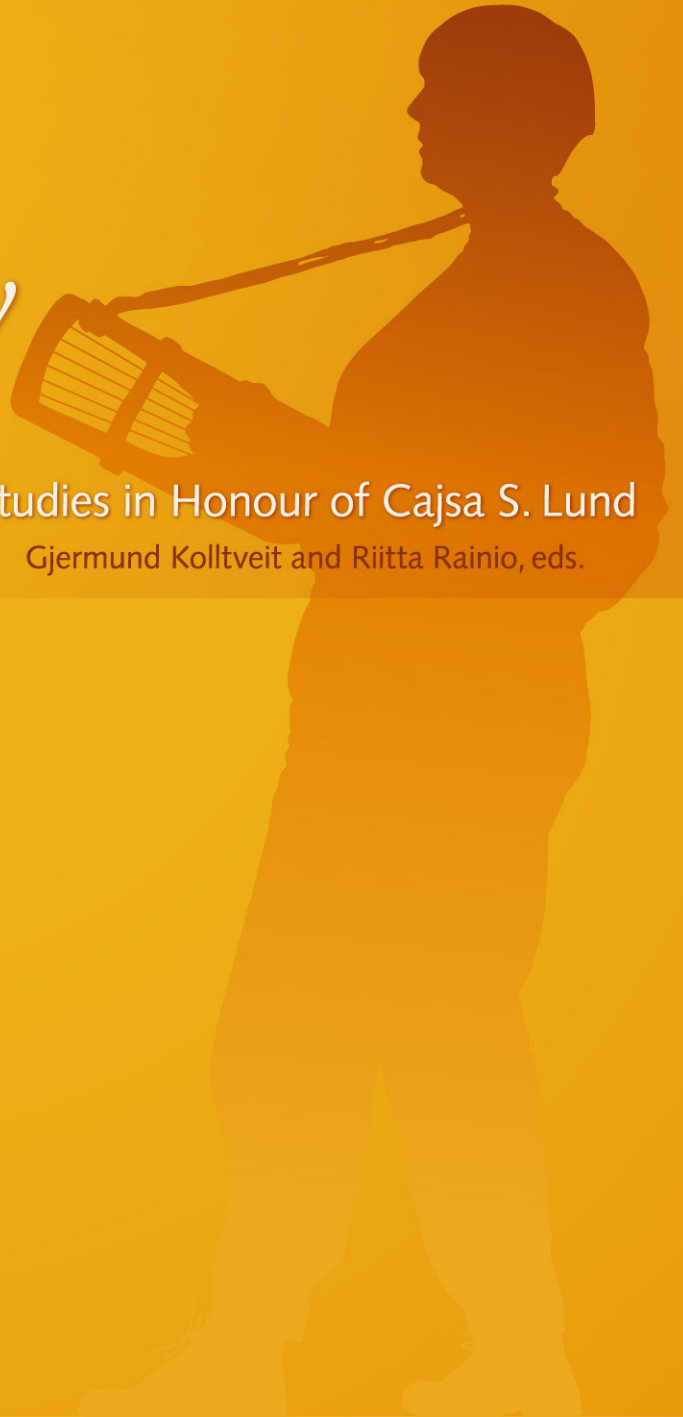


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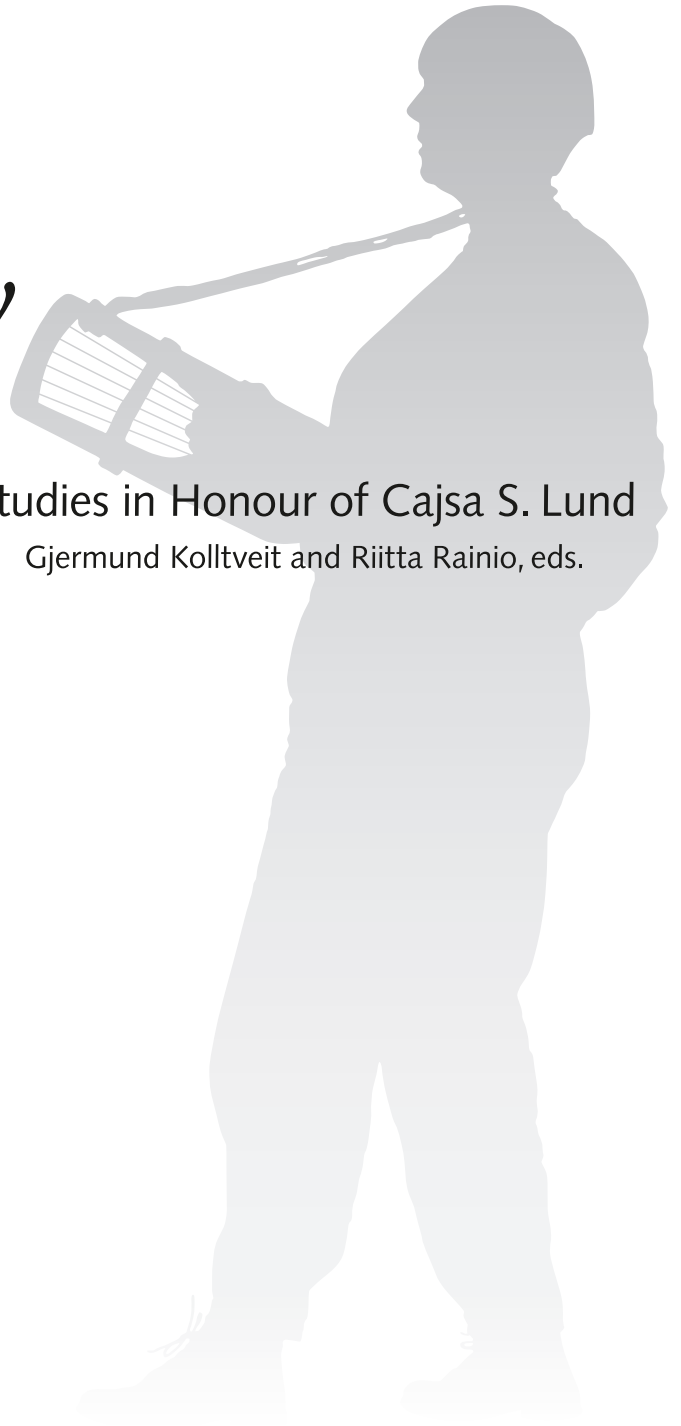
Studies in Honour of Cajsa S. Lund
Gjermund Kolltveit and Riitta Rainio, eds.



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Missing Membranophones? Traditional Drumbeaters in Northern Eurasia and Possible Prehistoric Parallels in European Archaeological Collections

By Raquel Jiménez Pasalodos and Riitta Rainio

Membranophones or drums have traditionally been thought to be among the earliest musical instruments, even though traces of drumskins or wooden frames or bowls are missing from the archaeological record. On the other hand, there are a large number of finds from the Palaeolithic and Mesolithic eras that have not yet been convincingly interpreted, and which could be connected with drumming. Starting from historical and ethnographic perspectives, this article presents a selection of prehistoric antler artefacts and discusses their suitability as drumbeaters. Artefacts from European archaeological collections are examined and compared with antler artefacts that the Sámi and Siberian shamans from the 11th–20th centuries AD used for beating their drums.

The ethnographic record shows that membranophones, that is drums, are known almost the world over. An animal skin stretched on any type of frame or vessel is one of the most common instruments in human culture, and usually has not only an important musical role, but also interesting cultural uses and symbolic meanings. The wide contemporary distribution of drums, however, contrasts with the scant prehistoric evidence. In fact, their existence is difficult to recognise in the archaeological record. Although there are iconographical depictions and written sources in the Ancient Near and Middle East (Bessler *et al.* 1984; Braun 2002: 29–31, 55, 75, 118–133; Mirelman 2014: 145–171), the organic nature of the frame or bowl and the drumskin, the membrane, has generally prevented their preservation; the exception is some instruments from ancient Egypt, where wooden frames, wooden barrel drums, and even tambourine membranes have been preserved by the dry climate (e.g., Hickmann 1956: 23–26; Manniche 1975: 1–11; 1991: Figs. 2, 12). In western Greenland, ten wooden fragments of drum rims were found at permanently frozen Saqqaq sites, from

circa 2200 BC, demonstrating the ancient use of frame drums in the Arctic region, as do the finds of drum handles and rim fragments from the Bering Straits area and eastern Arctic Canada, dated to the 1st millennium AD (Grønnow 2012: 65–66, Fig. 6; 2017: 222–224, Fig. 3.111).¹ On the European continent, the only drumming tradition that may have been materially preserved is that of the Neolithic drums of the Funnel-beaker (TRB) culture. Although contested by some, many scholars have identified these goblet-shaped, baseless pottery vessels as drums (Fischer 1951; Mildenerger 1953; Schrickel 1956; Seewald 1962; Wyatt 2007; 2008). Neolithic pottery drums are also known from China (Lawergren 2006).

