

# Domestic, industrial, (en)closed? Survey and excavation of a Late Bronze Age/Early Iron Age promontory enclosure at Gob Eirer, Lewis, Western Isles

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## ABSTRACT

*This is the first of four papers that present the results of survey and excavations undertaken in the late 1990s as part of the Uig Landscape Project on Lewis in the Western Isles (Na h-Eileanan Siar). This paper introduces the project and presents the results of the survey and excavations on the promontory enclosure of Gob Eirer, one of the earliest of the Uig sites excavated. Gob Eirer is located on a stack just off the Uig shoreline in the Camas Uig, connected to the mainland by a pebble beach. The results of the excavations are discussed in terms of the structural form, stratigraphy, material culture and environmental evidence from the site. Gob Eirer is then considered within the wider context of the Late Bronze Age and Early Iron Age archaeology of Atlantic Scotland and broader research themes surrounding promontory enclosures.*

## INTRODUCTION: UIG LANDSCAPE PROJECT

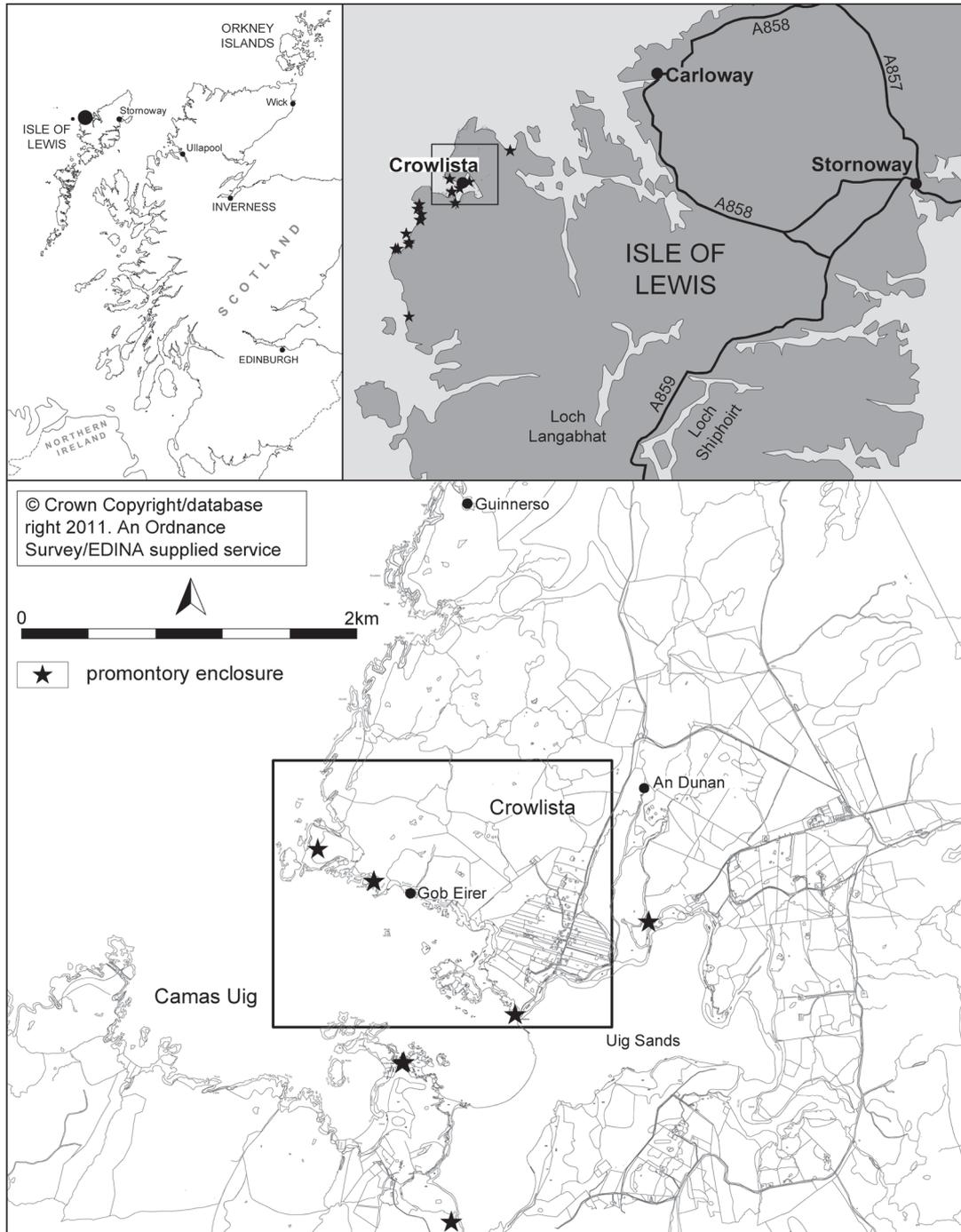
Over the last 30 years, discussions on the later prehistoric periods in Atlantic Scotland have concentrated on the monumental remains that still dominate the landscape, including brochs, duns, wheelhouses and crannogs, but have also emphasised the need to consider the wider landscape and its more subtle, or at least less visible, archaeological sites (Barrett 1981; Armit 1990, 1996; Rennel 2008). However, despite these calls for a more balanced approach to the archaeology of the region, there is still a dearth of excavation on later prehistoric sites that are not monumental. The Uig Landscape Project challenged this

