

# Cupmarks

## Introduction

A monumental menhir stands upright in front of a circle of stones in Süderbarup, Kr. Schleswig-Flensburg, Schleswig-Holstein. Both, the landscape and the stones are lightly dusted with snow. Forty-five spherical cavities cover the menhir's rocky surface. In the back, an opening in the surrounding shrubbery grants a view across a greyish-white winter landscape. Icy forests stretch into the horizon and disappear in the fog. The bluish hue of the scene underscores the forlorn atmosphere. The menhir, known as the 'guardian stone', belongs to a Late Bronze burial mound (Groht et al., 2013: 470–471).

The way this image of the menhir is presented is no coincidence; all elements of the scene make it enigmatic and mysterious. This includes the man-made cavities strewn across its surface, i.e. cupmarks. However, taking a more sober view, cupmarks are round or oval spherical depressions in the rock. Mostly they appear to have been chiselled into the rock surface. Other methods may have been used such as grinding or drilling. Experimental archaeology has already demonstrated that a cupmark could have been produced in a few minutes, depending on the method (Hasselrot, 1984: 63; Tvauri, 1999: 134). With some local variability, they appear on boulders, menhirs and megalithic tombs. In Sweden and Norway, cupmarks are frequently found on smaller and larger bedrock surfaces. Due to the thin soil cover, bedrock is more exposed here than in Denmark or Northern Germany where cupmarks are more often found on loose boulders (Archäologisches Landesamt Schleswig-Holstein, 2015; Felding, 2015). The British Isles and Iberia have a rich cup

mark tradition as well (Bradley, 2009; Waddington, 1998).

Judging from their wide distribution, their large number and the ease with which they could have been made, people in the past perhaps did not think of cupmarks as something mysterious. Nevertheless, cupmarks spark the imagination of professional researchers as well as amateurs, because there are many unanswered questions pertaining to their chronology, use and symbolic content. The missing answers produce the mystery that surrounds cupmarks. This leaves unexplained their appearance in great numbers all across Europe and the fact that they transform the natural rock face into a social space. We simply do not know per se what they meant to people in the past and how they used them. Since the carvers likely knew the significance of cupmarks, they perhaps did not consider them mysterious at all.

To ask what they were used for and what their particular meaning might have been is, of course, a tricky question for which there is no singular answer (Hodder, 1986). However, it is worth making an attempt to provide new and alternative interpretations. An analysis should consider the local context and indicators of use in order to deduce some potential meaning. Therefore, before a new interpretation of cupmarks in Southern Scandinavia is attempted, the historical significance of cupmarks, their chronology and prior interpretations of their use will be reviewed.

## Cupmark chronology

Due to their non-descript form, cupmarks are notoriously hard to date – at least when

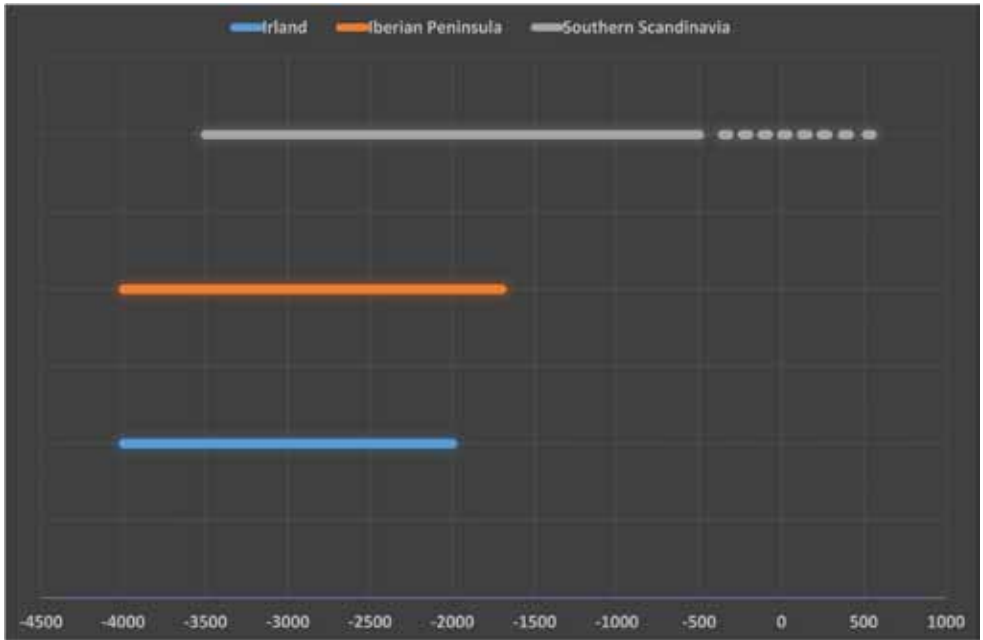


Fig. 1: Timespan of the production of cupmarks in different regions of Europe.

we inquire about their origin and main phase of production. Nevertheless, dating them to the Bronze Age is uncontroversial in Southern Scandinavia due to their link to figurative rock art on panels from Sweden and Norway. Here, cupmarks are associated with ships (Enkenberg, RAÄ Östra Eneby 23:1), animals such as cattle (Tegneby, RAÄ Tanum 25:1), footprints (RAÄ Askum 761), handprints (Högsbyn RAÄ Tisselskog 10:1) and many other features.