Nevertheless, it is almost impossible to recognise this musical practice during the Palaeolithic and Mesolithic eras. Due to the nature of the construction materials, there are no material remains of the drums themselves. To date, there are also no representations of drums or drummers in Palaeolithic cave art. While there are some possible iconographical depictions of drums in the prehistoric rock art of northern Europe, it is difficult to propose a conclusive identification. Even the chronologies remain doubtful and imprecise. One of the oldest depictions comes from Lake Onega in northwest Russia, dating from 6400–2500 BC, in a work which represents, among other things, various anthropomorphic figures. One of these figures is seemingly wearing a mask and holding, or standing next to, a circular object with some kind of hanger or handle (Savvatejev 1984: 63, see also 97, 140). Another example from Värrikallio, Finland, dates to 3000–500 BC; there, an anthropomorphic figure has been identified as holding what seems to be a round object in the right hand, with a seemingly open left hand, or perhaps holding a trident-like object in it (Figs. 1–b) (Rainio *et al.* 2014: Fig. 11; 2017: Fig. 12). Some of the clearest examples come from Alta, Norway, as proposed by Knut Helskog (1987: 18). Dated between 4200 and 3600 BC, this work appears to be of a curious ensemble with four anthropomorphic figures. Two of them are holding elk-headed staffs, while one of them is holding a round object in the right hand, and what seems

to be a stick in the left hand. Also from Alta comes a depiction of an anthropomorphic figure holding a round object in the right hand and a stick in the left hand, following another figure in procession with an elk-headed staff (Helskog 1988: 53, 94, 133; Gjerde 2010: 125, Fig. 58). A third depiction from Alta shows a boat with several figures, two of them

1 These later finds consist of a small drum handle from an Okvik site on the Punuk Islands (Rainey 1941: 516, Fig. 24: 14), seven ivory handles, five wooden handles and several fragments of rim from Punuk sites on St. Lawrence Island (Collins 1937: 54, 77, 174, 239, Pl. 14: 3–4; 55: 5; 57: 8; 81: 2–6), and one complete frame and five fragments from Dorset sites in High Arctic Canada (McGhee 1984: 73–74, Pl. 12e; Sutherland 1997: Fig. 3).

in the centre holding the same kind of round object in the right hand and a stick in the left hand (Fig. 1d) (Helskog 1987: 18). More difficult to recognise is a carving from Skavberget, questionably dated to 3000 BC. Two anthropomorphic figures seem to be facing the viewer. One of them is holding a handle that ends in a round object. The other hand is open or possibly holding a trident-like stick (Helskog 1987: 18; Lødøen/Mandt 2005: 45–46, Fig. 37). The fact that the possible drumstick is often held with the left hand – the weaker one in most cases – is interesting. In old ethnographic photographs, the drumstick is usually held with the right hand, but a few accounts relate that in some areas of Siberia it was common for the beater to be held with the left hand; for instance, among the Sakha (Seroshevskii 2003 [1896]: 635). On the other hand, there is a wide-spread belief that the left in this world becomes the right in the Otherworld, and *vice versa* (e.g., Pentikäinen 1995: 251–252). Thus, the left-handed drummers could be depictions of the upside-down and mirrored world of spirits. In Siberian rock art, representations of drums are believed to date mostly to historical periods. In fact, according to Andrzej Rozwadowski (2009: 316; 2012a: 280–281; 2012b: 196–197), it is difficult to find unequivocal representations of drums before the 1st millennium BC. Only two representations dating from the Bronze Age, that is the late 2nd millennium BC, could be speculatively interpreted as drummers. One of them shows a figure wearing a headgear of feathers or horns and holding a circular object (see Devlet 2001: 64, Fig. 3.7.2; Devlet/Devlet 2002: 131, Fig. 7.4). The other one is a hypothetical assumption from Kazakhstan (Rozwadowski 2004: Fig. 95). From the second half of the 1st millennium BC on, however, there are more abundant representations of anthropomorphic figures with drums (Francfort 2006: 173). Despite the difficulty of identifying drums and drummers in prehistoric Siberian rock art, the drum remains from Greenland, mentioned earlier, can provide some further clues. These instruments from the 3rd millennium BC belonged to the first inhabitants of western Greenland, who came from Canada and were genetically related to Alaskan and Siberian populations (Grønnow 2017: 416). Undoubtedly, these Arctic frame drums form an argument in favour of the use of drums in prehistoric Siberia, and also support theories about a possible symbolic representation of drums in rock art (see Rozwadowski 2012b: 197–198).

As far as remains of instruments are concerned, a few prehistoric antler artefacts have been identified in the literature as possible drumbeaters; that is, sticks or batons used for hitting the membrane. Already in 1900, Paul Girod and Elie Massénat (1900: 80) proposed that the “most rational” interpretation of the

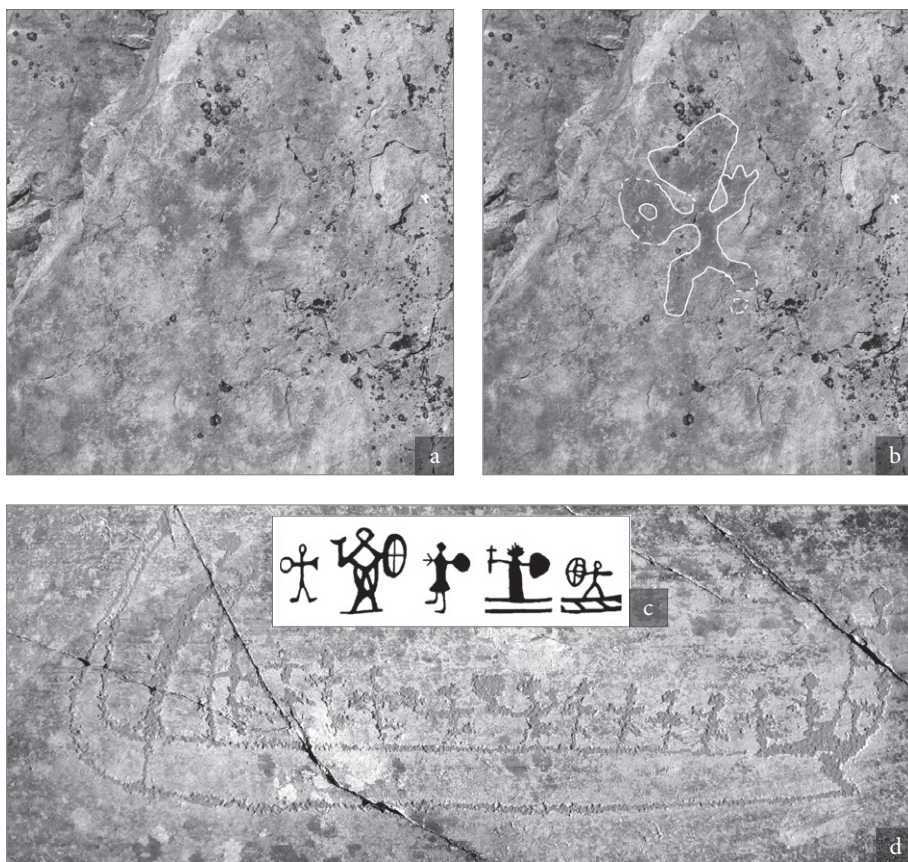
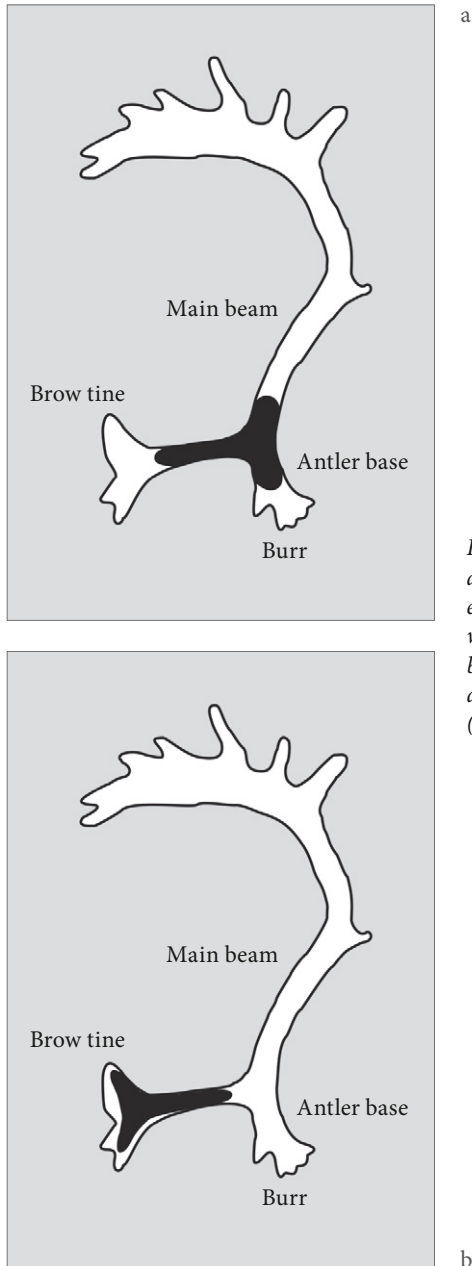


Fig. 1 Probable representations of anthropomorphic figures beating a drum in prehistoric rock art and Sámi drums. a) The rock painting of Värrikallio in Finland, an unmodified photo of the figure; b) The rock painting of Värrikallio in Finland, the saturation of red hues has been modified and a tentative outline marked with white; c) Shamans carrying drums on the membranes of various Sámi drums; d) The rock carving from Alta in Norway. Photos by Antti Lahelma, drawings after Manker (1950).



