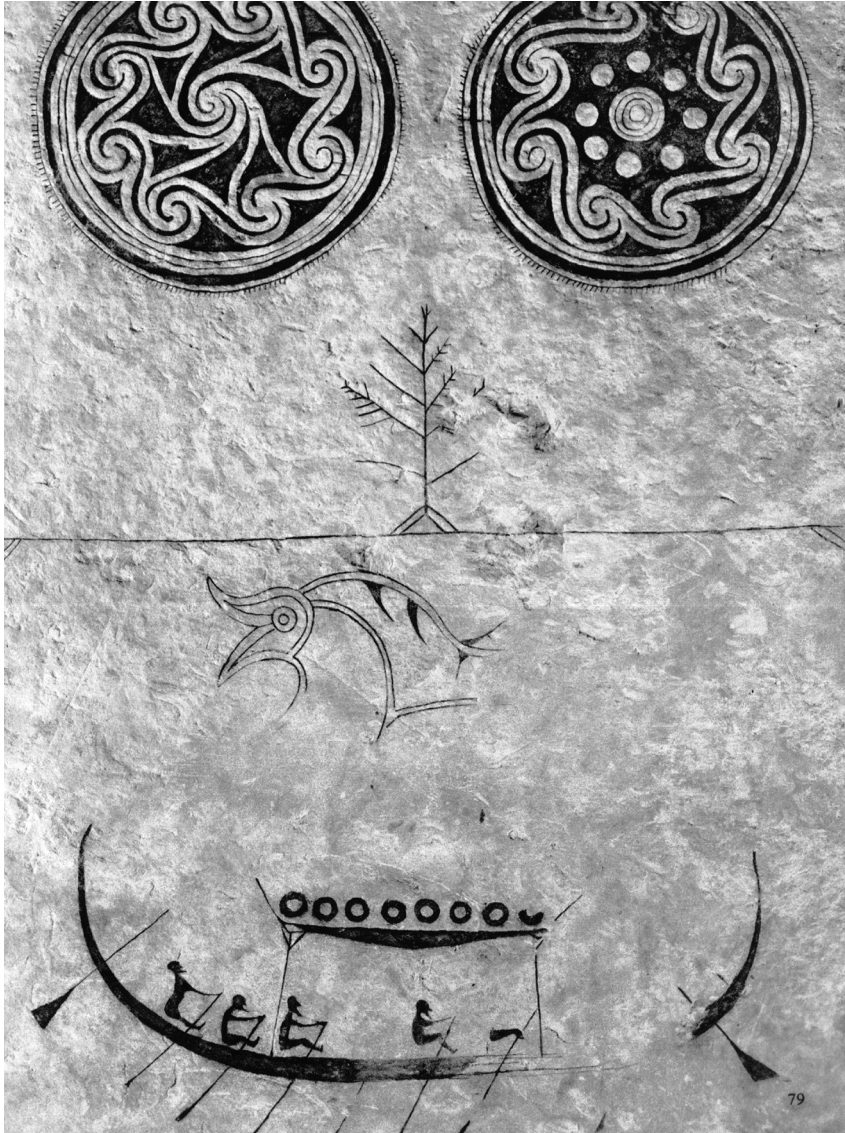


Figure 5. Sanda kyrka IV painted by Lindqvist (detail, lower half) (Andersson 1968, table 79).

open jaws can be seen, as well as a rowing boat with crew. Nevertheless, my re-analysis revealed that there are remains of some more carvings in front of the big animal's mouth (Figure 6–7). An angled linear groove is carved deeply and can be seen easily. Some more grooves and chiselled areas to the right of this can be assembled to a horsemen with a spear in his hand. A corresponding equestrian with bent arm and an angled

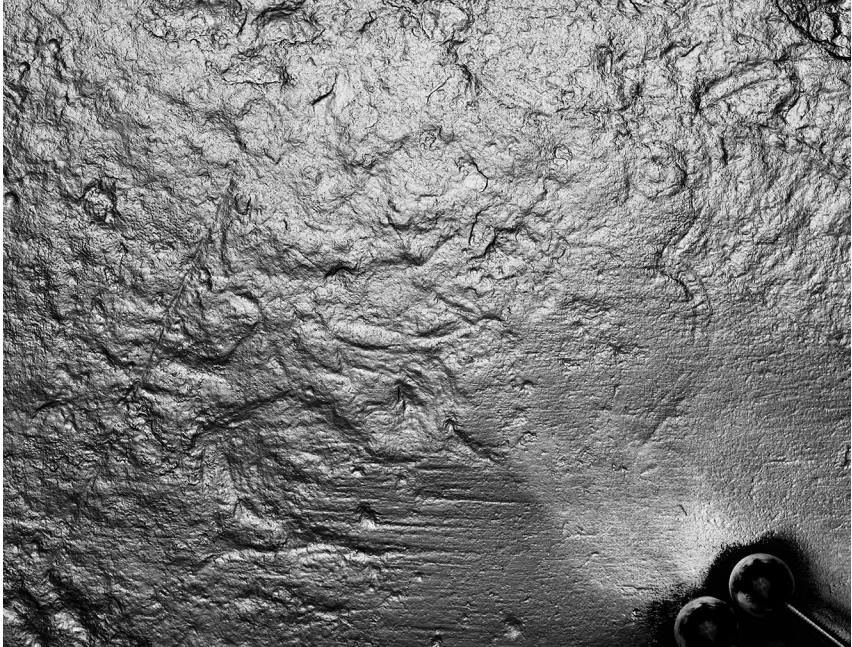


Figure 6. Sanda kyrka IV. Equestrian and beast, shown in the RTIViewer. Rendering mode 'Specular Enhancement'. Figure: Sigmund Oehrl.

