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Bronze Age Timbers from Creag Ruaidh, Achmore, Isle of Lewis

Abstract

Excavations at Creag Ruaidh, Achmore in August 1996 recovered two small logs from the peat fill of an intra-peat ditch. These birch logs had axe-marks at either end, probably made by the same metal blade, and the lower of the two was dated to 2910 ± 50 uncal BP (GU-7320). The logs are interpreted as having been deposited after the ditch had degraded into a boggy hollow. No other identifiably anthropic material was associated with this ditch.

A wood litter layer, predominantly birch and willow, was identified towards the base of the natural peat succession and this was dated to 4530 ± 60 uncal BP (GU-7321). A date prior to this can be inferred for the initiation of peat growth. No mineral soil was identified. The excavation and post-excavation analyses were funded by Historic Scotland.

Introduction

Achmore is a crofting township situated in the core of the Isle of Lewis, lying on one of the few roads (A858) which runs between the east and west coast. The township is overlooked by raised ground to the north, principally by Eitshal, a rounded, peat covered hill at 233 m OD, while to the south lies an extensive area of flat peatlands, interspersed with numerous lochs, beyond which are the northern hills of Harris.

The scheduled site of Achmore stone circle (NMRS ref. no.: NB 32 NW 3) lies to the east of the township, south of the A858, on a spur of ground which extends to the south-east from Eitshal, locally known as Creag Ruaidh (Ponting & Ponting 1981, 3). The spur, at roughly 110 m OD, is composed of Lewisian gneiss which has been capped by peat. In the spring of 1996 Margaret Curtis noted two small logs, with cut marks, in a peat cutting approximately 50 m to the east of the stone circle (Fig. 3). The peat cutting had not been worked during 1996, but gave the impression of having been worked in the recent past.

A collaborative excavation, in August 1996, by the West of Lewis Landscape Project and AOC (Scotland) Ltd, retrieved the logs and recorded associated archaeological features. The post-excavation works were progressed and are reported on here by AOC (Scotland) Ltd. The excavation and post-excavation works were funded by Historic Scotland.

The following specialist reports are summarised here but may be consulted in full in the site archive: Clare Ellis, *Routine soils samples*, Anne Crone, *Waterlogged wood*.

Archaeological Background

The immediate vicinity of the excavation is dominated, archaeologically, by the Achmore stone circle (NMRS ref: NB 32 NW 3) which lies 50 m to the west (Fig. 1). This stone circle, originally identified in 1981, is a true circle, 41 m in diameter, formed by nineteen stones (Ponting & Ponting 1981; Ponting 1983). The majority of the stones appeared to have fallen, or been pushed over, either before the commencement of peat growth or shortly after (Ponting & Ponting 1981, 50). On the basis of the morphological typology proposed by Burl (1976) it was suggested that this stone circle may relate to an early phase of stone circle construction, roughly early in the fourth to late third millennium cal BC (Ponting & Ponting 1981, 53).

The vicinity has subsequently revealed, from the working of peat cuttings, a number of prehistoric finds including an