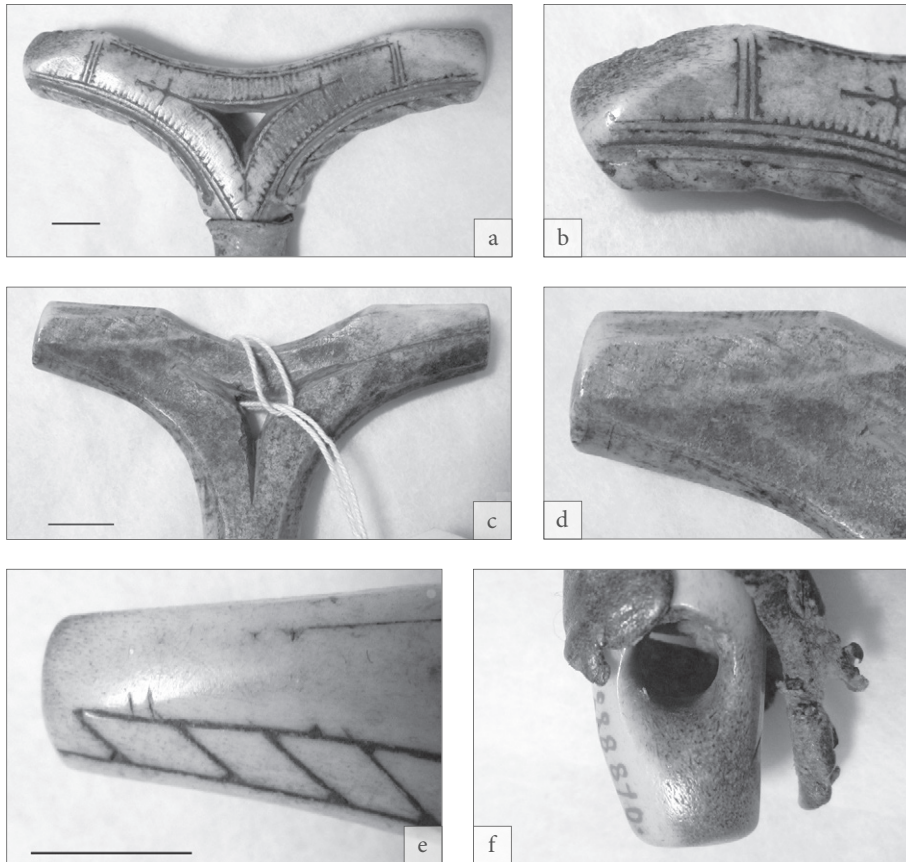
Fig. 2 Sámi drum beaters. a) Inari Nukkumajoki, eastern Sámiland, 13th–15th centuries (KM 21986: 34); b) Salla Kaakkurilampi, northern/eastern Sámiland, circa 1600 (KM-SU 3577: 26); c) Ásele, southern Sámiland, early 18th century (NM 228865*1); d) Unknown provenance, 17th–19th centuries (NM 228872). Photos by authors and the National Board of Antiquities.



a

Fig. 3 Parts of reindeer (*Rangifer tarandus*) antler used by the Sámi for making drum beaters. a) The main beam forms the striking end, while the brow tine forms the handle; b) The brow tine forms the striking end and the handle. Drawing by authors, redrawn after Lompre (2003: Fig. 5).

b



*Fig. 4 Use-wear on the arms and the handle of Sámi drum beaters. a-b) Rounded edges and facets, Åsele, southern Sámiland, early 18th century (NM 228865*1); c-d) Rounded edges, unknown provenance, 17th-19th centuries (NM 228872); e-f) Abraded ornaments, facets, and rounded edges, unknown provenance, 17th-19th centuries (NM 228870). Photos by authors.*

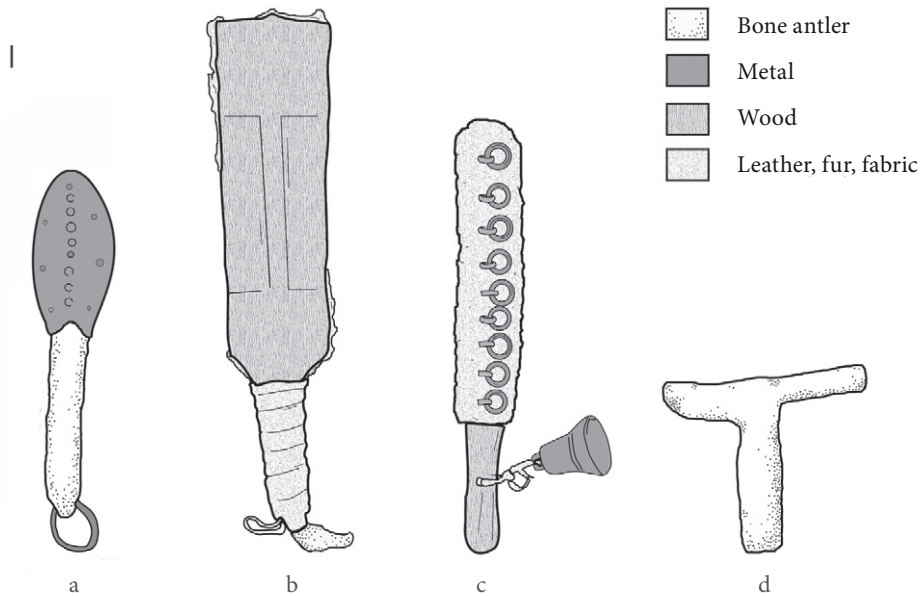


Fig. 5 Siberian drum beater types. a) Paddle-shaped, southern Siberia, late 19th century (MAE 2390-2); b) Paddle-shaped, southern Siberia, late 19th century (MAE 4262); c) Straight, eastern Siberia, late 19th century (RME 1275-2); d) T-shaped, historical rock carving from eastern Siberia, late 19th century, redrawn after Devlet (2001: Fig. 3.4). Drawings by authors.

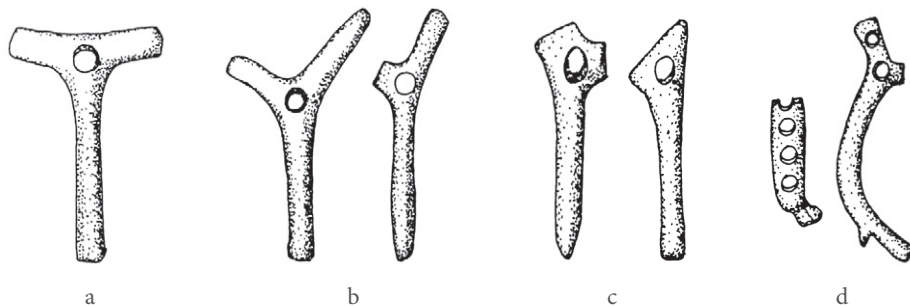


Fig. 6 Types of Palaeolithic perforated batons. a) T-shaped baton with horizontal divergent branches; b) Batons with one or two oblique branches; c) Batons with short branches; d) Multi-perforated batons. Drawing after Peltier (1992: Fig. 10).

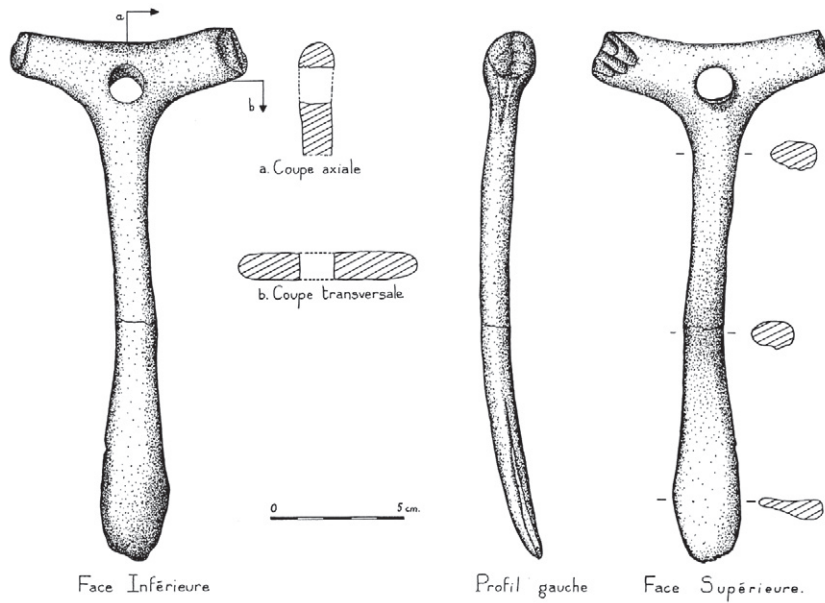


Fig. 7 T-shaped perforated baton with two horizontal divergent branches, Abri du Poisson, Eyziès-de-Tayac, France. Drawing after Peltier (1992: Fig. 3).

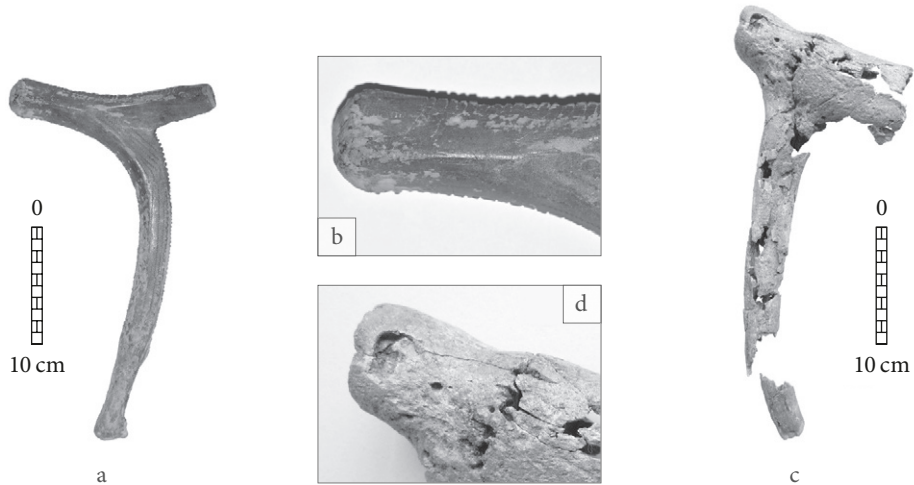


Fig. 8 Mesolithic hammer-like antler staffs. a-b) Vedbaek, Maglemose, Denmark (A 38879); c-d) Skateholm, grave XXI, Sweden (LUHM 31162). Photos by authors.