trend by focusing on sites within a moorland and coastal environment that did not conform to the standard monumental domestic site model that formed the bulk of the corpus of later prehistoric sites excavated in Atlantic Scotland during the 1980s and 1990s (cf Ballin Smith 1994; Sharples 1998; Parker Pearson & Sharples 1999; Armit 2006). One of the main aims of the project was to consider the whole landscape rather than individual sites – to allow a broad view of the changing use of the landscape over time and the lives, identities and lifestyle choices of the people who lived and died at Uig.

However, this landscape approach was not undertaken in isolation and reflected the

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ILLUS 1 Location map of the Uig peninsula with stars marking the locations of promontory enclosures

growing recognition of the role of landscape archaeology in British archaeology in the 1990s (Tilley 1997; Ashmore & Knapp 1999). For example, the Calanais Archaeological Research Project, undertaken by the University of Edinburgh, surveyed and excavated on the Bhaltois peninsula, adjacent to the Uig peninsula (Armit 1994, 2006; Harding & Armit 1990; Harding 2000; Harding & Dixon 2000; Harding & Gilmour 2000); the SEARCH project focused on the landscape archaeology of Barra and South Uist (cf Parker Pearson & Sharples 1999; Branigan & Foster 2000; Parker Pearson et al 2004) and the Loch Olabhat Research Project considered the archaeology of North Uist (Armit 1986; Armit et al 2008). Through these landscape-focused research projects our understanding of the archaeology of the Hebrides has been greatly enhanced.

Following a coastal erosion and landscape survey around the Uig peninsula in 1995, the Uig Landscape Project involved excavation of four strategically chosen sites identified as part of the survey: (1) Gob Eirer, a late Bronze Age/Early Iron Age promontory enclosure; (2) An Dunan, an Iron Age causewayed islet; (3) Guinnerso, a multi-period transhumance landscape from Late Bronze Age to post-medieval date and (4) Bereiro, a post-medieval blackhouse village.

#### THE LANDSCAPE OF THE UIG PENINSULA

Uig is located on the western coast of the Isle of Lewis, part of the Outer Hebrides (or Western Isles) (illus 1). Situated between the mainland and the North Atlantic, in the far north-west of the British Isles, the Western Isles are subject to the tempestuous weather of the North Atlantic. The landscape consists of coastal machair, a relatively fertile, low-lying dune pastureland, high cliffs and extensive moors of blanket peat and lochs,

which cover much of the inland areas. The majority of modern settlement in Lewis is in the coastal areas, predominantly on the eastern coast. The Uig peninsula largely consists of blanket peat bog stretching from the head of the Camas Uig north to Aird Uig. Uig sands give way to saltings in an estuarine area cross-cut by water courses. This salt marsh meets with rough grazing and a relict cultivated landscape that rises to moorland which ends abruptly to the west with high and sheer cliffs; it is bounded to the east by the 205m-high peak of Forsnabhal.

