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Moving Arrows, Moving People: Towards an understanding of Early Metal Age Settlement Zones in the Boreal Woodlands of Dalarna, Sweden

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ABSTRACT

Wehlin, Joakim & Lindblad, Tova. Moving Arrows, Moving People: Towards an understanding of Early Metal Age Settlement Zones in the Boreal Woodlands of Dalarna, Sweden.

This paper is a first step towards an understanding of how to locate and decode archaeological sites from the Early Metal Age 2000-1 BCE in Dalarna, Sweden. Sites from the Early Metal Age are rare in this region, but numerous locations have been identified as Stone Age sites. To search for Early Metal Age sites, the bifacial arrowheads, which chronologically belong to this time frame, have been examined. By doing this, two more extensive sites have been identified. The study shows that sites with a large number of preforms are a better indicator of extensive sites from the Early Metal Age than finished arrowheads. The study also problematizes the settlement concept and how to approach different types of sites. The spread of finds and the variation of different types of sites indicate that these settlements should be understood as part of larger settlement zones in which people moved over large geographical areas.

KEYWORDS: Bifacial arrowheads, Early Metal Age, Dalarna, Woodland archaeology, Landscape, Settlement zones

JOAKIM WEHLIN & TOVA LINDBLAD

Moving Arrows, Moving People: Towards an understanding of Early Metal Age Settlement Zones in the Boreal Woodlands of Dalarna, Sweden

Introduction

The Stone Age of Dalarna offers a rich variety of finds, not least when it comes to assemblages of lithic artefacts, which recurrently attract international attention. With a relative abundance of Iron Age sites, research has been focused on early metal production and development of the iron production districts that still characterise the cultural heritage of the region. In southern Scandinavia, the Bronze Age is a period placed in between the Stone Age and Iron Age in the chronology of prehistory. The northern limit of the occurrence of Bronze Age finds runs half way through Dalarna. Few key-finds typical of the south Scandinavian Bronze Age, such as bronze objects or burial cairns, have been discovered in northern Dalarna. No Bronze Age settlement sites have been discovered, at least not if interpreted according to a south Scandinavian perspective. Thousands of settlement sites in Dalarna are registered in the Swedish National Heritage Board's database for archaeological sites and monuments (KMR). All of these are listed as Stone Age settlement sites even though several contain artefacts that are dated to the Early Metal Age 2000-1 BCE in the chronology of more northerly parts of Scandinavia. Could it be that a great part of these known Stone Age settlement sites in actual fact are of much later date? The purpose of this study is to take a first step towards an understanding of how to locate archaeological sites from the Early Metal Age. We will do that by examining a specific category of finds, namely bifacial arrowheads. A further aim is to problematise the concept of settlement sites and the way this concept influences our interpretations of prehistory.

By analysing known archaeological assemblages from a landscape perspective and create distribution maps of specific artefacts, we have discovered at least two major sites in Dalarna with signs of settlement and activities dating from the Early Metal Age. These discoveries are keys that open up for future comparative studies.

What is a settlement?

What a settlement is, and can be, is one of the major questions of archaeology; the complexity of this was pinpointed not least by Lewis Binford's ethnoarchaeological studies (1980, 1982). Binford used classifications which Ingela Bergman (1995) has transformed to a Scandinavian perspective into the categories of residential camps, transient camps, exploitation camps, storage/hidings and gathering sites. A residential camp is characterised by a large number of artefacts and a longer period of use, while exploitation camps contain fewer and less varied finds. The model could be roughly applied to assemblages from Dalarna. However, such a division into different types of settlements is complicated at sites where no archaeological excavations have been conducted, since contemporaneousness is necessary for the classification. Moreover, the question of contemporaneousness is in general very difficult to answer, also for excavated sites. Further, it is apparent that this categorisation is too limited and that an understanding of people's ideas of their landscape, and how they moved around in their surroundings, is much more complex. Ethnological observations by Ole Grøn and Oleg Kuznetsov (2003, 2004) indicate difficulties in defining boundaries between different activity areas. These studies also illustrate that certain settlement zones can be quite large, which makes it evident that our present-day definition of a prehistoric settlement is far too limited. A settlement is usually defined according to functional and economic aspects, but the diversity of the archaeological finds represents a much broader range of underlying factors (Kelly 2013). Settlement sites should be regarded as wide-ranging and dynamic systems that cannot be separated from their surrounding environment, irrespective of whether they are defined as oriented towards activities, ecology or based on a hunter-gatherer ideology (Grøn & Kuznetsov 2004).

Mobility characterises the idea of hunter-gatherer groups, but it is also important to understand the temporality of the landscape in which these people moved around (e.g. Ingold 1993; Hicks 2016). This applies particularly to Scandinavian conditions with large seasonal changes. The great diversity is thus apparent, and difficulties arise in the interpretation of all the thousands of settlement sites in the Scandinavian inland. Furthermore, if we add the long time-span over which the remains were deposited, the picture becomes even more complex.

Most archaeologists and researchers are aware of the complexity involved in the interpretation of settlement sites. Nevertheless, a problem arises in the use of data from the National Database (KMR). Unreflected transfer of data, which sometimes occurs, provides a biased picture particularly for the untrained eye. In the Swedish National Heritage Board's descriptions of types of prehistoric remains and directives for heritage management (Blomqvist 2004; cf. Damlien et al. 2021), a settlement site is described as a place where prehistoric activities have left remains such as artefacts, raw-materials for production and/or debitage. The distance between finds should not exceed 20 metres. In cases when features such as settlement pits, semi-subterranean houses or cooking pits occur, the settlement and features should be registered together as a settlement area (boplatsområde).

In the National Database (KMR), all the types of settlements and activity areas that have been problematised by Binford (1980,1982) and others since

the 1980s fall within the categories settlement sites and settlement areas. These types of remains have been placed in a general prehistoric chronology, but are implicitly given a Stone Age date (- 1700 BCE). In analyses of the prehistoric landscape, these sites are categorised as dating from early prehistory and therefore fall outside the chronological framework of attempts to understand, for example, the Iron Age landscape. This is especially relevant when it comes to the Boreal inlands of mid-Scandinavia. These regions are often presented as rich Stone Age environments that developed considerably during the late Iron Age (500– 1050 CE) when farming communities were established including intensive metal working activity, which resulted in remains from charcoal burning and bloomery furnaces. At such a general level, the diversity of the Stone Age is lost, but the Early Metal Age (2000-1 BCE) is entirely obliterated. The Early Metal Age is a period from which only few artefacts and a small number of settlements from the Boreal inlands of mid-Scandinavia have been studied in detail. Attempts to understand settlement sites have been based on models with a southern Scandinavian perspective. Maybe we have been looking in the wrong places?

Early Metal Age

The geographical area of this study is the county of Dalarna, situated in the Boreal inland of the northern part of mid-Sweden. The landscape of Dalarna is characterised by varied terrain. The mountainous terrain in the north is similar to the landscape of northern Sweden, and coincides with the southern part of the north Swedish mountain range. The south of Dalarna largely consists of fertile farmland, and the central parts of the county are covered by the extensive woodlands of the Boreal inland. Although certain South Scandinavian types of artefacts do occur in the area, the archaeological assemblages from Dalarna are more like those of the inland of more northerly parts of Sweden. In earlier research, the period 2000-800 BCE in the Boreal inlands of mid-Scandinavia has been called the epi-Neolithic (Baudou 1995), based on the scarcity of bronze artefacts and the fact that hunting and not farming was still the predominant subsistence strategy. The material culture of northern Scandinavian prehistory displays evident eastern influences which has prompted several Scandinavian researchers to use the Russian term Early Metal Age (e.g. Carpelan 1975; Olsen 1994; Jørgensen 1986; Shumkin 1990; Lavento 2001). In this article, we use the term Early Metal Age since it is difficult to discuss Dalarna in terms of characteristics typical of the South Scandinavian Bronze Age cultural sphere.

