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The function of the Stállo foundations in the Scandinavian mountain ridge reconsidered

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Abstract

The interpretation of the Stállo foundations in the Scandinavian mountain ridge has been debated since the beginning of the last century. Today most researchers are of the opinion that these settlements are prehistoric Saami settlements. According to new studies they were built and primarily used in the time interval between AD 640 and AD 1180. The recent debate has been whether they represent a society of reindeer hunters or groups of reindeer herders. The seasonality has also been discussed. Where they just occupied during the snow-free season or even in winter? By applying palaeoecological studies, new information of the land use in the period of the Stállo settlements is put forward. These studies indicate minimal human impact on the vegetation. The historical milking grounds on the same sites are a later phenomenon. Stállo foundations can be interpreted as short time occupation related to the trade between Saami and northern Norwegian chieftains.

Keywords: Saami, Stállo, trade, Norse chieftains

6.1 Introduction

For over 100 years the so-called 'Stállo' sites in the Scandinavian mountain ridge have been debated vividly. They are large, oval, or almost rectangular foundations with a hearth in the middle. Around is a marked earthwork and the floor is a bit below the surrounding surface of the ground. As a rule they are often larger than remains of more recent Saami turf huts with usual size of 5–6 m in diameter. The most common is that they occur two to three together, and in some areas there may be several groups close to each other. In older research they were set in connection with the Vikings trade voyages. The fairy-tale character 'Stállo' was perceived as a mythical memory of these Vikings. These settlements were therefore named 'Stállo foundations' (Drake 1918: 315–319). However, already Torkel Tomasson and Ernst Manker pointed out that these sites, after all, had a great resemblance to the remains of Saami huts (Manker 1960; Tomasson 1988 [1917]). Some researchers have persistently maintained the interpretation of these sites as remnants of Nordic peat huts. Olof Holm has however expertly and convincingly responded to their arguments (Holm 2016).

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The aim with this study is to discuss the land use in connection with the Stállo settlements. In earlier research the discussion has been whether the Stállo sites are related to reindeer hunting or reindeer herding. The osteological material from the sites is very poor and gives no strong support for that slaughtering of reindeer, either wild or domestic, was of importance.

Inga-Maria Mulk´s archaeological excavations of Stállo sites in the Jokkmokk Mountains in the 1980´s became crucial to the interpretation (Mulk 1994). Mulk was able to show in detail how the space in the foundations was planned. The remains showed clear similarities with the spatial division of Saami huts. Finds of warlike Vikings did not exist. However, the construction details of the buildings were not entirely clarified through these investigations. Later, Lars Liedgren and Ingela Bergman have proposed how the buildings can be constructed from birch logs and birch bark. Today these sites are usually on the bare mountain, but we know that the tree line was higher up when they were in use. There was no shortage of building materials. There were enough wood and birch bark to build a stable construction. Their proposal therefore has some credibility (Liedgren and Bergman 2009).

6.2 Reindeer hunters or herders?

Mulk put the Stállo sites in connection with Saami wild reindeer hunting in the mountains. It would have been the entire Saami village community that went up to the mountains for hunting wild reindeer (Mulk 1984: 262). Their winter village would have been down in the forests. When the Saami later became nomadic reindeer herders, the settlement pattern was changed. The hearth of the nomad tents now becomes the settlement type that replaces the Stállo sites in the mountains. Mulk´s interpretation had to endure a great deal of criticism. Inger Storli put the Stállo sites in connection with early reindeer herding and pointed to similarities with younger Saami summer campsites. The Stállo sites usually occur in groups and this was the result of repeated settlement (Storli 1993). On the other hand, Mulk has been supported by Ingrid Sommerseth who also interpreted the sites as reindeer hunters' settlements. Sommerseth admits, however, that it is a troublesome circumstance that there are no finds of hunting equipment and so little bone waste. It would rather speak in favour of those who interpreted the sites as remains of reindeer herders' summer camps (Sommerseth 2009: 256–257). Often there are remains of younger settlements with hearths and historical milking grounds at the same sites. Liedgren and Bergman (2009) have pointed to the fact that the Stállo sites where situated in a forest with birch. According to my opinion these sites where probably not suitable as summer camps for reindeer herders, because during summer, mountain reindeer prefer the bare mountains with less insects.