However, other indicators suggest that humans produced cupmarks earlier than the Bronze Age. Striking evidence was discovered in Ireland on the famous megalithic tomb in Newgrange. A ring linked to the British cup-and-ring tradition was cut in half when the stone was quarried (Waddington, 1998: 31). This establishes a *terminus ante quem* for the cup-and-ring tradition, because the ring must have been applied before the grave was built around 3200 BC (O’Kelly and O’Kelly, 1982: 231; Waddington, 1998: 31–32). R. Bradley assumes a similar early date for cupmarks on the Iberian Peninsula (Bradley, 2002). Recent

AMS C14-dating may push these dates back to the early 4<sup>th</sup> millennium BC (Scarre, 2010: 183–188).

According to this evidence, it may be reasonable to assume that the production of cupmarks spread with the megalithic tombs (Bradley, 2009: 103). On the British Isles, the cup-and-ring tradition ends during the local Early Bronze Age between 2000–1800 BC, potentially somewhat earlier according to recent revisions in absolute dating (Burgess, 2004; Waddington, 1998: Tab. 1). On the Iberian Peninsula, steles with halberds possess cupmarks. The development of halberds ends around 1700 BC on the Iberian Peninsula, indicating that the steles and subsequently the cupmarks might also have been produced until 1700 BC (Fig. 1; Horn, 2014: 96–106). In a summary of cupmark research from an Estonian perspective, Andres Tvauri argued that the tradition of carving cupmarks started in Scandinavia around that time. This may have continued without interruption until the Late Iron Age (Tvauri, 1999). Challenging this view, Lasse Bengtsson argued for a contemporaneity

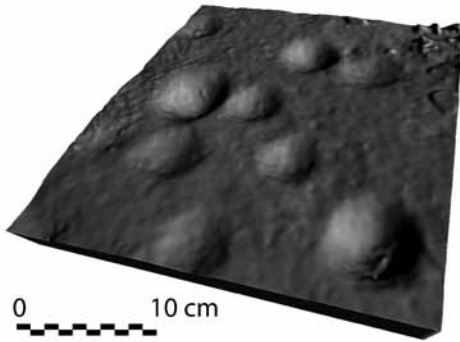


Fig. 2: 3D scan of cupmarks in Björlanda (RAÄ 250:1)

of megalithic tombs and cupmarks on their capstones (Bengtsson, 2004a). He differentiates between two groups, whereby on average deeper and wider cupmarks are contemporaneous with the megaliths. However, larger cupmarks also exist on bedrock panels in Sweden (Fig. 2). The second group is comprised of smaller cupmarks dating to the Bronze Age (Bengtsson, 2004a).

Nonetheless, the megalithic grave from Bunsloh, Germany (Schwantes, 1939; see Sprockhoff, 1966: 39) might provide some evidence that even larger cupmarks on capstones may also date to the Bronze Age (Fig. 3). The grave was possibly constructed around 3500 BC. Its western capstone was covered with 300 cupmarks interspersed with carvings of wheels, handprints and footprints. Swedish and Norwegian parallels suggest a Bronze Age or possibly later date of these motifs (Skoglund, 2013). Judging from the available documentation, no secure intersections of figurative motifs with cupmarks can be inferred. If anything, it seems that one finger of a hand is marginally cut by a large cupmark. The capstone is so packed with depictions that this would have required prior planning. It is not possible to assume that people, who erected the megalithic tomb, also planned for Bronze Age carvers to have enough space for their images. Located on top of the megalithic burial was a Bronze Age burial in a wooden coffin dating to 1700 BC. Perhaps the carving of the cupmarks and the other images took place just prior to the burial, because

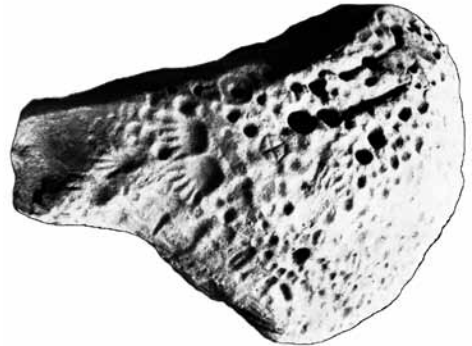


Fig. 3: Capstone of the megalithic tomb in Bunsloh, Germany (after Schwantes 1939)

cup-marked megaliths in Scandinavia seem to coincide with secondary graves dating to the Bronze Age (see also Goldhahn, 2015: 23). In any case, the situation could have also been far more complex. It could be proposed that a number of very large cupmarks were applied with the original construction of the megalithic tomb. When the mound was re-opened to inter another deceased during the Bronze Age, the figurative rock art may have been carved and the spaces in-between may have been filled up with smaller and some larger cupmarks.

