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The Vikings were not the first colonizers of the Faroe Islands

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Abstract

We report on the earliest archaeological evidence from the Faroe Islands, placing human colonization in the 4th-6th centuries AD, at least 300-500 years earlier than previously demonstrated archaeologically. The evidence consists of an extensive wind-blown sand deposit containing patches of burnt peat ash of anthropogenic origin. Samples of carbonised barley grains from two of these ash patches produced ^{14}C dates of two pre-Viking phases within the 4th-6th and late 6th-8th centuries AD. A re-evaluation is required of the nature, scale and timing of the human colonization of the Faroes and the wider North Atlantic region.

Keywords: Faroe Islands, earliest human settlement, ^{14}C dating

Introduction

The Faroes were the first stepping-stone beyond Shetland for the North Atlantic Viking diaspora that culminated in the European discovery of continental North America in the 11th century AD. The first major phase of human settlement of the Faroes (or *landnám* – Old Norse for landtake) was hitherto thought to have been by the Vikings in the 9th century (Arge 1991, forthcoming; Debes, 1993; Dugmore et al 2005), represented by archaeological sites ^{14}C dated to the Viking age (Table 1), for example at Undir Junkarinsfløtti (Church et al., 2005) and Toftanes (Vickers et al., 2005). Previous research on the contemporary literary source of *De Mensura Orbis Terrae* written by the Irish monk Dicuil c. AD 825, attested to ecclesiastical anchorites settling remote North Atlantic islands (Tierney, 1967), but the specific identification of the Faroes in the text is a subject of debate (Arge 1991; Debes, 1993; Thorsteinsson, 2005; Dugmore et al., 2010). Palaeoenvironmental reconstruction in the form of close-interval pollen analysis (Jóhansen, 1985; Hannon et al., 2000, 2001, 2005; Edwards et al., 2005; Edwards and Borthwick, 2010), has also suggested that small-scale human settlement may have occurred in 5th-6th centuries cal AD. This early settlement was proposed through the ^{14}C dating of sediment layers containing the first appearance of barley-type pollen, at sites such as Heimavatn in the north of the island chain and Hov in the south (see Figures 1 and 2a). However this equivocal literary and palaeoenvironmental evidence of human settlement in the mid first millennium AD has never been corroborated from definitive and stratigraphically robust archaeological remains. This paper presents new ^{14}C dates from a multi-phase archaeological site at Á Sondum (see Figure 1) that places human colonization in the 4th-6th centuries AD, at least 300-500 years earlier than previously demonstrated archaeologically.

Methods

Archaeological remains at Á Sondum on the island of Sandoy (61°50.3´N, 6°48.1´W), have been exposed by coastal erosion over many decades. Investigations by Arge and Jensen in 1994 indicated Viking settlement at the base of the sequence. The 1994 trench was re-opened in 2002 and 2006-7 to take detailed chronological and palaeoenvironmental samples. Standard excavation procedures were adopted (see Figures 2b and 3 for final site sections in relation to the excavation trench), with a bulk soil sample taken from each context for plant macrofossil analysis (*total* sampling – Jones, 1991) and 100% dry-sieving (4 mm) of the remainder of the soil from each context to recover larger ecofacts and artefacts. Additional bulk samples for beetle analysis and soil micromorphology were taken from key contexts. The bulk samples were processed using a Siraf-type wet sieve tank (Kenward et al., 1980), using 1.0 and 0.3 mm sieves for the flot and a 1.0 mm sieve net to catch the residue. The material was air-dried and both the flot and residue fully sorted under x6-20 magnification. Single carbonized barley grains (*Hordeum* sp. hulled) were chosen for AMS ^{14}C dating from key contexts, following established dating protocols for North Atlantic archaeology (Ashmore, 1999; Church et al., 2005; Ascough et al., 2009). The ^{14}C dates were processed by the Scottish Universities Environmental Research Centre following detailed methodology outlined in Ascough et al (2009), with calibration performed using OxCal 4.1 (Bronk Ramsay, 2009) and IntCal 09 (Reimer et al., 2009). The two dates from the Viking longhouse central hearth [132] and the external midden abutting the Viking longhouse wall [138a] were combined, following χ^2 tests (see Table 1). The three ^{14}C dates from the lower peat ash spread [138b] were combined using a weighted mean (cf. Ward & Wilson, 1978; Ascough et al., 2009).