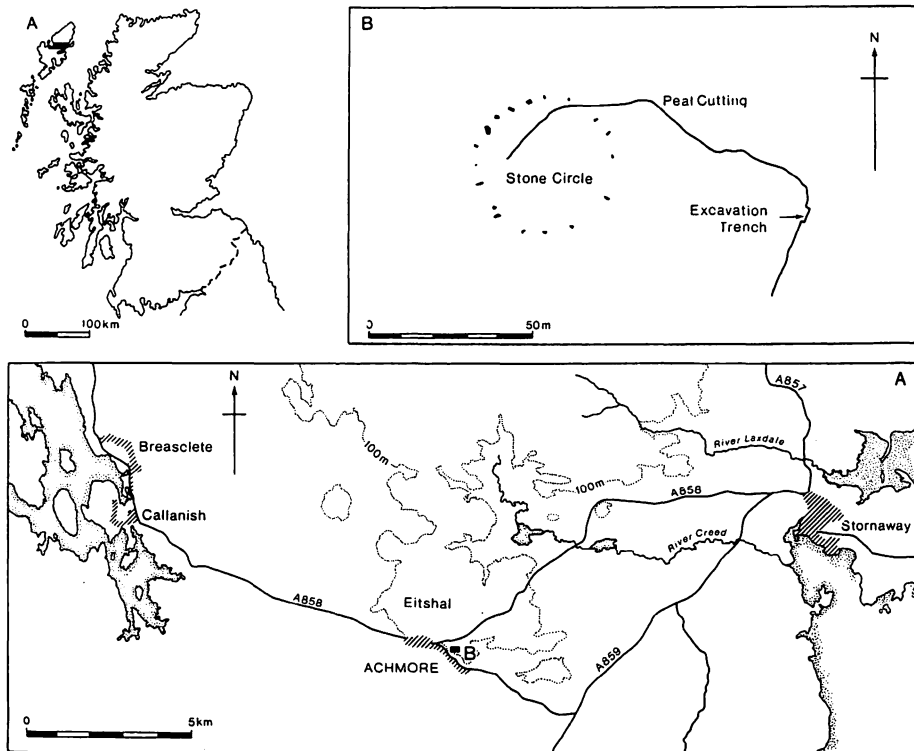


Fig. 1 Site location (based on Ordnance Survey)

upturned, flat bottomed, pottery vessel recovered 100 m east of the stone circle (Burgess et al. 1996) and three pieces of struck quartz 165 m east-south-east of the stone circle (Curtis & Curtis 1996). In addition a series of linear stone banks and a mound have been identified under the peat ca. 280 m south-east of the stone circle (Curtis & Curtis 1992).

This concentration of artefacts and features identified to the east and south-east of Achmore stone circle probably reflects where the peat is both being cut and examined by archaeologists rather than a true distribution of activity. However, these discoveries do indicate a broader distribution of activity than that suggested by the presence of the stone circle alone.

Methodology

The peat cutting was first cleaned, photographed and drawn, to clarify the context of the logs, which proved to be within a cut feature (Fig. 3). A trench, 4.5 m by 1 m in plan, was excavated from the front (north-west) section (Fig. 1). All features excavated were recorded, in plan and section, and photographed. All wooden artefacts were photographed *in situ*, with cut marks being photographed in detail, before they were carefully wrapped to prevent deterioration.

The trench was excavated down to the basal, compact, well-humified peat. Three small test pits, each approximately 0.2 m square, were excavated to confirm that this basal peat overlaid the drift material. The trench was then partially backfilled with peat in a graded fashion and covered in turf.

Results

The site was underlain by a layer of glacially deposited boulder clay. The upper surface of this clay was directly overlain by a natural succession of peat layers. There was no evidence of any mineral soil having formed prior to the

initiation of peat formation.

The basal layer of the natural succession of peat was a compact, well humified peat (Contexts 9 and 11), up to 0.2 m thick. This was superseded by a sequence of moderately humified and fibrous peats (Contexts 5, 4 and 2) and capped by a relatively modern, poorly humified and less fibrous peat which was capped by turf (Contexts 1 and 0). Field observation identified a possible turf line (Context 3) between two of the fibrous peats.

Within this natural succession of peat, at the base of the moderately humified peat (Context 5), there was a discrete wood litter layer (Fig. 2) which ran back into the south-west section. This layer contained willow (*Salix* sp.) and birch (*Betula* sp.) fragments (Crone *infra*), dated to 4530 ± 60 uncal BP (GU-7321), and appeared natural in origin. A sharpened wooden stake or point was found in the overlying peat (Small Find No. 6 in Context 5) of the south-west section. This stake could not be safely recovered given the limits of the trench, but appeared to be associated with further wood fragments.

