Settlement structure and landscape use in Southwest Norway in the last millennium BC

Trond Meling

Abstract

This study discusses settlement patterns and the interaction between farms during the last millennium BC in Rogaland. It is based on a collocation of 792 radiocarbon dates from 250 different sites retrieved through archaeological survey and excavation projects before 2020. Most of the dates are from the Pre-Roman Iron Age (500–1 BC), and the geographical distribution suggests a settlement expansion in the region around c. 500 BC. The settlement is dominated by single farms, but some areas have been densely populated, and in the northern part of the Jæren district the distance between each farmstead has not exceeded 500–700 metres during the Pre-Roman Iron Age. The distribution of radiocarbon dated sites and features within the landscape suggests that outfield areas were vital for subsistence. It is argued that the interaction and collaboration between different farms must have been extensive when exploiting resources in pastures and outfield areas, particularly in densely populated areas like the Jæren district.

Keywords: Southwest Norway, Pre-Roman Iron Age, farm structure, landscape, radiocarbon dates

Introduction

Since the end of the 1980s, when mechanical topsoil stripping became a frequently used archaeological method, the number of prehistoric agricultural settlements that have been found in Rogaland has increased considerably. Many of these settlements have produced radiocarbon dates from the Late Bronze Age (1100–500 BC) and Pre-Roman Iron Age (500–1 BC). This article is based on a collocation and an assessment of the context of all radiocarbon dates from this period in Rogaland.

The main objective is to discuss settlement patterns and farm organization in the last millennium BC. In Rogaland, settlement is dominated by single farms, but some areas were densely populated, suggesting a close coexisting settlement structure. The distribution of radiocarbon dates within the landscape also suggests that outfield areas were significant for the subsistence of the population. I will discuss land use and how the exploitation of resources within pastures and outfield areas influenced the spatial organisation of farms during the last millennium BC, and address the important question of how this affected the interaction and collaboration between different farms, especially in densely populated areas.

In *Complexity and dynamics. Settlement and landscape from the Bronze Age to the Renaissance in the Nordic Countries (1700 BC–AD 1600)*, M. Ødegaard and I. Ystgaard (eds.), pp. 41-52. Sidestone Press, Leiden.

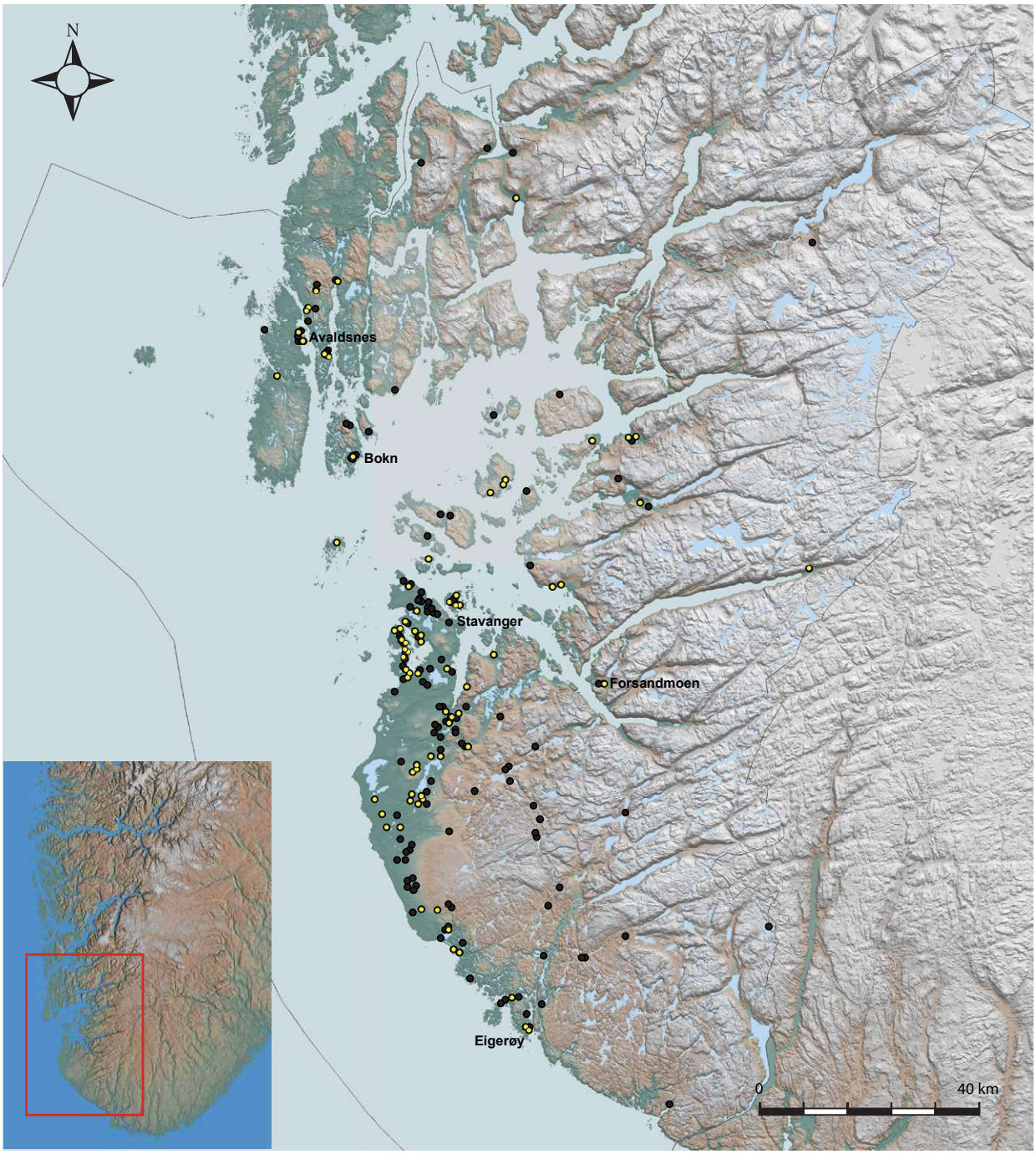

Figure 1. The distribution of sites from the last millennium BC in Rogaland, including place names mentioned in the article. The yellow dots marks sites which have radiocarbon dates from the Late Bronze Age (1000–500 BC). Illustration: Trond Meling.