To summarize, we cannot exclude an early date for cupmarks in Scandinavia. Nonetheless, the majority may have been produced during the Bronze Age. The end of cupmark production has been discussed as well. Cupmarks intersect Bronze Age boats, indicating that their production was not restricted to the Early Bronze Age (see Slagsta, RAÄ Botkyrka 279:1). The land uplift in Scandinavia indicates that some cupmarks may have been produced during the pre-Roman Iron Age, because the rocks did not emerge from the sea before that (Coles, 2008: 15; Ling, 2013: Fig. 13). Sporadically, making and using cupmarks may even have continued until rather recently. Comments on this can be kept short, because the ethnographic record has already been aptly summarized by Tvaauri (1999). However, what is also apparent is that cupmarks did not enjoy the same popularity as in earlier times (Fig. 1). A more or less continuous production practice is, therefore, possible at

least until the Early Iron Age (Goldhahn et al., 2010: 6) or even until 550 AD (Goldhahn and Ling, 2013: 1; Lødøen and Mandt, 2010; Tvauri, 1999).

## Interpretations on the meaning and usage of cupmarks

### Historic times

Although cupmarks were less important, and possibly only very few were newly produced in historic times, we are better informed by ethnographic accounts as to what they were used for. Even today, the stones with cupmarks are called 'offering stones' (German '*Opfersteine*'; Capelle, 2008: 36). In early modern folklore of the 17<sup>th</sup> century AD, cupmark production was linked to the imagined activity of elves (Goldhahn et al., 2010: 1; cf. Lødøen and Mandt, 2010). The old Swedish term '*älvkvarn*' translates roughly to spirit mill or elf mill (*älva*: Engl. *spirit*; *kvarn*: Engl. *mill* or *grinder*). In the Baltic states, for example in Estonia, people put offerings in cupmarks such as seeds and occasionally burned something in the cupmarks (Tvauri, 1999: 139). This example emphasizes the functional aspect of cupmarks as a means for ritual rather than as a material symbol. Of course, one is never quite without the other. However, archaeological interpretations focus usually only on one of these two features. Other rather practical purposes, in addition to seed offerings, are mentioned in ethnographic literature, for example, the collection of water for healing (Tvauri, 1999: 141) or the sacrifice of blood (Tiismaa, 1922). In each case, cupmarks served as a vessel and were not necessarily a material symbol in their own right.

These rather recent reports informed archaeological interpretations of cupmarks. Bengtsson, for example, maintains that libation or seed offerings could have taken place in the cupmarks of the capstones of megalithic graves. He argued that these sacrifices were dedicated to the ancestors (Bengtsson, 2004a: 172). Although possible, it should be kept in mind that most of the uses known from historic times are the

esoteric re-use of cupmarks based on their perceived mysterious existence. Therefore, these historical traditions illustrate possibilities for past uses, but should not be used as direct analogies. Furthermore, these notions do not specify in what way cupmarks may have been related to the ancestors, and why they would have been a suitable symbol for them.

### Prehistory

The reason why the historical record should not be used as a direct analogy is that social structures, technology, subsistence, religious conceptions, and ritual performances changed significantly over the past 4000–5000 years. A direct relation between Early Modern times and prehistory can hardly be substantiated with evidence. The occasional appearance of scorch marks in cupmarks on open air sites may be an indication that rituals and sacrifices involving fire could have been taken place in prehistory as well (Capelle, 2008: 35). Nevertheless, the chance that such traces would have been obliterated by water and erosion on open-air sites makes it more likely that these are marks of historic use. In any case, it is still unknown what was burned in these instances.

Water undoubtedly collects in cupmarks, but that only applies to horizontal ones and we have no way of knowing if it was actually collected during prehistoric times. Other horizontal cupmarks contained pot sherds or burnt clay (Goldhahn, 2008: 18; cf. Hauptman Wahlgren, 2002). In these cases, typological evidence or thermoluminescence could be used to verify a prehistoric date. Torsten Capelle mentioned another possible use in which cupmarks are more a practical measure in ritual activities. Based on the regularity of their size, it has been argued that the stone refuse of their production may have been collected for a number of magical or ritual purposes (Capelle, 2008: 35). However, while the regular size may be explained with certain quantities that had to be taken, many Bronze Age cupmarks are incorporated in figurative scenes that seem to be the primary reason for their presence rather than to extract

stone dust. The same could be said for the compositions of cups and rings on the British Isles. From here comes evidence that cupmarks could have been used as receptacles for stones or round objects of other materials. Chalk and stone balls have been discovered in Loughcrew cairn L. It has been argued that these may have been repeatedly inserted into the cupmarks (Conwell, 1866: 368–369; McMann, 1994: 28).