Results

Coastal erosion at Á Sondum has revealed archaeological settlement remains over 3 m in total depth, running from 19th century AD middens at the top of the eroding section to a truncated Viking longhouse towards the base (Figures 2b and 3). The lower stone course of a thick wall extends across the trench (contexts [102] and [136] in Figures 2b and 3), with internal longhouse deposits, including a central hearth [132], running into the main eroding section (Figure 3). A thin sheet midden [138a] abutted the external wall face [102] and was contemporary with the occupation of the structure (Figure 2b). Four ^{14}C dates on carbonised barley grains from the central hearth (SUERC-13997 and 14054; Table 1) and the external sheet midden (SUERC-14045 and 14056), date the longhouse occupation to the initial Norse colonization of the 9th

century AD (Figure 2), and contemporary with the earliest Viking settlements in the Faroes, such as Undir Junkarinsfløtti and Toftanes (Table 1). This longhouse and external associated midden overlay and truncated an extensive wind-blown sand deposit [138b] containing patches of burnt peat ash of anthropogenic origin. Samples of carbonised barley grains from two of these ash patches produced a date from a patch at the top of the sand deposit (SUERC-764) and three dates (SUERC-29302, 29303 and 30409) from the lowest ash patch (A and B in Figure 2b). Barley is not indigenous to the Faroes and so must have been either grown or brought to the islands by humans. The possibility of small-scale barley cultivation is strengthened by the barley-sized pollen grains first appearing in the Faroes palaeoecological record in the mid first millennium AD (Hannon et al., 2000, 2005; Edwards et al., 2005; Figure 1a).

Discussion

A model of the earliest occupation at the site can therefore be proposed. Ash, containing barley grains accidently carbonised in domestic hearths, was spread by humans onto the windblown sand surface during two pre-Viking phases within the mid 4th-mid 6th and late 6th-late 8th centuries AD, a common erosion-mitigation practice identified in the North Atlantic during this period (Dugmore et al., 2005). The burning of peat produces large quantities of ash (Church et al., 2007) that was routinely curated in middens adjacent to farm buildings, before being spread on fields and grasslands close to settlements in order to increase soil fertility and stability. The peat would have been collected, dried and burnt in the Faroes, a seasonal task requiring human presence in the island for many months. This peat fuel procurement strategy, coupled with small-scale barley cultivation, strongly implies some sort of permanent settlement at the site in two separate episodes from the 4th-8th centuries AD. Buildings associated with this settlement are envisaged to have been destroyed by the construction of the later Viking longhouse.

A re-evaluation of the nature, scale and timing of the human colonization of the Faroes, and the wider dispersal of people across the North Atlantic in the first millennium AD, is clearly needed. Were the mid first millennium sea conditions optimum for seafaring colonisation in small craft in the eastern North Atlantic as proposed by Dugmore et al. (2007; 2010)? Who were these earlier settlers, how many of them were there and where did they come from? Were they single ecclesiastical anchorites as described by Dicuil from Ireland, Late Iron Age groups of colonists from Atlantic Scotland or pre-Viking explorers from Scandinavia? Did they continue on to Iceland, or did the Faroes represent a temporary diasporal bottle-neck, requiring later Viking seafaring technology to be able to sail to Iceland and Greenland, and importantly to sail back?