The characteristics of the South Scandinavian Late Neolithic and Bronze Age have, to a large extent, been determined by the introduction of metal, agriculture and more permanent settlements, with a focus on grand narratives of European networks (e.g. Kristiansen 1998). In early research, the Bronze Age in the northern inland areas has been described as something different, an "Arctic Bronze Age", producing a picture where the two "cultural areas" were understood in a dichotomous way (Bakka 1976; Gjessing 1941). This is, however, not the dominating view today, and many researchers have criticized the former understanding of two cultural areas (e.g. Forsberg 1989; Bolin 1999;

Amundsen 2011; Skandfer & Wehlin 2017; Ljunge & Wehlin 2022). Characteristics of the Early Metal Age in the northern inland include a continuous use of stone tools, made of slate and later quartzite, from the Stone Age and onwards, but also influence from the east with imported asbestos ceramics and eastern bronze objects. From around 2000 BCE, earlier Stone Age settlements were abandoned, and the settlements were instead concentrated to areas near the largest water systems. Researchers have pointed towards a greater importance of the mountain areas, probably related to an extended reindeer hunt (Bergman 1995: 197–198; Damm 2012: 16; Forsberg 2012: 36–37). Material culture from the period 2000-1 BCE in the northern inland differs from that of southern Scandinavia during the same period. However, there is also a significant difference in how well each region is studied, which has contributed to the situation that material culture from the northern inland is more difficult to interpret.

Archaeological investigations are to a large extent dependent on large-scale infrastructural developments, which are mainly focused on large cities and railways between cities. The southern parts of Sweden are better documented, and relatively extensive regions in the northern Boreal inland, Norrland, have not been surveyed by archaeologists. The first substantial surveys in Norrland took place during the mid-1900s prior to the development of hydropower plants, resulting in the project "Norrlands tidiga bebyggelse" [Early Norrland settlements], (Björnstad & Baudou 1968), and later in the publication of the Early Norrland series. From then on, the research reflected a more comprehensive and diverse picture of prehistoric societies in the northern inland (Forsberg 1989; Holm 1991; Bergman 1995; Spång 1997; Bolin 1999;; Amundsen 2011).

The central inland of Sweden and Norway is especially interesting because of its position in the border zone between the two supposed cultural areas, which is the reason for focusing on Dalarna in this study. The period 2000-1 BCE in Dalarna has in previous research been described as a continuation of the Stone Age because of its lack of permanent settlements (Hyenstrand 1974:16). However, new types of finds and monuments occur in Dalarna during this period as well. The archaeology of the Early Metal Age in Dalarna exhibits a diverse picture of South Scandinavian bronzes, flint daggers, stone settings, north-eastern types of arrowheads of quartzite and trapping pits (Wehlin & Lannerbro Norell 2016). In the Norwegian inland, bordering on Dalarna, sites from the Early Metal Age have been investigated more thoroughly than in the mid-Swedish inland (Amundsen 2011; 2017; Mjærum 2012; Amundsen & Rundberget 2020; Nyland 2015, 2016, 2017, 2020). In the northern part of Hedmark, a quartzite quarry has been identified and excavated near Femundsåsen, close to the lake Femunden. A considerable number of bifacial tools were produced at the quarry, as well as at sites nearby. Nyland (2016) suggests that the quarry also could have functioned as a node in the landscape where people met and exchanged knowledge. Amundsen (2017) proposes that networks of specialised hunter gatherer groups probably used the waterways as communication routes both in Sweden and Norway.

Data and Methodology

THE LANNERBRO COLLECTION

In this study, we have used the assemblages and data of the Lannerbro collection at Dalarna Museum. Over a period of forty years, Ragnar Lannerbro conducted his own private surveys, which resulted in a huge body of archaeological finds and data, mainly from the northern half of Dalarna (Lannerbro 1991, 1992, 1997). A few surveys had previously been performed, but then mainly oriented towards the farmland of southern Dalarna (e.g. Olsson 1917). Lannerbro registered no less than 300 previously unknown settlement sites, and the collection now stored at Dalarna Museum contains around 56 000 artefacts of which 6000 have been more precise determined. The collection is considered to be one of the largest of its kind in Scandinavia, and has been included in the studies of several international research groups throughout the years (e.g. Lannerbro 1976; Sørensen et al. 2013; Manninen et al. 2021).

There are some source critical aspects that should be considered in reference to the Lannerbro collection, not least the fact that it chiefly consists of surface finds, which means that the finds lack more precise contexts. However, Lannerbro conducted a few excavations where the finds can be related to defined features and by that more closed contexts (e.g. Lannerbro 1984), but in most cases the relation between the finds at each site has not been recorded. Another problem is that the collection contains finds from sites that were revisited for additional surveying, which resulted in a much greater quantity of finds, disrupting the stringency of the data. Nevertheless, the problem can be monitored simply by identifying lacunas in the series of find numbers. Further, it is important to remember that the finds originate from a limited area, mainly alongside the shores of lakes and rivers. With the current archaeological knowledge base, it is therefore difficult to determine the representativity of the data.

Nonetheless, the Lannerbro collection is a significant asset for research, which is evident considering later years' studies on lithic technology (e.g. Sørensen et al. 2013; Manninen et al. 2021). In our view, this comprehensive data constitutes a satisfactory basis for studies on the characteristics of settlement sites; particularly since the data is collected by one person with the same methodology. Certain complications arise in comparisons of the collection with data from other sites, although this is not the case in this study, no more than at a conceptual level. The basic data from the Lannerbro collection used here has been processed by Tova Lindblad (2021).

THE BIFACIAL ARROWHEADS

The starting point of this study is the bifacial arrowheads from Dalarna, which were mainly collected during the surveys of Ragnar Lannerbro. Bifacial arrowheads of quartzite are one of the characteristics of the Early Metal Age in the northern inland, and they are often found at settlements places (Forsberg 2012: 130). The bifacial arrowheads discussed here occurred during the Late Neolithic in Sweden. Three different traditions can be traced in the bifacial artefacts (Apel et al. 2005: 63–64; Apel & Darmark 2007: 31). In the southern

parts, bifacial tools of flint were made by applying pressure flaking technique. The second technique requires less raw-material, since the object is made from flint debitage blanks which are thinned down to produce a new tool. This tradition has been observed in e.g. Uppland located in Southern Sweden but still far away from Scania which is the closest region where there are natural flint deposits. A combined direct percussion was mostly used in the northern parts of Scandinavia from 1700 BCE and onwards, with occasional pressure flaking in the finishing stages. In the north and in the region of Dalarna, quartzite and other local plastic materials were used to produce the bifacial tools (Sundström et al. 2019: 120).

Bifacial arrowheads have been classified in different types according to shape and material (e.g. Helskog et al. 1976; Mjærum 2012). Mjærum has successfully identified a chronology of bifacial arrowheads in South Eastern Norway, based on arrowheads found in dated contexts. The most common type of arrowhead in the inland is type G, which is a lanceolate arrowhead with a straight base. Such arrowheads have been identified mainly in contexts dating from 1500 BCE – 200 CE (Mjærum 2012). The lanceolate type with a straight base, in Mjærum's categories named type G, has been suggested to be a part of a north-eastern bifacial tradition, and similar arrowheads have been found in today's Russia and Siberia (Apel & Darmark 2007; Mjærum 2012).

The most common types of bifacial arrowheads in Dalarna are the triangular-, heart- and lanceolate-shaped types. A majority of the arrowheads in Dalarna are made of quartzite. A particularity of Dalarna is the locally available stone types, some of them only existing in Dalarna, like red quartzite sandstone, Dala porphyry and ash tuff (see fig.1). Bifacial arrowheads in Norrland have been found in dated contexts from 1700–500 BCE, and a few as early as 2200 BCE (Forsberg 2010: 130).

At several sites, stone arrowheads appear to have been used well into the Iron Age (e.g. Persson 2018:116, 124-125). Bifacial arrowheads have for instance been found in Iron Age burials in several parts of Dalarna. Hallström (1945: 114) considers the arrowheads to have been deposited in the burials by coincidence, since the burials were placed at earlier settlement sites and may have been filled with soil containing the arrowheads. More bifacial arrowheads have been discovered in Iron Age contexts since then, which means that it is not quite so easy to dismiss the conclusion that the arrowheads were placed there during the Iron Age (Hallström 1945: 114; Serning 1966; Lannerbro 1976: 73). However, the bifacial arrowheads in Iron Age contexts does not tell anything about the time of production.

It is clear that there are inaccuracies in the categorisation of stone artefacts from Dalarna; for example, some of the arrowheads appear to be in various stages of the production process, and some are broken or fragmental. It may therefore be difficult to determine whether the artefact was intended as an arrowhead, a spearhead or a dagger. Many times, lithics that appear to be preforms and debitage are registered in the same way as finished artefacts. For comparison, we have used Norwegian collections, and the typology identified amongst these (Helskog et al. 1976; Mjærum 2012).