Other interpretations of prehistoric cupmarks focus on their meaning as material symbols. Many different interpretations have been discussed for the Scandinavian Bronze Age material. Various hypotheses were substantiated by focussing on the context and placement of cupmarks in the landscape. Christopher Tilley suggested that cupmarks were linked to celestial bodies (Tilley, 1999: 146). In a similar vein, R. Bradley interprets circles closely connected to cupmarks as sun symbols and cupmarks without circles facing upwards on the highest point on a ridge as stars (Bradley, 2002: 155–161). However, cupmarks within circles are frequently placed close to human figures in Scandinavian rock art as well as on Iberian steles (Fig. 4a–b). In these cases, the

images are usually interpreted in a functional sense as shields (Uckelmann, 2012: Pl. 38–39). The circular features on such shields are similar to singular cupmarks and have therefore to be considered in this context. Nevertheless, both interpretations are not mutually exclusive. The shield bosses that are represented with cupmarks in rock art had a functional purpose for catching and deflecting blows. Simultaneously, the circular form of Bronze Age shield bosses in conjunction with the golden colour of bronze evokes the appearance of the sun and could have been semantized as a sun symbol.

Another prominent interpretation of cupmarks focusses on sex and gender. In the late 1980s, Gro Mandt re-popularized the notion that cupmarks signify female deities in rock art. Special significance was attributed to a placement of cupmarks between the legs of anthropomorphic figures (Fig. 5; Mandt, 1986, 1987). This idea seems to have been derived from older accounts referring by analogy to Indian cult symbols (Almgren, 1927: 222) or by the observation that such figures frequently had long hair (Glob, 1969: 170), although the hypothesis was picked up later on in the study of intercourse scenes (Fari, 2003; Lindgren,

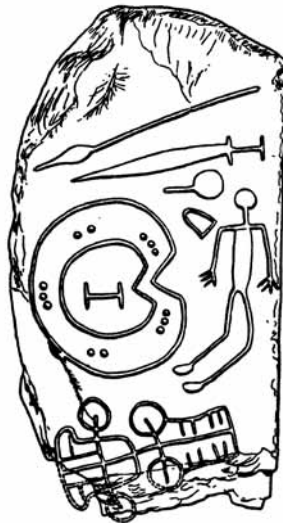


Fig. 4: Cupmarks on a shield in a. Hede (RAÄ Kville 124:1, photo by Tanums Hällristningsmuseum Underslös, ©SHFA); b. Solana de Cabañas, Spain

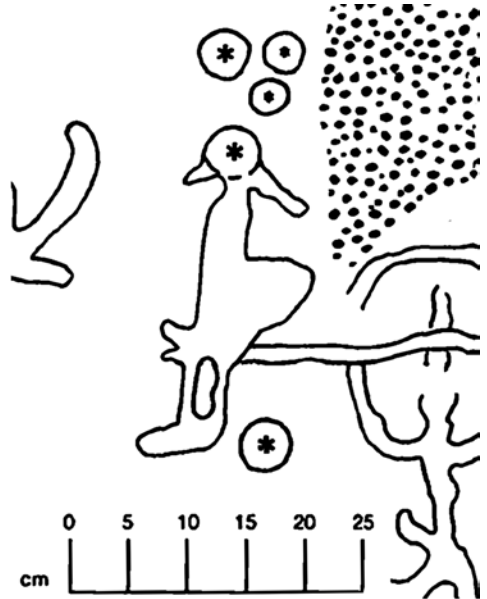
1999). The notion was criticized in the early 1990s, because there are phallic figures with cupmarks between their legs (Fig. 6; Skogstrand, 2008; Yates, 1993: 41–48). Similarly, long hair is occasionally also linked to phallic figures (Fig. 7). Nonetheless, as shall be discussed later, that does not mean that cupmarks are not connected to female figures at all, but that cupmarks cannot be the only evidence to identify females in rock art.