#### UIG LANDSCAPE SURVEY IN 1995

In spring 1995, a team from the Department of Archaeology, University of Edinburgh carried out fieldwork in a 1,000-hectare area between Uig sands and Aird Uig (illus 1), led by Chris Burgess (Burgess & Church 1995). This survey was undertaken as part of the wider Calanais Archaeological Research Project (Harding & Armit 1990; Harding 2000). The Uig peninsula was chosen because of its proximity to the Bhaltois peninsula, where a detailed survey had already been completed as part of the wider project (Armit 1994). Also, the extensive tracts of blanket bog, high cliffs and estuarine saltings, which comprise the majority of the landscape of Uig, represented the kinds of landscape where little previous archaeological research had been conducted to date. Walkover survey of the area led to the identification of approximately 300 previously unrecorded sites on the Uig peninsula. These sites ranged from prehistoric settlement to pre-clearance villages and shieling sites. Some key sites identified included:

NGR: NB 0464 3680 Loch Mheacleit: a possible crannog (NB 03 NW 13).

NGR: NB 0341 3616 Loch Ruadh Guinnerso: cellular settlement and multi-

phase landscape surrounding a drained loch (NB 03 NW 6).

NGR: NB 0454 3460 An Dunan: a possible crannog/utilized natural island (NB 03 SW 20).

NGR: NB 0366 3495 Between Lochs Barabhat and Camasord: post-medieval mill complex (NB 03 SW 22 + 23).

NGR: NB 0365 3437 Cleidir Loch: possible crannog/utilized natural island (NB 03 SW 56).

NGR: NB 0460 3445 Bereiro: pre-clearance blackhouse village (NB 03 SW 14).

NGR: NB 0450 3436 South of Bereiro: possible walled island.

NGR: NB 0315 3398 Gob Eirer: promontory enclosure (NB 03 SW 21).

Four sites were then chosen for excavation. The landscape and archaeology around the drained loch of Guinnerso had clear evidence for multi-phase activity below the multiple post-medieval shielings and so this was targeted for excavation to date the antiquity of transhumance landscapes in Atlantic Scotland. Gob Eirer was chosen because it was an excellent example of a promontory enclosure in the Uig peninsula and had a large, well-built drystone wall enclosing a relatively small area that contained possible archaeological structures. An Dunan was selected for excavation because it was a good example of the utilized natural islets found in the survey and it had a clear mound of stone comprising a recognisable archaeological site. Also, it was easily accessible compared with the other utilized natural islets in the area, for example, the site at Cleidir Loch. The final site chosen was the abandoned blackhouse village at Bereiro, where a possible early structure was identified among the blackhouses. Sampling and radiocarbon dating of deposits associated

with this earlier structure were aimed at dating the emergence of the blackhouse form as the standard post-medieval domestic structure in the Western Isles (see Nesbitt et al in press). Each site also represented an archaeological site type rarely targeted for excavation in the archaeology of Atlantic Scotland.

#### PROJECT RESEARCH AIMS

There has been much focus on the monumental archaeology of the region but much less on other more ephemeral archaeological site types outlined above, especially in the extensive blanket bog covering the inland areas of the Western Isles. One of the main project research themes was therefore to assess the nature of the hidden lives in the Uig landscape and life on the margins. Marginality in this sense is not meant to represent life at the farthest reaches of a more centralised and developed population hub; this would be to remove from the landscape its qualities of innovation and individual identity and to remove the islands from their contemporary geopolitical context and Armit's 'Island centred geography' (Armit 1996: 5–6). Here the term marginality reflects Barber's (2003: 242) definition that in marginal areas sites 'incur a high probability of failure of the subsistence basis on which settlement depends'.