6.3 Saami winter villages?

That the Saami original social organisation should have been village communities like the historically known villages among the Skolt Saami has been an axiom in Saami research, a matter of obviousness that does not even need to be discussed. During the winter the village community stayed together in a common winter village. During the summer the population could be more dispersed. Almost all, archaeologists, historians, and anthropologists have believed in this theory put forward by Väinö Tanner (Tanner 1929). Over the years, some critical voices have been found such as ethnographer Kerstin Eidlitz Kuoljok. According to Eidlitz Kuoljok, there are no known ethnographic examples that northern peoples stayed together in common winter villages. Because of scarce resources the popula-

tion spread out during the winter. Eidlitz Kuoljok put forward the idea, that the winter villages among the Skolt Saami were the result of the introduction of the Russian village organization among them in late historical time. It is not a question of an original Saami village organisation (Eidlitz Kuoljok 2011). Thomas Wallerström has recently discussed how the idea of Saami winter villages could have been so influential, despite the fact that remains of such winter villages never have been found in the Western Saami area (Wallerström 2017 and this volume). Archaeologist Nina Karlsson investigated sites with rows of hearths presumed to represent winter villages. If a larger group of people have lived together in a common winter village it should give clear chemical imprint through all the wastes. In Karlsson´s soil chemical investigations there were no signs that clearly could be related to common winter villages. If so, the soil chemical signals would have been stronger (N. Karlsson 2006: 164).

In contrast to earlier researchers like Storli (1993), Mulk (1994), and Sommerseth (2009), Ingela Bergman, Lars Liedgren, Lars Östlund, and Olle Zackrisson propose that the Stállo sites also were occupied during the winter. It was a kind of common winter village (Bergman et al. 2008). The fact that they were situated in forest when they were in use would have made it quite possible to live there even in the winter. Liedgren and Östlund also performed experiments to investigate how much firewood could be spent during the winter (Liedgren and Östlund 2011). In the area investigated archaeologically, Adamvallda, 31 Stállo foundations are situated. 100–150 people may have stayed there at the same time. One conclusion was that the settlements of a large group of people depleted wood resources. The birch trees became sparse to eventually disappear completely (Östlund et al. 2015). When the climate became colder there were no possibilities for the forest to regenerate. Therefore Stállo sites today are found on bare mountain heaths. According to Bergman and her colleagues, the people of the Stállo sites practised an early form of reindeer herding (Bergman et al. 2008). An important question is how a rather large group of people have been able to support themselves during the winter without a large slaughter of domesticated or wild reindeer? The traces of this are missing.

6.4 Palaeoecological investigations in Suollagavallda

When Mulk started to investigate Stállo foundations in the Jokkmokk mountains the largest known concentration of Stállo foundations was in an area called Suollagavallda (Mulk 1994: 68–79). The area is today bare mountain (Figure 6.1). A total of ten localities with 30 foundations are situated in this area (Figure 6.2). There are also a number of pits that have been interpreted as pits for food preparation and storage. There are also some hearths and a few pit traps in the area. There are many radiocarbon dates from the sites. The Stállo foundations are radiocarbon dated between 700 cal. AD and 1220 cal. AD, but with a concentration in the time interval 1005–1220 cal. AD. Among the archaeological finds are soapstone vessels, spindle whorls, and metal objects. However, hunting equipment and waste from slaughtering is lacking.