Settlement and farmsteads in the last millennium BC

There is evidence of a distinct settlement expansion during the last millennium BC in several places along the coast of western Norway (e.g., Løken *et al.* 1996; Løken 1998a, 1998b; Myhre 2002; Diinhoff 2005a). Existing farm areas expanded, and pollen analyses show that new land was cleared to facilitate farming, grazing and settlement (Prøsch-Danielsen and Simonsen 2000; Overland and Hjelle 2009). At Forsandmoen in Rogaland (fig. 1), for instance, the settlement expanded from two farmsteads in the Early Bronze Age to at least six in the Late Bronze

Age (Løken *et al.* 1996:71). Houses became smaller in the last millennium BC, and even though there are some regional differences in how houses were constructed (Diinhoff 2005b), most of them have been 10–20 metres long and 5–6 metres wide (Løken 1998a, 1998b, 1999; Myhre 2002). Usually, they have traces of two opposite and recessed doors in the middle, dividing the house into separate rooms for animals and people. Most farmsteads have only one building, but some also have a second building for storage purposes or craft activities (Løken 1998b; Diinhoff 2005b).

The small houses from the Late Bronze Age and Pre-Roman Iron Age were most likely inhabited by family-like households (Myhre 2002; Björhem and Staaf 2006), and several researchers have argued that rights to arable land were related to how long a household remained as a unity (Gerritsen 1999:143–144; Herschend 2009:169–170; Bukkemoen 2015:113; Ødegaard *et al.* this volume). If the households changed, for instance by death or marriage, rights concerning the farm and the exploitation of the land had to be re-negotiated (Herschend 2009:170). Therefore, new farms were established, and existing farmsteads had to "re-emerge" when a new household took over. This is often referred to as a wandering (Gerritsen 1999:139; Holst 2010:170) or a random (Gjerpe 2017:189–190) settlement structure, and it forms a contrast to a more fixed settlement where the farmsteads were used and maintained for several generations, and where households achieved stronger rights to use of land (Gjerpe 2017:191–194). In parts of Sweden, the development of fixed farmsteads began already in the Late Bronze Age (Ullèn 1995; Borna-Ahlkvist 2002), while it first appears in the latter part of the Pre-Roman Iron Age in Norway (Bukkemoen 2015; Ystgaard 2019). In the late Pre-Roman Iron Age there are also examples of large houses with several entrances leading to different rooms (Løken 1998a; 2001), suggesting a more stratified society towards the end of the last millennium BC.

The transition from a random to a fixed farmstead is also related to the formation of the farm as a social and economic unit (Myhre 2002:121). However, the farm as a notion is disputed, and some archaeologists only use the term to describe farms dating back to the medieval period, while previous settlements are referred to as "agricultural settlements" (Grønnesby 2013:78). In this paper, traces of agricultural settlements from the last millennium BC are interpreted as remnants of farms and farmsteads – first, because most of these settlements are found within contemporary agrarian landscapes which include traces of farming and grazing, suggesting that cultivation and animal husbandry were the main reasons to settle, and, secondly, to distinguish the agricultural settlements (farms) from sites and places which were used occasionally and for short periods only.

It has been suggested that the settlement at Forsandmoen was organized as a village around 300 BC, since there were, at this time, eight different farmsteads in the area situated 30–90 metres apart (Løken *et al.* 1996:71). A village can be structured in different ways depending on time, place, and social organization, and it is difficult to create a simple or universal definition which is adequate for all types of villages (Sabo and Söderberg 2019:44). Most definitions, however, are based on quantitative (at least two or three adjacent farmsteads) and functional (collaboration between farmsteads) characteristics of the settlement (Sabo and Söderberg 2019). In this article, the extent of collaboration between different farms will be emphasised, but the discussion is based on the assumption that interaction took place between single farms in this region.

The radiocarbon dates from the last millennium BC

The dataset in this study consists of 792 radiocarbon dates (fig. 2). Around 80 % are from excavations, while the rest are from different kinds of surveys. Most of the dates are from publications and excavation/survey reports, but some are only accessible in the archives at the Museum of Archaeology, University of Stavanger and at the county Administration in Rogaland. The radiocarbon dates are sampled from 250 different archaeological sites, and nearly all are produced through development-led archaeology. Consequently, most sites are found along the coast, and in areas that are densely populated today, especially around Stavanger (fig. 1).

Several Scandinavian studies have used large datasets of radiocarbon dates as a proxy to investigate long-term changes and variations in agricultural practice, demography and human activity (e.g., Lagerås 2013; Solheim and Iversen 2019; Gundersen *et al* 2020; Mjærum 2020; Loftsgarden and Solheim this volume). Most of these studies handle a much wider time frame than the last millennium BC, and many have also modelled the radiocarbon data to avoid errors because of sampling bias (e.g Solheim and Iversen 2019; Mjærum 2020). In this study the radiocarbon dates have been calibrated in OxCal. v4.4.2, but the data has not been modelled, and the dates are only presented as an ordinary sum diagram (fig. 2). However, this diagram displays a general trend, and within the last millennium BC, the distribution of radiocarbon dates from Rogaland is similar to the sum diagrams from other parts of Scandinavia.

