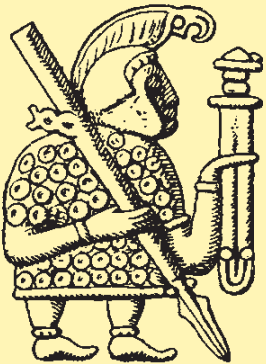


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Medieval communal reindeer drives on Hardangervidda, South Norway: reply to Otto Blehr

In his two debating articles in *Fornvännen* (2012 and 2019), Otto Blehr discusses, and strongly criticizes, my work on medieval reindeer hunting on the Hardangervidda. As his allegations are essentially the same in both contributions, I choose to respond to both simultaneously, and to discuss his main arguments here.

In cooperation with colleagues from within and outside the field of archaeology, I have researched the large scale, but seemingly brief mass hunting of reindeer in the northern part of the mountain plateau Hardangervidda in Norway in medieval times (Indrelid 2010; 2013; 2014; 2015; Indrelid & Hufthammer 2011, Indrelid et al. 2007; 2015). The background for this is partly provided by a local legend concerning a hunting technique making use of leading fences and floating lines on water guiding animals into lakes to be killed, and partly by material from archaeological excavations of nearby stone hut ruins and bone middens.

Sumtangen, a strip of land on the southern shore of Lake Finnsbergvatn (1190 m a.s.l.), is one of the most important locations for the legend as well as for cultural remains connected to the legends. Two stone hut ruins, named Austbu and Vestbu, lie near the narrow sound where the hunt is said to have taken place. They are surrounded by large bone middens, consisting almost entirely of reindeer bones and antler fragments.

As a part of an interdisciplinary project led by the osteologist, professor Anne Karin Hufthammer and me, small parts of the waste middens at Sumtangen were excavated in the years 2004–2005, and a further two comparable archaeological sites ca. 15 km further south on the shore of Lake Store Krækkja in 2006–2008. In 2006, assisted by marine archaeologists, we collected bone material from a fourth, now inundated, hunting station in Lake Ørteren, 4 km northeast of Store Krækkja.

In addition to having discovered leading fences and trapping pits in the landscape, Otto Blehr

excavated at Sumtangen and Store Krækkja in the first half of the 1970's. Before this, starting as early as 1840, several other researchers excavated house foundations and middens (Indrelid 2014).

Professor Hufthammer and Dr. Liselotte Takken-Beijersbergen analysed the faunal material from the excavations 2004–2008 osteologically and statistically. DNA-analyses were done by the geneticist, professor Knut Røed, and the archaeologist Dr. Jostein Bergstøl has registered cairns and postholes that may have been connected to the hunt.

Blehr's criticism concentrates mainly on the following issues:

- a) The traditional legend and my use of it.
- b) The remains of cairns and other leading contraptions in the terrain.
- c) When did the communal drives at Sumtangen take place, and how long did they last?
- d) How extensive was the hunt?
- e) Who organised the communal reindeer drives?

a) *The legends*

The legends describing reindeer hunting connected to four lakes on the Hardangervidda mountain plateau, Finnsbergvatn, Store Krækkja, Ørteren and Nordmannslågen, are fragmentary and partly self-contradictory. However, they contain some common elements such as catching reindeer flocks in water, rows of cairns that lead the animals towards the lakes, and the use of ropes attached to the cairns or stretched over water. All four hunting stations feature large stone hut ruins surrounded by middens consisting of reindeer bones. As far as I know, there are no other middens of comparable size in the northern or central part of the Hardangervidda.

The manuscript collection of the University library in Bergen contains several notes by the regional official, stiftamtman W.F.K. Christie, concerning cultural heritage sites connected to the reindeer hunt on Hardangervidda (Christie

ms. 222 nr. XIII, XIV and XV). These state that he learned of house foundations and bone middens on Hardangervidda in 1838. The collection further contains report of a journey undertaken in 1840 by W. Koren, who, on Christie's request, visited and examined these and other sites on Hardangervidda. Koren's report was reprinted and transcribed *in extenso* by Øivind Bakke (Bakke 1985).