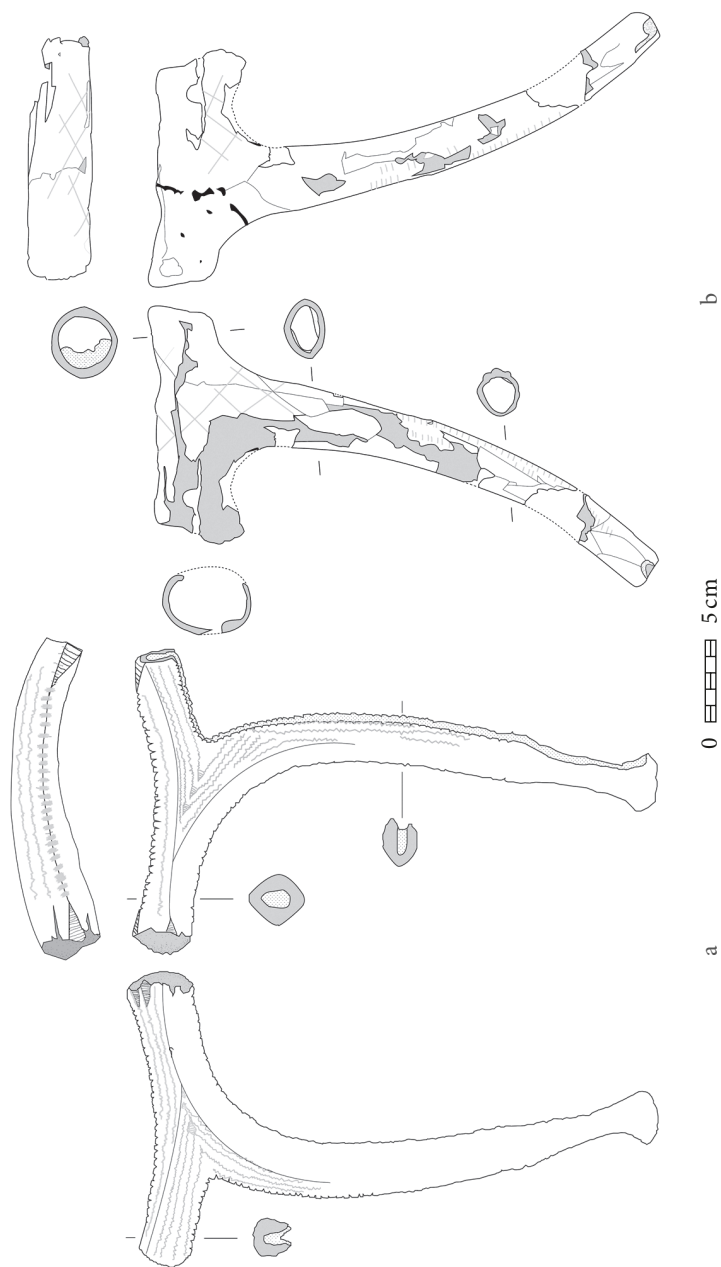


Fig. 9 Details of the Mesolithic hammer-like staffs. a) Vedbaek, Maglemose, Denmark (A 38879); b) Skatchholm, grave XXI, Sweden (LUHM 31162). Drawings by authors.

Palaeolithic T-shaped perforated batons in European archaeological collections was rooted in a comparison with the “bifid drumsticks” of the indigenous Sámi people. They remarked that their decoration could indicate that they were luxury objects. This idea was upheld by Horst Kirchner (1952: 279–282), who, looking for evidence of shamans in the archaeological record, added comparisons with Altaian drumsticks in Siberia, paying special attention to their zoomorphic shapes and decorations. In northern and eastern Europe, there are also some suggestive proposals for interpreting certain T-shaped antler artefacts as possible drumsticks, such as the Mesolithic hammer-like staffs from Vedbaek, Maglemose in Denmark (Mathiassen 1941: 131), and Skateholm in Sweden (Larsson 1988: 147–149), or the Palaeolithic mallet from Mezine, Ukraine, interpreted as a beater for the mammoth bone percussion set (Bibikov 1981: 64). Other T-shaped artefacts with much later chronologies have also been interpreted as drumbeaters, due to their similarities with Sámi drum hammers, such as the Early Metal Age artefacts from Bolshoy Oleniy Ostrov, northwest Russia (Schmidt 1930: Tab. IV: 1; Gurina 1956: 379, Fig. 24).

In the circumpolar areas of Eurasia and North America, frame drums were traditionally played with beaters made of hard materials, such as antler, bone or wood (e.g., Jacobson-Tepfer 2004: 549; Rydving 2005). Although the drums and drumming practices in these areas are extensively described in the ethnographic literature, the drumbeaters have been somewhat neglected in these sources. It is difficult to find systematic studies on their typologies, structures, sizes, or playing techniques. The above-mentioned analogies between prehistoric finds and traditional Sámi and Siberian beaters are based on rough morphological similarities. However, in the search for material remains of drumming – the topic and goal of this article – the drumbeaters have a crucial role, since their hard construction material makes them the most durable component of the drum, parts that can survive a lengthy stay in the ground. Therefore, in the following sections, we will collate the available information on traditional beaters in northern Eurasia, Sámi land, and Siberia, by surveying 19th–20th-century ethnographers’ accounts² and scrutinizing ethnographic collections in the Nordic Museum in Stockholm, the National Museum of Finland, the Museum of Cultural History in Oslo, and the Russian Museum of Ethnography and the Peter the Great Museum of Anthropology and Ethnography in Saint Petersburg. The purpose is to

2 We have found extremely useful the summaries and translations of Russian ethnographic accounts made by Andrei Znamenski (2003), otherwise inaccessible because of the language and difficult availability. In the text, we will quote the original author and page, and in the final bibliography the page numbers in Znamenski’s edition.

form an accurate idea of the characteristics of these presumably archaic beaters. In the next sections, we will proceed by looking for similar characteristics in the promising prehistoric finds and find groups mentioned by Girod and Massénat (1900: 80), Therkel Mathiassen (1941: 131), and Lars Larsson (1988: 147–149), and curated, for instance, at the National Museum of Denmark and the Trelleborg Museum. We will measure, draw, and photograph the artefacts and examine their structural characteristics with a microscope camera. Moreover, experimental reconstructions will be used for testing the playability of the artefacts. Our search is still ongoing. Several other promising finds, as well as traditional North American beaters, should be studied to complete the work. Nevertheless, this article will present the results obtained so far, and demonstrate the applicability of the comparative method, in which small structural and traceological details of fairly recent ethnographic artefacts are used to identify much older parallels in the archaeological record. Following on from this, our typological and taxonomical approach could be complemented by a large ethnoarchaeological work studying the life histories of these artefacts, from their production process to deposition, as well as the concepts and symbols associated with their materiality.

Traditional Sámi Drumbeaters – Material Remains of Drumming in the Ethnohistorical Record

The drum was the most important musical instrument of the historically known Sámi people, the indigenous reindeer herders, hunters, and fishermen inhabiting northernmost Europe (Itkonen 1948: 333–344; Pentikäinen 1995: 159–193; Aapala 2005; Rydving 2005). Traditionally, nearly all Sámi families owned a drum (*goavddis*) that was made of reindeer (*Rangifer tarandus*) skin and an oval wooden frame or bowl. The drum was played with a T-shaped beater, literally “a hammer” (*veažir*), carved out of reindeer antler (Fig. 2). Rhythmic drumming was used to accompany ritual activities, particularly those associated with the shaman (*noaidi*), and the figures painted on the membrane were used to foretell the future, and hunting fortune or misfortune (Fig. 1c). The oldest written account of Sámi drumming is in the anonymous *Historia Norvegiae* (AD 1170–1190). In the 17th and 18th centuries, the Christian missionaries travelling about the north disapproved of the use of drums, and forcefully collected them from their owners. Many of these drums ended up in museum collections around Europe, where approximately 70 drums and 34 drumbeaters can be found

today, often in a very good state of preservation (Manker 1938; 1950). Other drums continued to be used by the Sámi, and were deposited in the mountains, caves, or other sacred places, or buried in shaman graves, where they were found by archaeologists centuries later (e.g., Sirelius 1924; Hallström 1932: 118; Leppäaho 1937; Gjessing 1945; Vorren 1955; Kopisto 1971; Carpelan 1987; 1991; Ranta 1998; Berglund 2005; Rainio 2013). The state of preservation of these drums is poor, but their beaters and other accessories, such as metal rings, bells, animal teeth, or nails, have been much better preserved. The documented provenance and dating – between the 11th and 20th centuries – even allow for a comparison between different beater types. According to our survey of the collections in the National Museum of Finland, the Nordic Museum, the Swedish History Museum, the Museum of Cultural History in Oslo, the Tromsø University Museum, and others, the number of these archaeologically or otherwise known Sámi beaters stands at least at 24.

Apart from a few wooden and iron specimens (Kainuun Museo 540; Manker 1938: Nr. 37, 38; TM tslf5063; Kainuun museot 2017), the Sámi drumbeaters were made from reindeer antler, a material especially suited for making T-shaped hammer-like artefacts. In the T-shaped beaters, the arms of the T serve as the striking end, whereas the shaft of the T serves as the handle. In the oldest 11th–16th-century and 17th-century beaters from northern and eastern Sámi areas, the main beam of the antler has been used to form the striking end, while one of the tines, probably the brow tine, forms the handle (Figs. 2a–b, 3a) (KHM C26704; KHM C26831a; KM 20837: 27; KM 21986: 34; KM-SU 3577: 26, 27; KM-SU 5031: 1, 2; KM-SU 5606: 575; TM L1303). This type of beater has heavy, 1–3 cm thick arms with bulging and outwardly bending tips. Occasional burr pearls on the tip indicate that the material has been taken from the antler base, quite close to the skull (KM 20837: 27). Interestingly, in the somewhat later 17th–18th-century beaters, originating largely from southern Sámi areas, the shovel-like widened end of the brow tine has been used to form the striking end, while the shaft of that tine forms the handle (Figs. 2c–d, 3b) (Manker 1938: 312, 324, 344–346, Figs. 561–563). Contrary to the earlier beaters, this type of beater has flat, only 0.4–1.5 cm thick arms. Sometimes the arms have been deliberately flattened by removing one of the cortical surfaces of the antler, as well as the whole inner spongy bone (NM 0228872; TMM 21816: LU61; cf. Manker 1938: Nr. 11, 35). The purpose of this arduous operation must have been to produce maximally light arms. In both described beater types, presumably representing

chronological and geographical variations,³ the size of the specimens diverges by a considerable amount. The height of the artefact varies from 8 to 28 cm, and the breadth of the arms from 6 to 22 cm. In a few Iron Age or medieval specimens, the arms are not equal in size and shape, but a bit asymmetrical (Fig. 2a) (KM 20837: 27; KM 21986: 34; SHM 7373). As two beaters of unequal size have been found in the same shaman graves – at least twice (KM-SU 3577: 26, 27; KM-SU 5031: 1, 2) – they might have served different purposes. The diameter of the round, oval, or flat handle varies from 1 to 2.5 cm, making it fit to be used as a handgrip.