spear in his uplifted hand is shown on the early picture stone Martebo kyrka I (Lindqvist 1941/1942 Vol. I: fig. 6, Vol. II:100–102, fig. 462).

Apparently, the Sanda horseman is fighting against a giant animal, similar to the two Martebo horsemen, who seem to be attacking the monstrous serpent, which encircles the two discs. The equestrian defeating a serpent- or dragon-like enemy is not an unknown motif in early Germanic art. Two parallels are to be mentioned: On the Migration Period gold bracteate IK 65 Gudbrandsdalen-C, Oppland in Norway, (Hauck *et al.* 1985–1989:121, Taf. 77–78) a horseman with a spear and a sword in his hands is depicted (Figure 8a). Apparently, the warrior is struggling against a group of animals, including a big reptile, which seems to be lying defeated on its back (interpretations: Ellmers 1970:217–219; Hauck 1983b:439). Next to the rider's sword a stylized ship with crew can be seen. The amulet dates to the late 5th century. The famous helmet plate from Vendel I shows a horseman with a spear, accompanied by two birds, riding against a snake (Arne & Stolpe 1912:13, Taf. 6:1; quoting the relevant literature: Helmbrecht 2011:Kat. Nr. 1090, Abb. 6g, 11f–g; interpretation as Óðinn: Beck 1964:9–12, 19–31). The burial Vendel I dates to the second half of the 7th century. I may also mention the picture stone from Ramsjö in Björklinge parish, Uppland

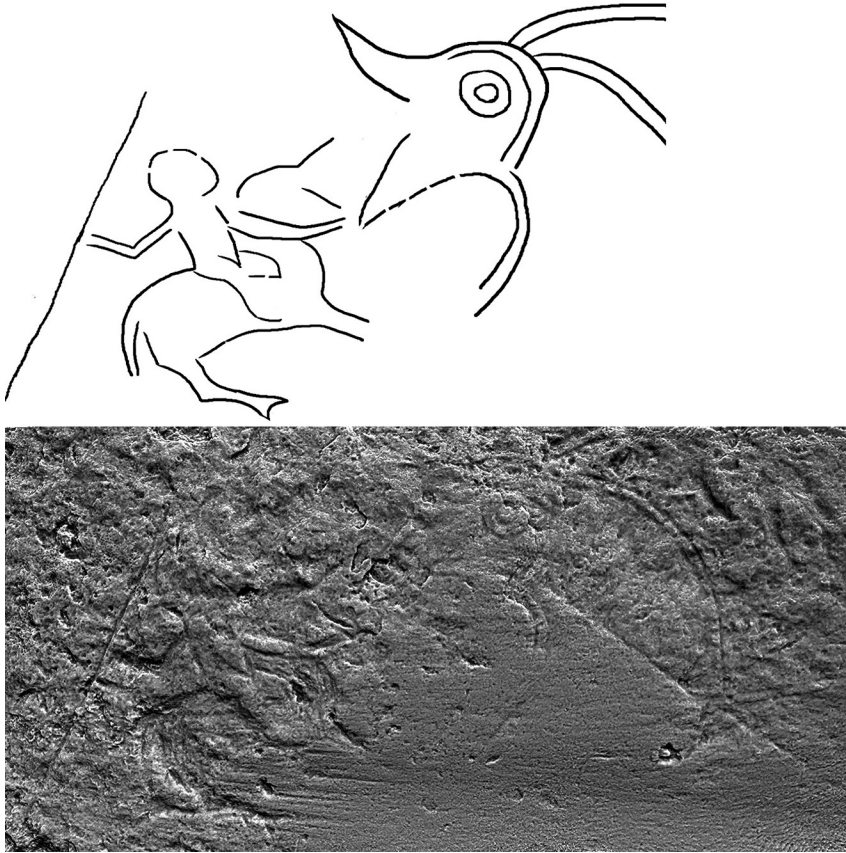


Figure 7. Sanda kyrka IV. 3D-model of equestrian and beast, without colour information. Figure: Sigmund Oehrl.

(Runverket U 1055), which depicts an equestrian, wielding his spear in a manner similar to the Martebo and Sanda horsemen, apparently fighting against a big quadruped, not unlike the beast depicted on Sanda kyrka IV (Figure 8b) (Ahlberg 1978:16–17, No. 8). In addition, the Ramsjö horseman seems to be accompanied by two more animals. Remarkably, there is a simplified ship located beneath the mounted warrior and the animals, reminiscent of the rowing boat beneath the animal combat on the Sanda stone. Unfortunately, the monument from Ramsjö, which had been carved in the Migration or Vendel Period, is lost today and only a drawing of it from the 18th century is preserved (Bautil Nr. 524).