Koren's report describes the hunting drives on Hardangervidda for the first time, although not from Lake Finnsbergvatn, but from Nordmannslågen, a lake situated ca. 30 km further south. He states that reindeer were caught using ropes stretched over the water, whilst they were trying to swim across the lake from the opposite shore. In a letter to Christie, dated 20 November 1840, he explains that this legend also concerns the bone middens in what he refers to as Findsedalen (at Finnsbergvatn). In a note (Ms. 222 nr. XIII), probably written in the autumn of the same year, Christie mentions the same fragment of the legend and adds: "Der siges at dyrene ere fangede paa vandet med liner af beboerne" (It is said that the animals are caught with ropes in the water by the inhabitants, my translation). This concerns the house foundations and bone middens at Sumtangen. Thus, it is not correct when Blehr in his summary of the 2019 article claims that Christie did not mention any legend concerning Sumtangen.

The antiquarian Nicolay Nicolaysen, who visited Sumtangen in 1860 (Nicolaysen 1861), was told that ropes were stretched between two promontories in Lake Finnsbergvatn (the southern of these being Sumtangen), trapping swimming animals in this way.

In 1884 Th. S. Haukenes published a more comprehensive legend linking the drives to trapping pits near Gravskar, 2.5 km west of Sumtangen. Rows of cairns, connected by ropes with rattling bells on them, would lead the reindeer towards the trapping pits and the lake. Some were caught in the pits; others trying to escape through the lake were killed by hunters in boats. This obviously is a combination of fragments of two legends, one from Gravskar and another from Sumtangen (Bakke 1985, p. 100).

In 1890 and 1891 Bendixen, a school director, visited Hardangervidda on a mission from Ber-

gen's Museum. His account of the legend about Sumtangen is consistent with Nicolaysen's version (Bendixen 1892, p. 27).

There are two hunting stations with remains of stone huts and middens on the southern shore of Lake Store Krækkja (Nordre Boplass and Søndre Boplass), whilst the remains of two large stone hut ruins and a bone midden are situated at Lake Ørteren. The latter was dammed and inundated in the 1960's. These three stations are connected to a legend concerning a complex of hunting structures near the narrow isthmus Svoi, which divides Store Krækkja from Ørteren. Bendixen was told the legend while visiting Krækkja in 1890. Ropes were supposedly set up at Svoi, reaching into the lake where they formed a curve. "Når rensdyrene så ikke kunne komme frem over eidet og satte på svøm, stødte de overalt paa linerne og blev overfaldne med spyd og pile" (When the reindeer could not cross the isthmus and took to the water, they would meet the ropes everywhere and were ambushed by spears and arrows, my translation) (Bendixen 1892, p. 35).

Around twenty years later, Yngvar Nielsen, a professor in geography, refers to the same legend, adding that old cairns can be found at Svoi, to which, according to the legend, ropes were fastened that continued into Lake Krækkja by which the reindeer would get trapped and were killed (Nielsen 1909, p. 593).

Fragments of legends that survived the 600 to 700 years since the hunt took place should hardly be taken literally. After being retold by 15 to 20 generations, not much can be left of the eyewitness accounts describing the original events. Therefore, I am not as concerned by the details in the individual fragments as Blehr seems to be. I see a connection between the hunts at all four stations that, according to their ¹⁴C-dates, were in simultaneous use. The individual elements in the fragmentary legends can at best provide some suggestions of how the hunt may have happened.

b) The remains of cairns and other leading contraptions in the terrain

In the 1970's, Blehr described six cairns on the north side of Finnsbergvatn, claiming these had nothing to do with Sumtangen, because they lie further to the west where the lake is widest. He

may be right there, but he is mistaken when he thinks that these cairns are included in the rows of cairns and post holes I mentioned in 2010 (p. 32), and by which he expresses his dissatisfaction in his 2019 article. Dr. Bergstøl, a participant in our project, proved the existence of several rows of cairns and postholes north of Lake Finnsbergvatn, opposite Sumtangen, in 2008–2010 (Bergstøl 2000, fig. 3, p. 102): “At the top of the eastern row, there are several post holes that show that it [the row] must have been reinforced at this spot. The western row follows the ridge that ends just above Sumtangen. The eastern row prevents the animals from moving to the eastern side of Lake Finnsbergvatn. It is difficult to determine whether the animals entered the lake voluntarily or whether they were driven into it.” (Bergstøl 2000, pp. 106–107, my translation). In an e-mail to me, dated 15.11.2019, Dr. Bergstøl describes these more accurately as being small cairns and several dozens of postholes. These contraptions can hardly have had another purpose than to lead animals towards the shore, barely 200 m from Sumtangen on the opposite side of the lake.