In 2011, Ájtte museum started new investigations in Suollagavallda. The purpose of this was not to perform new archaeological excavations. Many of the remains in the area have already been excavated and radiocarbon dated by Mulk. The new issue concerned the use of the land. Was it a question of wild reindeer hunting or herding? Did hunters or herders live here during summer and autumn, or even during winter, as previously proposed (Bergman et al. 2008)? We started by conducting an intensive inventory to investigate if there could be deposits of reindeer bone waste that were not previously detected. The result was negative and we found no bone deposits. However, we found that there was a number of historical reindeer milking grounds in the area and previously unregistered hearths. Some of the Stállo foundations were also situated on historical milking grounds (Figure 6.3). Although reindeer milking has not been practiced in the area for more than 100 years, the historical milking grounds

Figure 6.1: Overview map. 1. Suollagavallda, close to the Swedish-Norwegian border, 2. Stállonjárga, 3. Adamvallda. (Map: M. Spangen. Background map: The Norwegian Mapping Service.)

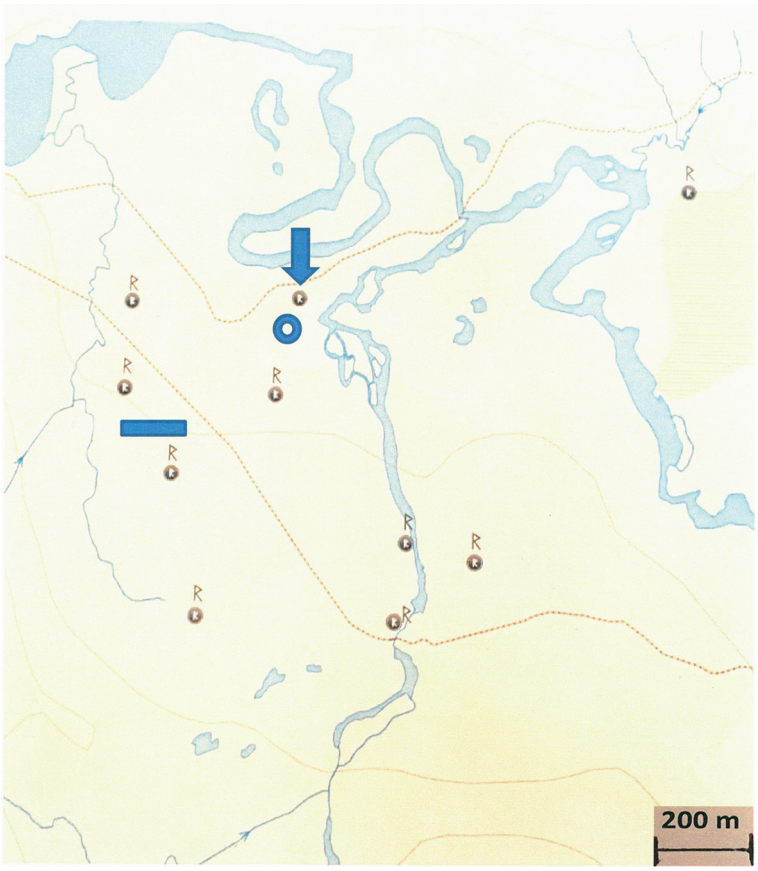

Figure 6.2: In Suollagavallda are ten localities with 30 Stállo foundations. The point marks the site on the map in Figure 6.5 and the wetland for sampling for pollen analysis. (Map: K-Å Aronsson.)

Figure 6.3: Stállo foundations at a historical milking ground. (Photo: K-Å Aronsson.)

are still visible through a vegetation of grasses and herbs. As previous studies have demonstrated, the vegetation at these historical milking grounds remains strikingly stable (Egelkraut et al. 2018). Central in the investigation area was a little wetland (Figure 6.2) that would make it possible to take samples for pollen analysis. The area looked promising to try to answer questions about historical land use.