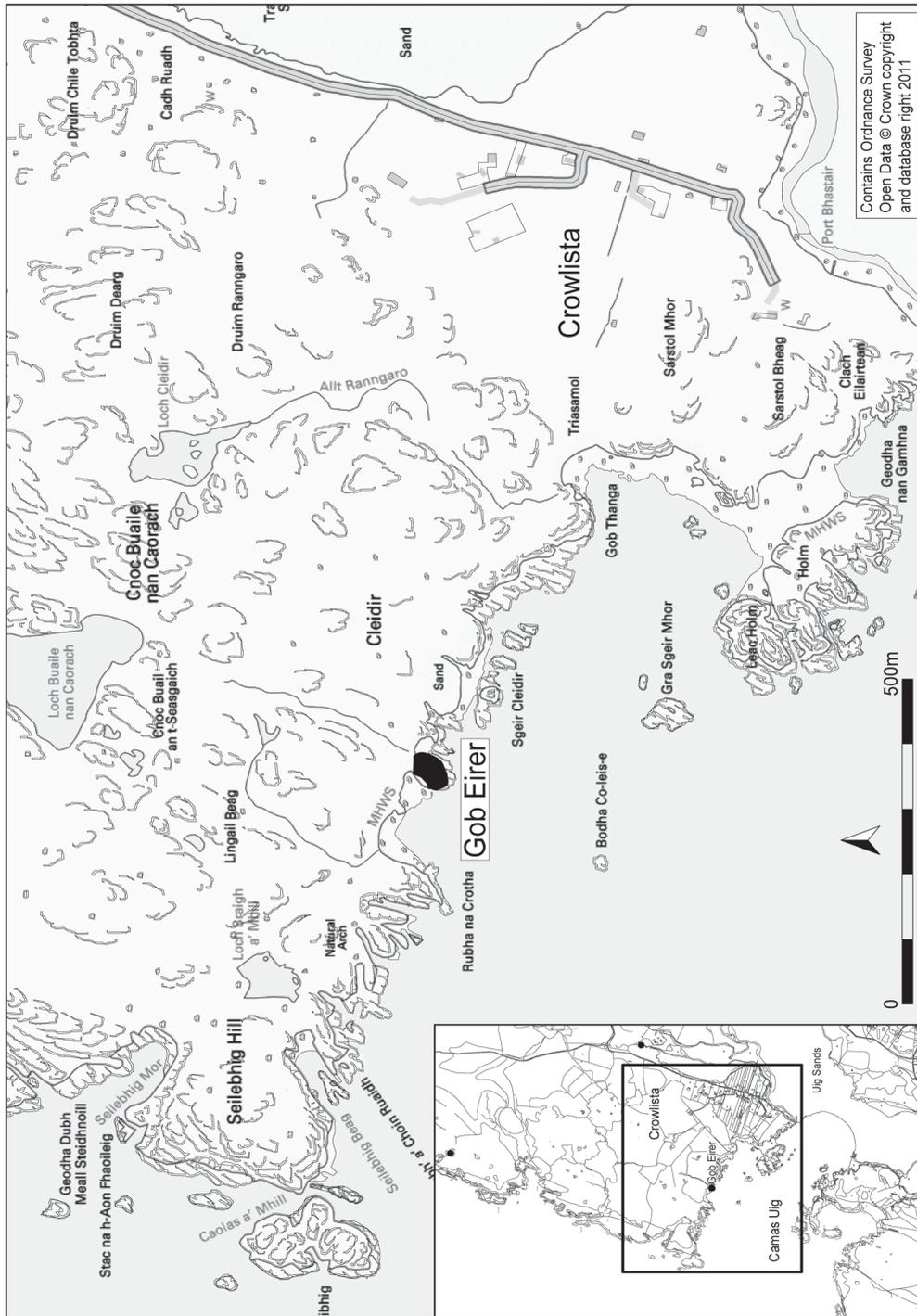
All of the sites targeted for excavation were liminal; their locations all bridge the land/sea divide in some way. Some are possibly ritual (An Dunan), some inaccessible (Gob Eirer) and others inhospitable (Guinnerso). The project asks how people lived on and/or used these sites, how the location was shaped by (or indeed how it shaped) the identities of the people living there. The project also asks how people were using these sites and how that relates to the use of other known archaeological sites in the region.

The detailed project aims can be summarised as:

1. To date the structural and stratigraphic phases of the four sites using multiple radiocarbon dates.
2. To understand the function of the different phases at each site.
3. To assess the significance of the sites within their landscape context and, where appropriate, their continuity of use by generations of local communities.
4. To reconstruct the palaeoenvironment as described by the archaeological record.
5. To populate the landscape with structures that represent a different way of life to the monumental archaeology of the region that dominated later prehistoric