Blehr seems to accept that some form or other of “communal reindeer drive” occurred at Sumtangen. Somehow, he has conceived the idea that the hunt targeted bulls exclusively. In his 2012 article, he accounts for an analysis of antler remains he recovered from the Sumtangen midden in 1972. He cites the zoologist Odd Kjos-Hanssen who states that “Both sexes and all age groups were represented in the material, but with a slight overweight for bull antlers” (Kjos-Hanssen 1973, p. 77–78), but is like Kjos-Hanssen surprised by this result: “Since such a male dominance is hardly likely in an area used by fostering flocks, where there would have been an excess of females and calves, this indicates that the area was mainly visited by bulls.” He concludes: “Thus, in most cases it would have been bulls migrating south in the fall that were driven into the water.” (Blehr 2012, p. 119).

Referring to his own observations of reindeer over a period of four years in the Sumtangen area, he informs that the largest flock he ever encountered were roughly twenty bulls. These data are of importance, he says, “since they indicate that most of the flocks migrating south at

the onset of the rutting season have consisted of only a few animals” (Blehr 2012, p. 119). According to Dr. Terje Skogland, one of the most distinguished biologists in international reindeer science, about 500 bulls and a herd of several hundreds of cows were counted within Hardangervidda North (including the Finnsbergvatn area) in 1985. He does not give the impression that finding bull herds and fostering flocks in this area is unusual. This is in accordance with the contents of the bone middens at Sumtangen that indicate that bulls, cows, and calves were targeted in the hunts. It does not necessarily mean that these were part of the same group. I believe that, during late summer and autumn, the hunters stayed at Sumtangen so long as there was any chance of capturing flocks of profitable size. Sometimes these would consist of bulls; sometimes these would be fostering flocks.

At Sumtangen, there is also a midden from the Older Iron Age, ca. AD 200–400. According to professor Knut Røed, the geneticist who performed DNA-analyses on the bones from the Older Iron Age, medieval period, and the present-day Hardangervidda reindeer population, the genetic variation was stable until the Middle Ages, but “there has been a substantial change from the Middle Ages until the present” (Indrelid et al. 2007, pp 151–152). “The Hardangervidda reindeer population has gone through rather dramatic genetic deteriorations, especially during the last two centuries, when reindeer husbandry was practised in this mountain region” (Røed et al. 2011). Furthermore, it is known that reindeer migration routes are highly influenced by human infrastructure and disturbance. On Hardangervidda, reindeer migration patterns are known to have changed a.o. after the establishment of the railroad between Oslo and Bergen (Skogland & Jordhøy 1988). Therefore, drawing definite conclusions on reindeer migration routes in medieval times based on observations of presentsday reindeer can only be speculation.

c) When did the communal drives at Sumtangen take place, and how long did they last?

In our 2011 paper we presented the 15 radiocarbon dates of bone for the medieval middens at Sumtangen we so far had received (specified in

Blehr 2012, fig. 1). The mean date interval at a 68 per cent confidence level showed the period AD 1240–1290 (Indrelid & Hufthammer 2011, p. 48). Since then, three new bone samples from the stratigraphically oldest bone layers have been dated (Takken-Beijersbergen 2017, p. 343 and tab. 2).

Based on the median probability values, 12 of the 18 radiocarbon dates lie between AD 1215 and AD 1300, with an average of AD 1257. Five lie between AD 1096 and AD 1193, with an average of AD 1155, and one AD 1348. The dates indicate a main hunting period restricted to the 13th century, but with a preceding phase in the early or middle part of the 12th century. It is unclear whether these older dates are related to the mass hunt. Six dates from three smaller middens at Lake Krækkja, not connected with stone hut remains, have been dated to the period AD 1096–1185. These sites contain the remains of but a few bulls and are most probably unrelated to the mass hunts.