Fig. 1. Bifacial arrowheads from Dalarna made of different kinds of stone. From the left, ash tuff; in the middle and to the right, arrowheads of red quartzite sandstone from Mora. To the right, arrowhead made in Dala porphyry tuff. Photo: Heléne Sjöstrand and Per Eriksson, Dalarna museum.

METHODOLOGY

For a better understanding and closer interpretation of the vast numbers and variation of settlement sites in the Scandinavian inland, we need to move away from the idea of settlement sites and activity areas as fixed entities. Binford (1980, 1982) as well as Grøn and Kuznetsov (2003, 2004) point out that we must consider the size of the settlements. On a daily basis, or as part of their regular activities, people moved around in extensive zones in the landscape, and these zones should therefore also be regarded as part of the settlement. In our view, these extensive settlement zones can be better understood from a perspective of movement, and not least an understanding of practices related to temporality in the landscape, for example seasonal changes. In particular, we consider that there is considerable potential in applying this perspective to later prehistoric periods; and in this case, the Early Metal Age.

A first step towards such an understanding is to locate archaeological sites from the period in question, 2000 – 1 BCE, which is the main focus of this study. In previous research, the region of our study, Dalarna, was believed to lack settlement sites dating from this period (Wehlin & Lannerbro Norell 2016). However, we know that bifacial arrowheads have been discovered at settlement sites dated to the Stone Age on the basis of other finds from the sites. A compilation of bifacial arrowheads and their landscape contexts (Lindblad 2021) was produced by studying the data base of collections at Dalarna Museum and Lannerbro's publications (1991, 1992, 1997).

A number of sites in Lindblad's study (2021) that were of particular interest have been selected for closer analysis. There is a substantial archive material related to the larger sites, especially those from the Vanån area, but also unpublished data from several minor archaeological excavations. Based on

archive material, and samples of biological remains (soil, charcoal and burnt bones) that were discovered, we conducted a range of osteological, macroscopic and radiocarbon analyses as well as identification of wood species.

Furthermore, we have used results from later archaeological excavations at sites encountered during shoreside surveys, mainly by Ragnar Lannerbro. A number of settlement sites dated to the Stone Age and Early Metal Age have been discovered during contract archaeological work, but these were excluded in this study since a different method had been used when identifying the sites, which makes it difficult to compare them with the sites of the study.

Study areas

Potential settlement sites from two areas have been selected for a closer study. The sites are located alongside the rivers Oreälven and Vanån, which are two of the largest waterways in Dalarna. Presented below are sites where the largest numbers of bifacial arrowheads have been recovered but also where finds and/or dates connect them to the Early Metal Age. Since some of the results from surveys and excavations have not previously been published, the sites are presented in slightly more detail in the following.

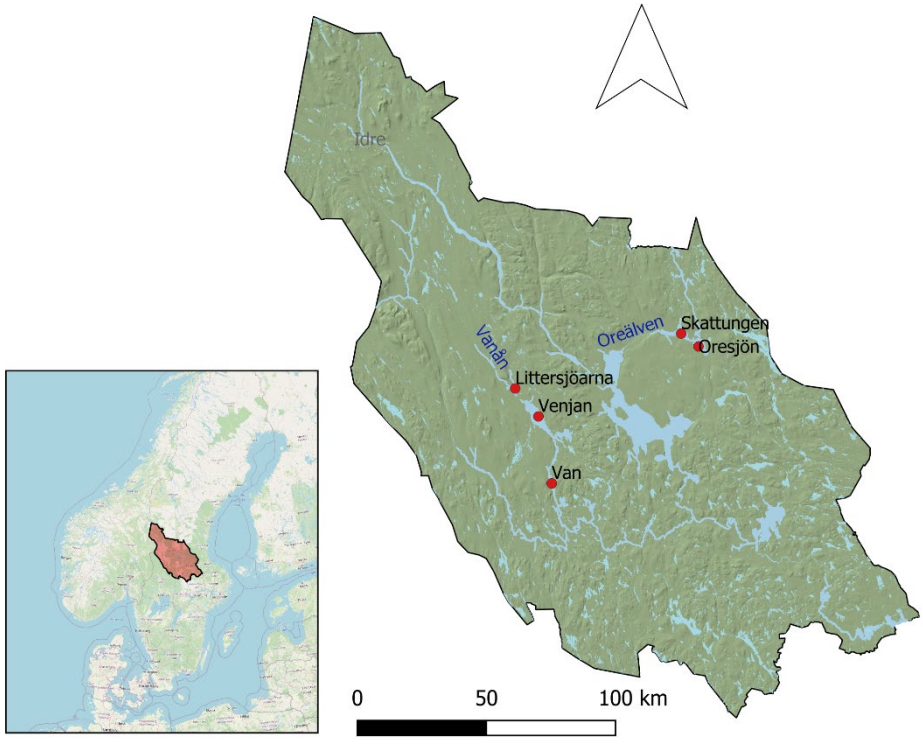


Fig. 2. Dalarna with areas discussed in the text. Illustration Tova Lindblad.

ORE ÄLVEN AREA

Bifacial arrowheads have been found together with large assemblages of other stone tools on the beaches of River Oreälven in the eastern parts of Dalarna. The area is well known from previous research, with many excavated sites dating from the Stone Age to the Iron Age, indicating a long continuity of human presence. The largest burial field from the Iron Age is located at Vindförberg, to the north of Lake Oresjön (Serning 1966), and close to the burial field is also one of the few sites in Dalarna from the Pitted Ware Culture (Bennström & Lannerbro Norell 2016: 132). The largest concentration of trapping pits in Dalarna has been identified to the west of Lake Skattungen. Several trapping pits close to Skattungen have been dated to the Stone Age, Early Metal Age and Iron Age, which again highlights the long continuity of the area (Wehlin 2016: 240). Scrapers are the most common tool at sites where bifacial arrowheads were discovered. Stone tools from sites surrounding the lakes Oresjön and Skattungen are made of a variety of different raw-materials, such as ash tuff, Dala porphyry tuff, quartz, quartzite, slate, flint and red quartzite sandstone.

One of the most remarkable finds at River Oreälven and Lake Skattungen is an uncommonly well-made spearhead of red quartzite sandstone, found at a ford on the bottom of the river. It was therefore interpreted as a fishing spear (Hyenstrand 1992: 10), but it might of course have ended up in the water by chance. Another alternative is that it may have been used to kill animals that passed the ford (Wehlin & Lannerbro Norell 2016: 193). Red quartzite sandstone mainly occurs in the Venjan area, which means that the artefact, or at least the raw-material, was imported to the area of River Oreälven. The river constitutes an excellent communication route both to the south and to the north.

Fig. 3. The well-made spearhead of red quartzite sandstone from River Oreälven. Photo: Heléne Sjöstrand, Dalarnas museum.

SANDNÄSUDDEN

The promontory Sandnäsudden in Lake Skattungen is the site with the largest assemblage of finds in Dalarna and where bifacial arrowheads have also been found. The site is defined in KMR as a settlement area; the northern part is characterised by medium to richly occurring fire cracked stones, and the southern part by a large concentration of artefacts. No archaeological excavation has been conducted at the site despite the large number of finds recovered, which were all surface finds (DMA 17748:4:14). Three bifacial arrowheads were recovered along with a great quantity of other artefacts, mainly scrapers and cores. The assemblage also contains a significant number of slate artefacts including arrowheads and other points as well as flakes (Lannerbro 1992: 113-122). Polished slate points were used over a long period from the end of the Mesolithic to the Iron Age, but different types can be divided into earlier and later phases. In the material culture of northern Sweden, slate points with a tang are dated to the Mesolithic and onwards to the middle Neolithic, while points with a concave base and a polished notch can be more distinctly connected to the Early Metal Age (e.g. Bergman 1995: 56; Lindqvist 2007: 135; Käck 2009: 60). At the Sandnäsudden settlement site, slate points with a concave base and a polished notch occur alongside points with tangs. Generally, the assemblage of finds at the site indicates an extended time-span, with a large number of much earlier types of artefacts. For example, the point of a harpoon made of reindeer was found along with a rejuvenation flake, which are two key artefacts for pioneer settlements dated to 8000 BCE.