The result of the pollen analysis was staggering (Figure 6.4). We could not see any obvious human impact at all. The *Oxyria/Rumex* curve is nearly continuous because *Rumex* is growing naturally on the

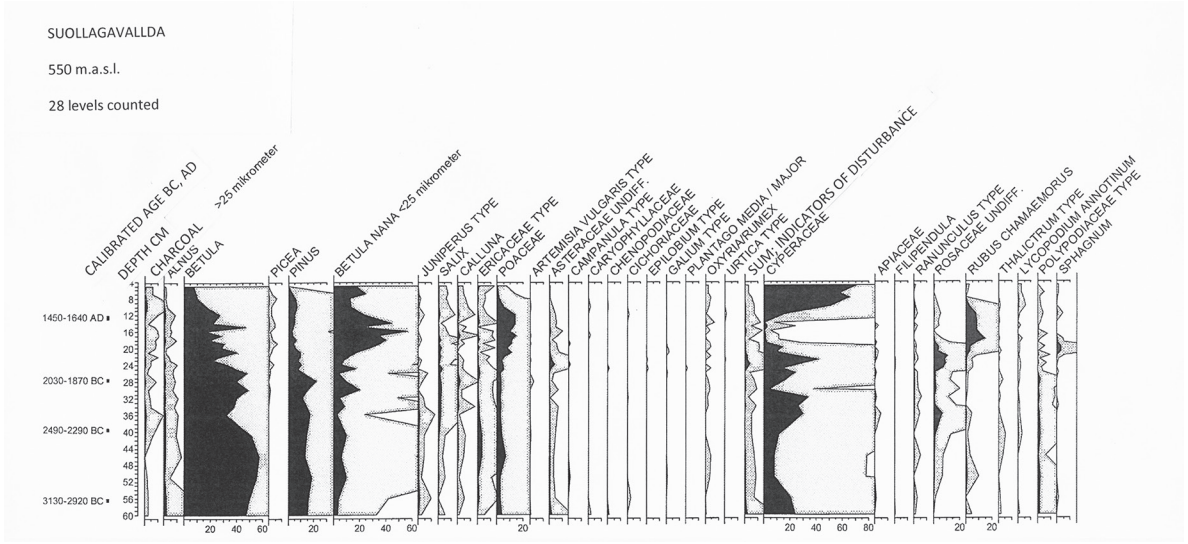

Figure 6.4: Pollen diagram from Suollagavallda.

mountain slopes. Single pollen grains from *Plantago* and a few other cultural indicating pollen spread over thousands of years do not indicate human impact. Probably they are long-distance transported like pollen from *Picea*. Spruce has never been growing in the area. The pollen diagram demonstrates a development from forest with birch and pine to an open tundra landscape. There is no visible human impact from the time of the Stállo foundations. The forest with birch remained until around 1600 cal. AD when a marked decline starts (Wallin 2012). This is during the coldest part of the period usually called the Little Ice Age (Grudd 2008). We obtained the same result from a site with Stállo foundations on a little peninsula in Lake Virihaure in Badjelannda National Park (Wallin 2011). In the pollen stratigraphy from Suollagavallda we also saw that the willow belts were reduced when the forest declined. In a natural succession it should have been the opposite when trees withdraw. This indicates human influence and reindeer grazing in the area. Increase of carbon particles is also an indication of nearby human settlements of reindeer herders' summer campsites. However, this was later in time than the period of the Stállo foundations. Other taxa, such as *Calluna*, have some peaks. This is not surprising when the landscape became bare mountain. When the forest declined *Cyperaceae* was favoured on the mire because it gathered more water from precipitation. The decline of *Rubus chamaemorus* also indicates a change of the conditions of the mire. This was favourable for reindeer grazing there.

Grasses also increased when the landscape became more open. In Saami language, "*vallda*" means open grassland and the pollen analysis also indicates this with a peak of *Poaceae.* In the following years, we conducted extensive land explorations with help of measure of magnetic susceptibility (MS) and phosphate. The map (Figure 6.5) shows the results from one of the sites. In connection with the sampling in the soil, we managed to pinpoint some unregistered hearths that were not visible above