TABLE 1  
Promontory enclosures in the Uig area

<i>Grid Reference</i>	<i>Name</i>	<i>Date</i>	<i>Excavated</i>
NB 02927 34048	Cleidir	Undated	No
NB 04566 33806	Tolanais	Undated	No
NB 08011 36455	Clibh Thall	Undated	No
NB 03770 33249	Crowlista	Undated	No
NB 03389 32002	Carnish	Undated	No
NB 03105 32961	Carnish	Undated	No
NB 03096 32956	Carnish	Undated	No
NB 00220 31520	Stac Dhomnuill Chaim	Undated	No
NB 02546 34294	Sheilavig	Undated	No
NB 00534 31057	Mangersta	Undated	No
NB 00362 31886	Mangersta	Undated	No
NB 03151 33979	Gob Eirer	919–231 cal BC	Yes
NB 00471 30545	Mangersta	Undated	No
NB 00404 30567	Mangersta	Undated	No
NA 99249 29395	Aird Fenish	Undated	No
NA 99505 28697	Mangerstadh	Undated	No
NA 99465 28522	Mangerstadh	Undated	No
NA 98356 28105	Islivig	Undated	No
NA 98553 28114	Islivig	Undated	No
NA 99487 22354	Polla Thor	Undated	No



ILLUS 2 Detailed location map of Gob Eirer

archaeology in Atlantic Scotland during the 1980s and 1990s.

#### LANDSCAPE CONTEXT OF GOB EIRER

Eighty-seven promontory enclosure sites are recorded around the coast of the Western Isles (Burgess et al 1996; Burgess 1999) with 18 of them concentrated in the Uig area (see Table 1). The preponderance of this site type in this area is a function of the natural geography; the high and rugged cliffs along the north-west coast of the Hebrides are the perfect terrain for this kind of site. The results may also be skewed by the 1995 and 1996 surveys that actively sought to record all archaeological sites around the north coast of Lewis; either way, the numbers remain significant. The site at Gob Eirer was initially recorded as part of the Uig Landscape Survey and was one of the most significant of around 300 sites recorded during the survey (illus 1 & 2). The site was also selected for priority excavation because of the threat to its preservation presented by coastal erosion. The cliffs in the vicinity are continuously eroding and the process could destroy portions of the promontory enclosure. Many promontory sites have already been reduced to stacks of less than a few metres across (Church & Burgess 2003: 61; McHardy et al 2009). Two seasons of excavation occurred in 1996 and 1998 directed by Simon Gilmour and Mike Church.

#### DETAILED RESEARCH AIMS OF SITE SURVEY AND EXCAVATION AT GOB EIRER

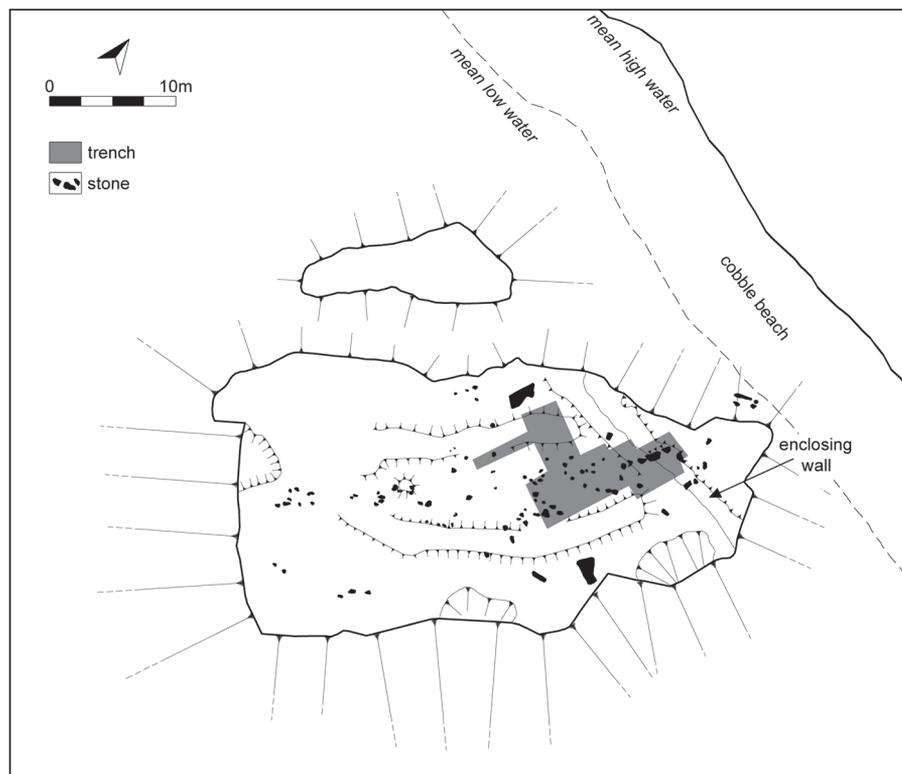
The excavations at Gob Eirer aimed to resolve the question of the date and nature of occupation at the enclosure site. This type of site is still poorly understood; despite a recent survey of stack sites (McHardy et al 2009) excavation has been limited to a very few sites in Atlantic Scotland. The presence of substantial walls