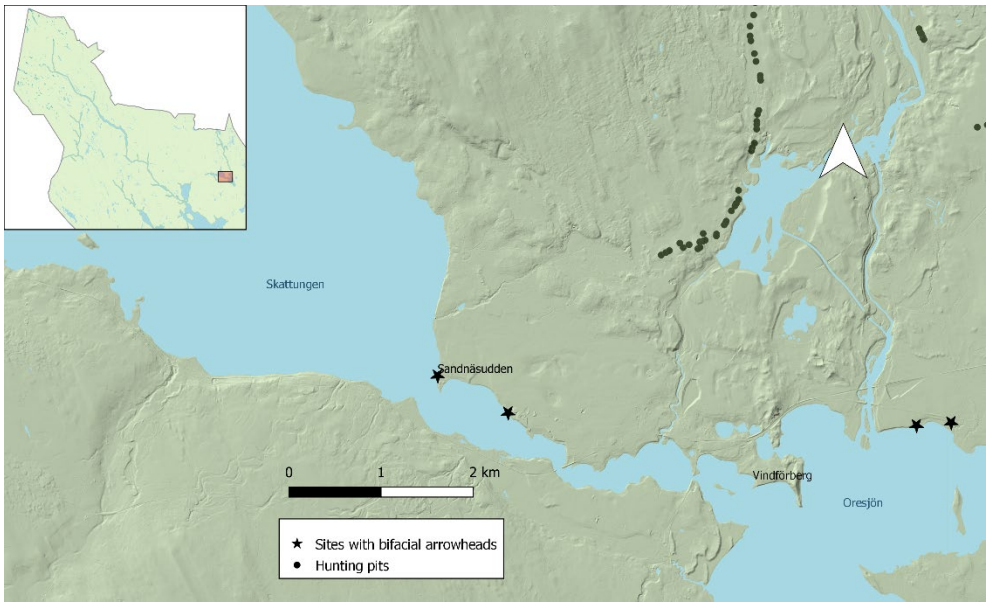


Fig. 4. Map of the settlement site Sandnäsudden situated between the lakes Skattungen and Oresjön. Illustration Tova Lindblad.

THE VANÅN AREA

River Vanån runs through several lakes, and a large number of bifacial arrowheads have been found in this area. Many of the stone tools recovered from areas alongside Vanån are made of red quartzite sandstone. The red quartzite sandstone was formed in the rock in areas where sandstone converges with diabase, for instance in Buråsberg and Spjutsäl to the north of the lakes Littersjöarna (Lannerbro 1992:13). A common artefact for the area is a special kind of preform of points made of red quartzite sandstone (fig 5). In the Lannerbro collection, many of the points have been called "daggers", because of their size, but they should rather be understood as preforms of points. Lannerbro considers that the larger points recovered near River Vanån were made of local quartzite extracted from solid rock, but no indications of quarrying have yet been identified in the area (Lannerbro 1992: 16). Other prehistoric sites near Vanån include systems of trapping pits and gravefields dated to later periods, which are placed alongside the largest lakes (Hyenstrand 1991: 9-10).

Fig. 5. Preforms for points made of red quartzite sandstone from Kolvik (Mora 349). Photo: Per Eriksson, Dalarna Museum.

KOLVIK

At the settlement site Kolvik (KMR Mora 349), located in a small bay in Lake Venjan, over 90 of the preform points of red quartzite sandstone were found during Lannerbro's surveys. Eight bifacial arrowheads were also identified; Lannerbro dated them to Early Metal Age based on the shape of the points. However, other finds in Kolvik, e.g. two core axes resembling Lihult axes, which would indicate a much earlier date, make the chronology of the site

more complicated (Lannerbro 1976: 70). Several other finds were also recovered from Kolvik, such as scrapers, hammerstones, flakes and cores.

The topsoil was stripped from a surface and a small archaeological excavation was performed at Kolvik in 1964 by Ragnar Lannerbro (DMA 7748). At the site, there are several different areas for production of stone tools, but also an iron production site. A soil sample was collected from a cultural layer at one of the production areas (no 9. see fig. 6), which has now been dated to the Early Metal Age (tab. 1). Macro fossil analysis of soil from the fill of production area 9 was performed, but it was not possible to make any specific observations. However, a small stone flake was found in the sample, giving strength to the interpretation of the site as a production area for stone tools.

A feature in the form of a hearth or the foundation of a dwelling was also identified at the site (fig 7). The feature was not fully excavated, but soil samples from the upper layer were collected during Lannerbro's excavation (DMA 7748). Radiocarbon analysis of charcoal from the feature resulted in a calibrated date of 1484-1641 CE. Charcoal from the iron production site was also analysed and the result was similar (tab. 1).

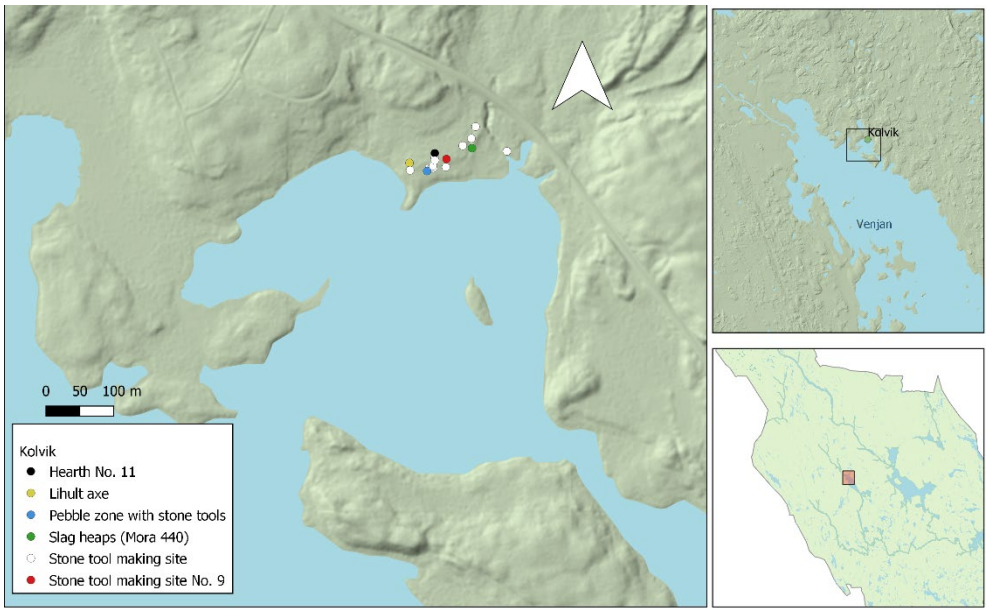


Fig. 6. Map of Kolvik showing features, artefacts and a number of zones based on information from Lannerbro 1976. Illustration Tova Lindblad.

Fig. 7. Possible hearth or remains of dwelling (No 11) at the Kolvik site. Photo: Ragnar Lannerbro (DMA).

Site No. (KMR)	Context	Material	Lab-no.	BP	+/-	Calibrated (2 Σ)	Reference
L2000:3380, Mora 349:1	Cultural layer, production site for stone tool No 9	Charcoal	Ua-70449	3008	29	1384-1341 BCE (13,6%) 1312-1157 BCE (77,1%) 1147-1127 BCE (4,8%)	
L2000:3380, Mora 349:1	Possible hearth No 11	Charcoal	Ua-69745	327	29	1484-1641 CE (95,4%)	Lindblad 2021
L2000:4570, Mora 440:1	Bloomery, No 17	Charcoal	St-2647	355	100	1329-1335 CE (0,2%) 1396-1693 CE (86,5%) 1726-1810 CE (6,9%) 1919- CE (1,8%)	Dalarna museum archive

Tab. 1. Radiocarbon dates from Kolvik. OxCal 4.4 (Bronk Ramsey 2009), Calibration IntCal20 (Reimer et al. 2020).

THE LITTERSJÖ COMPLEX

The lakes Yfstsjön, Millsjön, Grindsjön and Ejstsjön (fig. 8) are situated around 8 kilometres to the north of Venjan. Together, they are known as the Littersjö complex. Lannerbro has conducted archaeological excavations at some of the settlement sites of the Littersjö complex. Unlike Kolvik and Sandnäsudden, there are no large settlement sites with many finds in the area, but instead several smaller sites. A common feature of the sites around the Littersjö lakes and Kolvik is that a great number of large preforms for points made of red quartzite sandstone have been discovered here. Bifacial arrowheads have been found together with the large points at several of these sites. Some of the preforms were deposited together, which Lannerbro interprets as hoards. Hoards containing unfinished points of red quartzite sandstone have also been identified at Kolvik and at Vanänget nearby. Finished tools are not particularly common at the settlement sites in the surroundings of the Littersjö complex, most are preforms. Burnt elk bones were recovered from a cultural layer close to Lake Yfstsjön and dated to the Early Metal Age (tab. 2). Elk bones from a site at Lake Millsjön were also analysed and dated to the late Iron Age. The bones were encountered together with flint tools and points of red quartzite sandstone (Lannerbro 1976:73).