Fig. 5: Potentially female figure in Fossum (RAÄ Tanum 255:1, photo by G. Milstreu , ©SHFA)



Fig. 6: Male figure with cupmark between his legs in Assleröd (RAÄ Askum 697:1; drawing by S.G. Broström and K. Ihrestam, ©SHFA);

Fig. 7: Male with long hair and an older cupmark reused as a head in Torsbo (RAÄ Kville 158:1, redrawn after Å. Fredsjö and J. Nordblad, original ©SHFA)



## Cupmarks as human heads – An interpretation

In 2003, John Coles mentioned a new and very intriguing interpretation for cupmarks. On some of the panels with processions of human figures, he recognized accompanying rows of cupmarks. Viewing them as vague human “presences”, he goes on to call them heads. According to Coles, they are placed there to create depth and give the impression of a crowd (Coles, 2003: 218). The idea is not taken up any further, although if these rows of cupmarks are truly heads then there may be more scenes in which cupmarks represent heads. In the following, this idea will be followed. However, due to the scope of this paper the data cannot be presented in a quantitative way. Instead, exemplary scenes will be described.

## Re-use of cupmarks as heads

The notion that cupmarks could represent heads is supported by older cupmarks that were re-used as heads for newer carvings. One such example was documented by the author and Rich Potter (Göteborgs Universitet) using Reflectance Transformation Imaging (RTI; Malzbender et al., 2004). This imaging technique helps to observe places where carved features intersect (Jones et al., 2015). It highlights subtle differences in depth that the time-honoured frottage documentation technique does not record to the same extent. RTI was used to document, among others figures, the big spearman in Finntorp (RAÄ Tanum 89:1). The figure itself has a long carving tradition with many transformations. Two cupmarks are considered to be potentially the oldest carvings, because they deviate in depth from all other carved lines on the figure and the stratigraphy of carvings (Fig. 8a–b). After the cupmarks were carved, a spear was applied potentially during the Early Bronze Age (Jacob-Friesen 1967). Later, a shield was added that marginally intersects with the spear. One of the cupmarks is incorporated as a shield boss. Afterwards, a wide line was carved connecting the cupmark, the spear and the shield cutting through all three. This line is the neck of the anthropomor-

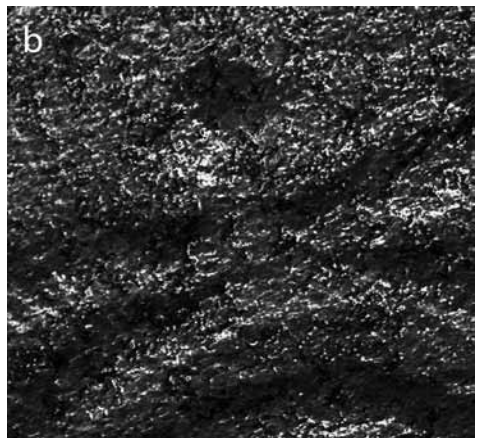
phic figure making the second cupmark the head of a warrior. Based on a stylistic analysis, this potentially took place during period III or IV (Almgren, 1987: 49). Parallels were discovered in Aspeberget (RAÄ Tanum 14:1), Balken (RAÄ Tanum 262:1), Torsbo (Fig. 7) and Ekenberg (RAÄ Östra Eneby 23:1).

## Crew members

Strokes delineating crew members on canoes mostly consist of simple lines, but in some cases, each stroke possesses a cupmark hovering above it (for example Assleröd, RAÄ Askum 697:1). Sometimes a second line of cupmarks can be observed on top, potentially representing a second row of



Fig. 8: Finntorp (RAÄ Tanum 89:1) Tanums Hällristningsmuseum Underslös, a. spear-bearer complete; b. detail



rowers (for example Sotetorp, RAÅ Tanum 357:1; see Fig. 9). Even more detailed figures with arms, objects and bodily features further support the interpretation of cupmarks as heads (for example Lövåsen, RAÅ Tanum 325:1). Although the heads of human figures are sometimes carved as flat disks, on most figures there is no difference between the head and a cupmark. Both are round and bowl-shaped depressions in the rock. Of course, some of the heads of canoe crews could also be re-used lines of older cupmarks (for example Björneröd RAÅ Tanum 325:1). Lines of cupmarks with the potential to apply ships exist, for example, in Stale (Fig. 10).

If the notion of cupmarks as heads is accepted, such cupmarks may also relate to other symbolic functions. In relation to canoes and crewstrokes, one other such function may be deduced. On a large panel in Aspeberget (Fig. 11), a figure with one exaggerated hand as been recorded. Close to the other hand could be a canoe, which the figure seems to be holding. Unfortunately, this part of the carving is damaged. Above the exaggerated hand, the rock is occupied by 28 cupmarks. They are arguably arranged in four rows. One cupmark seems to be out of line, but the second row from the top has only six instead of seven cupmarks. This row is slightly misaligned. Therefore, the cupmark that seems to be squeezed into this space may be an attempt to correct an error. Most canoes possess seven crewstrokes during the Early as well as the Late Bronze Age (Ling, 2008:



Fig. 10: Rows of cupmarks in Stale (RAÅ Bokenäs 443:1, photo by A. Toreld, ©SHFA);