Based on three radiocarbon dates from his own excavation in 1973, Blehr concluded that “the hunt had been carried out regularly through the Early Middle Ages only to end abruptly with the Black Death 1349–50” (Blehr 2012, p. 116). On the following page, he presents the 15 radiocarbon dates from our excavations, and admits that “Judging from them, it is likely that the communal drives at Sumtangen ended already in the early 14th century, that is, before the Black Death hit the area.” Despite this, Blehr chooses to trust his own three dates from 1973 more (740 ± 80 , 600 ± 100 and 700 ± 100 BP) and say that these, “when calibrated, are consistent with an end date of about 1350, though with so few dates and such low precision it could have been a century later too” (Blehr 2012, p. 121). Blehr’s opinions on the excellence of his own ideas are at times astounding.

d) How extensive was the hunt?

In his 2019 article Blehr criticizes our use of the terms “herds”, describing the reindeer groups that were caught at Lake Finnsbergvatn, and “mass killing”, describing the hunting method (Indrelid & Hufthammer 2011). He allows his pondering on these words to become an argument to

reject the idea that large numbers of reindeer were caught at Sumtangen. He claims that “herd” is a concept used to describe “a larger unit within a population, sometimes for post-calving aggregations of 1000–5000 animals” and refers to Parker (1972). Parker’s article concerns barren-ground caribou in north-central Canada. I have no knowledge of Canadian caribou group size, but both Blehr and I know that reindeer flocks on Hardangervidda in our times can vary between a few dozen or fewer individuals to several hundreds, occasionally even more than 1000 animals. Because the estimates professor Huft-hammer and I provide for the average yearly catch are considerably lower than 1000–5000, Blehr concludes audaciously: “Thus, it goes without saying that no «mass killing of entire herds» can ever have taken place at Sumtangen.” (Blehr 2019, p. 243).

We have no objections to replace “herds” by “flocks” or other terms that Blehr would find more appropriate. Our point is that large groups of animals were driven into the water, dragged onshore and butchered by the huntsmen. The remains of these, by our tentative estimations, 5500–7800 animals, are left behind in the bone midden at Sumtangen. In my opinion, this justifies using the term “mass killing”. Concerning the extent of the hunt, Blehr refers to Dr. Takken-Beijersbergen who according to him reaches completely different conclusions. Different statistical methods may be used to estimate the number of individuals. We used MNI (minimum number of individuals) (White 1953) and MLNI (most likely number of individuals) as described by Adams & Koningsberg (2004).

Our material was based on the bone material from one square meter, 0.5 m³ of sediment and bones excavated from the midden on the south side of the Austbu ruin, in total 22.749 bones and bone fragments (Indrelid & Hufthammer 2011, tab. 2). The whole midden outside Austbu and Vestbu is estimated to 50 m³ (Indrelid et al. 2007, p. 137).

The MNI method, based on 55 right carpale 4+5, gave the result of 5500 individuals. The MLNI estimate derived from the calcaneum gave 5800, from the astragalus 7800, and the centro-tarsale 7700 individuals. Dr. Takken-Beijersber-

gen reaches a lower estimate. She concludes that the middens contain the remains of a minimum of 2851 animals based on an MNI of 77. This is considerably less than the MNI of 5500 and indicates that the bones were not distributed evenly in the middens. However, one has to assume that more animals than calculated were represented at the site, because of the very nature of the MNI, and the likely size reduction of the middens due to taphonomic processes, including later human disturbances and the earlier excavations. Both the archaeological evidence and the demographic composition of the taphocoenoses strongly indicate a hunting strategy that was aimed at killing as many animals as possible (Takken-Beijersbergen 2017, p. 353).

Blehr makes a point of the fact that Dr. Takken-Beijersbergen's results show lower numbers than ours and takes this as an evidence that no mass hunt can ever have taken place (2019 p. 243). It should be self-evident that no statistical method ever can give exact numbers of the real catch. Our objective was to find out whether the total catch was large – several thousand, or less extensive. The results demonstrate beyond a reasonable doubt that we are not talking of a few hundred individuals but several thousands.