on the landward side of several sites such as Stac a Chaisteal, Stac Domnhuill Chaim and Dunasbroc (ibid) has led to the suggestion they may have been defensive. The excavations at Gob Eirer targeted a similar well-constructed wall and its entranceway to explore the nature of the site perimeter. It also remains unclear what activities were taking place on sites of this type. Were they dwellings? Ritual sites? Look-out posts? At Gob Eirer a trench was opened within the structural remains to try to understand whether the site was a domestic structure or had alternative uses. Finally, a total sampling strategy of all excavated contexts was employed to retrieve environmental evidence to enable palaeoenvironmental reconstruction and to provide material for radiocarbon dating.

#### METHODOLOGY

##### FIELD METHODS

The site was initially surveyed as part of the Uig Landscape Survey in 1995 using an Electronic Distance Measurement theodolite and Penmap land survey software to produce a data terrain model for the site. The survey data were used to lay out a grid system which provided the basis for sampling. Coring for magnetic susceptibility and phosphates samples was undertaken across the site to inform the location of the trenches. However, the extensive spread of cobbles that capped much of the archaeology and the extremely aggressive soil environment (see below) meant that the coring survey was largely unsuccessful for locating any meaningful archaeological stratigraphy. The first trench was therefore placed within the enclosure area, based on possible structural material identified by the survey (see illus 3) and oriented north/south. The trench included a gap in the large cross-wall that appeared to be



ILLUS 3 Pre-excavation survey and plan, showing location of trenches

an entrance to the main area of the stack. The trench was expanded east and west over the course of the excavation to investigate more of the cross-wall on the east side and explore a potential building to the west. Further trenches were opened to the south and all were eventually amalgamated to cover an area of some 53m<sup>2</sup> (illus 3). A total sampling strategy was employed across the site (Jones 1991); this involved taking a standard bulk sample of 28 litres from every sediment context. In some cases, greater volumes or multiple samples were taken, depending on the perceived archaeological significance of the deposit. A routine sample of approximately 0.25 litres was also taken for soil tests in the laboratory (see below). The specialist reports detailing

the small finds and environmental evidence have been edited from the original versions for inclusion here. The full reports, which outline methodologies and quantify data, are available in the site archive accessioned to the National Monuments Record held by the Royal Commission on the Ancient and Historical Monuments of Scotland.

#### POST-EXCAVATION AND LABORATORY METHODS

##### *Bulk sample processing*

Bulk samples were processed using a flotation tank (Kenward et al 1980), with the residue held by a 1.0mm net and the flot caught by 1.0mm and 0.3mm sieves respectively. All the flots and residues were dried and

sorted using a low-powered stereo/binocular microscope at  $\times 15$ – $\times 80$  magnification. Any samples from (a) mixed or disturbed deposits, (b) wall fills or structural foundation layers or (c) with less than 10 identifiable plant macrofossils were not included in the archaeobotanical analysis (see Church 2002a for justification for this data standardisation). All macrofossil identifications were checked against botanical literature and modern reference material from collections in the Department of Archaeology, University of Edinburgh. Anatomical keys listed in Schweingruber (1990), in-house reference charcoal and slide-mounted micro-sections were used to aid identification. Asymmetry and morphological characteristics were also recorded. Nomenclature follows Stace (2010), with ecological information taken from Clapham et al (1987), Stace (2010) and Pankhurst and Mullin (1994). The identification and counting criteria for the cereal grain and chaff followed van der Veen (1992). The preservation was also recorded for each cereal grain identified, following the index devised by Hubbard and al Azm (1990). The identification criteria for the wild seeds were based on those outlined by van der Veen (1992), with the grasses and sedges only differentiated by large/medium/small and biconvex/trigonus respectively. Each seed was given a count of one even if broken, except large fragments that were clearly from the same seed. Other miscellaneous plant parts, such as hazelnut, seaweed and heather leaf fragments, were given a fragment count rather than a quantifiable count due to multiple fragmentation (cf Dickson 1994).