A few undecorated beaters with visible cut marks give the impression of half-finished products (Fig. 2a) (KM 20837: 27; KM 21986: 34; KM-SU 1346; SHM 13886: 60, 61), but generally speaking the Sámi beaters are richly decorated. Engraved zigzags, dots, ribbons, plaits or other ornaments, dyed with charcoal, run parallel to the rims of the arms and form an eye-catching figure in the middle of the arms (Figs. 2b–d). Particularly in the 17th–18th-century beaters, with relatively flat arms, the same locations have been equipped with narrow slits and round or triangular holes that pierce the striking end, making it in some cases almost hollow (Manker 1938: Nr. 2, 8, 9, 11, 12, 35; SHM 34358: 232). The rims of the arms have sometimes been carved into the shape of a threaded metal bar (Manker 1938: Nr. 12, 26, 35). One of the oldest beaters appears to have been carved into the shape of a stylized animal (SHM 7373).⁴ The pierced openings at the striking end can serve as visual focal points, as a means to reduce the weight of the artefact or as suspension holes for metal rings, spirals, chains, or pendants that must have produced a rattling sound when the beater was used (cf. Kainuun Museo 540; KM 29659; Manker 1938: Nr. 11; TM tslf5063). Alternatively, they could accommodate metal studs or nails that probably bore some special meaning (Manker 1938: Nr. 7, 34; TM L1303). Metal studs, nails, plates, and more complicated fittings, such as bars, have also sometimes been driven into

the upper rim of the arms (KHM C26704; KHM C26831a; Manker 1938: Nr. 23, 31; TM L1303), or the upper end of the handle (TM L1303). In many cases, the handle has been coated with leather (Fig. 2c). In a few cases, the lower end of the handle has been made from a separate piece of antler (Manker 1938: Nr. 7, 36). Leather straps, cords, ribbons, tassels, and pendants suspended from a

3 Geographical variations, or similar type of distinction between northern, eastern and southern Sámi areas, can also be found in the structure, markings and uses of the drum (Pentikäinen 1995: 168–170; Rydving 2005).

4 According to the online collections of the Swedish History Museum, this artefact from Swedish Lapland, without any further provenance information, is dated to the Iron Age or a later period. It has been displayed in the exhibition *Vikingar*, “the Vikings”.

hole at the lower end of the handle served as ornaments, rattles, or fastening loops for the player's wrist, or for the pointer (*árpa*), a type of die (Fig. 2d) (e.g., Manker 1938: Nr. 22, 23, 24, 27, 32).

The beaters confiscated in the 17th–18th centuries and kept in the museum collections show clear signs of wear, usually on both sides of the striking end (cf. Manker 1938: 310–340). In four beaters with flat arms that we studied at the Nordic Museum (NM 0228865*1, 0228870, 0228871, 0228872), the tips of the arms are smooth and polished, lighter in colour than other parts of the striking end (Figs. 4a, 4c). The edges of the tips are rounded (Figs. 4b, 4d), engraved ornaments near the tips have faded away (Fig. 4e), and the whole tip area has sometimes changed in shape, developing asymmetrical facets (Figs. 4b, 4e). As the slightly bulging or bending tips of the arms are the parts that mainly touched the drumskin, these signs may be traces of drumming, the result of regular and intensive hits against the membrane. The drumming techniques and patterns of the Sámi are poorly documented. Historical accounts of shamanic séances only relate that the drumming started at a slow pace and then grew wilder (Manker 1938: 426). The ethnologist Ernst Manker (1938: 426, 428, Figs. 615–617) states that either one of the tips, or both arms at the same time, were used to hit the membrane. According to our experiments with the replica of a 15th-century find from Finland (TMM 21816: LU61), it is tempting to shake the beater so that both tips in turn hit the membrane, generating a rapid thundering roll. This technique appears to be natural for a T-shaped beater, and even a potential reason for favouring this specific form. It also generates intensive abrasion pressure on the very spots that show the observed use-wear. However, the technique requires that the arms of the beater are light, and symmetrical or equal in size; otherwise the player's wrist will soon become exhausted. Thus, the technique appears to be especially well-suited to the beaters with flat arms. Furthermore, the hits with only one tip appear to be suitable for producing loud single booms or moving the pointer, a piece of bone, antler, stone, or metal that jumped over the figures on the drumskin, foretelling future events. Metal rings, spirals, chains, or pendants attached to the pointer (Manker 1938: Nr. 1–3; NM 0228873, cf. also Leppäaho 1937: Figs. 2, 7), as well as to the beater and the drum, must have created an incessant rattling accompaniment to the drumming, thus making the séance quite a noisy event. The fastening loops of these fittings caused the polish and rounding seen on the holes at the lower end of the handles (Fig. 4f).

Traditional Siberian Drumbeaters

Depending on the area of origin, Siberian drumbeaters are made of antler, bone, wood, or a combination of these materials, with the handle and the striking end made of different materials. Sometimes whole animal parts were used, such as the whole legs or leg bones of cervids (e.g., Jacobson-Tepfer 2004: 549). The striking end of these beaters is often covered with fur or leather of different animals, and carries their symbolic meanings. The soft cover must also have had an effect on the sound. The handle often shows attached ribbons, bells, rattles, or pendants made of bone, metal, leather, fabric, or fur. For instance, among the Khakass in southern Siberia, shamans covered their wooden or bone drumsticks (*arba*) with the skins of a hare (*Lepus sp.*) or a wild goat (*Capra sp.*), and attached to the handle ribbons that represented hostile spirits (Sukhovskoi 2003 [1901]: 149). Sometimes the handles show engraved geometric decorations or carved animal heads, which suggests a symbolic connection with these animals, usually regarded as spirit helpers of the shamans. For instance, among the Khanty in western Siberia, a Russian ethnographer (Kulemzin 2003 [1976]: 108–111) describes a drumstick with a depiction of the snake spirit, that helped the shaman by devouring hostile spirits. In other areas, colors were used to decorate the drumsticks. Among the Selkup, the drumstick was made of cedar wood and the bottom half was colored in black, the top half in red, to symbolize the Underworld and the Upperworld. This drumstick was covered with a skin from the forehead of a wild buck deer (*Cervidae*). Also, the Khanty-Nenets had a special all-black drumstick that was used only when a shaman descended into the Underworld. In this case, the drumstick was covered with the fur of the right paw of a bear (*Ursus arctos*) (Prokof'ev 2003 [1930]: 366).

There are three morphological types of drumsticks seen in the historical rock art (Devlet 2001; Devlet/Devlet 2002; Rozwadowski 2014), ethnographic materials, and old photographs: paddle-shaped drumsticks, straight, slightly curved drumsticks, and T-shaped drumsticks (Fig. 5). The paddle-shaped and straight types are not always easy to differentiate, but these three categories can work as a first approach for the classification of the Siberian artefacts, and they also work at a symbolic level. It is also important to note that different types of drumsticks can exist in the same cultural area. For instance, the Evenk in central and eastern Siberia have different names for different types, all deriving from the word *gis* or *gisun* “speaking” (Ivanov 2003 [1976]: 223–224).

Some Selkup shamans would even carry two drumsticks, one with fur from a deer's forehead and the other with fur from a bear's paw (Gemuev/Pelikh 2003 [1997]: 36).

The most common drumsticks are the paddle-shaped types (Figs. 5a–b). This shape is also most frequently seen in the historical rock art depictions of drumming shamans (e.g., Rozwadowski 2009: 318, Fig. 1; 2014; 2015: 197, 199–200, Figs. 3, 9, 10, 11; Devlet 2001: 45, 47, Figs. 3.2, 3.3, 3.5; 2002: 131, Figs. 7.1, 7.3). Among the Sakha in central and eastern Siberia, drumsticks were made from pieces of wood or antler, and shaped as small narrow shovels with a handle. They were always slightly curved (Pekarskii/Vasiliev 2003 [1910]: 22–23), probably to facilitate drumming. The convex side of the stick was obviously used to hit the membrane. Also, among the Nenets in Western Siberia, the drumstick resembled a “small wooden shovel” (Anfilov 2003 [1902]: 631). The shape may derive from the symbolic idea of the shamanic drum as a boat, and the drumstick as its paddle. For instance, in Altai, among the Kumandin and Shor, the drums became boats and drumsticks paddles when the shamans encountered rivers in their spiritual journeys (Potapov 2003 [1991]: 161–165). In old photographs, there are paddle-shaped drumsticks in the hands of Khanty, Mansi, Selkup, Tofalar, and Tyvan shamans, made of different materials such as wood, bone, or antler. In the ethnographic collection of the Peter the Great Museum of Anthropology and Ethnography, we identified a paddle-shaped drumstick from southern Siberia dated to the end of the 19th century, made of elk (*Cervidae*) antler and decorated with engraved concentric circles, ribbons, and animal vertebra attached to a hole of the handle (MAE unnumbered). The hole has smooth, rounded edges caused by the friction of the ribbons. The artefact measures circa 20 cm. In the same collection, there is another drumstick from southern Siberia dated to the 19th century (Fig. 5b) (MAE 4262). It is also paddle-shaped, but almost 40 cm in length and clearly flatter than the previous artefact, which suggests that the category of paddle-shaped beater consists of different sub-categories. This beater is made of wood and antler or bone, and covered with animal fur and leather. The handle is carved into a bird's head. Among some shamans, the drum could become a bird that took the shaman flying in their spiritual journeys. A third drumbeater in the collection, also from southern Siberia (Khakass?), is made of antler and has a bronze plate nailed to the concave side of the striking end, decorative bumps in the plate and cloth, and mustelid fur attached to the handle (Fig. 5a) (MAE 2390–2). The convex side of the striking end is uncovered, flat, and smooth. Slimmer, but also slightly paddle-shaped, is an Evenk drumstick dated to the

end of the 19th century: circa 30 cm in height, made of antler or bone, and covered with leather and fur. It also has an carved animal head on the handle tip as well as engraved decorations (RME 4216-493c).