In his comments (2019, pp. 242–243), he obviously regards our average numbers as absolute. As an example, we calculated the annual catch over a 50 years period to be 110 individuals using 5500 animals as a total number (Indrelid & Hufthammer 2011). This is of course a hypothetical example. Some years the number would be considerably higher, some years lower. When the catch for several years was lower than what was profitable, the communal hunt would be abandoned, which according to our dates happened several decades before the Black Death 1349–1350.

e) *Who organised the communal reindeer drives?*

In his 2019 contribution, Blehr states that “There is no evidence that townspeople and not the hunters themselves organized the communal drives in medieval times.” (Blehr 2019:245). In this case, Blehr and I have interpreted the data differently. I cannot see that he expresses a clear theory of who organised the communal hunt, except

that it was not by townspeople. In his 2012 article however, he presents a “tentative hypothesis”, saying that he can see a connection between the communal reindeer drives at Sumtangen and the iron production in Sysendalen, especially at the farm Fet: “The production of iron, and the charcoal this process demanded, would have employed many people, and thus made the meat from reindeer killed at Sumtangen a necessary supplement to the food produced at Fet.” (Blehr 2012, p. 120). An observation made by Nicolaysen (1861, p. 18), that some of the charcoal kilns were not emptied, made him propose that something had happened to their owners, and suggests that it had to do with the Black Death. Blehr finds this to be “a reasonable assumption” and goes on speculating: “If the plague killed the men burning charcoal, it would also have killed enough of those engaged in iron production as well as those hunting at Sumtangen.” Referring to his own three radiocarbon dates from 1973, he concludes: “Thus, it seems certain that the communal reindeer drives at Sumtangen did come to an abrupt end when the plague hit the area in 1349” (Blehr 2012, p. 121).

In my opinion, there are three facts that indicate that the hunt was organised by others than local huntsmen: 1) Laws, and finds from the middens; 2) Runic inscriptions and rare artifacts; 3) The way the animals were butchered.

I have, in several publications, discussed legal texts concerning the ownership of swimming animals that are killed (Indrelid 2010; 2014; 2015). Both *the Gulating Law Codex*, one of the four regional laws in Norway in the Early Middle Ages, and the first national law (*Landsloven 1274*) contain rules about this. The Gulating Law region covered a large part of South Norway, including the districts of Hardanger to the west, and Hallingdal to the east of Hardangervidda. Part V, article 24, describes a particular situation when a swimming animal is killed. If the one who kills the animal is someone else than the person who “owns” it, the upper foreleg (*bóg*) belongs to the one who killed it. In the law text, this is referred to as *skot-bóg*.

As mentioned below, precisely upper forelegs are heavily underrepresented at Sumtangen. I consider it likely that the upper foreleg was the

hunters' payment, whilst the rest of the carcass fell to the "owners". The "owner" of the animal in this case should be interpreted as the one who organised the hunt or was considered the owner of the game in the area. The king considered himself the owner of all the land that fell outside the area of the established farms, but the local people had some hunting and fishing rights in such areas. Reindeer hunting to such an extent would hardly have been accepted by the king. Therefore, I consider it highly unlikely that local hunters organised the communal reindeer hunts on Hardangervidda in medieval times.

I have posed this question to Dr. Jørn Øyre- hagen Sunde, professor in legal history and specialised in medieval sources. He agrees with my arguments. On the Landsloven that succeeded the Gulating Law, he says a.o.: "Combining all the rules in the Landsloven from 1274, there can be no doubt that the king prevailed over all activity in commons ("allmenninger") that exceeded established use." The extensive, but relatively brief communal reindeer hunt he interprets as "an example of use of such a character and where the timing of its origin that the king must approve it. The person to grant permission for such a hunt would have been the "sysselman", the king's highest regional official" (my translation) (Øyre- hagen Sunde, e-mail to me 24.11.2019).

In his 2019 contribution, Blehr mentions four reindeer bones with runic inscriptions found in the middens at Sumtangen. I consider it more likely that these runes were carved by other people than the reindeer hunters in Hallingdal and Hardanger. Blehr refers to the *Samnordisk runtextdatabas* and states it as a fact that "medieval runes were in common use at least to ca. 1400 for simple messages inscribed on wood and bone". That runes were used regularly in certain circles in the towns, is commonly accepted. Carvings from a.o. churches in the countryside prove that even some villagers must have been familiar with the runic alphabet. However, we know little about how common this knowledge was.