As Wilhelm Holmqvist already noted, images like these are probably influenced by Christian motifs, by the iconography of the Equestrian Saints (Holmqvist 1939:123ff., 1952:passim; cf. Böhner 1982:109, Taf. 14). This iconographic tradition arises from eastern Mediterranean art.



Figure 8. a: Gold bracteate IK 65 Gudbrandsdalen-C (after Hauck *et al.* 1985–1989). b: Picture stone from Ramsjö in Björklinge parish, Uppland. Drawing (Bautil No. 524) (after Runverket [U 1055]). c: Belt buckle from Ladoix-Serrigny, Département Côte-d’Or in Burgundy (Quast 2002:Abb. 7).

Coptic depictions of mounted Warrior Saints, defeating lions or serpent-like demons, were the models for a group of images of victorious equestrians in the Merovingian Period, for example on a disc-shaped amulet of gilded copper from Strasbourg in Alsace and a belt buckle from Ladoix-Serrigny, Département Côte-d’Or in Burgundy, which depicts Christ himself as a mounted warrior, next to a crocodile-like creature (Figure 8c) (Holmqvist 1939:110ff.; Böhner 1982:103ff.; Quast 2002:269, 275, 2009; Fingerlin 2010:42–46.). My assumption is that the horseman fighting the animal on Sanda kyrka IV is influenced by the iconography of Equestrian Saints as well. However, it is not likely that the Gotlandic stone carver actually intended to depict a Christian Saint. It is more plausible, following Holmqvist’s view (1939:221 and *passim*), that the pagan artist borrowed the Christian rider motif from Mediterranean or continental art and reinterpreted it, on the background of indigenous myths.

Because of the absence of written sources, it seems to be impossible to reconstruct those Migration/Vendel Period myths. However, there actually are some observations to be made which give us more insight into the context of the animal combat on Sanda kyrka IV. The figures are placed beneath the horizontal line with the tree. As a result, they are clearly located in an area *under* the earth. This interpretation is supported by the fact that the discs on the early Gotlandic picture stones, occasionally encircled by cosmic serpents, are commonly regarded as celestial bodies (see above). Conclusively, the Sanda monument is divided into two cosmological spheres, a world above and the world below. The combat between the equestrian and the beast is located in the underworld. This observation goes well with the common interpretation of the rowing boat on the Migration/Vendel Period picture stones, which is regarded as the vessel that carries the dead to a transmarine world of death (see above).

On this background, it could be asked whether the myth depicted on the Sanda monument remained alive until the Viking Age and if some memories of it are still preserved in Old Norse literature. Could the small

tree, which indicates the border between two cosmological spheres, be regarded as the world tree, as the Migration or early Vendel Period forerunner of the ash *Yggdrasill*, recorded in eddic poetry (cf. Ellmers 1981; Ellmers 1986:342–350; Andrén 2004:404–406, 2014:136–139)? The beast directly beneath the root of the tree might be reminiscent of the dragon *Níðhoggr* who, according to *Grímnismál* stanza 35 (Neckel & Kuhn 1983:64), is located beneath the root of *Yggdrasill*, gnawing it from below. In *Völuspá* stanza 39 (ibid. 9) *Níðhoggr* devours the corpses of the dead in the netherworld. The Old Norse name for the place where this happens is *Náströndr*, which means ‘shore of the dead’. *Náströndr* seems to be the shore, where the deceased arrive after a journey by boat (Egeler 2015:125–126). This vehicle of the dead is probably also depicted on the Sanda monument, beneath the animal and the horseman, on the lower half of the stone and thus also located in the netherworld. Even if there are four or five centuries in between, it does not seem impossible that the picture stone Sanda kyrka IV reflects ideas of the cosmos and the world of the dead comparable to those preserved in Old Norse literature. Nevertheless, the identity of the horseman who fights and defeats the beast remains enigmatic.

### EXAMPLE 3: ÓÐINN STEALING THE MEAD OF POETRY ON LÄRBRO STORA HAMMARS III?

The third example is a more negative and disappointing one. As I have already mentioned, Lindqvist identified a human head under the beak of the huge bird of prey on Lärbro Stora Hammars III during a re-examination in 1946 (see above, Figure 2). For this very reason, the bird is sometimes interpreted as Wayland the Smith in bird-shape (Oehrl 2012a:298–299; also considered by Lindqvist 1948:24, 1970:20–23), but more often as Óðinn, in the shape of an eagle, stealing the mead of poetry (see above). However, the present condition of the stone is disastrous. Since 1946, the picture stone is erected at the open-air museum of Bunge in the north of the island. Lindqvist’s red paint has faded, and only faint remains of it are still visible today. The stone surface is covered with moss and lichen and seems to be flaking off. The body of the bird – wings, tail feathers and the beak – is still visible, as well as the human legs and the human head under the beak. However, when the colour information is faded out, it becomes quite difficult to identify any traces of the carving (Figure 9). I have worked with 3D-models and the RTI-data intensively, but the only parts of the figure I was able to verify were the bird’s wings, tail and certain parts of its legs and head section. The hu-

man head with the pointed chin beard and even the bird's beak remain uncertain to me. The stone is so badly weathered that I would say that it is not possible to confirm Lindqvist's results from 1946. Possibly, in the 1940s, before acid rain was to become a major issue, the carvings were in better condition than today. Perhaps, Lindqvist's painting was correct but the crucial details of the figure have disappeared over the decades. This question remains open.