There has been a steady increase in the number of dates from the early part of the Late Bronze Age from Rogaland, and a small peak in the diagram is seen c. 800 BC (fig. 2). Between c. 750 BC and c. 550 BC the curve is rather flat (fig. 2). This is due to a plateau in the calibration curve, often referred to as the Hallstatt plateau, which makes it impossible to distinguish chronological sequences within

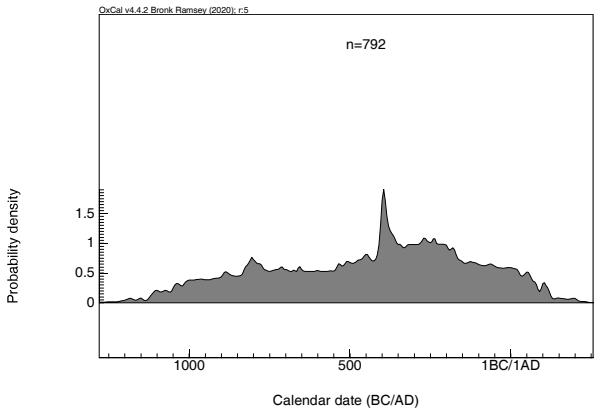

Figure 2. Sum diagram of 792 radiocarbon dates from the last millennium BC in Rogaland. The radiocarbon dates have been calibrated in OxCal v4.4.2.

this period (Ystgaard *et al* 2019:29). The most significant increase is in the Pre-Roman Iron Age, especially between c. 400 – 200 BC, while there is a subsequent small decrease in the number of dates after c. 200 BC (fig. 2).

The chronological distribution of radiocarbon dates from Rogaland suggests intensified human activity during the last millennium BC, particularly in the first half of the Pre-Roman Iron Age. This development is also demonstrated by the distribution of sites since the number of sites clearly increases, both geographically and within already settled areas, around 6–500 BC (fig. 1). Hence, there is reason to believe that both the number and the geographical distribution of radiocarbon dates, especially after c. 500 BC, reflect a period of expansion where new land was cleared to facilitate farming, grazing and the construction of settlements. A similar expansion in settlement and farming has also been demonstrated in the eastern part of Norway during this period (Gjerpe 2017; Mjærum 2020).

At 45 sites it has been possible to define buildings. These make up less than 20 % of all sites, but even so most radiocarbon dates seem to be from farms. Many of the sites are located in areas where farming conditions are good, and within most sites there are usually both a large number and a great variety of features, suggesting that they are traces of settlement.

Some radiocarbon dates, however, are from sites that do not appear to have been farms or dwellings. For instance, it is quite common to find cooking pits and fireplaces, either singly or in small clusters, from the Late Bronze Age and Pre-Roman Iron Age at Stone Age sites along the coast (e.g., Bang-Andersen 1981; Eilertsen and Redmond 2019; Sørskog 2020). Several rock shelters have also been occupied during this period, but only occasionally, and for short periods (Meling 2017a). Many of these rock shelters and Stone Age sites are situated at a distance from farmsteads, and they demonstrate that different parts of the landscape were exploited in the last millennium BC. Their location in the landscape also illustrates that outfield areas must be taken into consideration when discussing settlement structure and the spatial organisation of farms.

The farm and the surrounding landscape

To demonstrate to what extent outfield areas were related to farmsteads in the Pre-Roman Iron Age, three case studies from different parts of Rogaland will be presented. The case studies represent well documented areas, where several survey and excavation projects have taken place.

Laupland and Vågshaug, Bokn

In 2016–18 a large-scale survey and excavation project took place at Laupland and Vågshaug on Bokn (Sørskog 2018, 2020; Jensen 2020), an island situated in the northern part of the Boknafjord basin (fig. 1). The undulating landscape on Bokn, dominated by exposed bedrock, bogs, streams, and small lakes, is typical for the coastal region of southwest Norway. The land suitable for settlement and farming is somewhat limited, and within the investigated area the fields and the settlement were concentrated on a narrow strip of land at Laupland, surrounded by rocks and bogs (fig. 3). At Laupland, radiocarbon dates and botanical analysis indicate that farming started in the Late Neolithic, and that the area was continuously occupied until the medieval period. No complete houses from the last millennium BC were found, but radiocarbon dated postholes and fireplaces indicate that there have been at least four buildings at the site which have succeeded each other within the Pre-Roman Iron Age. Scattered in the surrounding landscape were several cooking pits, a cremation burial and three cairns, all contemporary with the settlement from the Pre-Roman Iron Age (fig. 3). The burial, which is of a young adult, was found in a small cairn situated on top of a rocky outcrop, about 250 metres from the settlement. The three cairns, which were found c. 750 metres from the settlement, have no clear indications of being burials, but they are interpreted as possible graves because of several construction details and the regular shape (Sørskog 2018:8). Nearly all the cooking pits were found at different Stone Age sites located between 150 metres and 800 metres from the settlement.

Gjeldestadvika, Eigerøy

A similar proximity between a settlement from the Pre-Roman Iron Age and contemporary cooking pits has also been found on the island of Eigerøy in the southern part of Rogaland (fig. 1). At a place called Gjellestadvika, several survey and excavation projects have been carried out since the early 1970s due to industrial construction work (e.g., Simonsen 1972; Bang-Andersen 1988; Bjørdal

Figure 3. The position of the settlement, fields and different structures from the Pre-Roman Iron Age at Laupland and Vågshaug on Bokn, plotted on an aerial photo from 1967. Photo: Kartverket. Illustration: Trond Meling.

and Dugstad 2014; Meling 2017a). Most excavations at Gjellestadvika have been related to Stone Age sites, but they also include a rock shelter and several gravemounds from the Roman Iron Age and the Migration Period (Bang-Andersen 1988). During surveys in 2013, archaeologists also found traces of farming and settlement dated to the Pre-Roman Iron Age (Bjørdal and Dugstad 2014), and, as on Bokn, these were situated within a limited area on high ground. The contemporary cooking pits, mostly found at Stone Age sites, are located between 100 and 300 metres from the settlement (fig 4). Pollen analyses demonstrate that the areas around the settlement were heathland and used for grazing during the Pre-Roman Iron Age (Simonsen 1972).