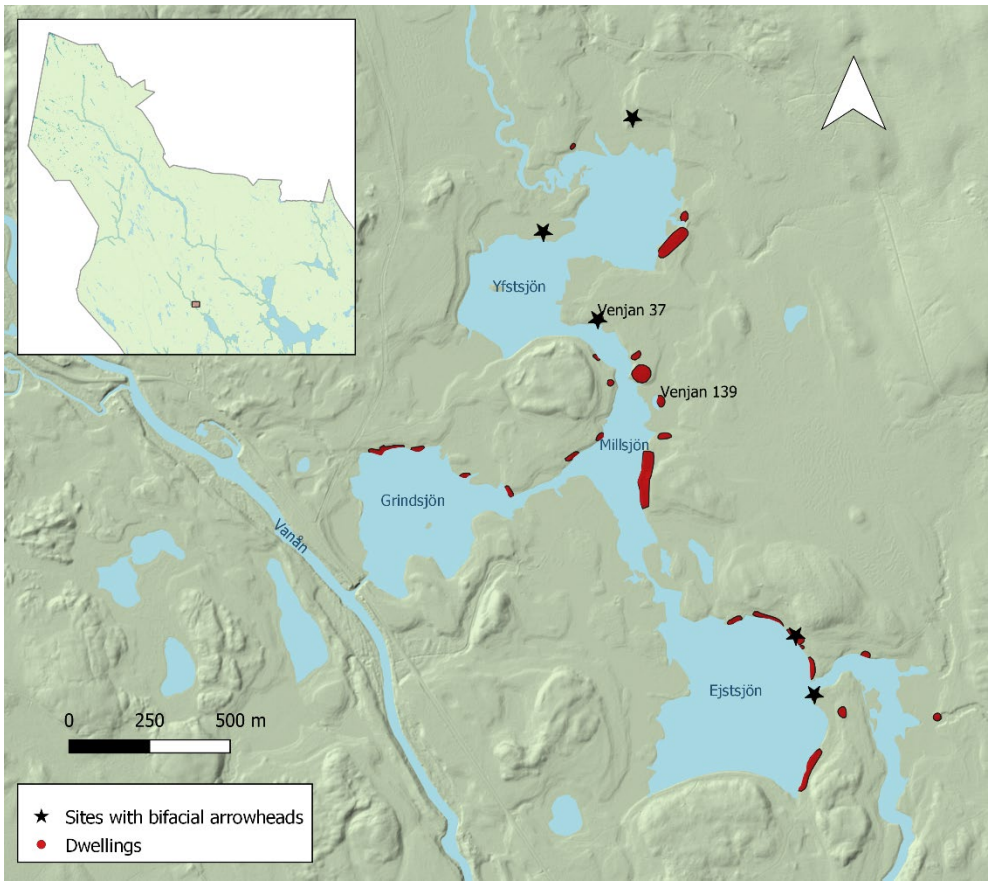


Fig. 8. The Littersjö complex. Illustration Tova Lindblad.

Site No. (KMR)	Context	Material	Lab-no.	BP	+/-	Calibrated (2 Σ)	Reference
L1999:4323 Venjan 37:1	Cultural layer	Burnt bone (elk)	Ua-71338	3221	29	1533-1429 BCE (95,4%)	
L1999:4993 Venjan 139:1	Cultural layer	Unburntbone (elk)	St-2100	1260	75	647-899 CE (90,7%) 918-960 CE (4,3%) 967-972 CE (0,4%)	Lannerbro 1976:73

Tab. 2. Radiocarbon dates from the Littersjö complex. OxCal 4.4 (Bronk Ramsey 2009), Calibration IntCal20 (Reimer et al. 2020).

VANÄNGET

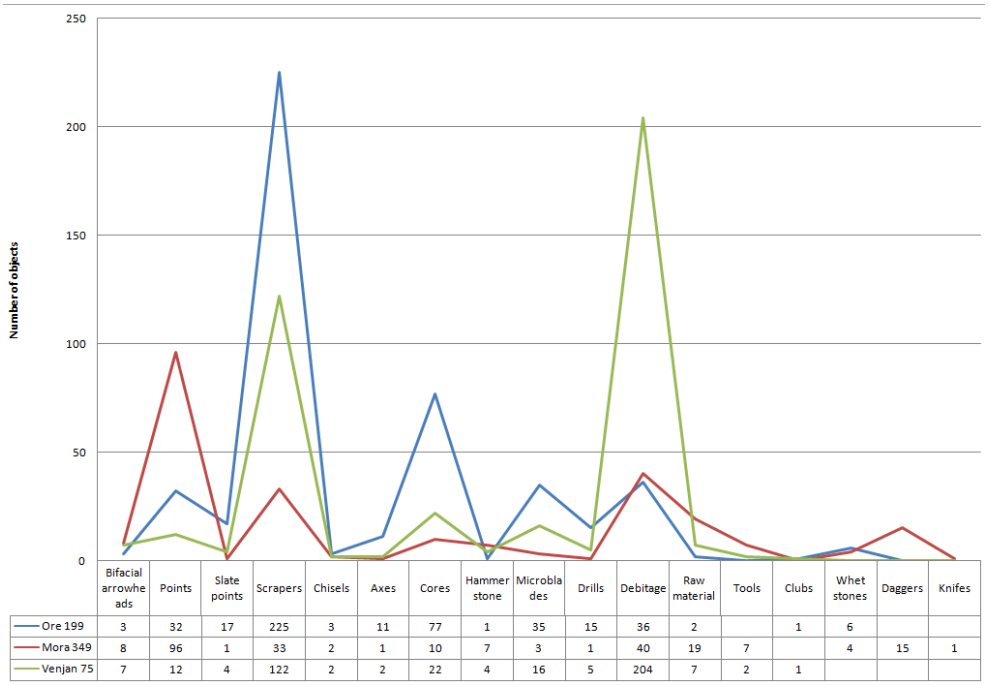
Bifacial arrowheads were found by the beaches of Lake Van situated to the south of Venjan. A large assemblage of finds was recovered from one of the sites at Vanänget, including a remarkable amount of flakes of various types of stone: red quartzite sandstone, flint, ash tuff and blue quartz. One of the bifacial arrowheads from Vanänget is made of blue quartz. It is interesting that blue quartz has been found in this area, since it mainly occurs naturally in the bedrock of the north of Dalarna, for example at Idre. Points made of red quartzite sandstone have been found at Idre, thus indicating exchange between the areas. The most common find at Vanänget, apart from the flakes, is scrapers. Similar to Kolvik and the Littersjö lakes, a hoard containing a number of bifacial arrowheads of red quartzite sandstone was discovered; all of them unfinished and heart-shaped. In the vicinity of the hoard, traces indicating a hearth were identified in a cultural layer containing fire-cracked stones, bones and charcoal. Three trapping pits from a system of trapping pits situated a few kilometres to the north of Lake Van were dated; one was from the Early Metal Age 1600- 900 BCE, and two were dated to the Iron Age (Wehlin 2016:240).

Variations among the sites

LARGE SITES

For the sake of comparison, we have compiled all the artefacts recovered from the larger sites (fig. 9). When discussing large sites in this case, we are referring to the total number of finds and not the size of the area, since the outer limit of the sites are difficult to determine. The three sites in Dalarna with the largest assemblages of finds including bifacial arrowheads are Sandnäsudden (KMR Ore 199), Kolvik (KMR Mora 349) and Vanänget (KMR Venjan 75).

The site at Vanänget differs from the other sites in that significantly greater quantities of flakes were found there compared with any of the other sites. Apart from this, scrapers are the most common artefact at Vanänget. One of the most distinct differences between Kolvik and the other sites is the greater number of points recovered from Kolvik. The category of points includes preforms identified as points which could not be further specified. Kolvik is the only site with interpreted daggers, and where the largest number of preforms were found. On the other hand, scrapers are more common at Sandnäsudden and Vanänget; the greater number found at Sandnäsudden. Slate points are much more common at Sandnäsudden, while complete and finished bifacial arrowheads are relatively uncommon at all the sites.