A linear cut (Context 6) was identified in the main section (Fig. 2), roughly orientated west to east and curving slightly to the north. The cut had steep regular sides, 0.25 m deep, and a level base up to 3.5 m broad. On the south side the cut appeared to have started at the upper surface of the moderately humified peat (Context 5), and bottomed within the basal layer of the natural peat succession (Contexts 9 and 11). On the north side it was identifiable from a comparable height, although this lay mid-way through a layer of abundantly fibrous peat (Context 4) rather than on the upper surface of a context. A possible recut of this linear feature was tentatively identified in plan, but could not be identified in section and more probably relates to differences in humification of the peat.

The linear cut was filled by two discrete layers. The basal layer was composed of compacted peat nodules (Context 10), incorporating some willow and birch fragments, which was overlain by a fibrous peat (Context 7). The lower of the two worked logs (Small Find No. 2) was within this fibrous peat, which was overlain by the upper portion of the abundantly

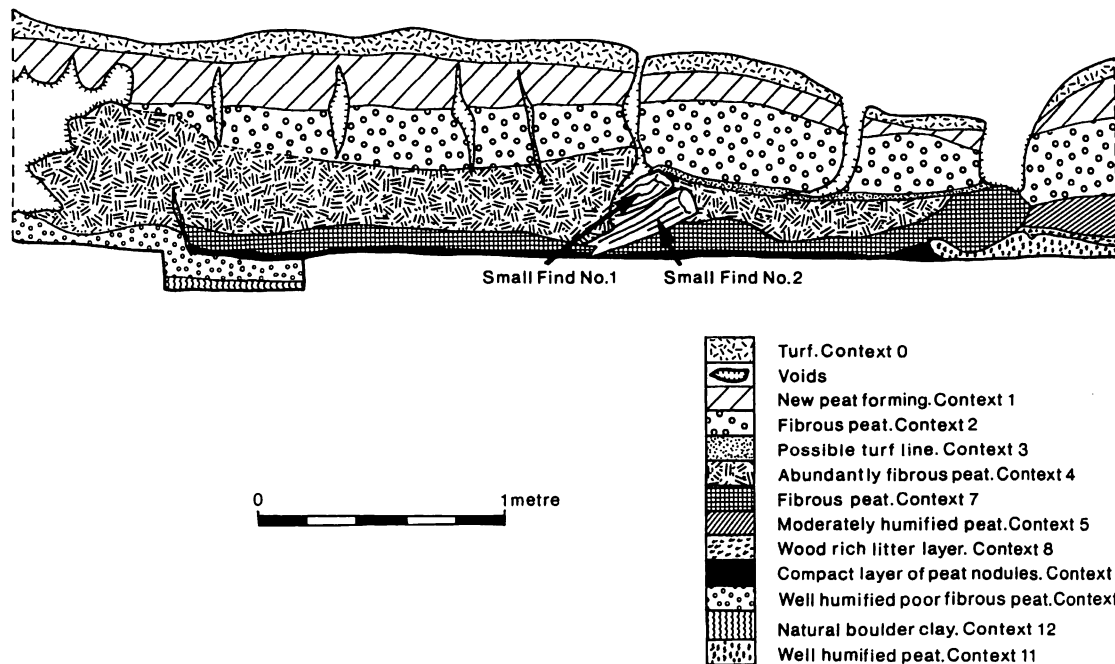


Fig. 2 Peat section, prior to excavation



Fig. 3 The logs as they appeared in the peat section

fibrous peat (Context 4). The upper portion of the abundantly fibrous peat (Context 4), which contained the upper worked log (Small Find No. 1), appears to have continued to grow after the cut was excavated and eventually enveloped the cut and its fills.

The logs, both roughly 0.15 m in diameter and 0.5 m long, had cut marks at either end (Crone *infra*) and appeared to be stacked on top of each other. The lower log, Small Find No. 2, was dated to 2910 ± 50 uncal BP (GU-7320).