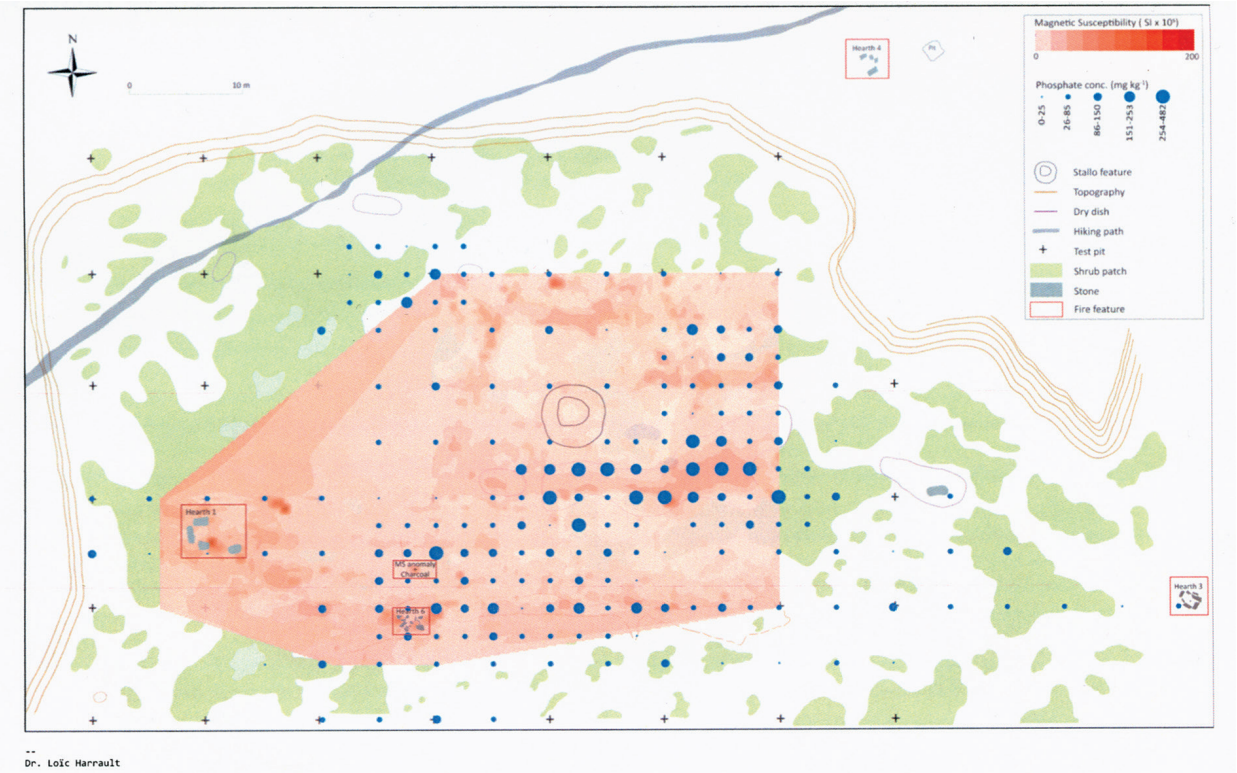

Figure 6.5: Results from sampling for MS and phosphate analysis from a site with a Stállo foundation on a historical milking ground. Increased MS values are found close to hearths as well as increased phosphate values over the site. The Stállo foundation has been excavated and the soil is so far disturbed and gives no signals in MS.

ground. Since we got some pieces of charcoal, we let these go to radiocarbon dating. We got two dates from hearths to around 500 cal. AD. This is in agreement with what we know of a radical change in settlement patterns in northern Sweden after AD 400 (Aronsson 2009; Bergman 1995: 20; Hedman 2003; N. Karlsson 2006: 148). Bergman´s (1995: 201–203, 208) interpretation was that the almost complete lack of settlement traces by the shores of the great lakes after the end of the Roman Iron Age indicated a change of subsistence strategy where reindeer became more important. The new settlement pattern is characterised by rows of hearths that are not located at the shores of great lakes. These hearths are oval or rectangular and are the typical remains from the nomadic tents. They are radiocarbon dated from around AD 500 up to AD 1900 (N. Karlsson 2006: 164).