To answer these questions, more and better-preserved pre-Viking Faroese archaeological sites need to be identified, excavated and analysed. However, the nature of the archaeological remains at Á Sondum also explains why the proposed early settlement of Faroese is so elusive archaeologically. Firstly, it is likely that the remains left by the small-scale settlement were ephemeral, such as the small peat ash spreads found in the basal windblown sand at Á Sondum. These remains are likely to be obscured by the substantial structural remains left by the Vikings that would immediately overlie the earliest archaeology, rendering them almost invisible in eroding sections. Secondly, the optimal places for sustained human settlement in the initial colonization of the Faroes would be on the areas of relatively flat grassland near to the shore, usually at the head of sheltered bays, and there are only limited locations such as these in the mountainous island chain. These locations would have been the first places that the Vikings constructed their settlements, due to their attractive geomorphic position and also as the early structural remains could be used for building material and the middens used as fertilizers in the fields. Indeed, many of the modern villages across the islands have been located in these same places for over a thousand years (Arge et al., 2005). Therefore, the scant early remains would have been truncated and built over by successive generations of Faroese builders, either destroying the evidence completely or sealing it under metres of occupation debris capped by modern buildings, again rendering the evidence archaeologically invisible. Thirdly, the insubstantial remains would be susceptible to natural eroding and accreting forces, such as coastal aeolian erosion and soil movement and landslides, which routinely occur in the low-lying coastal valleys of the Faroes (Edwards et al., 2005; Gathorne-Hardy et al., 2007; Lawson et al., 2005; 2007; 2008). A systematic and very detailed archaeological examination of the base of known coastal erosion sections containing archaeological remains similar to Á Sondum may be the best way to find other early settlement sites in the islands.

This detailed examination at the base of coastal erosion archaeological sections was successfully used to identify the first archaeological sites of Mesolithic date in the Western Isles of Scotland (Gregory et al., 2005; Church et al., 2011). A similar palynological argument for early human settlement was proposed for the 'invisible Mesolithic' of the Western Isles, where small-scale clearance episodes evident in pre-Neolithic pollen sequences, coupled with a rise in microscopic charcoal, led researchers to propose hunter-gatherer fire ecology accounted for these disturbances, despite the lack of any Mesolithic archaeological sites in the island chain (Bennett et al., 1990; Bohncke, 1988; Edwards, 1996; Edwards and Sugden, 2003). In the Faroes and the Western Isles of Scotland, small-scale perturbations in pollen sequences were interpreted as ephemeral human occupation events in periods prior to the orthodox *landnám* events attested by the substantial settlement record of structures, dating to the Viking and Neolithic periods respectively. In both cases, the palaeoecological interpretations were eventually proved to be correct on discovery of ephemeral archaeological remains of pre-*landnám* date at the base of large coastal erosion archaeological sections and this raises intriguing issues about perturbations in palaeoenvironmental sequences prior to orthodox *landnám* chronological horizons in other island systems elsewhere in the North Atlantic (e.g. Edwards et al., 2009) and across the world, as in the Pacific (cf. Summerhayes et al., 2009).

Conclusion

Our results have a number of important implications, some of which have relevance for the first colonization of island systems across the world:

1. There is now firm archaeological evidence for the human colonisation of the Faroes by people of unknown geographical and ethnic origin some 300-500 years before the large scale Viking colonisation of the 9th century AD . The overall scale of this early colonisation in terms of both numbers and spatial extent is unclear. Therefore, we now need a comprehensive re-evaluation of the timing, nature and scale of the settlement of the Faroe Islands in particular and the wider dispersal of people across the North Atlantic as a whole.

2. The majority of the archaeological evidence for this early colonisation is likely to have been destroyed by the major Viking colonization in the 9th century AD, explaining the lack of previous archaeological evidence found in the Faroes for earlier settlement. Small-scale evidence of events of this nature in other island systems may be similarly destroyed by later major human activity.
3. Ephemeral anthropogenic signatures identified by high-precision palaeoecological research have predicted the first human presence in a North Atlantic island system prior to direct confirmation by archaeology, lending credence to similar signatures identified in other island systems globally.