The second type of drumstick are straight, slightly curved staffs covered at the top part – the striking end – with fur or leather (Fig. 5c). Ekaterina Prokof'eva (1961: 436–437) states that of the 30 Siberian peoples she studied, there were not as many varieties in the drumstick construction as in the drum construction, and that the drumsticks were usually curved pieces of wood or bone, over which people stretched skins taken from legs of the deer buck, the roebuck (*Capreolus sp.*), the bear, or the skin from the forehead of the deer, the bear, or any other animal skin. Perhaps Prokof'eva also refers here to the paddle-shaped sticks, some of them so slightly shaped as paddles that they could be taken for straight sticks. Nevertheless, the straight shape might also be associated with another symbolic meaning of the drum. Among Altaian shamans, the drum was considered a weapon against evil spirits, a bow that can throw arrows to ward them off. The drumsticks and pendants of the drums were considered the arrows (Potapov 2003 [1934]: 71–72). In Tyva, however, shamans believed that the drum was alive and served as a riding horse – a belief shared with other peoples of the steppe – while the drumstick was the lash (Vainshtein 2003 [1990]: 157–158, 171–172). In photographs, it is possible to see that the straight drumsticks are slightly bent to facilitate the performance, including the wooden drumsticks of the Khanty (KM-SU 1870: 22; KM-SU 6155: 2) and the whalebone drumsticks of the Chukchi in eastern Siberia (RME 11012–83/2; Simchenko 2003 [1993]). One of these thick whalebone drumsticks is wider at the end, and is covered with the skin from a wolf's (*Canis lupus*) tail (Czaplicka 1914: 59). In 1904–1909, Waldermar Bogoras described how the Chukchi shaman even provided an extra whalebone drumstick so that the spirit could use it (Power 2004: 156).

The third type of drumstick is exclusively seen in photographs and rock art, dating mostly from the last two or three centuries (Fig. 5d) (see Devlet 2001: 44, 46, 48, Figs. 3.1, 3.4, 3.6; Devlet/Devlet 2002: 124, Fig. 3). They seem to be T-shaped, fork-shaped, or curved, similar to the Sàmi drumbeaters. Unfortunately, so far we have not found artefacts like these in the ethnographic collections or in the literature. However, if the artefacts depicted in the hands of drumming anthropomorphic figures were drumbeaters, the T-shaped form could indicate that they were made of antler.

In Siberia, drumsticks were not merely staffs to beat the membrane and produce rhythmic booming and rattling sounds, but had many symbolic and ritual uses and meanings. From their method of manufacture, many Siberian cultures treated them as a ritual objects. As we have previously seen, there were different types and materials to make drumsticks, but the symbolic process of their manufacture also varied considerably. Although many drumsticks were made of wood, there are also places where they were made of cervid antler or bone, as they had – similarly to the drums – a special symbolic connection with the deer family. According to Vilmos Diószegi, the Tofalar would make their drumsticks from reindeer or deer antler, the horns of wild goats, or especially consecrated wood (Jacobson-Tepfer 2004: 549), and in Leonid Potapov’s descriptions, the Orok made the drumsticks from an elk leg bone (Jacobson-Tepfer 2004: 549). Furthermore, Sev’ian Vainshtein describes how among the Tyvan, the drumsticks were made from the antler of the same elk whose skin had been used to make the drum (Jacobson-Tepfer 2004: 549).

It was common in different Siberian areas that the drumstick was the first object a beginner shaman could acquire. V. I. Anuchin (2003 [1914]: 33) explains that among the Ket the first drumstick a shaman apprentice could acquire had to be made of rotten wood, and would break after half a year. In that time, the apprentice would use only the drumstick in séances, not a drum. Many shamans who did not acquire more status would use drumsticks without drums all their lives. When the first rotten drumstick broke, the shamans would ask people to make them a good one. Potapov (2003 [1949]: 198) believes that in ancient times Teleut shamans performed their séances with only a drumstick before they were entitled to have a drum, and describes how Kumandin shamans still followed this custom in modern times; before they could get their first drum, they would perform a séance using a drumstick and a square piece of canvas. Likewise, in Altai, among the Shor, if shamans did not have drums they used only the drumstick (Malov 2003 [1909]: 39).⁵ However, this was not always the case. For instance, in Tyva

5 In this respect, the drumsticks were comparable to the staffs that new shamans of the Mongol, Buryat and Darhat used until they were prepared to have the drum, drumstick and shamanic dress. Some shamans carried on using the staffs until their death, and were thus called “shamans with a staff” (Diószegi 1963: 57–64, 76). Interestingly, these staffs share several similar characteristics with the potential drumsticks found in the prehistoric rock art and archaeological record: they are either trident-like or terminating in carved horse heads, made of wood or iron and decorated with strings, ribbons and rattling metal cones and rings. Symbolically, they were understood as riding animals or mounts of the shamans (Konovalov *et al.* 2006: 173, 178). The link or possible historical connection between these two artefact groups, drumsticks and shamanic staffs, would deserve a study of its own.

the shamans received their drums and drumsticks immediately after initiation (Vainshtein 2003 [1990]: 157–158, 171–172).

In many Siberian cultures, the drum and the drumstick had to be animated after their manufacture. For instance, for the Sakha, both drum and drumstick were living beings (Pekarskii/Vasiliev 2003 [1910]). Potapov (2003 [1949]: 198–200) describes a *séance* aimed at animating a drumstick covered with mountain goat fur. The shaman would imitate the mountain goat, running around the house eating grass, drinking water or licking stones, making goat noises and movements. Georgii Prokof'ev (2003 [1930]: 369, 376) describes an animation *séance* for a drum and drumstick among the Nenets. These items must catch the soul of the animal whose skin was used to make them, otherwise they would not go anywhere. The drum must become the reindeer on which the shaman travels – a typical association in the areas where the reindeer is the main source of economic value – and the drumstick serves to pour the water of life and death on the forked piece of wood symbolizing this deer. Sometimes these items had spirits associated with them. For instance, the Teleut called the master of the drumstick, when they called the guardian spirits of their ancestors (Funk 2003 [1996]: 147–155). However, it is also important to recall exceptions to these symbolic beliefs. Some Khanty shamans treated drums and drumsticks as ordinary musical instruments, and did not have any rites associated with their manufacture (Kulemzin 2003 [1976]: 139–140).

The main use of the drumstick was to beat the drum to accompany songs and recitations (Kenin-Lopsan 2003 [1996]: 31), invoke spirit helpers, intimidate hostile spirits, or symbolize thunderstorms to ward off evil spirits among the shamans of the Lower Amur River and the peoples of the extreme Far East (Ivanov 2003 [1976]: 223–224). The drum was an essential tool for a spiritual journey, and for communication with the divinity. For instance, the Khanty believed that the words of the shaman only reached the deity if accompanied by a drum (Ivanov 2003 [1976]: 223–224). However, these artefacts also had other uses and roles. In many ethnographic accounts, the drumstick is thrown, or moved up and down, during the shamanic *séance* as an important part of the performance; for instance, to mimic paddling, if the shaman is using the drum as a boat, as an arrow, when the drum is used as a bow, or as a lash, when the drum is a mount that transports the shaman. The drumstick can also symbolize a cosmological horse; for instance, among the Manchu, where the drum was the carriage (Stary 2004: 583). Ethnographers also

describe how the drumstick could be used as a ritual healing tool – for touching patients – or a tool for foretelling events (Czaplicka 1914: 163; Shirokogoroff 1935; Dolgikh 1978; Anokhin 1994 [1924]: 135).⁶

In a lifetime, shamans usually discarded and changed their drums from three to seven times, and each new drum had an increase in the number of pendants (Anuchin 2003 [1914]: 51). Some ethnographic descriptions also tell us the fate of the drums, when they were no longer used, or the shamans died. For instance, when Ket shamans passed away, their successors usually inherited all of the metal items from the drums and drumsticks, but not the actual drum (Anuchin 2003 [1914]: 51). Among the Shor, the drum and drumstick were hung on a tree near the shaman's grave. The relatives would take the iron pendants and chains as relics, and when a new shaman arrived, he would take one of these relics for his drum, as they contained special powers (Funk 2003 [1995]: 181). Among the Teleut, Potapov (1949: 198–200) describes how the drum was played by a man on the shaman's grave, until he would break the membrane saying: “with six humps you, white drum, are hung on a white birch tree. Ribbons from your drumstick are spread over seventeen roads.” Then the people would hang and spread the metal pieces of the drum and the ribbons of the drumstick over a birch tree. It seems that the Teleut had to destroy the dead shaman's drum, because otherwise his spirit would beat it each night. However, among the Evenk, all shamanic paraphernalia was placed in the shaman's grave (Putugir 1930: 159).

Palaeolithic Perforated Batons – Evidence of Prehistoric Drumming?

Palaeolithic perforated batons are, in general, cervid antler artefacts of unknown use (Fig. 6), appearing in the Upper Palaeolithic contexts in Spain, France, Italy, Germany, the Czech Republic, Slovakia, and the Ukraine (Peltier 1992). Their area of distribution, however, reaches from Europe to Russia, as far as central and eastern Siberia (e.g., State Hermitage Museum). Despite their typological, technical, and artistic interest and the important number of finds, there is no definitive interpretation of the possible uses of these objects. Researchers have used ethnographic parallels, experimental archaeology, and use-wear studies to find possible solutions, but they have failed to provide an unquestioned explanation of their meaning.