There are also some pit traps in Suollagavallda. There is just one uncertain radiocarbon dating from one pit trap, so it is not possible to make conclusions if the pit traps were contemporary with the Stállo foundations or not. However, it would be very peculiar if Stállo foundations and nearby pit traps were in use at the same time. It is very unlikely that wild reindeer would wander right into a human settlement area with many people. The lack of slaughtering waste in connection with the Stállo foundations also indicates that hunting of wild reindeer cannot have been very important. Although Sommerseth (2009: 256–257) was of the opinion that the Stállo sites were related to hunting of wild reindeer the lack of reindeer bones is a problem for this interpretation.

6.5 Prehistoric meeting and market places?

A crucial issue remains: how can these sites with Stállo foundations in the western part of the Scandinavian mountain ridge be interpreted? At the sites there are no indications of slaughtering of reindeer in a large scale. Hunting equipment is missing among the archaeological finds from the foundations. The impact on forest and ground vegetation is minimal. This is the same result that Hanna Karlsson (Karlsson et al. 2008: 20) reached through a pollen analysis from a site with Stállo foundations in the Vindel River valley. Karlsson found the first cultural indications linked to domestic animals from a site called Gieddeålge from the time around 1350 cal. AD. *Poaceae, Rumex, Epilobium, Urtica*, and *Plantago* indicated human induced disturbance. This is later than the period of Stállo foundations, however. *Giedde* also means historical milking ground in Saami language. Based on results from an archaeological excavation and pollen analysis, Oddmund Andersen (2017) came to the conclusion that a Saami settlement with milking pastoralism was established about AD 1300–1400. This site is situated on the Norwegian side of the border and not so far away from Suollagavallda.

It is striking that notable amounts of slaughtering waste never have been found in relation to the Stállo foundations. The conclusion is that these foundations only were used during a short period of the year. It was probably during the snow free season, because the impact on forest vegetation is minimal. There was no need for much fuel for the hearths. A possible connection between the Stállo sites in the mountains and the rows with hearths in the forest zone has been discussed in earlier research (Storli 1993). Many sites with hearths in the forest zone are contemporary with the Stállo sites (N. Karlsson 2006: 148).

Liedgren et al. (2006) and Bergman et al. (2008) has shown that the Stállo sites were in use just for a few centuries between AD 640 and AD 1180. That is a more narrow time span than Mulk discussed (Mulk 1994: 142–144). In some cases there are later secondary use but in another economic and social context with reindeer herders. The Stállo sites seem to disappear abruptly in time. Chronologically, the Stállo foundations time is coinciding with the glory days of the north Norwegian chieftains during the Viking period. The exchange of trade between Saami and northern Norwegian chieftains is described in written sources and has been discussed in earlier research (Berglund 1995; Hansen

1990; Hansen and Olsen 2004: 65–69). This trade continued in the early medieval period. The Saami delivered fur. The furs were prepared on the hunting grounds in the forests. The delivered fur leaves no archaeological traces. In return, the Saami got metals, soap stone vessels, and probably also wool, because spindle whorls are among the archaeological finds.

Probably the Saami were organised in kinship related groups of varying size in space and time. These groups met the Norwegian chiefs at fixed meeting points. I think the Stállo sites can be explained in this context as a type of meeting and trade site. They may also be links in a redistributive network inside the Saami society. Mulk may be correct that in some places a whole Saami community went up to the mountains together. However, the reason was not for hunting wild reindeer but for trade. Mulk is also correct in the critique of Storli´s interpretation that the Stállo sites represent reindeer pastoralism settlement pattern (Mulk 1993: 31). Pastoralist's settlements maintain a much wider distance between the tents or huts for good functional reasons connected to reindeer herd management.

All known Stállo sites are located in the western part of the Scandinavian mountain ridge. From Suollagavallda, the distance is less than a day´s march to the Atlantic. Logistically, the location is suitable for contacts over the mountain ridge. Among the finds from the Saami metal deposits from AD 1000–1350 are many Norwegian coins (Serning 1956, Zachrisson 1984). The influx of Norwegian coins, however, ends completely around AD 1200 (Serning 1956: 218).