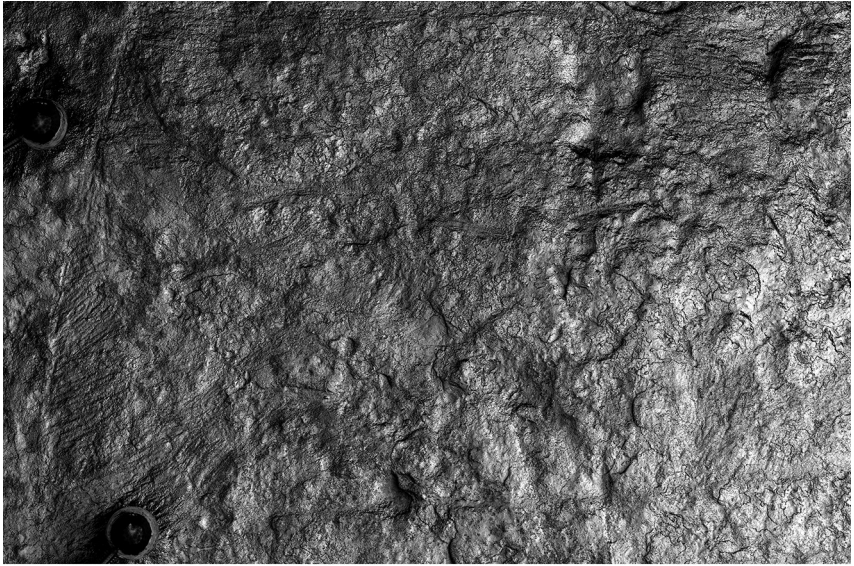


Figure 9. Lärbro St. Hammars III (bird detail), shown in the RTIViewer. Rendering mode 'Specular Enhancement'. Figure: Sigmund Oehrl.

As can be seen from the examples discussed above, rereadings can lead to entirely new interpretations, broadening our knowledge about Germanic religion and heroic legend. However, it can also lead to more sceptical points of view, as in the case of the bird figure of Lärbro Stora Hammars III. The use of digital methods like RTI and 3D-modelling permits a more objective documentation of the Gotland picture stones. These methods provide the opportunity to re-examine the stone's surfaces on the screen again and again without being influenced by Lindqvist's secondary painting. They also provide the opportunity to check the results of re-examinations objectively, at any time. RTI-files and 3D-models generated during my project are freely accessible on the internet. A collection of 3D-models made by Laila Kitzler Åhfeldt with an optical 3D-Scanner (ATOS II) is also available on the web (Kitzler Åhfeldt 2013, <http://3ddata.raa.se>). Compared to the previous state of documentation this is an essential improvement.

Some more problems of picture stone research hindering their iconographic evaluation will be mentioned in the following sections.

## MORE PROBLEMS 1: THE LOCATION OF THE STONES

The example of Lärbro Stora Hammars III showed that the current location of the monuments is one of the urgent problems of picture stone research (cf. Simonsson 2012). Although the picture stones at the open-air museum in Bunge are covered during the frost period, their carvings are gradually destroyed by the rain and other environmental influences. There are many alarming examples like this. On the upper part of the stone at Klintebys near Klinte (Lindqvist 1941/42 Vol. I: fig. 134, Vol. II:81–82) a horseman is depicted who is welcomed by a woman with a drinking horn (Figure 10a). He is accompanied by a dog that is hurrying ahead and apparently chasing a prey animal. In one of his hands the horseman is holding the reins, on the other one a bird of prey is sitting. If Lindqvist's painting of the figures is appropriate, this is the earliest known North Germanic monument depicting a falconer (Åkerström-Hougen 1981:275–276, 285; Oehrl 2013b:515, 2017a:245). Unfortunately, this stone has been in the open since 1934, in a small forest, on private grounds. Today almost nothing of the carvings is visible with the naked eye (Figure 10b). The 3D-model reveals parts of the horse, the hunting dog and the prey animal, while the rider and the woman with the horn have vanished without a trace (Figure 10c). However, the falcon emerges faintly. Presumably, it will not take long before it too disappears.