Acknowledgments

We would like to the thank Faroese Research Council, Leverhulme Trust, NSF (Grant 0732327), Anadarko Faroes Company and BP Amoco Explorations (Faroes) Ltd. for funding the research. We would also like to thank Mrs Bjarta Vilhelm of Á Sondum for permission to excavate and Linda Bosveld (Archaeological Services Durham University) for producing the illustrations.

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Reporting number	Sample details	^{14}C Age ± 1σ	$\delta^{13}C$ (‰)	Calibrated age range AD (2σ)
Á Sondum (this paper)				
SUERC-13997	Carbonized barley grain from Viking longhouse central hearth deposit [132]	1195±35	-24.1	695-947
SUERC-14054	Carbonized barley grain from Viking longhouse central hearth deposit [132]	1130±35	-24.6	781-990
	Combined age for barley grains in [132] T value = 1.7 ($\chi^2_{:0.05}$ = 3.8) **D in Figures 2 and 3**	1163±25	n/a	778-965
SUERC-14045	Carbonized barley grain from external midden abutting Viking longhouse [138a]	1195±35	-24.6	695-947
SUERC-14046	Carbonized barley grain from external midden abutting Viking longhouse [138a]	1210±35	-23.5	689-984
	Combined age for barley grains in [138a] T value = 0.1 ($\chi^2_{:0.05}$ = 3.8) **C in Figures 2 and 3**	1203±25	n/a	722-891
SUERC-764	Carbonized barley grain from upper peat ash patch in windblown sand [138b] **B in Figures 2 and 3**	1370±45	-24.5	601-765
SUERC-29302	Carbonized barley grain from lower peat ash spread in windblown sand [138b]	1685±40	-24.1	245-430
SUERC-29303	Carbonized barley grain from lower peat ash spread in windblown sand [138b]	1555±40	-24.4	420-591
SUERC-30409	Carbonized barley grain from lower peat ash spread in windblown sand [138b]	1605±35	-23.5	385-545
	Weighted mean for barley grains in lower peat ash patch in [138b] **A in Figures 2 and 3**	1614±36	n/a	351-543
Undir Junkarinsfløtti (Church et al., 2005; Ascough et al., 2006)				
AAR-6928	Sheep bone from basal midden layer in Phase 1	1190±40	-20.4	695-967
AAR-6929	Cow bone from basal midden layer in Phase 1	1115±35	-19.9	784-1016
Toftanes (Vickers et al., 2005)				
SUERC-3613	Carbonized barley grain from floor layer in House 1, Phase 1	1155±35	-25.1	778-972
SUERC-3614	Carbonized barley grain from floor layer in House 1, Phase 1	1125±35	-22.8	782-993
SUERC-3668	Carbonised hazelnut shell from floor layer in House 2a, Phase 3	1155±35	-27.6	778-972
SUERC-3669	Carbonised hazelnut shell from floor layer in House 2a, Phase 3 (other half of SUERC-3668)	1110±35	-27.8	829-1018
SUERC-3615	Carbonised hazelnut shell from floor layer in House 2a, Phase 3	1215±35	-22.3	689-891
SUERC-3616	Carbonised hazelnut shell from floor layer in House 2a, Phase 3 (other half of SUERC-3615)	1170±35	-22.3	773-971
Við Kirkjugarð (Arge forthcoming)				
SUERC-24836	Carbonized barley grain from hearth deposit	1215±40	*	685-932
SUERC-24310	Carbonized barley grain from hearth deposit	1235±30	-22.6	687-879

Table 1: ^{14}C dates from Á Sondum and other Viking age sites in the Faroes. Dates combined in a weighted mean were first tested for internal consistency using a chi-squared (χ^2) test (Ward & Wilson, 1978). This gives a test statistic (T value) for comparison against the T-value for 95% confidence of 2 ^{14}C age measurements ($\chi^2_{:0.05}$ = 3.8). Where the sample T-value < 3.8, the results were combined. Calibrated ages were obtained using OxCal 4.1 (Bronk Ramsay, 2009) and IntCal 09 (Reimer et al., 2009). * measured on-line on AMS.