Professor Henrik Williams at the Department of Scandinavian Languages of Uppsala University kindly sent me an overview over all medieval runic inscriptions from Norwegian rural contexts in the *Samnordisk runtextdatabas*. Fifteen

inscriptions are known from Hallingdal, 11 of those are from Torpo church and four from the church in Ål. There are five inscriptions from Hardanger: one from Odda, one from Kvam and three from Ullensvang. Based on this, it is doubtful that literacy was widely spread amongst the rural population in Hallingdal and Hardanger in the Middle Ages.

There is, however, more than just the runic inscriptions alone that make me doubt that it were local reindeer hunters that organised the communal hunt on Hardangervidda. Some other finds also seem strange amongst reindeer hunters in the field. A chess piece was found in one of the middens at Sumtangen, two dices for game at Krækkja North, and at Krækkja South a fragment of a long bone featuring small, carved circles identical to those that were used to decorate medieval combs. This is an ordinary bone fragment on which somebody played around with a pair of compasses. In my view, these artifacts do not fit in with the equipment of a reindeer hunter, but they may well have belonged to merchants or craftsmen present during the hunt to attend to their business- and crafting interests.

Blehr omits mentioning one of the most important arguments I have put forward against a locally organised hunt: the way the animals were butchered. All skeletal elements are present in the 13th century middens at Sumtangen, except the main part of the antlers, ribs and upper foreleg bones. Marrow-containing bones are heavily fragmented. The meat was cut from the bones during the butchering process, and almost all bones were left as waste at the site. This is completely different from the butchering pattern known from the local communities around Hardangervidda in historical time, where the head and distal parts of the feet were chopped off, whilst the remainder of the carcass would be transported in one piece or divided into shoulders, legs, loin and ribs. Why did those who undertook the mass-hunts at Sumtangen and Store Krækkja treat the carcasses differently?

Bearing in mind the large amounts of meat to be carried away after a successful mass-hunt, it was necessary, even with horse transportation, to keep the weight at a minimum. If the destination for the products was far away, it would have been

worth the bother of cutting off the meat and leaving most of the bones behind, that only presented unnecessary weight and ballast. All marrow-containing bones were shattered, either to consume the nutritious marrow on site or to transport it with the meat. If the destination was close-by, like e.g. to Fet in Sysendalen, like Blehr suggested, it seems absurd that the hunters would debone the animals first, harvest the marrow and then undertake the 25 km long trip home to Fet.

The antlers were taken away from site as well. The middens contain almost exclusively smaller tines and skulls where the antlers have been removed. Reindeer antlers were an important commodity in medieval times. They were used for a.o. the production of hair combs and other personal accessories. Combs made of reindeer antler are found in medieval archaeological contexts spanning from Northern Norway to Schleswig and from Lund to Orkney and the Faroe islands (Røed & Hansen 2015, pp. 69–70). The remains of a comb maker's workshop were found in the medieval layers at Bryggen in Bergen, featuring debris of reindeer antler off cuts (Herteig 1969, p. 186).

The way the animals were butchered is the most convincing argument for that not local huntsmen were responsible for hunt, and that the resulting products were not intended for the local villages, but more likely for the towns, in this case most likely Bergen.

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Otto Blehr and I have known each other for 50 years, from the early 1970's when we both were researchers in the *Hardangerviddaprojektet for Tverrvitenskapelig Kulturforskning* (HTK), he as an ethnologist, I as an archaeologist. We were often of different opinions and disagreed on scientific questions, the way it should be amongst dedicated researchers. However, in his last two debating articles in *Fornvannen* 2012 and 2019, his scientific arguments are at times overshadowed by an attitude that has little to do with serious research. As shown above, many of his verbal assaults against me are based on false claims, weak arguments, and he finds my articles “far too rich in unsubstantiated statements” (Blehr 2019, p. 245).

I find it lamentable and sad that Blehr lets his scientific legacy be overshadowed by this type of one-sided negative narrative of the works of a former colleague and friend. I agree wholeheartedly with him that “As researchers we have a responsibility to present a picture as solidly underpinned as possible, based on our limited data” (Blehr 2019, p. 245) and leave it to the reader to judge who provides “unsubstantiated statements”.

This discussion is closed as far as I am concerned.

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