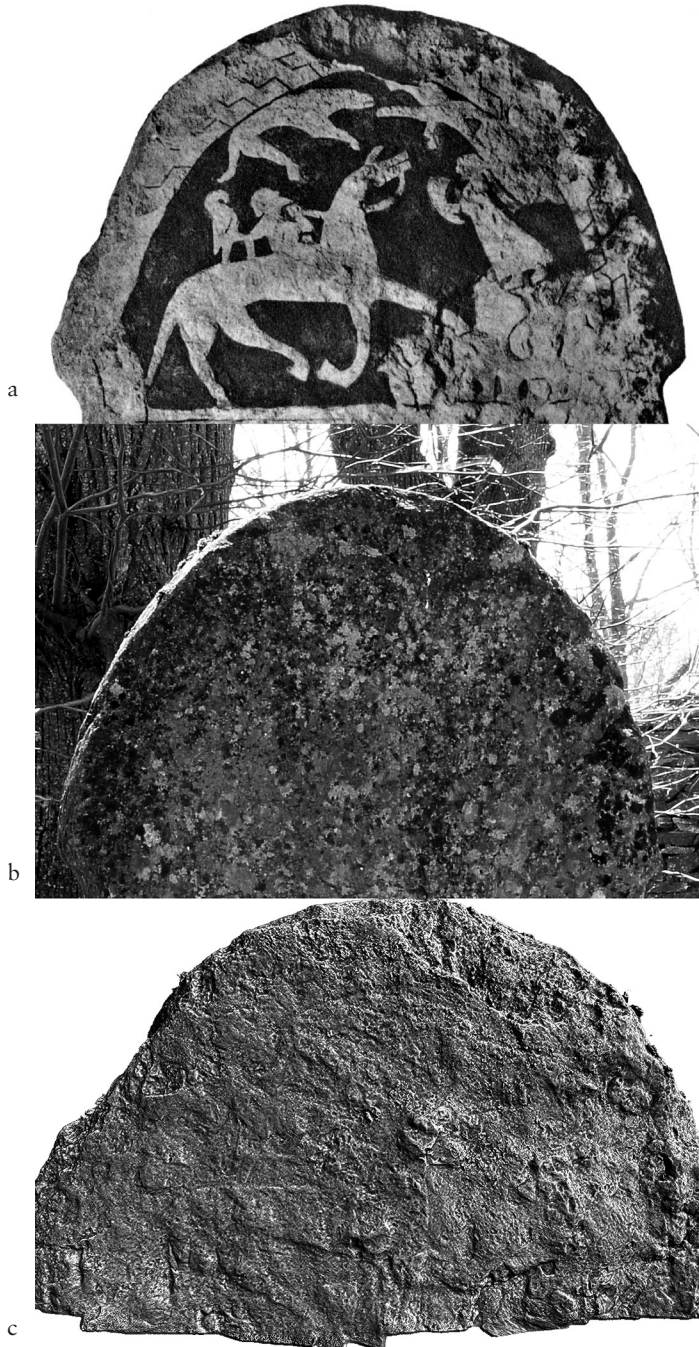


Figure 10. a: Klinte Klintebys (head section) (after Lindqvist 1941/42). b: Current condition. Photo: Sigmund Oehrl. c: 3D-model of head section, without colour information. Figure: Sigmund Oehrl.



Figure 11. Väskinde kyrka 6, piece 3 (currently hidden). Photo: Gotlands Museum, No. 978.46–48.

Another example of an inappropriate location of a Gotlandic picture stone can be found in the church of Väskinde, north of Visby. In the floor and steps of the choir parts of a tall type C picture stone are built in. These fragments are mentioned in Erik Nylén and Jan Peder Lamm's book *Bildstenar* (2003:48; cf. Lindqvist 1956:30), where it is noted that the slab must have been more than 3.55 meters tall. Apart from this, the picture stone is still unpublished. Having examined the stone fragments in the church and having studied the reports and photos in the archives in Visby and Stockholm (esp. ATA Go, Väskinde parish, Kyrkan, Dnr. 2029) I am convinced that the stone was at least 5.50 metres tall and thus it must have been the biggest picture stone of Gotland. The tremendous monument was cut into five pieces, which were built into the floor in front of the altar and used as steps. During a restoration of the chancel in 1953, the floor was lifted up and the picture stone pieces were uncovered. Thus, it became apparent that a part of the stone's surface, formerly hidden by the step on top of it, preserved traces of figurative carvings and a runic inscription (Figure 11). According to the letters kept in the archives, the persons in charge discussed the idea of carrying the pieces into the museum. However, the estimated cost of new stone slabs (1,000 Swedish crowns) was considered too high. As a result, this extraordinary and unique monument was built in again and is still lying in the church floor, thus the carvings are invisible again. The stone has never been discussed in research literature and even the photos from 1953 have never been published.