Routine Soil Samples (C. Ellis)

Method

All samples were subjected to four analyses, using soil in a field moist condition. pH was determined in a 1:2.5 soil to distilled water mixture. Loss on ignition used ca. 10 g oven dry soil ignited to 400°C for four hours. Determination of phosphate used a spot test for easily available phosphate (Hamond 1983). Samples were rated on a three point scale using the time taken for a blue colour to develop following the addition of the two reagents to the sample. The scale was high (0-30 seconds), medium (30-90 seconds) and low (more than 90 seconds). Calcium carbonate content was assessed semi-quantitatively using a simple field test and the samples assigned to a series of classes based on Hodgson (1976, 57).

Table 1: *Routine soils results*

Context	pH	W1	W2	W3	LOI %	Phos	CaCO ₃
1	3.9	14.03	15.70	14.07	97.60	L	0
2	3.2	12.09	14.26	12.15	97.24	L	0
3	3.8	14.84	15.92	14.87	97.22	L	0
4	3.2	15.26	16.32	15.28	98.11	L	0
5	3.2	14.70	16.46	14.76	96.59	L	0
7	3.2	14.07	15.38	14.20	90.08	L	0
11	3.7	15.80	17.77	16.16	81.73	L	0
14	3.6	15.79	16.67	15.80	98.86	L	0

Results and discussion

The results are displayed in Table 1. There is little differentiation in pH values between the samples; the mean pH is 3.5. The organic content in all the samples is high with a mean LOI% of 94.68. The available phosphate in the samples is low. None of the samples contain any detectable calcareous material.

All the contexts are acid, non-calcareous and can be classified as organic soils; these results confirm the peaty nature of the samples. The basal peat layer (Context 11) is described as a well humified peat. The slightly lower percentage of organic matter in this context is probably due to the inclusion of some mineral matter from the underlying boulder clay. Phosphorus is not readily fixed or absorbed in peat, rather added phosphorus tends to be leached rapidly from peats. Therefore the low phosphate levels in the analysed contents may be a function of process rather than indicative of a lack of human and/or animal activity.

The nature of the routine soil analyses employed here prevents further assessment of the possible buried turf layer (Context 3); the results show that this context is not significantly different and therefore cannot be differentiated from the other analysed contexts.

Waterlogged Wood (B. A. Crone)

The logs

Small Find No. 1

A single log, 530 mm long and 100 mm in diameter, was retrieved from the upper portion of the abundantly fibrous peat (Context 4). It was identified microscopically as birch, the bark was still *in situ* and looked remarkably fresh.

The log had been roughly chopped flat at both ends by rotating the log after each chop until it was severed, leaving a blunt point at the centre. There were pronounced signatures on the axe marks indicating that the blade was chipped. The number and length of the axe marks suggest that the blade was

also blunt. A metal blade may have been used (Rob Sands *pers. comm.*)

Small Find No. 2

A single log, 460 mm long and 115 x 90 mm across, was retrieved from the fibrous peat (Context 7), the fill of the linear cut. This log was also identified microscopically as birch. The bark survived around one half of the log but the other half was badly split as a result of dessication.

The log had also been roughly chopped flat at both ends in the same manner as Small Find No. 1 and the signatures on the axe marks suggest that the same blade was used on both logs (Rob Sands *pers. comm.*)

The wood litter layer

Context 8

The bulk sediment sample from the wood litter layer (Context 8) contained the occasional small twig ca. 5 mm diameter, one of which was identified as willow, and a few amorphous lumps of spongy wood, all of which were identified as birch, but the bulk of the sample consisted of fragments of bark. A large twig had been recovered separately as Small Find No. 3. This twig, which had split as a result of dessication prior to burial, showed no signs of working and was identified as willow.

Radiocarbon Dating

Dating strategy and samples

Two samples were prepared for radiocarbon-dating.

Context 7 (Small Find No. 2)

A length 185 mm long was cut from the middle of the log, leaving the tool-marked ends intact. The piece weighed 1675 g, wet.