	Bifacial arrowheads	Points	Slate points	Scrapers	Chisels	Axes	Cores	Hammer stone	Microblades	Drills	Debitage	Raw material	Tools	Clubs	Whet stones	Daggers	Knifes
Ore 199	3	32	17	225	3	11	77	1	35	15	36	2		1	6		
Mora 349	8	96	1	33	2	1	10	7	3	1	40	19	7		4	15	1
Venjan 75	7	12	4	122	2	2	22	4	16	5	204	7	2	1			

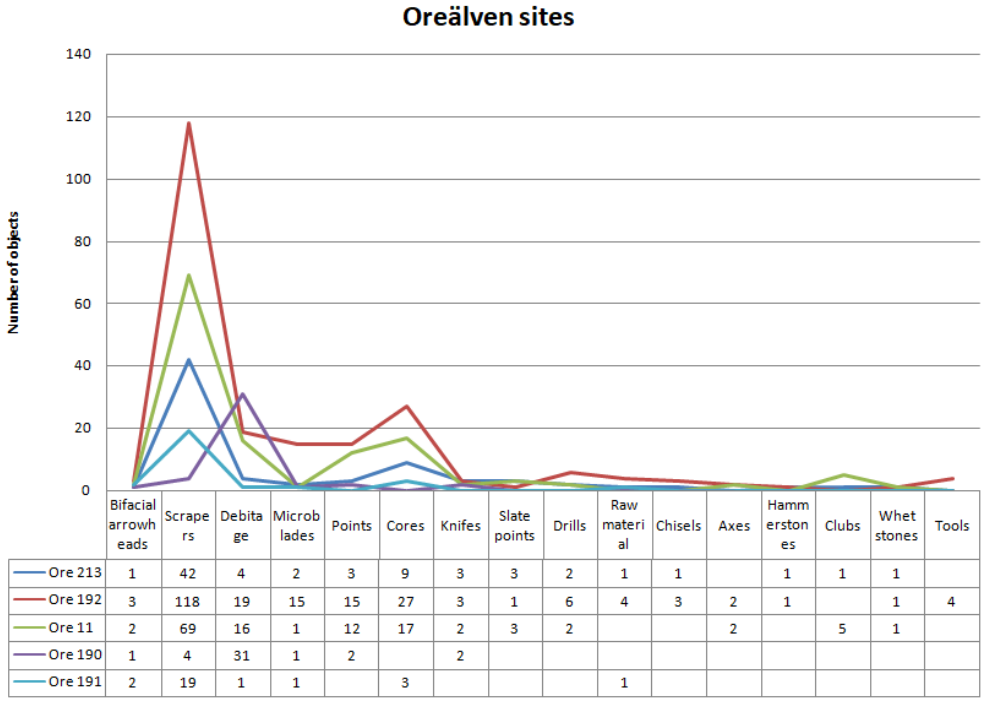
Fig. 9. The three largest sites with bifacial arrowheads in Dalarna. Illustration Tova Lindblad.

SMALL SITES

The differences in composition of assemblages at the smaller sites at Vanån, Oresjön and Skattungen are similar to the pattern that emerges in the comparison between Kolvik and Sandnäsudden. Points are predominant at the Vanån sites, and scrapers are more common along River Oreälven, where cores also occur more frequently. "Daggers" have only been found in the Vanån area, although it should be noted that many of the daggers in the assemblages are the preforms mentioned above, and not finished daggers. Points of slate are much more usual on the shores of Oreälven. Only one slate point has been encountered at Kolvik, but none at the other sites in the Vanån area. The variation of both artefacts and raw-material is typically much greater at sites along River Oreälven, while the sites along River Vanån contain less varied assemblages and the raw-material is mainly red quartzite sandstone.

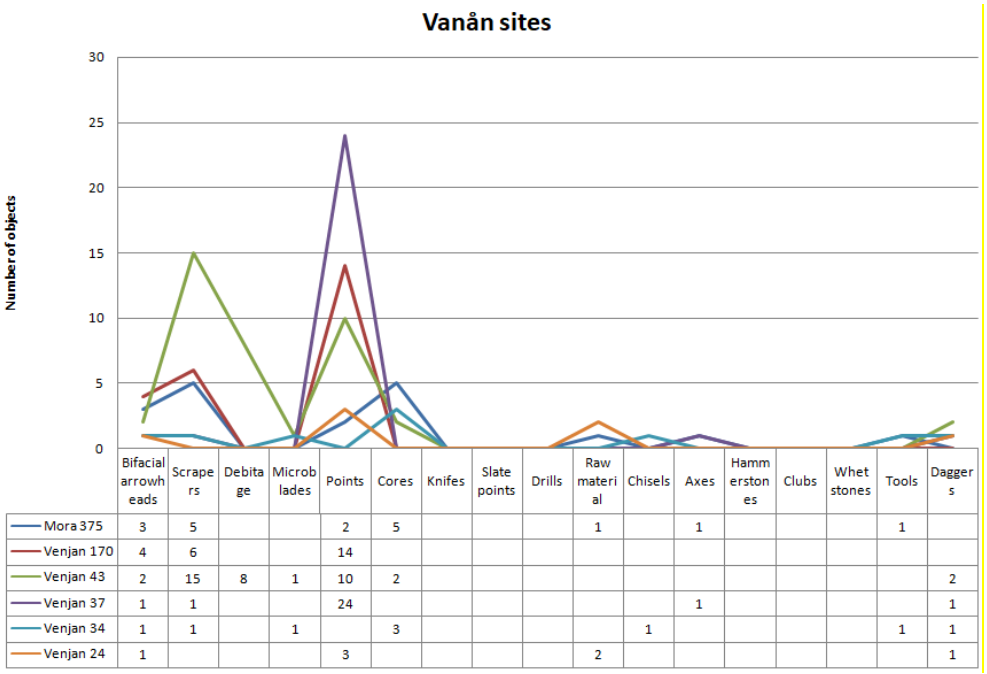
Another difference between the sites along Vanån and those along Oreälven is that significantly fewer finds were recovered from the sites of the

Littersjö complex than from the Oreälven area. Hyenstrand (1991:8) has mentioned that the sites in the surroundings of the Littersjö lakes are situated so close together that it is hard to distinguish any boundaries between them. The small assemblages of relatively homogenous find material at each site in the surroundings of the Littersjö lakes suggest that they may have been production sites rather than separate settlement sites. In his notes from the excavation of sites at the Littersjö complex, Lannerbro defines some of the sites as production sites and observes that a large number of preforms were recovered, but hardly any finished points (DMA 17748:4:16). The number of preforms also differs significantly from the sites along River Oreälven, where assemblages largely comprise finished tools or flakes. No quarries have been discovered so far in Dalarna, but the red quartzite sandstone occurs naturally in the Venjan area, which indicates that there should be a quarry nearby. Perhaps a first stage of lithic reduction was performed at the production sites of the Littersjö complex, and the finished tools were subsequently transported further afield.



	Bifacial arrowheads	Scrapers	Debitage	Microblades	Points	Cores	Knifes	Slate points	Drills	Raw material	Chisels	Axes	Hammerstones	Clubs	Whetstones	Tools
Ore 213	1	42	4	2	3	9	3	3	2	1	1		1	1	1	
Ore 192	3	118	19	15	15	27	3	1	6	4	3	2	1		1	4
Ore 11	2	69	16	1	12	17	2	3	2			2		5	1	
Ore 190	1	4	31	1	2		2									
Ore 191	2	19	1	1		3				1						

Fig. 10. Smaller sites by the beaches of River Oreälven (the lakes Skattungen and Oresjön). Illustration Tova Lindblad.



	Bifacial arrowheads	Scrapers	Debitage	Microblades	Points	Cores	Knifes	Slate points	Drills	Raw material	Chisels	Axes	Hammerstones	Clubs	Whetstones	Tools	Daggers
Mora 375	3	5			2	5				1		1				1	
Venjan 170	4	6			14												
Venjan 43	2	15	8	1	10	2											2
Venjan 37	1	1			24							1					1
Venjan 34	1	1		1		3					1					1	1
Venjan 24	1				3					2							1

Fig. 11. Smaller sites by the beaches of River Vanån (the lakes Littersjöarna and Myckelsjön). Illustration Tova Lindblad.