## MORE PROBLEMS 2: UNPUBLISHED FINDS (THE HORNED SHIP-GUIDE FROM RUTE STORA VALLE)

I would like to call attention to another serious problem of picture stone research: Many of the stones that were discovered after the release of Lindqvist's 1941/42 book are still unpublished. The book contains 280 picture stones. In the 2003 edition of the little but very important book *Bildstenar* by Erik Nylén and Jan Peder Lamm 467 objects are listed (see also Böttger-Niedenzu 1988; Widerström & Norderäng 2004). In 2012, Per Widerström had recorded 570 objects in his database (Widerström 2012:36). Most of these new finds seem to be only small fragments, many of them apparently without any remains of figures. However, having a closer look at this unknown material reveals that there are hidden treasures to be explored. I want to present an extraordinary example:

During my examinations in Visby in 2013, I discovered a previously unpublished and so far unnoticed picture stone fragment in the stores of Gotlands Museum, which measures only about 36 × 30 cm (Oehrl 2016 with fig., 2017b). It represents the lower right part, approximately 15%, of a relatively small type C monument. There was no inventory number inscribed on the stone. However, an investigation in the Museum's archives led to the conclusion that the fragment was found in 1940 during the excavations of a medieval house foundation called *Munkskällaren* in Stora Valle, Rute parish, near Valleviken in the north of the island. The fragment was found in the basement. Apparently, it had been re-used as building material.

The carvings on the stone are relatively well preserved (Figure 12). They include remains of an unusual rhombus-patterned border on the right-hand side and the stern of a ship on the left side. Only one crewman is preserved. In addition, the stone fragment depicts a person with horned headgear, which is a unique feature in the iconography of the Gotland picture stones. Though the horned warrior is a widespread motif in Germanic art (Helmbrecht 2011:140–146), it was previously unknown in the picture stone corpus.

The horned figure from Stora Valle is hovering behind the ship, similar to the horned *eidolon* figure on Vendel Period helmet plates (Arwidsson 1954:24, Abb. 79, 1977:118–119, Abb. 122–134) who assists the equestrian in throwing his spear as a kind of divine helper in battle. This motif seems to be inspired by Roman depictions of the *numen victoriae* (Beck 1964:31–45; repeatedly Hauck, e.g. 1954:41–42, 1957:6–7, 1978:42–44, 1980:246–274, 1981:203–256, 1994:222). The idea of gods and other supernatural beings helping in battle, guiding the weapon of the hero and giving victory, is widespread, ranging from

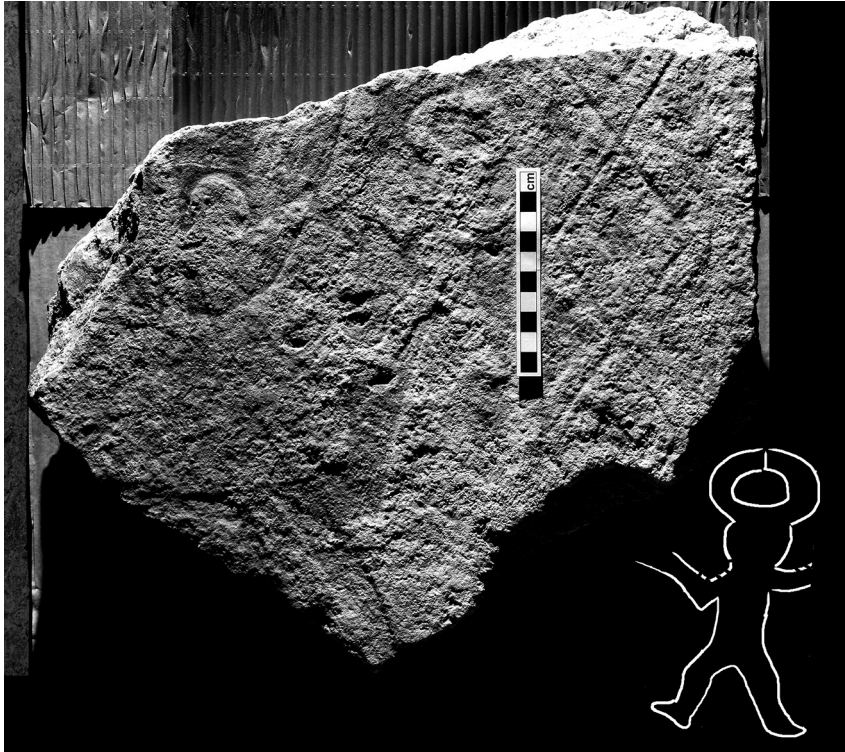


Figure 12. Rute St. Valle 2. Photo: Sigmund Oehrl.

biblical tradition and classical mythology to the Christian Middle Ages (Graus 1977; Schreiner 2000, 2004). The motif on the Vendel plates can be connected to Old Norse written sources (esp. Beck 1964:31–45) such as the skaldic poem *Gráfeldardrápa* written by Glúmr Geirason (after 974). Glúmr says that the gods guide or steer (*stýra*) the heroes on the battlefield (Finnur Jónsson 1912–1915 A I:78, B I:68; Whaley 2012:262 [with translation]). In the eddic poem *Hlqðskviða*, the King of the Goths invokes Óðinn, god of war and father of the fallen, to steer his throwing spear (*láti svá Óðinn flein fliúga* – ‘May Óðinn let the spear fly, as I say’). The text is one of the oldest eddic poems, probably written in the 9th century (Neckel & Kuhn 1983:309).