Fig. 4 Detail of the tooling on one of the logs (Small Find No. 2)

Context 8

All the wood from this context, including Small Find No. 3, weighed 218.32 g wet. This dating sample included bark, birch and willow.

Radiocarbon dating and calibration

The waterlogged wood samples were submitted to the Scottish Universities Research and Reactor Centre for conventional (liquid scintillation) dating.

The calibrated date ranges were determined from the University of Washington, Quaternary Isotope Laboratory, Radiocarbon Dating Program (CALIB 1987). The 20 year atmospheric calibration curve was used throughout and the calendar age ranges, obtained from the intercepts, are expressed at both the one and two sigma levels of confidence (Table 2).

Table 2: *The radiocarbon dates*

<u>Lab No.</u>	<u>Context</u>	<u>Uncal BP</u>	<u>Cal BC (1σ)</u>	<u>Cal BC (2σ)</u>	<u>$\delta^{13}\text{C}$ (‰)</u>
GU-7320	7	2910 \pm 50	1253 - 1020	1270 - 943	-27.5
GU-7321	8	4530 \pm 60	3357 - 3101	3491 - 3040	-29.2

Discussion

In general this discussion will focus on the key depositional events identified, i.e. the wood litter layer and the linear cut with its associated fills. One factor which should be mentioned, but cannot be resolved, is whether the apparently continuous natural succession of peat masks any erosive or extractive phases.

The wood litter layer*Origin of the litter layer*

The wood litter layer, dated to 4530 \pm 60 uncal BP (GU-7321), presumably derived from scrub birch and willow woodland

which was growing in proximity to the blanket peat. Interaction between scrub woodland and peat is not unusual, especially in the early stages of the growth of blanket peat when there are frequently 'islands' which still supported mineral soils and more diverse flora. The composition of the scrub woodland complies well with the palynological evidence for woodland in marginal areas of Lewis at this time (Edwards et al. 1994; Bennett et al. 1997).

Comparable horizons in Lewisian peat

Comparable horizons to the wood litter layer, in both form and depth, are apparent at several points elsewhere in Lewis. Wilkins (1984) identified, sampled and dated willow, birch and pine remains from 40 sub- and intra-peat sites resulting in a suite of dates for the arboreal remains from the 8th to the 3rd millennium cal BC. The recent excavation of a sub-peat feature at Aird Callanish (Flitcroft and Heald 1998) also identified a wood litter layer at a similar depth. Hence, the remains at Creag Ruaidh contribute further to the emerging picture of deforestation of the scrub woodland in Lewis from the early to mid Holocene.

The wooden point (Small Find No. 6)

The wooden point (Small Find No. 6) was found in the peat immediately overlying the wood litter layer, and it was assumed that they could be related. However, none of the wood litter exhibited evidence of having been worked. It is possible that the artefact penetrated the peat from a non-contemporaneous level.

The relationship between peat initiation and the Achmore stone circle

The date from the wood litter layer clearly shows that peat accumulation on this part of Creag Ruaidh must have begun at least prior to the late fourth millennium cal BC. The fragmentary process of peat initiation does not allow the extension of this date beyond the very immediate vicinity of the excavation. However the comparability of this date with the suggested early date for the stone circle (see above) is of

interest given that the excavators' interpretation was that the stones fell or were felled either before or soon after the initiation of peat growth (Ponting & Ponting 1981, 50).

The linear cut feature

Interpretation

Only a 1 m length of the broad, shallow cut identified during the excavation was exposed. Given its shape and form it appears reasonable to interpret it as a deliberate anthropic feature. While its linear extent is unknown its form is suggestive of a ditch. The two dated materials, the log from a fill and the wood litter layer it cut, indicate that this ditch was cut after 4530 ± 60 uncal BP (GU-7321) and prior to 2910 ± 50 uncal BP (GU-7320).