191–194). If we interpret the cupmarks as heads and relate them to canoes, the person is potentially indicating the number of crewmen of four boats. This coincides with the four fingers on the exaggerated hand. Perhaps, the figure indicates the number of canoes. However, if we think of canoe crews sitting in double rows, then only two crews are symbolized, but four rows. There is one

Fig. 9: Canoe crew with a double row of heads, possibly reusing slightly misaligned older rows of cupmarks, and a warrior also reusing an older cupmark as a head in Valeby (RAÅ Bottna 43:1, redrawn after Å. Fredsjö and J. Nordblad, original ©SHFA);

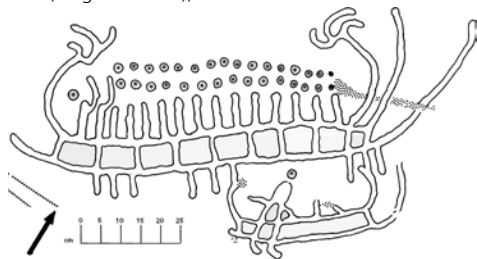


Fig. 11: Figure with rows of cupmarks above a big hand in Aspeberget (RAÅ Tanum 120:1, photo by G. Milstreu.





more cupmark isolated somewhat further away, but its placement seems to be coincidental.

## Birth

The interpretation of cupmarks as heads may apply to another small group of carvings. The panels in Torsbo (RAÅ Kville 157:1), Kalleby Nedergård (RAÅ Tanum 493:1) and Rished Sotenäs (RAÅ Askum 70:1) are occupied by crouched human figures (Fig. 12–14). Their legs are spread apart. On a boulder discovered in Engelstrup, Denmark we may see a similar scene, but the figure seems to be depicted standing with legs apart (Fig. 15). Typologically, these figures may represent birthing scenes if compared to similar looking figures, for example, from North America (Hays-Gilpin, 2004: 29–36 Fig. 2.11–22). Wide hips and possibly female breasts extending sideways, present on some of the figures, support this notion. The scenes in Torsbo and Kalleby Nedergård require some elaboration, because in these cases no actual cupmark is present.

A square protrudes below the negative cupmark in Torsbo, while in Kalleby Nedergård another pair of legs emerges. Both bodies are filled by carving the rock's surface. Within the lower part of their re-

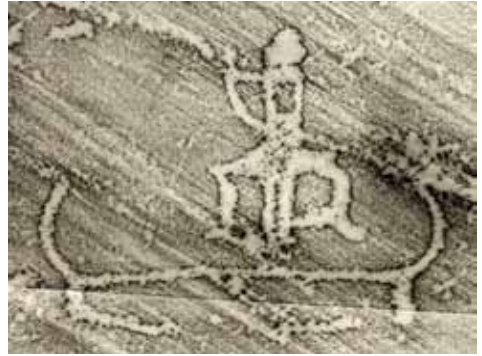


Fig. 13: Kalleby Nedergård (RAÅ Tanum 493:1, frottage by Tanums Hällristningsmuseum Underslös, ©SHFA)



Fig. 14: Rished Sotenäs (RAÅ Askum 70:1, redrawn after a photo by Å. Fredell, ©SHFA)

Fig. 12: Birthing scenes in a. Torsbo (RAÅ Kville 157:1, redrawn after Å. Fredsjö, original ©SHFA)



Fig. 15: Engelstrup, Denmark, (photo by F. Kaul and G. Milstreu)



spective bodies, they have a single circle where the rock is left blank. They appear to be 'negative' cupmarks. If both images are birthing scenes, then they are breech births. During such a birth, the new-born comes out of the uterus feet first while the head is still in the birth channel (Thorpe-Beeston, 2002). The blank circles may have been chosen out of convenience to represent the head of the new-born, because a regular cupmark would have been hard to see in the already carved body. In Askum and Engelstrup, a regular cupmark is outside the body and no legs are indicated. Possibly, this scene pictures a regular birth. Therefore, the interpretation of cupmarks as heads makes sense again, because during such a birth the head is out, while the legs emerge last. The rectangle in Torsbo may have been an abstract way to indicate legs or a body. Nonetheless, Kalleby Nedergård serves as a reminder that rock art does not represent unfiltered reality (Ling and Cornell, 2010). The length of the emergent legs indicates that we may deal with a newly born adult, which would point to an otherworldly, mythical sphere. These scenes link female figures and cupmarks to the reproductive sphere. It is possible that more female representations in rock art are associated with cupmarks, perhaps to indicate their potential to give birth. Another panel, discovered in Sotetorp Tyft (RAÅ Tanum 359:1) indicates that the cupmark could also be missing from birthing scenes (Fig. 16). However, cupmarks may also link

Fig. 16: Sotetorp Tyft (RAÅ Tanum 359:1, frottage by Tanums Hällristningsmuseum Underslös, ©SHFA)