RADIOCARBON DATES SMALL SITES OUTSIDE THE STUDY AREAS

To examine further whether bifacial arrowheads can be used in a general way to locate and possibly even to date identified settlement sites, we have searched the archives and collections of Dalarna Museum to find organic material from these sites. We did discover a few samples, but organic material such as burnt bone or charcoal occurs extremely rarely in the collections, since these mostly consist of surface finds, and consequently lack any certain archaeological context. An exception is a charcoal sample from Grundsand in Älvdalen (KMR Älvdalen 3), which was collected from an eroded cooking pit.

These newly analysed radiocarbon dates (tab. 3) do not appear to correspond to the chronology of the bifacial arrowheads, which also confirms the importance of understanding the complexity of a continuous use of these sites. It is clear that finished bifacial arrowheads cannot be used as straightforward indicators for locating and dating settlement sites. In Dalarna, finished bifacial arrowheads appear to have been found at sites that were occupied temporally, perhaps even just for a rest or a meal.

Site No. (KMR)	Context	Material	Lab-no.	BP	+/-	Calibrated (2 Σ)	Reference
L1999:4861 Älvdalen 3:1	Cooking pit	Charcoal (pine)	Ua-51296	8191	36	7326-7072 BCE (95,4%)	Bennström et al. 2016
L1999:4861 Älvdalen 3:1	Dwelling	Burnt bone (elk)	Ua-71339	7669	33	6591-6446 BCE (95,4%)	
L2021:130 Malung	Dwelling	Burnt bone (mammal)	Ua-71340	6695	32	5706-5692 BCE (1,6%) 5670-5538 BCE (93,8%)	
L2021:145 Malung	Dwelling	Burnt bone (elk)	Ua-71341	7172	32	6077-5986 BCE (95,4%)	

Tab. 3. Radiocarbon dates from smaller sites with bifacial arrowheads outside the study area. OxCal 4.4 (Bronk Ramsey 2009), Calibration IntCal20 (Reimer et al. 2020).

COMPARISON WITH NORTHERN SWEDEN

Since there are so few studies on the archaeology of the mid-Swedish woodlands, we need to find comparisons in other regions. In the 1980s, Lars Forsberg studied settlement patterns in northern Sweden (e.g. 1985, 1989). Forsberg identified two types of base camps located in different parts of the landscape, and suggested a mobile settlement pattern for the period 1500-1 BCE. The one type of base camp was found in woodlands and was occupied during the winter and summer. The other type occurred in the lower parts of the mountains; these were used by the same groups in spring and autumn. Both types of base camp were surrounded by smaller exploitation camps. The lower mountainous regions were probably attractive during spring and autumn because of the reindeer hunting, which is favourable at these times of the year. Forsberg identified base camps focussed on reindeer hunting in the higher mountain regions. Sites in the higher mountain regions contained larger assemblages of raw-material and preforms, indicating that raw-material was gathered at these sites where there was plenty of quartzite (Forsberg 1989: 65).

The woodland base camps were larger sites with a greater variation of equipment, situated close to water suitable for fishing. The artefacts mainly consisted of processing tools rather than hunting tools. Exploitation camps in the surroundings of the base camps are divided into subcategories, the most common being processing stations followed by hunting stations. Both types of sites contain fewer finds; scrapers and cores are found at processing stations

while points and flakes mainly occur at hunting stations (Forsberg 1989: 64-65).

The sites of this study from Dalarna are not quite comparable with Forsberg's sites in north Sweden. Not least, the landscape is different; the Dalarna sites discussed here are all situated in woodland. Nevertheless, there are also similarities, for example in regard to the finds. The sites in Dalarna can be categorised as at least two different types, even if we need to be aware of the problems that exist with multiple phases of use at these sites. At some sites, large numbers of finds and a great variety of artefacts have been encountered (Sandnäsudden, Kolvik and Vansänget), while smaller sites occur too, containing more homogenous assemblages of finds, mainly points (the Littersjö complex). The smaller sites of the Littersjö complex are somewhat like hunting stations, but they might also have functioned as production sites and places for extraction and working of the raw-material for, primarily, points. In his study, Forsberg points out that production sites frequently occur in the lower mountainous areas, but it is reasonable that similar sites could just as well be found in other areas where stone material is plentiful, which seems to be the case at Vanån.

At the northern Swedish sites, bifacial arrowheads have commonly been discovered at sites characterised as settlement sites. In the Mälardalen region to the south of Dalarna, the situation is completely different. Most of the bifacial arrowheads have been discovered in burials, and when arrowheads were recovered from settlement contexts, these were fragmental to a great extent, and as it would seem, unusable artefacts (Falkenström 2007:235). While a few bifacial arrowheads have been encountered in northern Swedish burials, for example in Sundsvall and alongside River Umeälven, this is a much more common phenomenon in southern Sweden (Forsberg 2010: 132, 143-144). In northern Sweden, even at large excavated settlement sites, a minority of the finds are finished and intact arrowheads, if they occur at all; assemblages are instead dominated by fragmental arrowheads and preforms (e.g. Bergman 1995: 187; Holm 1991: 46; Forsberg 1985: table 4.13: 97). In cases when finished bifacial arrowheads were found at sites in northern Sweden, these were often understood to have been the result of repair work, for example when still functionable points were fitted in a new shaft (Bergman 1995: 187; Forsberg 2005: 142). They may also have been brought back to the settlement site inside killed animals, and then discarded. This is an interpretation used to explain fire-cracked arrowheads, which are considered to have been left in the animal when it was cooked (Apel *et al* 2005: 61). It has also been suggested that intact arrowheads were part of a standard set of equipment at a settlement site (Bergman 1995: 187). The fact that large numbers of finished arrowheads are usually not found at the same site is a logical consequence of arrows most likely having been used, and therefore shot and lost in places that are now difficult to find. Remains of the actual production process are therefore potentially better indicators of events of a more permanent nature, particularly at sites where there are larger assemblages. However, at sites established to target reindeer or elk there are sometimes a very high number of arrowheads (e.g. Mjærum 2012; Friis 2021), but no such sites have yet been found in Dalarna.

Kolvik and Venjan 37 were dated to Early Metal Age, while other sites with bifacial arrowheads have been dated by ^{14}C, and through finds of earlier types of artefacts, to much earlier periods than the arrowheads. This kind of long continuity of use has been identified at many other sites in the inland of north Sweden, where earlier and later types of artefacts often occur together (e.g. Forsberg 1985; Baudou 1995). Consequently, sites of this type are complicated to interpret. Individual arrowheads may have been brought to the site many years later through, for example, occasional visits. If the sites were situated in an attractive place, for example in favourable hunting grounds, they may have been used over a long period, like the sites alongside River Oreälven. Having been an important area from the Mesolithic to the Iron Age, Oreälven is a good example of this; the most extensive system of trapping pits in Dalarna occurs in this area, indicating favourable trapping conditions.

Fig. 15. Burned arrowhead found at Oresjön (KMR Ore 190). Photo: Per Eriksson, Dalarna museum.

COMPARISON FEMUNDSÅSEN

As previously mentioned, the sites along River Vanån are understood to have been focussed on production of points. An example of a similar kind of site can be found near Dalarna, in the eastern parts of the Norwegian inland, where a quartzite quarry at Femundsåsen was excavated. At the Femundsåsen quarry, like the sites along River Vanån, the main production was bifacial tools. Based on typology, this production is considered to have started during the late Neolithic, but to have been intensified during the Early Metal Age and Iron Age. A large number of lanceolate arrowheads with a straight base, in an early stage of production, have been identified at the quarry and surrounding sites, and were dated to Early Metal Age and Early Iron Age. The actual quarry is situated on the one side of a ridge and the stone material comes from large loosely lying blocks of stone. Several smaller workshops were located near the quarry, where a first reduction of the material took place. At Lake Femunden, a few kilometres from the quarry, small workshops with preforms and quartzite

flakes, originating from the Femunden ridge, were also discovered (Nyland 2013; Nyland 2015: 156).

Preforms of spearheads or large points were the most frequently occurring artefacts at a majority of sites containing quartzite from Femunden. Nyland points out the similarities between preforms from Femundsåsen and points from Venjan and Idre, as well as preforms from the Rana Tärna mountain region in southern Lappland (Nyland 2015: 303; Holm 1991). Quartzite from Femundsåsen occurs most often in the surroundings of the quarry, with fewer occurrences further away, which suggests local use of the material. On the other hand, Nyland suggests that the considerable amount of worked flint may be an indication that the area functioned as a gathering place for different groups of people. Furthermore, a quartzite dagger of type 1b has been discovered at Femundsåsen, which is remarkable because lithic reduction of the quartzite that comes from Femundsåsen appears to be difficult. In Dalarna, bifacial arrowheads of red quartzite sandstone are most common in the area around River Vanån, even if they were distributed in other places in the region too (Lindblad 2021: 50; Nyland 2015: 303-304).