The degradation of the feature

The primary peat fill, the layer of peat nodules (Context 10), was probably produced by the erosion of the ditch sides, either by natural processes or the mechanism of cutting the ditch. The subsequent accumulation of a fibrous peat (Context 7) reflects a change, as the ditch became a boggy hollow. The growth of this fibrous peat is probably accentuated by the addition of eroding material from the sides of the ditch. The two axe-cut logs were either placed or discarded into this boggy hollow. The duration of these stages of degradation are uncertain, although it is probable that the peat accumulation rate within the ditch was greatly accelerated by the addition of redeposited material.

Comparable landscape boundaries

The ditch may have acted as a landscape boundary, although its primary aim could have been drainage. There have been several excavations on the Western Isles which have identified comparable landscape boundaries.

The more well known of these boundaries appear as linear banks of rubble, often resting on peat surfaces and subsequently subsumed by peat growth (i.e. intra-peat). Intra-peat rubble features on Lewis, identified as field walls, have been dated at Callanish to roughly the late fourth millennium uncal BP

(Bohncke 1988), and at Sheshader to roughly the early third millennium uncal BP (Newell 1989). Further intra-peat rubble features have been identified more recently at Callanish (Geraint Coles *pers. comm.*), although these have yet to be dated. Intra-peat rubble features have also been investigated on North Uist. At Loch Portain a stretch of linear stone bank was dated to the early to mid third millennium uncal BP (Mills et. al. 1994) while at Bharpa Carinish a late fourth to early third millennium uncal BP enclosure was identified (Crone 1993).

The use of ditches, in the intra-peat environment, does not appear to have readily identifiable parallels. This, perhaps, reflects the difficulties in identifying ancient ditches in peat cuttings when they are not associated with material clearly anthropic in origin. Ditches appear a credible alternative to walls, where there is a suitable depth of 'soft' sediment as is the case at Creag Ruaidh. Accepting that this ditch was cut in the late fourth to early third millennium uncal BP, then it would fit well into an emerging pattern in the Western Isles in which landscape divisions are being constructed over the peat-covered landscape during the Bronze Age.

The worked logs

The logs have clearly been modified, and the freshness of the cut marks suggests that this was done when the wood was freshly felled, or perhaps during felling. That the cut marks on both logs appear identical, and probably made by a metal blade (Rob Sands *pers. comm.*), supports the assumption that these logs are contemporary. The function of these short, cut logs is unclear, as is the reason for their deposition in the partly filled ditch.

The presence of the logs, both birch, also shows that in the vicinity of Creag Ruaidh there probably were small stands of woodland in the early third millennium uncal BP.

Exposure by peat cutting

A rich range of prehistoric artefacts and features continue to emerge from Creag Ruaidh since the formal identification of the stone circle in 1981 (Ponting & Ponting 1981). Peat cutting,

which can damage artefacts and leave features divorced from contextual information, has been the principal process of their exposure.

Archaeological involvement has remained limited in extent, and reactive to peat cutting, even though there is ample evidence for further material in the vicinity (Curtis & Curtis 1992). This is a common experience across the Western Isles where attention seems to focus more on the machair sites. A continuation of the current fragmentary and inadequate reactive stance to discoveries from the peatlands will further impoverish this finite resource which is of comparable cultural heritage value to the material 'at risk' in the machairs.

Conclusion

The excavations at Creag Ruaidh, Achmore identified two main phases of anthropic activity. The earlier, undated, was the cutting of a linear intra-peat ditch. The later was the deposition of two axe-marked small logs into the ditch after it had degraded to a boggy hollow. These birch logs had axe-marks at either end, probably made by the same metal blade, and the lower of the two was dated to 2910 ± 50 uncal BP (GU-7320).

The intra-peat ditch cut through a wood litter layer, predominantly birch and willow, which was identified towards the base of the natural peat succession. Material from this wood litter layer was dated to 4530 ± 60 uncal BP (GU-7321). A date prior to this can be inferred for the initiation of peat growth.

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