As repeatedly noted, the Vendel and Viking period depictions of horned warriors may represent the god Wodan/Óðinn. This conclusion is based on a Series of observations and in particular shown by the fact that some of these figures are one-eyed. Mention can be made of the so-called weapon dancer on one of the Torslunda dies (Arrhenius & Freij 1992:76, fig. 6; Helmbrecht 2011:168) and a figurine from Uppåkra (ibid. 167, Abb. 31r). In both cases, one of the eyes was removed deliberately

with a kind of chisel, after the piece was cast. In skaldic and eddic poetry Óðinn is described as the one-eyed god from the 10th century onwards. Notably, the horned and one-eyed figure from Torslunda is accompanied by a warrior with a wolf-like animal mask, reminiscent of the *úlfheðnar* (Speidel 2004:11ff., 24–33, 57ff.; Samson 2011:288–336) – animal warriors mentioned in early skaldic poetry who, according to Snorri Sturluson's *Ynglinga saga* ch. 6 (Bjarni Aðalbjarnarson 1941:17), are closely linked to the god Óðinn: Hans [i.e. Óðins] *menn fóru brynjulausir ok váru galnir sem hundar eða vargar* ('His men went into battle without mail armour and they were mad like dogs or wolves').

Considering these facts, it seems very likely that the horned figure behind the ship on the Rute fragment also represents a deity, probably Óðinn. As on the helmet plates he may be regarded as a divine helper, accompanying and protecting the crew, like a kind of helping spirit. Alternatively, the god of the fallen heroes may in this case be considered as a *psychopomp* guiding the ship of the dead and escorting the deceased on their afterlife journey. As a matter of fact, in Old Norse literature Óðinn sends out the Valkyries in order to choose the fallen (*kjósa val*) for *Valhöll*. In the skaldic poem *Finngálkn í Jómsborg* (10th century) (Finnur Jónsson 1912–1915 A I:186–187; B I:176) and in *Grímnismál* (Neckel & Kuhn 1983:58–59) Óðinn chooses the dead himself: [...] *en þar Hroptr* [this is Óðinn] *kyss hverian dag vápndauða vera* ('[...] and there Hroptr [Óðinn] chooses men who are killed by weapons, every day'). Possibly, the Rute fragment preserves a depiction of Óðinn, choosing the dead and taking them to his realm.

By the way, the astonishing case of Rute Stora Valle shows: While Old Norse philologists have had to work with the same sources for centuries, archaeology is providing us with more and more material, giving new information about the pre-Christian religions of the North.

## MORE PROBLEMS 3: THE INNER CHRONOLOGY OF THE CARVINGS AND THE QUESTION OF COLOUR

Another problem of picture stone research can be described as 'the question concerning the inner chronology of a stone's carvings'. Do all of the figurative elements on a picture stone belong together in terms of chronology and in terms of content? Were they all carved by one artist and at the same period of time? These questions have not been discussed in detail so far (a kind of picture stone palimpsest is the slab from the ruin St Hans in Visby, Nylén & Lamm 2003:161–161). Taking a closer look at the early picture stone Väskinde kyrka 5, it can be ob-

served that there are two additional disc motifs in the lower part of the slab which have not been painted by Sune Lindqvist (cf. Kitzler Åhfeldt 2013:61, fig. 6). Apparently, he considered them as not belonging to the final conception and thus as meaningless. However, the RTI image reveals that these carved circles cross the horse-like quadruped's legs and bodies as well as the horizontal border in the lowest part of the stone's surface (Figure 13). The discs must have been carved after the animals and the border. What does that mean? Are these discs part of the original composition or was the slab reused in a subsequent period, perhaps as a kind of training piece of a stonemason? Would it not be appropriate to repaint these carvings, too?

When I examined the 3D-models of Klinte Hunninge I (see above) on the screen I realized that there are grooves on the undecorated bottom of the slab, which must have been carved by human hands. These grooves seem to form the upper part of an animal, its curved back, neck and a small head (Figure 14). The shape of the figure is typical of Vendel and Viking Age depictions of horses. The question is, why is the figure carved on this part of the monument? This part of the slab had been put into the earth and thus was invisible when the picture stone