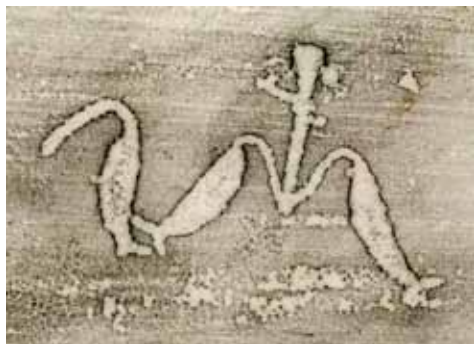


Fig. 17: Vitylcke (RAÅ Tanum 1:1), frottage by Gerhard Milstreu, Tanums Hällristningsmuseum Underslös.

males to reproduction, because male figures are more closely connected to cupmarks in many of the so-called bridal couple scenes (Fig. 17). This was also observed on bulls with indicated sexual organs and a cupmark underneath their tail (Fig. 18). Perhaps, this could indicate how sexuality, conception and fertility were perceived during the Nordic Bronze Age.

## Discussion – Ancestors and other humans

Cupmarks are present in many rock art locations and possess a long history. In Southern Scandinavia, they are connected with burials (Fahlander, 2012: 128), settlements (Goldhahn, 2006: 94–98, 2008: 18; Hauptman Wahlgren, 2002), steles, menhirs, inland sites (Fahlander, 2012: 128) as well as higher ground (Bengtsson and Ling, 2007). Moreover, there are figurative and abstract engravings as well as sites consisting exclusively of cupmarks. The heads on



Fig. 18: Aspeberget (RAÄ Tanum 12:1), photo by G. Milstreu.

anthropomorphic figures are often identical to cupmarks, but because of their context, they are not counted as such. However, the re-use of older cupmarks in figurative rock art as heads supports the notion of a conceptual link between cupmarks and heads. Potentially, we could tentatively delineate possible meanings of cupmarks for past societies within the context of these figurative scenes.

The interpretation of cupmarks as heads behaves inclusively in relation to other interpretations. It has been argued that cupmarks are connected to the worship of ancestors<sup>1</sup> (Bengtsson, 2004a: 172). Sacrifices could have taken place in cupmarks, for example, on the grave in Bunsöh. Furthermore, if they represent heads, they may have been perceived as the heads of particular or named ancestors. In Ingelstrop, small cupmarked stones were included in a number of Late Neolithic and Early Bronze Age graves (Strömberg, 1982: 103–104). Here they may well have represented the heads of ancestors accompanying the deceased to an afterlife. Alternatively, the cupmarks could have represented the deceased themselves, or perhaps, other persons were represented by the cupmarks, for example, mourning children or other relatives. This could also apply to cupmarks on the capstones of megalithic tombs. Here, offerings may have been placed in such cupmarks representing the person that sacrifices. In the case of Bunsöh, the Neolithic cupmarks could have represented those who sacrifice,

while the later Bronze Age cupmarks could refer to ancestors whose presence was perceived in the tomb.

In open locations close to settlements, cupmarks may have been more accessible to entire communities (Bengtsson, 2004b). Such sites may have been more involved in everyday rituals leaving ceramics or burning offerings (Hauptman Wahlgren, 2002). It cannot be excluded that they also represented the heads of ancestors (of the village or of a family) or those who sacrifice, either individuals or families. Other spaces are more secluded, such as the potentially fenced rock art site in Madsebakke on Bornholm. It is also conceivable that the large number of cooking pits indicate that larger communities gathered here on special occasions such as feasts, possibly including ritual specialists (Goldhahn, 2007; Sørensen, 2006).

It has been suggested that larger figurative panels may have been used in initiation rites. Potentially, young males were introduced to maritime and other specialized knowledge (Ling, 2008; Nordbladh, 1989: 325; Yates, 1993). At such occasions, stories of mythical sea-voyages or battles of ancestors could have been newly carved or evoked on pre-existing images. Ritual specialists or other elite figures could have been responsible for such initiations. This may have established the long-recognized link of elites to figurative rock art (Bertilsson, 1987; Kristiansen and Larsson, 2005). Conjoined, the rock art and myths perhaps

instilled and reinforced social norms and ideals. Thus, rock art may serve as material images of cultural memory and chronotopes bringing together generations of people at the same sites in the landscape (Assmann, 2011; Goldhahn, 2015). On such occasions, cupmarks may have been newly carved, added and transformed, possibly to represent the new members of canoe crews as perhaps at Aspeberget (RAÄ Tanum 120:1, see above), and to evoke the memory of ancestors who went to sea and into battles before them. Hereby, rock art may have exerted secondary agency in influencing the identity of young initiates (Ling and Cornell, 2010).