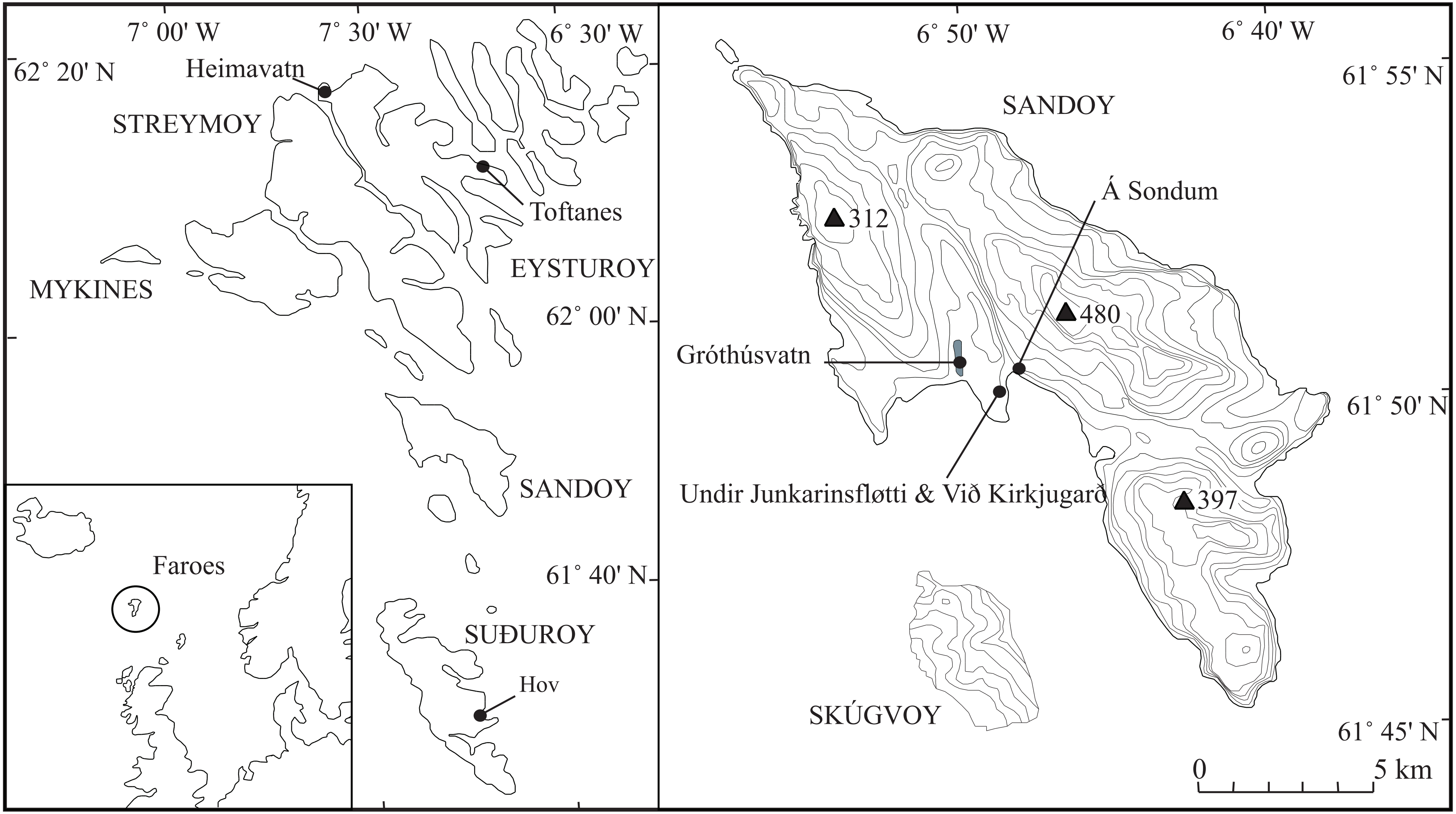
Figure 1: Location map of Á Sondum and sites mentioned in the text.