6 See also Meletii 2003 [1894]: 104–105; Stefanovich 2003 [1897]: 36; Sukhovskoi 2003 [1901]: 149; Anuchin 2003 [1914]: 27–31; Vita-shevskii 2003 [1918]: 167, 180; Popov 2003 [1928]: 128–129; Kulemzin 2003 [1976]: 108–111; Vainshtein 2003 [1990]: 160; Bulatova 2003 [2000]: 246; Finch 2004: 95, 96.

Palaeolithic batons are made from different types of hard animal material, such as ivory, or most commonly antler, usually from reindeer, and present a branched main beam near the burr (Lompre 2003: Fig. 5). The chosen part of antler is identical to the oldest (11th–16th-century) Sámi beaters and the 17th-century beaters from northern Sámi areas (cf. Fig. 3a). The branched end of the artefact shows at least one perforation, usually at the intersection of the branches. However, some artefacts have several perforations, which can be located either at the intersection or in different parts, sometimes all over the object (Peltier 1992: 65). On the basis of the number of the perforations and the types of the branches, Aurelie Peltier (1992) classifies the objects in four categories: 1) multi-perforated batons with or without branches (Magdalenian) (Fig. 6d), 2) T-shaped batons with two horizontal divergent branches (Aurignacian and Solutrean) (Figs. 6a, 7), 3) batons with one or two oblique divergent branches (Magdalenian) (Fig. 6b), and 4) batons with short or no branches (Upper Palaeolithic in general) (Fig. 6c). The batons usually measure between 10 and 30 cm, but there is a great variability in their shapes and sizes, depending on the morphology of the original antler and the way the piece was cut. Many artefacts are decorated with carved lines, notches, and animal reliefs and sculptures. It is also important to note that many artefacts are broken, and that use-wear analysis shows important marks in some parts of the perforations.

Based on ethnographic parallels and experimental reconstructions, researchers have suggested uses such as shamanic staffs (the famous “bâtons de commandement”) (Girod 1900), tent pegs (Peyrony 1934), arrow straighteners (Leroi-Gourhan 1943), string making tools (Breuil 1954; Kilgore *et al.* 2014), sling shots (Glory 1964; 1965), or fire making tools (Manos/Boutié 1996). All of these hypotheses have been rejected in experimental approaches and use-wear comparisons (Rigaud 2001; Lompre 2003). Other hypotheses that have recognised the position of the use-wear inside the perforation have proposed alternative explanations, such as anchors for strings that are for lifting weights (Lompre 2003), or for blocking strings, for instance in portable tents (Rigaud 2001; 2004). However, the use-wear produced in the experiments, although in the same locations, shows, after a limited amount of time, very deep marks that are not like the ones on the archaeological materials. The excellent traceological approach of Aliette Lompre (2003: 12) determined the impossibility of identifying the material that produced the use-wear marks, as well as the cause of the rupture of the pieces – 75 percent of the batons she studied were broken. The 130 examples studied by

Lompre (2003: 4, 6, 18) show use-wear traces in the perforation corresponding with different types of marks, such as polish, pressure, shaking, lamination, and micro-striae, that are explained by the author as suggesting diverse uses, or the possibility of reutilization of the objects. She concludes that the marks of polish and micro-scratches in the perforation of some of the examples are testimony of the circulation of a solid but soft element (Lompre 2003: 12), and that the fractures must have resulted from considerable force.

Most of the proposed interpretations have been tested both experimentally and with use-wear studies, but the hypothesis of a possible musical use has not received further consideration. Reasons for this may be that the hypothesis was too old (Girod/Massénat 1900: 80), that Kirchner's proposal was in German (1952), or that the acknowledgment of the existence of a possible drumming practice in prehistory has been strongly linked with the search for prehistoric shamans in Eurasia (see Kirchner 1952; Jacobson 2001: 278–279). The controversial issue of the identification of prehistoric shamanic practices, linked to rock art interpretations (Clottes/Lewis-Williams 1996; Bahn 1997; 2010; De Beaune 1998; Lewis-Williams/Clottes 1998, Clottes/Lewis-Williams 2001: 151–219; Lorblanchet *et al.* 2006; Bahn 2010: 67–135), might have led the drumstick hypothesis to oblivion (e.g., De Beaune 1998: 205–206). However, drums and music are not a “monopoly of shamanism” (Francfort 2001: 247), and we have seen how, in certain areas in Siberia, drums were also used in different community singing and dancing celebrations.

Another reason for the inconspicuous nature of the drumstick hypothesis may be that drumming has not been considered to be a technological activity (De Beaune 1998: 205–206), or that it has not been believed to leave traces of wear, a belief which is contested by our first approaches to the ethnographic record, both for Sámi and Siberian drumsticks. Significant use-wear marks are visible not only on the part that was in contact with the membrane, but also in the holes used to tie the drumstick to the drum, or to attach rattles and strings to it. The perforations of the Palaeolithic batons could also have been used to attach rattles or strings. In the ethnographic drumsticks, the perforations in the handle often show polish and rounding due to contact with soft material such as ribbons or strings (cf. Fig. 4f). It is interesting to note that Lompre not only describes five types of use-wear marks, but also the association between them: polish and pressure, micro-striae and pressure, and polish and micro-striae (Lompre 2003: 28), and suggests the possible

reutilization of the objects. It could be possible that the polish or the micro-striae were made during the life of the objects, while the other marks, where rupture of the fibres are involved, were produced as the result of their intentional destruction. This could explain the important amount of broken artefacts. Moreover, according to Lompre (2003: 21), the majority of the objects were broken when the antler was still fresh, which means the artefacts had a short life span. Their ritual destruction may be a good explanation. This purposeful “killing” of ritual objects appears in different cultures, and is not uncommon in the case of musical instruments. As we have seen, for instance in some Siberian regions, part of the shamanic garment was destroyed at the end of the shaman’s life. The holes in the batons could also have been created to adjust a soft leather or fur component which would be in contact with the membrane, or even to make the artefacts easier to destroy. A new microscopic study of use-wear, replicas and experiments with drumming, ritual destruction, and suspended ribbons or pendants would be needed to verify or falsify the drumbeater hypothesis.

Mesolithic and Later Hammer-Like Staffs

Several artefacts potentially suitable for beating a drum can be found among the Mesolithic, Neolithic, and Early Metal Age finds from northern Europe. These artefacts can be reckoned among the so-called elk-headed antler staffs, a heterogeneous artefact group that has a very long period of use and an area of distribution from Scandinavia to the Ural mountains (Carpelan 1975; Strassburg 2000: 142–144, Fig. 21; Iršenas 2010; Kashina/Zhulnikov 2011). Each item in this group is unique. Some staffs have a realistically carved cervid head at their top, while others only show a stylized muzzle and roughly outlined ears or antlers in profile. In some cases zoomorphic elements are so schematic that the staffs can rather be characterized as T-shaped or simply curved. The height of the artefacts varies considerably, from 10 to 47 cm. The function or uses of these staffs are not well-known. Many artefacts have been found in graves, often placed near the hands or parallel to the arms of the deceased (Gurina 1956: 213–227, 304, 309, 381; Kashina/Zhulnikov 2011; Kolpakov *et al.* 2017). In contemporary rock art, identical elk-headed or curved staffs are depicted in the hands of human figures, who raise or wave them, or strike each other or the heads of the elks with them (Kashina/Zhulnikov 2011: Figs. 4–6). Judging from this evidence, the staffs have been interpreted as striking or hunting weapons, status or

clan emblems, or ritual or ceremonial staffs (O'Shea/Zvelebil 1984; Strassburg 2000: 142–144; Murashkin 2007: 215; Iršenas 2010; Kashina/Zhulnikov 2011), more or less similar to the horse-headed staffs of wood or iron that the Buryat and Darhat shamans used to ride into the spirit world (Diószegi 1963: 57–64, 76; Konovalov *et al.* 2006: 173, 178). Based on their T-shaped form, a few artefacts have also been regarded as potential drumbeaters, similar to those of the Sámi (Schmidt 1930: Tab. IV: 1; Mathiassen 1941; Gurina 1953: 378–379, Figs. 23–24; Larsson 1988: 147–148; Vang Petersen 1998: 96, Fig. 16; Wyatt 2010). However, systematic analyses from this perspective have not been carried out.