Avaldsnes, Karmøy

The third example is from Avaldsnes on Karmøy (fig. 1). Avaldsnes is probably best known as a place of aristocratic power and importance in the Late Roman Iron Age and onwards to the medieval period (Skre 2018). However, the agrarian settlement in the area was established in the Late Neolithic, and it expanded during the last millennium BC (Østmo and Bauer 2018). No traces of buildings have been found from this period, but radiocarbon dated features and the presence of thick cultivation layers suggest an increased settlement over time, especially in the latter part of the Pre-Roman Iron Age (Østmo and Bauer 2018:87). This assumption is supported by the existence of a similar and contemporary settlement at Velde (Dugstad 2011), only 500 metres southwest of Avaldsnes (fig. 5). Many of the cooking pits dated to the Pre-Roman Iron Age at Avaldsnes are found within or close to the fields (Østmo and Bauer 2018:87), but they also occur in the outskirts of the settled areas, along the seashore and on small islands close to land (fig. 5).

Discussion

Pollen analyses show that grass- and heathland dominated the coastal landscape of southwest Norway in the Pre-Roman Iron Age (Prøsch-Danielsen and Simonsen 2000), and many of the structures found in the proximity of the settlements on Bokn and Eigerøy and at Avladsnes probably relate to grazing, the tending of animals and the exploitation of hay-meadows. Some of the cooking pits, at least on Eigerøy and those close to the sea

Figure 4. The position of the settlement and cooking pits from the Pre-Roman Iron Age at Gjellestadvika, Eigerøy, plotted on an aerial photo from 1967. Photo: Kartverket. Illustration: Trond Meling.

Figure 5. The position of the settlement/fields and different structures from the Pre-Roman Iron Age at Avaldsnes and Velde, plotted on an aerial photo from 1964. Photo: Kartverket. Illustration: Trond Meling.

at Avaldsnes, could also be related to fishing and hunting of sea mammals. It is also likely that cooking pits were used during special occasions and gatherings, such as juridical and political meetings (Gjerpe 2001; Ødegaard 2019) and ritual activities (Narmo 1996; Henriksen 2005). The ritual use of the surrounding landscape is also illustrated by the burial on Bokn and by the discovery of four ard shares close to Avaldsnes. The ard shares were found in a bog about 1 kilometre west of Avaldsnes (fig. 5), and the location could indicate that the bog was situated at a territorial boundary (Zachrisson 2018:695–696).

The variety and number of structures in meadows and outfield areas suggest that resources within such landscapes were important for subsistence in the Pre-Roman Iron Age. There is also reason to believe that these resources had an influence on the location and organization of farms. In areas with a dense population, they would most likely also affect how adjacent farms interacted and coexisted.

The interaction between farms

The highest concentration of sites with radiocarbon dates from the last millennium BC in Rogaland is in the northern part of the Jæren district, especially around Hafrsfjord (fig. 6). Only small parts of this area are higher than 100 metres above sea level, and it is covered by thick and fertile Quaternary deposits which present favourable conditions for cultivation (Bergstrøm *et al.* 2010). Hafrsfjord is also one of few sheltered harbours along the coast of Jæren. So far, surveys and excavations have uncovered over 20 farm sites from the last millennium BC (fig. 6). These are situated on both sides of the fjord, but the majority are along the western part, particularly at Tjora and Sømme (Fyllingen and Armstrong 2012a; Eilertsen 2016; Meling 2017b, Lindell *et al.* 2018; Fyllingen 2019; Meling *et al.* 2020a).

Far from all sites around Hafrsfjord have been the subject of thorough excavations, but many have traces of thick cultivation layers and continuous agricultural settlements dating back to the Late Neolithic (e.g., Tansøy 2001; Fyllingen and Armstrong 2012a; Meling 2017b; Meling *et al.* 2020a). One example is a site at Sømme which had traces of twelve houses. The oldest house is dated to the transition between the Late Neolithic and Early Bronze Age, while the rest are from the last millennium BC (Meling 2017b; Meling *et al.* 2020a). Apart from a Late Bronze Age house, which was 20–25 metres long, all houses dated to the last millennium BC had a length of around twelve metres. The size indicates that the houses were occupied by family-like households, and both radiocarbon dates and the location within the site suggest that the houses succeeded each other over time. Because of massive aeolian activity the site was abandoned in the latter part of the Pre-Roman Iron Age, and the area was not re-occupied until the Late Iron Age.

The relocation of houses within a limited area at Sømme suggests a rather stable settlement structure at the site during the last millennium BC. Not all settlements around Hafrsfjord have the same long-lasting stability, and some were only used in the Pre-Roman Iron Age (e.g., Lindell *et al.* 2018; Meling *et al.* 2018; Lindell this volume). However, many of the pre-Roman settlements have multiple houses from this period (Bjørlo 2011; Meling *et al.* 2018; Fyllingen 2019). Pollen analysis also shows that agriculture expanded in the area at this time, and that permanent fields and hay-meadows were established (Fredh *et al.* 2018). This suggests that the settlement around Hafrsfjord increased during the Pre-Roman Iron Age, and that many farmsteads became fixed farms/settlements which were occupied for several generations. At Sømme this development seems to have taken place already in the Late Bronze Age (Meling *et al* 2020a).

The distance between each farmstead also supports the suggestion of a structural stability in the area, particularly in the Pre-Roman Iron Age when most farms were situated no more than 500 to 700 metres apart (fig. 6). In some places the distances were even less. One example is from Tjora where two farmsteads were situated 125 metres apart in the 4th century BC (Fyllingen 2019). Both farmsteads were located on a ridge but separated from each other by a marshy area. Another site is Varaberg, which has remnants of seven houses dated to the first half of the Pre-Roman Iron Age (Meling *et al.* 2018). Most of the houses have succeeded each other within this period, but radiocarbon dates and the position of the houses suggest that there might have been two separate farmsteads, only 20 metres apart, within the site in the second half of the 4th century BC.