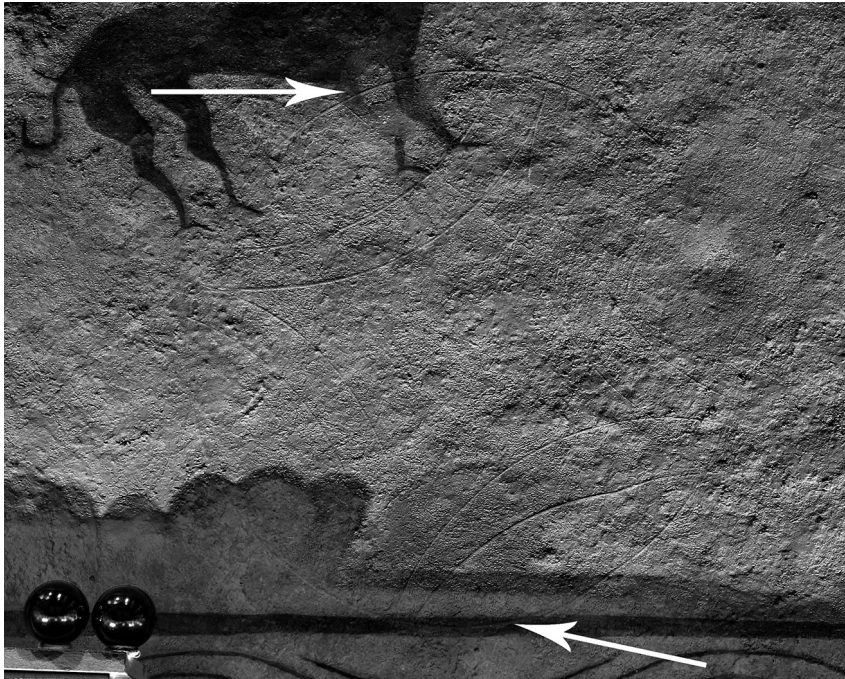


Figure 13. Väske kyrka 5. Additional disc, shown in the RTIviewer. Rendering mode 'Diffuse Gain'. Figure: Sigmund Oehrl.

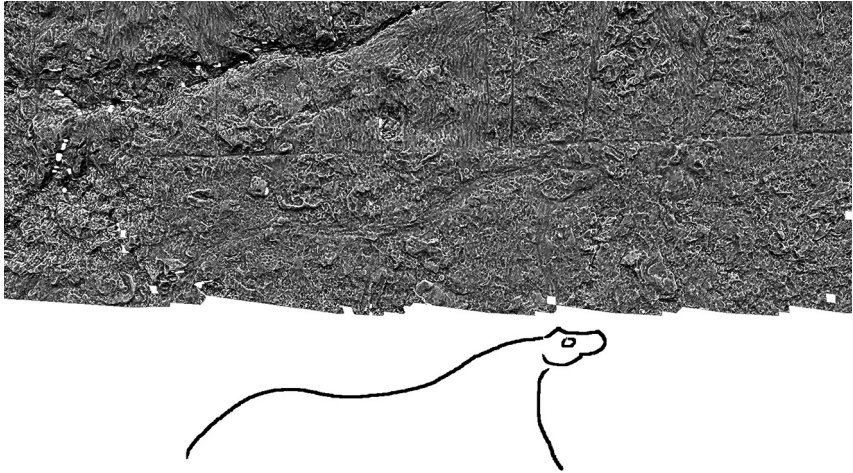


Figure 14. Klinte Hunninge I. The horse on the bottom of the slab. 3D-model, without colour information. Figure: Sigmund Oehrl.

was erected. Did the artist want the horse carving to be hidden? Was it a kind of *probatio pennae*, before the carver started his work? Or was the figure added when the stone was not standing in the landscape anymore? Future research should deal with questions like this.

In addition to the questions concerning the preservation and the chronological relation of the carvings, there is another issue that complicates our view of the stones: The monuments must have been colourfully painted (Lindqvist 1941/1942 Vol. I:43, 23; Holmqvist 1952:3–4; Nylén 1960; Nylén & Lamm 2003:82–85, Simonsson 2012:197–198). As a result, important figurative details have been lost. So far, visible traces of pigments were detected only on a small number of type E stones. However, methods like ultraviolet photography and ultraviolet-visible spectroscopy have long been applied in order to reveal the polychromy of ancient Mediterranean sculptures (Brinkmann & Scholl 2010). In the future, these technologies should also be applied to the picture stones of Gotland.

## FINAL REMARKS

As we have seen, there are many problems hindering the iconographic evaluation of the picture stones which are one of the most important sources for the analysis of Norse religion in the Late Iron Age. Their state of preservation is often worse than the pictures in Lindqvist's edition suggest. This paper demonstrates how digital methods like RTI and 3D-

modelling provide a more objective and unprejudiced documentation of the carvings. These tools can help us to identify problematic and hidden details and to document them in a comprehensible manner. Of course, these methods cannot perform miracles – finally, it is always our own eyes and experience which decide whether a structure is carved by human hands or not. However, on the basis of digital documentation we are able to check previous interpretations unprejudicedly and to make future interpretations checkable. Compared to the current edition – presenting photos of the secondary painted stone surfaces – this is a big step forward. Nevertheless, these approaches have to be combined with the indispensable consideration of the original stone surfaces. Nothing can replace the careful analysis of the stones themselves. A second major problem discussed in this article is the fact that most of the new finds are not published adequately. The example of Rute Stora Valle shows how important this currently unknown material is.

The Gotlandic picture stones are a unique and extraordinarily important source material. They deserve to be investigated comprehensively and to be documented in an up-to-date manner. My research (the results of which will be published elaborately in a forthcoming monograph) is intended as a kind of second step, after the *Picture Stone Symposium* in Visby 2011, as a proposal and as a basis for the establishment of a new and systematic picture stone research that, as a long-term goal, should aim for an all-comprehensive, interdisciplinary and modern re-edition of the entire corpus.

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