At the same time around AD 1200 the Stállo sites are finally abandoned. At that time, the Norwegian royal power had reduced the role and privileges of the north Norwegian chieftains. Zachrisson has pointed out that cod fishing now became a significant nutrient. Dried cod became an important commodity as Lenten fare to the Catholic Europe. The economy got a new focus in sea fishing (Zachrisson 1984: 124). The Stállo sites lost their function and were abandoned. Interest in fur trade slowed down in Norway. However, the fur trade took other roads to the east. There is no decline or discontinuity in the settlements with hearths from AD 1200 (N. Karlsson 2006: 148). A new trading system between Saami and external tradesmen, the so-called 'birkarlar', replaced the system of the Stállo period (Bergman and Edlund 2016). New meeting places and trade routes were established.

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Bibliography

Andersen, O. 2017. Landskap og kulturminnen i Gierggebuodo i Divtasvuona suokhan/Tysfjord kommune. Analyse av ulike typer kilder for å dokumuntere bruken av området. In A. F, Nielssen, K-Å. Aronsson, O. Andersen, and S. Gælok (eds.): *Gielas/Kjölen. Arkeologi og historie i lule- og sörsamisk område*, pp. 41–63. Árran julevsáme guovdásj 2. Drag: Báhko.

Aronsson, K-Å. 2009. Relations between man and reindeer – traces of reindeer herding. In P. Halinen, M. Lavento, and M. Suhonen (eds.): *Recent Perspective on Sámi Archaeology in Fennoscandia and North-West Russia: Proceedings of the First International Conference on Sámi Archaeology, Rovaniemi, 19–22 October 2006*, pp. 17–24. ISKOS 17. Helsinki: Finnish Antiquarian Society.

Bergman, I. 1995. *Från Döudden till Varghalsen. En studie av kontinuitet och förändring inom ett fångstsamhälle i övre norrlands inland, 5200 f.Kr – 400 e.Kr*. Studia archaeologica Universitatis Umensis 7.Umeå: University of Umeå.

Bergman, I, L. Liedgren, L. Östlund, and O. Zackrisson. 2008. Kinship and settlements: Sami residence patterns in the Fennoscandian Alpine area around A.D. 1000. *Arctic Anthropology* 45(1): 97–110.

Bergman, I. and L-E. Edlund. 2016. Birkarlar and Sámi – inter-cultural contacts beyond state control: Reconsidering the standing of external tradesmen (birkarlar) in medieval Sámi societies. *Acta Borealia* 33(1) : 52–80.

Drake, S. 1918. *Västerbottens-lapparna under förra hälften av 1800-talet. Etnografiska studier.* Lapparna och deras land VII. Umeå: Två Förläggare Bokförlag.

Egelkraut, D, K-Å. Aronsson, A. Allard, M. Åkerholm, S. Stark, and J. Olofsson. 2018. Multiple feedbacks contribute to a centennial legacy of reindeer on tundra vegetation. *Ecosystems* 21(8): 1–19.

Grudd, H. 2008. Torneträsk tree-ring width and density AD 500−2004: A test of climatic sensitivity and a new 1500-year reconstruction of north Fennoscandian summers. *Climate Dynamics* 31(7): 843–857.

Hansen, L. I. 1990. *Samisk fangstsamfunn og norsk hövdingeökonomi.* Oslo: Novus.

Hansen, L. I. and B. Olsen. 2004. *Samenes historie fram til 1750.* Oslo: Cappelen Akademisk Forlag.

Hedman, S. D. 2003. *Boplatser och offerplatser. Ekonomisk strategi och boplatsmönster bland skogssamer 700−1600 AD.* Studia archaeologica Universitatis Umensis 17. Umeå: Umeå University.

Holm, O. 2016. Stalotomterna, samerna och Hålogalands stormän. Svar på Anders Wepsäläinens replik. *Fornvännen* 111(3): 201–204.

Karlsson, H.2008. *Vegetation Changes and Forest-Line Positions in the Swedish Scandes during Late Holocene. Anthropogenic Impact vs Climate*. Acta Universitatis agriculturae Sueciae 2008:31. Umeå: Swedish University of Agricultural Sciences.