Around Hafrsfjord there are several graves, ritual deposits, and sites with single or small clusters of cooking pits dated to the last millennium BC (fig. 6), and like the situation at Bokn, Eigerøy and Avaldsnes, many are located on the outskirts of the settlement or between different farmsteads. At Sømme, for instance, three cooking pits dated to 1000–600 BC have been recorded in an area which was used for pasture in the Late Bronze Age, and which was situated c. 500 metres from the nearest contemporary farmstead (Meling *et al.* 2020b). The same proximity between settlements and cooking pits is also recorded at Tjora and Myklebust, and at these sites some of the cooking pits were related to large boulders (Bell 2012; Fyllingen and Armstrong 2012b). At Tjora the distance between the boulder and the settlement was around 150 metres, suggesting that it was situated on the outskirts of a farmstead. The location and the size also suggest that the boulders had a ritual function (Bell 2012; Fyllingen and Armstrong 2012b), and close to the boulder at Tjora, on a rocky hilltop, was a grave field with at least seven cremation burials from the last millennium BC (Fyllingen and Armstrong 2012b). The grave field was

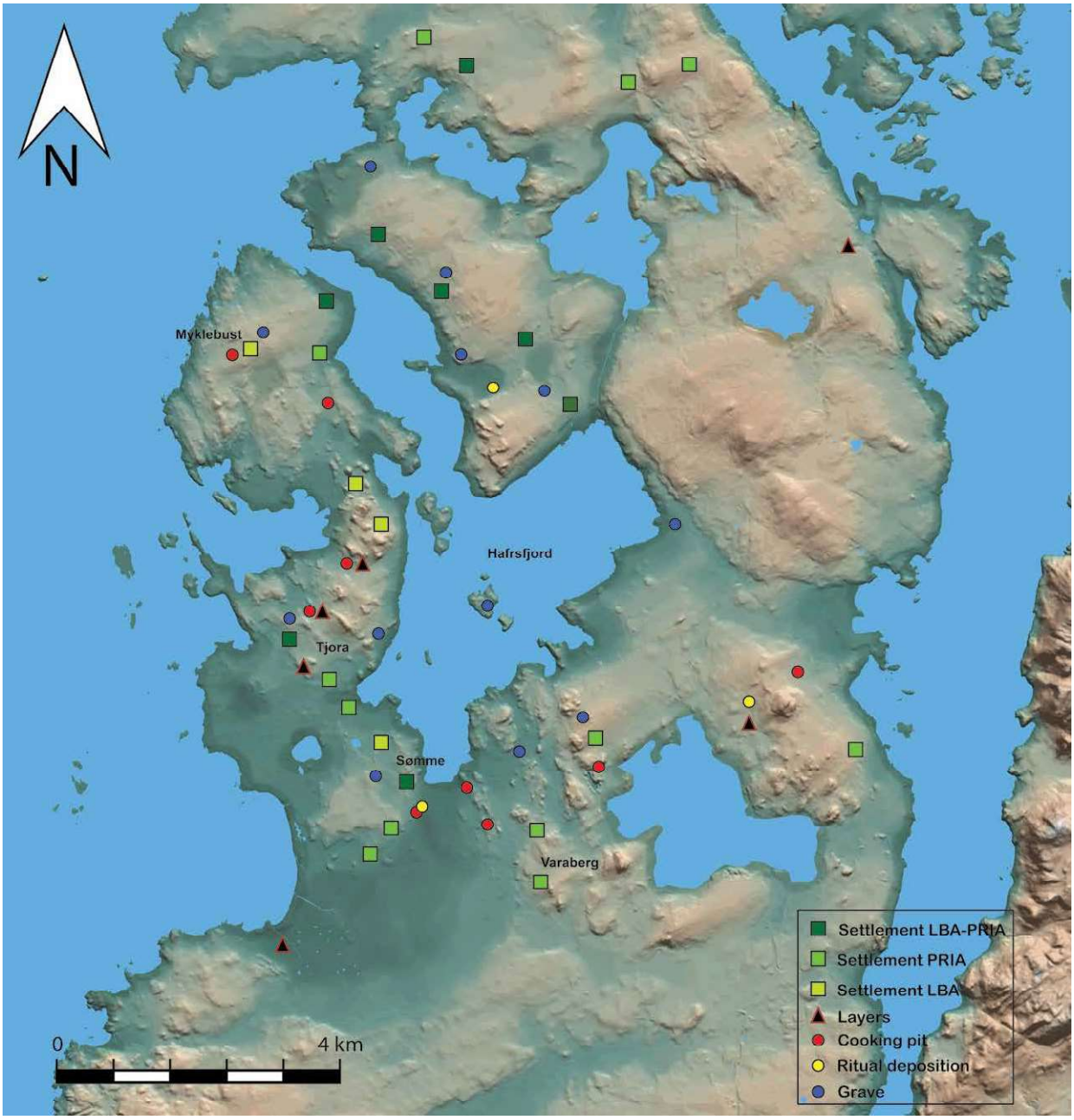

Figure 6. The distribution of settlements, graves, ritual depositions, and cooking pits from the last millennium BC around Hafrsfjord. Illustration: Trond Meling.

most likely related to one or several farms at Tjora, and the location could have been a boundary between different farms or landscapes. Ritual deposits in bogs may have had a similar function, since the great majority of such finds in Rogaland come from agrarian landscapes where the bogs were natural boundaries that differed significantly from the surroundings (Flesland 2014).

It has been argued that the settlement expansion in the Pre-Roman Iron Age must have influenced how, and to which extent, outfield areas were used, and that the exploitation of resources in the outfield was subject to common regulations (Björhem and Staaf 2006:192; Friman 2008:116; Holst 2010:158). Rock shelters may have functioned as important focal points when drawing up and monitoring such regulations (Meling 2017a), but this could also apply to large boulders, graves and cooking pits scattered in the landscape. Grazing was probably well organized in this period (Petersson 2004:231–232), and cooking pits in grazing areas, like those at Sømme, could represent places where herdsmen gathered and tended the animals (Prescott 1995;

Petersson 2001). It is also possible that such places were related to specific farm areas or farmsteads as part of a common regulation of pastures and outfield areas, and perhaps the rights to exploit the resources were associated with the household as a unit. If so, these rights had to be re-negotiated when the composition of the household changed, and the cooking pits could represent meeting places in the landscape where rights between neighbouring farms were settled. The meeting places probably changed over time in step with the settlement expansion, and this could explain why no large assemblages of cooking pits have been found within pastures and outfield areas around Hafrsfjord, which would suggest a regular use of the same place. Instead, the only finds of such features have been single or small clusters scattered in the landscape.