In birthing and sexual scenes, cupmarks may be used to represent the heads of newborn humans. The link of rock art to fertility rights has long been established (Almgren, 1927; Fari, 2003; Lindgren, 1999; Mandt, 1987). Such images may have been used to wish for the healthy birth of offspring. The depictions of breech births may point to this as a ritualistic inversion. However, the birth of an adult in Kalleby Nedergård (RAÄ Tanum 493:1) could also point in another direction. This image could picture the wish for a newly born baby to fit social ideals or specific social role, for example, warriorhood. Nonetheless, the figure in Kalleby Nedergård is not carved with insignia of any particular role. In light of a possible use of figurative rock art for male initiation, we may infer a parallel use of some scenes for female initiation. A connection between ancestors and fertility cults and rituals is quite well-known in social anthropological literature, for example, in Africa and Southern America, but also in Asia and in association with the monotheistic religions (Caldwell and Caldwell, 1987; Hill, 2001; Wilson, 1954). In such rituals, the social institutions of descendancy and reproduction are negotiated. This could also be the case in other regions and different times. In the adrant images in Valcamonica, for example Naquane No. 32 (Fig. 19) the position of the head and arms are almost mirrored by the position of the legs and the cupmark. This may have symbolized the reproduction of human life and the continuation of life.

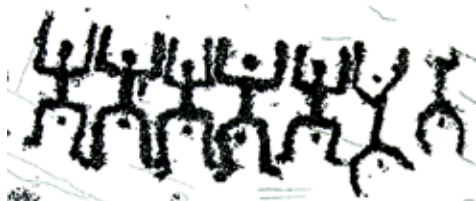
Birthing scenes also could have been used to evoke stories of a potentially difficult birth, for example the conception of an ancestor, a hero, a god or a spirit. Again, cupmarks may have represented their heads. Relating cupmarks in figurative scenes to ancestors and other human beings, such as initiates or new-borns, may have reinforced the day-to-day ritual use of simpler cupmark sites.

Other cupmarks and cupmark-like features have been carved and re-used for other purposes. Larger cupmarks may have been secondarily used to indicate a shield (Kalleby Västergård RAÄ 422:1) or a shield-boss (Finntorp RAÄ Tanum 89:1), smaller ones serve as earrings (Kalleby Långemyr RAÄ Tanum 406:1) or as testicles (Litsleby RAÄ Tanum 75:1). Under such circumstances, cupmarks may not have ritual significance in their own right. They are, therefore, simply used as constructional elements. It is not possible to assign a singular interpretation to all cupmarks and cupmark-like features. In the words of the great Carl-Axel Moberg, similar finds do not necessarily indicate similar interpretations (Moberg, 1981: A12-A13). Cupmarks have, according to their chronological and compositional contexts, different meanings. However, many cupmarks in the Nordic Neolithic and the Bronze Age may have represented heads of mythical or real human beings, such as ancestors or initiates, because they have been used and re-used as such in figurative rock art.

## Conclusion

Cupmarks are mysterious to researchers because their significance for past societies

*Fig. 19: Valcamonica, Naquane No. 32, photo by G. Milstreu*



is difficult to discern. Reviews about their chronology, spatial distribution and ritual use in historic times have been used in this contribution to highlight the importance of context and the great variability of a phenomenon such as the cupmarks. An assessment of interpretations made by researchers of prehistoric cupmarks was used to demonstrate that different interpretations exist, but that they leave the question open as to why a cupmark would be suitable for ancestral worship or as a signifier for female figures.

Three examples have been chosen to highlight the connection of cupmarks to heads. The re-use of older cupmarks as heads, cupmarks as the heads of crew-strokes and for counting canoe crews, and cupmarks in birthing and sexual intercourse scenes were cited to argue for an interpretation of cupmarks as heads. In the discussion, their wider context was considered primarily in order to argue that cupmarks represent the heads of ancestors or similar human-like entities that may be worshipped or evoked in rituals. This interpretation is explicitly inclusive to highlight conceptual links to other archaeological interpretations of rock art sites, i.e. initiation and fertility rites. Intertwining several interpretations in this way provides a more complex picture of ritual activities on rock art sites; figurative as well as pure cupmark sites. Furthermore, if they represented heads, a logical reason is provided why they were important in activities like ancestor or fertility cults. This combined and inherently more varied interpretation may represent a better and wider picture for the significance of cupmarks in Neolithic and Bronze Age Scandinavia.

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## Note

<sup>1</sup> Newer research has shown that an interpretation as heroes may also be viable (Hansen, 2014a, 2014b). However, a hero could be venerated as ancestor or vice versa. For the moment, it is not possible to infer a difference from the presented material that would require a quantitative approach to the material to provide an empirical base for such an interpretation. Therefore, I will adhere to the notion of ancestors.

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