Karlsson, N. 2006. *Bosättning och resursutnyttjande. Miljöarkeologiska studier av boplatser med härdar från perioden 600−1900 e.Kr. inom skogssamiskt område*. Studia archaeologica Universitatis Umensis 21. Umeå: Umeå University.

Kuoljok Eidlitz, K. 2011. *Den samiska sitan och vinterbyarna. En utmaning*. Dissertations and documents in cultural anthropology 10. Uppsala: Uppsala University.

Liedgren, L. G, I. Bergman, G. Hörnberg, O. Zackrisson, E. Hellberg, L. Östlund, and T. H. Deluca, 2007. Radiocarbon dating of prehistoric hearths in alpine northern Sweden. Problems and possibilities. *Journal of Archaeological Science* 34(8): 1276–1288.

Liedgren, L. and I. Bergman. 2009. Aspects of the construction of prehistoric stállo-foundations and stállo-buildings. *Acta Borealia* 26(1): 3–26.

Liedgren, L. and L. Östlund. 2011. Heat, smoke and fuel consumption in a high mountain stállo-hut, Northern Sweden. Experimental burning of fresh birch wood during winter. *Journal of Archaeological Science* 38(4): 903–912.

Manker, E. 1960. *Fångstgropar och stalotomter. Kulturlämningar från lapsk forntid*. Acta Lapponica 15. Stockholm: Geber.

Mulk, I. M. 1994. *Sirkas: Ett samiskt fångstsamhälle i förändring Kr.f.−1600 e.Kr.* Studia archaeologica Universitatis Umensis 6. Umeå: Umeå University.

Mulk, I. M. 1993. Comments on Sami Viking Age pastoralism – or "the fur trade paradigm" reconsidered. *Norwegian Archaeological Review* 26(1): 28–34.

Serning, I. 1956. *Lapska offerplatsfynd från järnålder och medeltid i de svenska lappmarkerna.* Acta Lapponica 11. Stockholm: Hugo Geber.

Sommerseth, I. 2009. *Villreinfangst og tamreindrift i Indre Troms: belyst ved samiske boplasser mellom 650 og 1923.* PhD thesis. Tromsø: University of Tromsø.

Storli, I. 1993. Sami Viking Age pastoralism – or "the fur trade paradigm" reconsidered. *Norwegian Archaeological Review* 26(1): 1–20.

Tanner, V. 1929. *Antropogeografiska studier inom Petsamo-området. 1. Skolt-lapparna*. Fennia 49: 4. Helsingfors: Geographical Society of Finland.

Tomasson, T. 1988. *Några sägner, seder och bruk upptecknade efter lapparna i Åsele- och Lycksele lappmark samt Herjedalen sommaren 1917.* Dialekt- och folkminnesarkivet Serie C5. Uppsala: Dialekt- och folkminnesarkivet.

Zachrisson, I. 1984. *De samiska metalldepåerna år 1000−1350 i ljuset av fyndet från Mörtträsket, Lappland*. Archaeology and environment 3. Umeå: Umeå University.

Wallerström, T. 2017. *Kunglig makt och samiska bosättningsmönster. Studier kring Väinö Tanners vinterbyteori.* Instituttet for sammenlignende kulturforskning. Serie B skrifter 165. Oslo: Novus.

Wallin, J-E. 2011. *Stalonjargga, Padjelanta nationalpark, Virihaure. Vegetationsförändringar och kulturpåverkan under ca 500 år. En undersökning baserad på pollenanalys.* Unpublished excavation report. Jokkmokk: Ájtte Mountain and Sami Museum.

Wallin, J-E. 2012. *Suollagavallda, Valldajåhkå – vegetationsförändringar under 5000 år. En undersökning baserad på pollen och kolpartikelanalys.* Unpublished excavation report. Jokkmokk: Ájtte Mountain and Sami Museum.

Östlund, L, G. Hörnberg, T. H. DeLuca, L. Liedgren, P. Wikström, O. Zackrisson, and T. Josefsson. 2015. Intensive land use in the Swedish mountains between AD 800−1200 led to deforestation and ecosystem transformation with long-lasting effects. *Ambio* 44(6): 508–520.