The large number of farms around Hafrsfjord, particularly in the Pre-Roman Iron Age, and the extensive exploitation of pastures and outfield areas, suggest a comprehensive collaboration and solidarity between different farms. The distance between some of the farmsteads was also very short, and some might characterise the settlement, at least in parts of the area, as a village. I am, however, reluctant to use this label since there are no fences linking the settlements together, and since most of the farms have been separated from each other by natural barriers like bogs, streams, and small lakes. Still, the need for working together, making agreements and negotiating rights was probably much more important for subsistence around Hafrsfjord, than in less densely populated areas of Rogaland. The result of this collaboration could even have been some measure of unity between farms where different households regarded themselves as a group with common interests. In my opinion, the settlement around Hafrsfjord demonstrates that single farms could have a high degree of interaction without being organized as a village.

Bibliography

Bang-Andersen, S. 1981: En fangstboplass på Eigerøy – boplassbruk og miljøtilpasning i sørvestnorsk yngre steinalder. AmS-Skrifter 6, Stavanger

Bang-Andersen, S. 1988 Fortid og framtid i Gjeldestadvika. Arkeologisk museum i Stavanger, Oppdragsrapport 1988:1. Arkeologisk museum i Stavanger, Stavanger.

Bell, T. G. 2012: Arkeologisk utgraving av lokalitet alvasteinen på Myklebust gnr. 3, bnr. 1134, Sola kommune. Oppdragsrapport B 2012/12. Universitetet i Stavanger/Arkeologisk museum, Stavanger.

Bergstrøm, B., L. Olsen, K. Riiber and A. J. Reite 2010. Rogaland fylke, løsmassekart, M 1:200 000. Norges geologiske undersøkelse.

Bjørdal, E. and S. A. Dugstad 2014 Kulturhistoriske registreringer. Aker Solutions, Eigerøy gnr. 8, bnr. 36, Eigersund kommune. Rogaland fylkeskommune, Kulturavdelingen Rapport 3/2014, Stavanger.

Bjørlo, A. H. 2011 Arkeologisk utgraving av bosetningsspor fra eldre jernalder og graver fra yngre jernalder på Skadberg gnr. 32, bnr. 1 og 2, Sola k. Rogaland. Oppdragsrapport B 2011/11. Universitetet i Stavanger/Arkeologisk museum, Stavanger.

Björhem, N. and M. Staaf 2006 *Långhuslandsapet. En studie av bebyggelse och samhälle från stenålder til järnålder. Öresundforbindelsen och arkeologin*. Malmöfynd nr 8. Erlanders Berlings AB, Malmö.

Borna-Ahlkvist, H. 2002 *Hällristarnas hem. Gårdsbebyggelse och struktur i Pryssgården under bronsålder*. Riksantikvarieämbetet Arkeologiska undersökningar Skrifter 42. Malmö.

Bukkemoen, G. B. 2015 Ett hus – mange livsløp. Boligens biografi i førromersk jernalder belyst gjennom et gårdsanlegg i Askim. *Viking* 78:95–118.

Diinhoff, S. 2005a Den vestnorske agrarbosætning. Fra sen stenalder til folkevandringstid. Arkeologiske resultater fra et tiår med fladeafdækninger på Vestlandet. In *Konstrusksjonsspor og byggeskikk. Maskinell flateavdekking – metodikk, tolking og forvaltning*, M. Høgestøl, L. Selsing, T. Løken, A. J. Nærøy and L. Prøsch-Danielsen (eds.), pp. 75–85. AmS-Varia 43, Arkeologisk museum i Stavanger, Stavanger.

Diinhoff, S. 2005b: Den førromerske jordbruksbosætning på Moflaten ved Ørsta. In *Fra funn til samfunn. Jernalderstudier tilegnet Bergljot Solberg på 70-årsdagen*, K. A. Bergsvik and A. Engevik (eds.), pp. 105–119. UBAS. Universitetet i Bergen, Arkeologiske Skrifter, Nordisk 1. Bergen.

Dugstad, S. A. 2011 Rapport fra kulturhistorisk registering gnr. 86, bnr. 1 m.fl., gnr. 87, bnr. 4, Karmøy kommune. Rogaland fylkeskommune, Regionalutviklingsavdelingen, kulturseksjonen, Stavanger.

Eilertsen, K. S. 2016: Hus og hytter ved Tanangerveien. *Frà haug ok heiðni* 1:16–22.

Eilertsen, K. S. and J. Redmond 2019 Steinalderen i Sola sentrum. *Frà haug ok heiðni* 4:24–30.

Fredh, E. D., L. Prøsch-Danielsen and C. E. Jensen 2018 A Synthesis of Pollen Composition in Prehistoric Cultivation Layers in Southwestern Norway. *Environmental Archaeology* 27(2):127–145, doi:10.1080/14614103.2018.1536499.

Friman, B. 2008 *Att stå på egna ben. Centrala funktioner och lokal utveckling under yngre bronsålder och äldre järnålder i Mellanbyn, Skåne*. Malmöfynd nr 18. Elanders Sverige AB, Malmö.

Flesland, M. 2014 Myrdeponerte kar fra førromersk jernalder på Vestlandet – en analyse. Unpublished masterthesis. Universitetet i Bergen, Bergen.

Fyllingen, H. 2019 Et førromersk gårdskompleks på Tjora i Sola. *Frà haug ok heiðni* 1:13–16.

Fyllingen, H. and N. J. O. Armstrong 2012a Arkeologisk utgraving på Tjora gnr. 10, bnr. 5, 17 og 19. Sola

kommune, Rogaland. Sesong 2009 – id 114908. Oppdragsrapport B 2012/23B. Universitetet i Stavanger/Arkeologisk museum, Stavanger.

Fyllingen, H. and N. J. O. Armstrong 2012b Arkeologisk utgraving på Tjora gnr. 10, bnr. 5, 17 og 19. Sola kommune, Rogaland. Sesong 2008 – id 14854 og id 158316. Oppdragsrapport B 2012/23A. Universitetet i Stavanger/Arkeologisk museum, Stavanger.