To perform a comparison between the Sámi beaters and these promising finds, we applied to museum collections for research permission. So far, we have scrutinized two of these finds. The artefact from Vedbaek, Maglemose, Denmark, curated at the National Museum of Denmark (A 38879) (Fig. 8a), is a stray find, but the find location is famous for its Mesolithic cemeteries and settlement sites (Mathiassen 1941; Brinch Petersen 2015). The artefact is dated to approximately 6200–4000 BC (Vang Petersen 1990: 19; Brinch Petersen 2015: 112, 160). It is made from European elk (*Alces alces*) antler, by cutting the antler close to the burr and by sawing or otherwise working the large palm into a T-shaped or hammer-like form (Vang Petersen 1990: 19–20, Fig. 2). The thick antler base forms the striking end of the hammer, while the worked palm forms the handle. The inner spongy bone, exposed on the rim of the handle by the sawing, is now weathered away, leaving a long and deep furrow on the rim (Fig. 9a). The arm, formed of the hardest part of antler close to the burr, has a solid, slightly bulging and hemispherical tip (Figs. 8b, 9a). The other arm is shorter and has a more straightforward tip. This asymmetry creates an association of an elk head, with a stylized muzzle on one arm and ears or antlers on the other (cf. Strassburg 2000: Fig. 21: C). The artefact could equally well be seen as a hammer or mallet, with one primary functional tip. Dents and breaks on the surface of this tip, though potentially of depositional origin, strengthen the latter impression (Fig. 8b). The surface of the artefact is richly decorated with engraved wavy lines, zigzags, triangles, rhombi, and stripes, in some places densely packed, in others more sparsely (Fig. 9a). The worked rim of the handle and the lower part of the shorter arm are decorated with rows of notches. As these notches are not synchronous on both sides of the furrow, the furrow appears to be partly man-made. Remains of polish, that is, small

shiny spots, can be detected all over the surface, especially on the elegantly carved ridges of the striking end and on the solid, hemispherical tip. This might indicate that these protruding parts were subjected to intensive abrasion pressure during use. On the other hand, occasional spots on non-protruding parts suggest that the whole surface, now largely missing, was originally polished on purpose. With respect to the assumed use as a drumbeater (Mathiassen 1941; Vang Petersen 1998: 96, Fig. 16), the measurements of the artefact provide important clues. The height of the artefact is 32 cm, the maximum breadth 18 cm, and the thickness of the arms 2.5–3 cm. This means the artefact is rather large and heavy compared to the Sámi beaters. Due to the weathered inner parts, determining the original weight of the artefact is not possible, but a type model crafted from a similar piece of elk antler weighs as much as 250 g. The type model can certainly be used to play a drum, but not conveniently or smoothly because of the weight. Beating or rolling the drum with both tips of the arms is impossible, but this, of course, is not the only conceivable technique. According to Manker (1938: 426, 428, Figs. 615–617), the Sámi sometimes just managed with one tip. Thus, it is not possible to explicitly verify or deny the beater hypothesis through the chosen traceological or experimental methods, and the question of use remains open. However, it is worth noticing that the Native Americans of the Northwest Coast used very similar massive staffs of cervid antler, so-called war clubs, as chiefs' status emblems (British Museum).

The artefact from Skateholm, Sweden, curated at the Trelleborg Museum (LUHM 31162) (Fig. 8c), was found in grave XXI made for a dog, together with a red deer (*Cervus elaphus*) antler, a flint knife, and other grave goods (Larsson 1984: 68–72, Figs. 11, 13; 1988: 148). The grave is dated to approximately 5400–4900 BC (Bäcklund Blank/Fahlander 2006). The artefact was made from red deer antler (Larsson 1984: 72; 1985: 4) by cutting the antler base into a T-shaped or hammer-like form. The main beam of the antler forms the striking end (Larsson 1984: 69), while one of the tines, almost in the raw, forms the handle. Thus, the chosen part of the antler is the same as in the oldest 11th–16th-century Sámi beaters, and the 17th-century beaters from northern Sámi areas. The spongy bone in the core of the beam and the tine has weathered away, making the artefact largely hollow (Fig. 9b). Similar to the Vedbaek artefact, the striking end is somewhat asymmetrical, with one arm longer than the other. Consequently, the artefact can be seen either as an elk-headed staff or a hammer or mallet with one functional tip - the choice is in the eye of the beholder

(cf. Strassburg 2000: Fig. 21D). The surface of the artefact is decorated with engraved stripes and crosswise lines, however much more sparsely than the Vedbaek artefact (Fig. 9b). The surface is mostly destroyed, and in many places spotted with glue, due to conservation work (Fig. 8d). Therefore, it is impossible to detect any use-wear. With respect to the size, the artefact is very similar to that of Vedbaek. The height of the staff is 30 cm, the maximum breadth 14.5 cm, and the maximum thickness of the arms 4 cm. Based on our experiments with the type model described above, the artefact is almost too clumsy to function as a drumbeater, but this option cannot be ruled out. Potential uses as a mallet for clubbing, knapping, or pounding also seem worth studying (cf. e.g., Mathiassen 1976 [1927]: 69, Pl. 28: 6).

The artefacts from Bolshoy Oleny Ostrov, northwest Russia, have not been scrutinized by us as of yet, but form a particularly interesting group. Altogether nine elk-headed or T-shaped staffs were found in graves dated to 3500 uncalibrated years BP, and situated within the area historically inhabited by the Sámi (Gurina 1953: 378–379, Figs. 22–24; Murashkin 2007: 213–217, Fig. 13; Kolpakov *et al.* 2017). The staffs are made from reindeer antler, and they obviously portray reindeer heads with slightly bulging, hammer-like muzzles and long notched antlers (Kashina/Zhulnikov 2011: Fig. 3: 3–4; Kolpakov *et al.* 2017). Two symmetrical T-shaped staffs lack zoomorphic elements, but have an arched and thin upper rim that could perhaps have worked as the edge of some type of fleshing, skinning, or flensing tool (Schmidt 1930: Tab. IV: 1; Gurina 1953: Figs. 23–24). In several artefacts the handle has a long and deep furrow, like in the Vedbaek artefact, probably caused by the decomposition or removal of the spongy core of the antler. Due to the raw material (reindeer antler), these artefacts are slender and very similar in size to the Sámi drumbeaters. The height of the staffs varies between 11 and 26 cm, and the maximum breadth is 11–16 cm. Generally speaking, this type of artefact would be ideal for beating a drum, or even rolling it in rapid succession with the tips of the arms. However, this is just a conjecture, as we have not been able to acquaint ourselves with all the details of these artefacts. More beater candidates worth studying are mainly to be found among the smallest specimens in the artefact group of the elk-headed staffs, for instance among the finds from Šventoji, Lithuania (4000–3000 BC) (Irsenas 2010: Fig. 1: 6). Also, numerous fragmentary finds, for the most part unexplored, could cast some new light on the history, interrelationship, meaning, and uses of these curious artefacts.

Final Considerations

Our search for traces of prehistoric drumming has led us to examine drumbeaters, the most durable material components of the drum, in several European museum collections. To begin with, we gathered information on traditional, presumably archaic beaters from northern Eurasia, to establish an idea of what the prehistoric beaters might have looked like in general. We learned that the ethnographic beaters are often made from cervid antler, using a piece taken from the hard antler base. The piece is carved into various forms, from straight sticks with slightly widened ends to clearly widening paddles or shovels, or T-shaped hammer-like artefacts. Many beaters have zoomorphic elements, such as carved animal heads on the handle or, less often, on the striking end. In addition, engraved grooves, slits, and holes, leather coatings or suspended animal bones, furs, ribbons, and rattling pendants were used to decorate these artefacts. Their size varies between 8 and 40 cm. Our most important finding is that the striking end often shows clear signs of wear: smooth and polished surfaces, abraded ornaments, rounded edges, and facets that appear to change the original form of the striking end. As these signs appear on protruding parts or tips that most probably impacted the drumskin, they must be traces of drumming, results from regular and intensive strikes against the membrane. In addition, the hole that accommodates the ribbons, furs, or pendants often shows polish and rounding caused by the movements of these fittings.

Next, in order to identify prehistoric drumbeaters in the archaeological record, we started to apply these diagnostic criteria to the promising finds and find groups recognized earlier as having potential for drumbeating. The Mesolithic finds from Vedbaek and Skateholm were scrutinized in their collections, while other T-shaped or elk-headed staffs and Palaeolithic batons were surveyed through the literature. According to our survey, these candidates, in general, meet the criteria rather well. The studied staffs and batons with unknown functions are made from cervid antler, using similar parts from the antler base,⁷ and are carved into a widening paddle-, shovel-, T- or zoomorphic form. They are decorated with engraved designs, slits, notches, and holes that might have served as suspension holes for pendants or other accessories. In addition, the size of the artefacts also roughly match. However, when testing the type model of the Vedbaek find in practice,

7 Similar type of pieces from the antler base have also been used for making Mesolithic antler axes and other “shaft weapons” with hafting holes (Vang Petersen 1998: 100, Figs. 10–13). Thus, the part of antler is by no means exclusive to elk-headed or hammer-like staffs.

it became evident that both of the Mesolithic finds from Scandinavia are more massive and heavier than the studied ethnographic beaters. Therefore, they are somewhat clumsy for drumbeating, at least by the standards set by the Sámi tradition. On the other hand, a few ethnographic accounts relate that, in Siberia, whole cervid leg bones could be used for striking the membrane. In any case, the state of preservation of the surfaces did not allow us to observe remarkable use-wear on the Mesolithic artefacts, let alone the characteristic wear pattern associated with drumming. Thus, despite the similarities between the ethnographic beaters and archaeological staffs, we have not yet made any definite identification of a prehistoric drummer. However, the survey has provided us with a set of useful criteria and a clear idea of what type of artefact to search for. The documented use-wear could also be of help in identifying potential straight drumsticks made of antler but not showing the typical branched form.

Abbreviations of Museum Collections

- British Museum, London. Electronic source: http://www.britishmuseum.org/research/collection_online/search.aspx
- Kainuun Museo, Kajaani.
- Lund University Historical Museum, Lund (LUHM).
- Museum Centre of Turku, Turku (TMM).
- Museum of Cultural History, University of Oslo, Oslo (KHM).
- National Museum of Finland, Archaeological Collections, Helsinki (KM).
- National Museum of Finland, Ethnographic & Finno-Ugrian Collections, Helsinki (KM-SU).
- National Museum of Denmark, Archaeological & Ethnographic Collections, Copenhagen (A).
- Nordic Museum, Stockholm (NM).
- Northern Ostrobothnia Museum, Oulu (PPM).
- Norwegian University of Science and Technology University Museum, Trondheim (VM).
Electronic source: <http://www.unimus.no/>

- Peter the Great Museum of Anthropology and Ethnography, Department of Siberia, Saint Petersburg (MAE).
- Russian Museum of Ethnography, Saint Petersburg (RME).
- State Hermitage Museum, Saint Petersburg.
- Swedish History Museum, Stockholm (SHM). Electronic source: <http://mis.historiska.se>
- Trelleborg Museum, Trelleborg.
- Tromsø University Museum, Tromsø (TM). Electronic source: <http://www.unimus.no/>

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