Figure 2: a) Calibrated ^{14}C dates (see Table 1) for archaeological contexts from Á Sondum compared to the time of appearance of barley-type pollen from Hov (Edwards et al., 2005) and Heimavatn (Hannon et al., 2005). A=Lower peat ash patch in [138b]; B=Upper peat ash patch in [138b]; C=Longhouse external midden [138a]; D=Longhouse central hearth [132]; E=*Hordeum*-type pollen percentages from Hov, pollen sum= c.500; F= *Hordeum*-type pollen percentages from Hov, pollen sum = c.1500; G = *Hordeum*-type pollen percentages from Heimavatn, pollen sum = c.300.

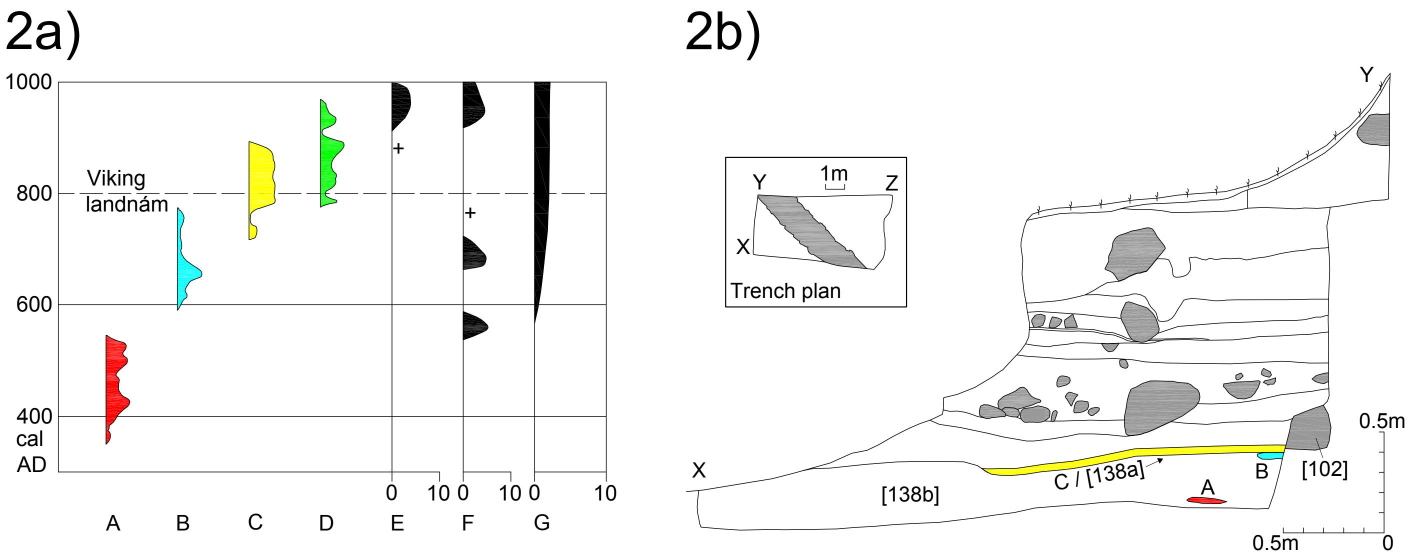
b) Side section of excavation trench containing ^{14}C dated contexts [138a] and [138b] (X to Y on trench plan). A, B and C denote the sample positions for the radiocarbon dates displayed in Figure 2a. X marks the end of the trench where it meets the upper beach (0 m above sea level) and Y marks the intersection to the main seaward-facing section (Figure 3).

Figure 3: Main seaward-facing section containing ^{14}C dated context [132] (Y to Z on trench plan). [102] outer wall-line of the longhouse appears on both this section and the side section (Figure 2b) and the extent of the longhouse wall is indicated in the trench plan. The longhouse hearth context ([132]) is indicated and radiocarbon sampling position D corresponds to the calibrated date in Figure 2a.

Church et al Figure 1.pdf



Church et al Figure 2 2nd submit.pdf



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