Gerritsen, F. 1999: The cultural biography of Iron Age houses and long-term transformation of settlement patterns in southern Netherlands. In *Settlement and Landscape. Proceeding of a conference in Århus, May 4–7 1998, Denmark*, C. Fabech and J. Ringtvedt (eds.), pp. 139–148. Jutland Archaeological Society, Højberg.

Gjerpe, L. E. 2001 Kult, politikk, fyll, vold og kokegropfeltet på Hov. *Primitive tider* 4:5–17.

Gjerpe, L. E. 2017 *Effektive hus. Bosetning, jord og rettigheter på Østlandet i jernalder*. Bind I av II. Unpublished PhD thesis. Institutt for arkeologi, konservering og historie. Det humanistiske fakultet. Universitetet i Oslo, Oslo.

Grønnesby, G. 2013 Bosetning på Torgårdsletta, Trondheim og Egge, Steinkjer. Et innlegg i diskusjonen om den norske gårdens opprinnelse. In *Jordbruksbosetningens utvikling på Vestlandet. Kunnskapsstatus, presentasjon av nye resultater og fremtidige problemstillinger*, S. Diinhoff, M. Ramstad and T. Slinning (eds.), pp. 77–92. UBAS. Arkeologiske Skrifter 7. Universitetet i Bergen, Bergen.

Gundersen, I. M., C. L. Rødsrud and J. Post-Melbye 2020 Kokegroper som massemateriale. Regional variasjon i en kulturhistorisk brytningstid. In *Ingen vei utenom. Arkeologiske undersøkelser i forbindelse med etablering av ny rv. 3/25 i Løten og Elverum kommuner, Innlandet*, C. L. Rødsrud and A. Mjærum (eds.), pp. 187–199. Cappelen Damm Akademisk forlag, Oslo.

Henriksen, M. B. 2005 Danske kokegruber og kokegrubefelter fra yngre bronzealder og ældre jernalder. In *De gåtefulle kokegropene*, L. Gustafson, T. Heibreen and J. Martens (eds.), pp. 77–102. Varia 58. Universitetets kulturhistoriske museer, Fornminneseksjonen, Oslo.

Herschend, F. 2009 *The Early Iron Age in South Scandinavia. Social Order in Settlement and Landscape*. Occasional Papers in Archaeology, vol. 46. Uppsala Universitet, Uppsala.

Holst, M. K. 2010 Inconstancy and stability – Large and small farmsteads in the village of Nørre Snede (Central Jutland) in the first millennium AD. In *Settlement and Costal Research in the Southern North Sea Region 33*, pp. 155–179. Niedersächsisches Institut für historiche Küsteforschung. Verlag Marie Leidorf GmbH, Rahden/Westf.

Jensen, C. E. 2020 Vegetasjonshistorisk undersøkelse av myr på Laupland, gnr. 15, bnr. 5, Bokn k. (Rogfast IV). Oppdragsrapport 2020/30. Universitetet i Stavanger/Arkeologisk museum, Stavanger.

Lagerås, P. 2013 Agrara fluktuationer och befolkningsutveckling på sydsvenska höglandet tolkade utifrån röjningsrösen. *Fornvännen* 108:263–277.

Lindell, S. H., H. Fyllingen, M. M. Lempiäinen-Avci and J. Lechterbeck 2018 Arkeologiske undersøkelser av en sen-mesolittisk lokalitet samt bosetningsspor fra sen-neolitikum og før-romersk jernalder. Id 178709 og 178711, Tjora gnr. 10, Sola k. Oppdragsrapport 2017/15. Universitetet i Stavanger/Arkeologisk museum, Stavanger

Løken, T. 1998a Det forhistoriske huset i Rogaland – belyst ved flateavdekkende utgravinger. In *Hus och tomt i Norden under förhistorisk tid*, O. Kyhlberg (ed.), pp. 169–184. Bebyggelseshistorisk tidskrift Nr. 33, 1997. Uppsala.

Løken, T. 1998b Hustyper og sosialstruktur gjennom bronsealder på Forsandmoen, Rogaland, Sørvest-Norge. In *Bronsealder i Norden. Foredrag ved det 7. nordiske bronsealdersymposium i Rogaland 31. august - 3. september 1995*, T. Løken (ed.), pp. 107–121. AmS-Varia 33, Arkeologisk museum i Stavanger, Stavanger.

Løken, T. 1999 The longhouses of Western Norway from the Late Neolithic to 10th Century AD: representatives of a common Scandinavian building tradition or a local development? In *Grindbygde hus i Vest-Norge. NIKU-seminar om grindbygde hus*, H. Scheldrup and O. Storsletten (eds.), pp. 52–64. NIKU Temahefte 20. Oslo.

Løken, T. 2001 Oppkomsten av den germanske hallen – Hall og sal i eldre jernalder i Rogaland. *Viking* 64:49–86.

Løken, T., L. Pilø, and O. Hemdorff 1996 *Maskinell flateavdekking og utgraving av forhistoriske jordbruksboplasser, en metodisk innføring*. AmS-Varia 26, Arkeologisk museum i Stavanger, Stavanger.

Meling, T. 2017a Hellere i Rogaland og bruken av landskapet i førromersk jernalder. *Viking* 80:7–24.

Meling, T. 2017b Hus fra bronsealder og førromersk jernalder på Sømme i Sola. *Frà haug ok heiðni* 2:20–24.

Meling, T., J. Lechterbeck and D. E. Mooney 2018 Arkeologiske undersøkelser av landbruks- og bosetningsspor fra yngre bronsealder og førromersk jernalder på Varaberg (id 216503, id 216501, id 217017), Skadberg gnr. 32, bnr. 1233 m/ fl., Sola kommune. Oppdragsrapport 2018/13. Universitetet i Stavanger/Arkeologisk museum, Stavanger.