An important point in regard to the sites at Femundsåsen is that the stone material appears to have been extracted from blocks of stone in the moraine ridge and not from solid rock. The material from the Rana Tärna region was also extracted from blocks of stone (Holm 1991: 40). No quartzite quarry has been discovered in the surroundings of River Vanån in Dalarna, even if Ragnar Lannerbro has made countless attempts to find one. Based on studies on lithic reduction, Lannerbro concludes that the stone material was extracted from solid rock (Lannerbro 1992: 16). The comparison with Femundsåsen shows that this is not necessarily the case. Rather, the sites in the surroundings of the Littersjö complex correspond very well with the sites at Femundsåsen. Describing these sites, Astrid Nyland uses the umbrella term extraction sites. A site like this "encapsulates a quarry, an exploited outcrop, or rock deposit, as well as contingent adjacent workshop sites. At an extraction site there may be evidence for any, or all, of the following: signs of reduction of loosened rock at source, limited testing of the rock from the source, and production rough-outs, cores or preforms" (Nyland 2015: 24).

Further, the Kolvik site could be discussed as a workshop in the same manner as Nyland describes Femundsåsen: "A specialised site established for the sole purpose of the initial reduction of rock procured from a specific extraction site. At a workshop site, there is debitage from several stages of production, but not the finishing stages.. A workshop site can be located directly in or adjacent to the quarry, being part of what constitutes an extraction site." (Nyland 2015: 23). Usually, debitage from other stages of the production occurs at workshop sites, together with preforms, cores and a few finished tools. However, it can be difficult to distinguish a settlement site from a workshop, and they may not necessarily be separable. Nyland considers that a settlement site could generally function as a workshop, but a workshop may not always be intended as a settlement site; a statement with which we agree (idem).

The lithics from the Vanån area have not been subject to any deeper studies yet, but a scanning of the assemblages of the Lannerbro collection indicates a broad potential for future studies. There are flakes of all sizes and a

variation of different kinds of preforms. It is clear that assemblages from both the Vanån area and Femundsåsen are similar in regard to type and character, and that a deeper study of the Vanån assemblages would provide a better understanding of these sites and their role in people's patterns of life.

Discussion

Early metal age Production sites

By studying finds of bifacial arrowheads, we have indirectly been able to identify and subsequently date a number of Early Metal Age sites, 2000-1 BCE, in Dalarna. Nonetheless, the question of the type of sites we are dealing with still remains. There are considerable differences between the sites; particularly in the surroundings of Vanån sites can be understood as workshops, mainly for producing various kinds of points. In the directives for the Swedish National Heritage Board's database for archaeological sites and monuments, it is stated that production sites/workshops should be registered as settlement sites or settlement areas. This may be correct, but it is essential to nuance interpretations of settlement sites. Assemblages from sites that we have studied in the surroundings of Vanån largely contain debitage, but cultural layers and hearths were also registered at these sites. While many researchers have problematised the concept of settlement sites over the years, Lars Forsberg's study (1985, 1989) of north Sweden has illustrated that it is possible to nuance the understanding of these sites by relating them to seasonal movement in the landscape.

In her study of the relation between production sites and known quarries in the Norwegian inland, Astrid Nyland has added further complexity to the discussion. Nyland's studies of Femundsåsen comprise similar types of assemblages as those in the surroundings of Vanån, where there are scattered workshop sites, which could be included in the umbrella term extraction site, even if the actual quarry has not yet been identified. If we then add the results of ethnographical studies, for example the studies of Ole Grøn and Oleg Kuznetsov (2003, 2004), it is clear that we have located several parts of activity sites used by one or more groups of people within a settlement zone during the Early Metal Age in Dalarna. We do not consider it improbable that all the sites within our study area around Vanån could be interpreted as one single settlement zone.

Mobility of Arrows and Humans

This study has detected, and in part illuminated, the environment where people lived around 3000 years ago in Dalarna, as well as their movements in the landscape. Nevertheless, a further insight of the study is that we have only located a small part of their patterns of movement, particularly at an everyday level. To understand them better, we need a broader perspective. Similarities can be seen with northerly sites and assemblages, but also with the south, although conditions of the mid-Scandinavian inland are different and consequently also the practices.

We consider that the sites and landscape need to be understood in the light of weather conditions and seasonal changes; the various sites were probably used in different ways during different times of the year. In part, this follows the line of discussion in northern Sweden, although conditions are different in the woodlands of the Scandinavian inland. It has for instance been suggested that summertime is a favourable time for production of bifacial arrowheads (Bergman 1995: 194), particularly the first steps of the production. Recovery and extraction of the raw-material is work of precision since the quality may vary. Good light conditions and warm weather, as well as ground that is not covered by snow, make it easier to find the best material. The actual production process requires detailed work and is probably easier if one's hands are not cold and with a good source of light, but it is possible that such work could be done even in the wintertime, by the side of a fireplace. However, it is probable that summertime was a suitable time for major jobs including all steps of the process of producing stone tools. Reasonably, this would leave a large assemblage of archaeological finds. The sites around the Littersjö lakes and Lake Venjan with large assemblages of half-finished points are probable summer season sites, considering the traces of intensive activities of producing points. At River Oreälven, on the other hand, there are no large assemblages of half-finished points; at these sites the arrowheads were complete. Interestingly, comparatively few complete arrowheads of red quartzite sandstone have been recovered from sites at Kolvik and the Littersjö lakes, while finished points of red quartzite sandstone were mainly discovered at other sites in Dalarna where there were fewer preforms.

Complete arrowheads are distributed over larger areas and illuminate a different aspect of the movement patterns of people, which should also be seen in the light of seasonal changes. When are different kinds of animals hunted? What kinds of communication routes would there have been? These probably varied depending on the time of the year. In the summer, people most likely travelled by boat along waterways. Large quantities of archaeological finds have been discovered along the shores of rivers in Dalarna, which indicates their importance and that people moved around along the waterside and lived there. Eskers have been pointed out as significant for the movement of people and animals in the prehistoric landscape. In Dalarna remains that have been dated to the Early Metal Age such as hunting ground burials, trapping pits and a major part of the bifacial arrowheads have been found on or close to these ridges (Lindblad 2021: 44; Wehlin 2016), which may have offered easier walking in terrain that might otherwise have been rough.

Waterways may have functioned as communication routes even in the winter when the ice was strong enough. Large bogs, which are impassable in the summertime, freeze in the winter and may have become available routes in the wintertime. It is possible that various types of transport were used during the winter such as sledges and skis. Unfortunately, these are usually made of perishable materials, although three prehistoric skis have discovered in Dalarna; the oldest was dated to the beginning of the Common Era (Wehlin 2018). The most difficult time to travel was probably in the spring and autumn when weather conditions were unfavourable and the ice was unstable (Damm 2016: 109).

This is a likely background which can facilitate an understanding of variations among different types of sites with bifacial arrowheads in the inland of Scandinavia. Altogether the data distinctly shows us that people moved around in the landscape, but we have only begun to understand the patterns of movement, and the networks and contacts that occurred among people.

Conclusion

By studying a specific and typologically distinct type of artefact, the bifacial arrowheads, we have been able to locate some of the first larger sites in Dalarna from the period 2000-1 BCE. But what kind of sites are they? According to the current used definition, they are settlement sites or settlement areas, but the assemblages of finds mainly consist of debitage from stone tool production. By analysing the variation among these archaeological sites, and by comparing them with sites in surrounding regions, we find that we are seeing parts of larger settlement zones where groups of people moved around over extensive geographical areas. These local communities most likely differed from the agro-pastoralists to the south, west and east, and in relation to the hunter-gatherers to the north, resulting in a local way of life, which needs to be studied in greater detail.

More extensive studies are required in order to proceed, but the results of our analysis indicate that sites with assemblages of flakes, preforms and debitage from production, rather than complete arrowheads, constitute a starting point for locating Early Metal Age sites. Complete arrowheads are spread over larger areas and indicate movement of people, and networks that extend beyond the settlement zone.

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