Meling, T., C. E. Jensen and E.-C. Soltvedt 2020a Arkeologiske og naturvitenskaplige undersøkelser av landbruks- og bosetningsspor fra seinneolitikum til middelalder, samt metallhåndverk fra vikingtid (id 150770, id 150765, id 150766) på Sømme (Sømme IV). Sømme gnr. 15, bnr. 5 m.fl. i Sola kommune, Rogaland fylke. Oppdragsrapport 2020/16. Universitetet i Stavanger/Arkeologisk museum, Stavanger.

Meling, T., H. Fyllingen and S. Denham 2020b Arkeologiske undersøkelser av bosetningsspor fra seinmesolitikum og tidligneolitikum, samt aktivitetsspor fra bronsealder og førromersk jernalder (id 150773, id 150775, id 150776) på Sømme (Sømme III). Sømme gnr. 15, bnr. 161 m.fl. i Sola kommune, Rogaland fylke. Oppdragsrapport 2020/17. Universitetet i Stavanger/Arkeologisk museum, Stavanger.

Mjærum, A. 2020 The emergence of mixed farming in eastern Norway. *Agricultural history review* 68(1):1–21.

Myhre, B. 2002 Landbruk, landskap og samfunn 4000 f. Kr.–800 e.Kr. In *Norges landbrukshistorie* I, B. Myhre and I. Øye, pp. 12–213. Samlaget, Oslo.

Narmo, L. E. 1996: Kokekameratene på Leikvin. Kult og kokegroper. *Viking* 59:79–101.

Overland, A. and K. L. Hjelle 2009 From forest to open pastures and fields: cultural landscape development in western Norway inferred from two pollen records representing different spatial scales of vegetation. *Vegetation History and Archaeobotany* (2009) 18:459–476.

Ødegaard, M. 2019 Assembling in times of transition. The case of cooking-pit sites. In *Settlement change across Medieval Europe. Old paradigms and new vistas*, N. Brady and C. Theuwn (eds.), pp. 185–194. Ruralia XII. Sidestone Press, Leiden.

Østmo, M. A. and E. L. Bauer 2018 Site Periods and Key Contexts. In *Avaldsnes - A Sea-kings` Manor in First-Millennium Western Scandinavia*, D. Skre (ed.), pp. 83–102. Walter de Gruyter, Berlin/Boston.

Petersson, M. 2001 Grazing and hearts in west Östergötland 1000-1 BC. In *One Land, Many Landscapes. Papers from a session held at the European Association of Archaeologists Fifth Annual Meeting in Bournemouth 1999*, T. Darvill and M. Gojda (eds.), pp. 125–145. BAR International Series 987. Oxford.

Petersson, M. 2004 Animal husbandry and social hierarchies in Östergötland in the Pre-Roman Iron Age. In *PECUS. Man and Animal in Antiquity. Proceedings of the Conference at the Swedish Institute in Rome, September 9-12, 2002*, B. S. Frizell (ed.), pp. 225–234. The Swedish Institute in Rome. Projects and Seminars 1, Roma.

Prescott, C. 1995 *From Stone Age to Iron Age. A Study from Sogn, western Norway*. BAR International Series 603, Oxford.

Prøsch-Danielsen, L. and A. Simonsen 2000 *The deforestation patterns and the establishment of the coastal heathland of southwestern Norway.* AmS-Skrifter 15. Arkeologisk museum i Stavanger, Stavanger.

Sabo, K. S. and B. Söderberg 2019 Byns vara eller icke vara, är det frågan? By och bebyggelse i sydvästra Skåne 400-1800 e.Kr. *in Situ Archaeologica* 13:5–54.

Simonsen, A. 1972: Da bøndene kom til Gjeldestadvige. *Frà haug ok heiðni* 2:235–239.

Skre, D. 2018 Aristocratic Presence along the Karmsund Strait 2000 BC–AD 1368. In *Avaldsnes - A Sea-kings` Manor in First-Millennium Western Scandinavia*, D. Skre (ed.), pp. 749–764. Walter de Gruyter, Berlin/Boston.

Solheim, S. and F. Iversen 2019 The mid-6th century crises and their impacts om human activity and settlements in south-eastern Norway. In *Settlement change across Medieval Europe. Old paradigms and new vistas*, N. Brady and C. Theuwn (eds.), pp. 423–434. Ruralia XII. Sidestone Press, Leiden.

Sørskog, O. 2018 Steinalderbosetningen på Bokn. *Frà haug ok heiðni* 3:3–10.

Sørskog, O. 2020: Arkeologiske undersøkelser på Laupland gnr. 15 og Vatnaland gnr. 13, Bokn k. (Rogfast II). Oppdragsrapport 2020/31. Universitetet i Stavanger/Arkeologisk museum, Stavanger.

Tansøy, B. 2001 To hus og ein heil haug med keramikk – Nokre resultat etter utgravinga på Utsola sommaren 2001. *Frà haug ok heiðni* 4:32–34.

Ullèn, I. 1995 The power of case studies. Interpretation of a Late-Bronze-Age settlement in Central Sweden. *Journal of European Archaeology* 1994 2(2):249–262.

Ystgaard, I. 2019: Spatial organization of farmsteads at Iron Age and early medieval Vik (c. 400 BC – AD 1250). In *Environment and settlement: Ørland 600 BC – AD 1250. Archaeological excavations at Vik, Ørland main air base*, I. Ystgaard (ed.), pp. 373–396. Cappelen Damm Akademisk, Oslo.

Ystgaard, I., M. M. Gran and U. Fransson 2019 Environment and settlement at Vik, Ørland: A phase framework. In *Environment and settlement: Ørland 600 BC – AD 1250. Archaeological excavations at Vik, Ørland main air base*, I. Ystgaard (ed.), pp. 23–48. Cappelen Damm Akademisk, Oslo.

Zachrisson, T. 2018 Depositional Traditions in Iron Age Kormt. In *Avaldsnes - A Sea-kings` Manor in First-Millennium Western Scandinavia*, D. Skre (ed.), pp. 687–720. Walter de Gruyter, Berlin/Boston.