It became clear during the sorting of the samples that culm parts and rhizomes were present throughout the assemblage. Almost all of these were presumably of the grass family (*Poaceae* undiff.), though some other monocotyledonous plants would have

been present. Though Hather (1993) has highlighted the importance of these elements, they were only identified to generic element type (eg culm node, culm base and rhizome) because detailed SEM research would have been too time consuming for this study and of little extra interpretative value. However, in this analysis all three generic element types were split into greater than and less than 2mm. This stemmed from experimental observation (Dickson 1998; Church et al 2007) that cereal culm nodes and bases are generally greater than 2mm in diameter, and rhizomes, culm nodes and culm bases from other grasses and turf were less than 2mm. Therefore, the general proportion of material from cereal straw could be separated from other grassy material, especially from the material introduced with the fuel source.

Charcoal identifications were made on carbonised fragments of <4mm diameter. The total fragments and weight from both the flot and residue from each sample was calculated. Up to 20 fragments were then randomly chosen for identification from the flot, using a riffle box, random number tables and a 2D grid. Statistical representation was still maintained for the samples, following the test outlined by van der Veen and Fieller (1982). The arbitrary cut-off point of 20 identifications was chosen, as it would allow easy conversion to percentages. The fragments were generally identified to genus, with the number of fragments and weight for each genus recorded. The fragments were also categorised into roundwood or timber and the number of rings noted. Many of the roundwood fragments allowed ring counts from the central pith to the outer ring and bark, allowing the age of the fragment to be estimated. However, estimations of seasonality were not possible because the rings were usually too small or warped by the carbonisation. Other miscellaneous observations, such as

boreholes or vitrification, were noted when appropriate. It became apparent during the initial charcoal identification that Ling heather (*Calluna vulgaris* L. Vill.) was an important component of the assemblage, and that different age profiles were emerging from the fragment ring counts. These may relate to specific procurement patterns or heathland management. It was therefore decided to identify and ring count as many Ling heather fragments as possible within all the samples that contained more than 20 fragments. This was a relatively quick procedure as the dimpled surface of Ling is easily recognised and the rings are generally easy to count.

#### *Zoo-archaeological analysis*

The residues from the samples were also sorted for burnt animal remains and the few

diagnostic bone fragments were identified using comparative collections held in the laboratories of the Department of Archaeology, Durham University.

#### *Sedimentary analysis*

Each sub-sample was subjected to the following analyses; basic soil description (texture and colour), organic content, pH and mineral magnetic analysis. The methods employed for each test are described below.

##### (1) Basic soil description

The basic physical characteristics of the ‘wet’ soil were described through texture and colour. The texture was estimated following Hodgson (1976), whilst the colour was estimated using Munsell colour charts (1994).



ILLUS 4 Gob Eirer from north-east taken August 2010 (© Mike Church)

(2) Organic content (following Hodgson 1976)

Approximately 20g of 'wet' soil was dried at 40°C for 24 hours before being dry-sieved through a 2mm gauge to remove stones and larger particles. The sieved material was then placed in a weighed crucible and placed in an oven at 105°C for 5 minutes to drive off any latent moisture within the soil. The crucible and soil were then weighed before being placed in a furnace for 4 hours at a temperature of 550°C, to incinerate the organic component. The crucible and material were then weighed and the percentage organic content (by weight) calculated.

(3) pH (following Hodgson 1976)

The pH of the soil was measured using a Pye Unicam PW 9410 digital pH meter, calibrated to pH7 and pH4 buffer solutions. Approximately 20g of 'wet' soil was added to 50ml of distilled water. The solution was left for 20 minutes and periodically stirred. Then the probe of the meter was immersed in the solution until reading stabilisation.

(4) Magnetic susceptibility

The samples were dried at 40°C and dry-sieved through a 2mm gauge to remove stones and larger particles. Volumetric ( $\chi$ ) high and low frequency magnetic susceptibilities were measured with a Bartington MS2 meter and MS2 laboratory coil. Mass specific magnetic susceptibility ( $\chi$ ) and percentage frequency dependent ( $\chi_{fd}\%$ ) were then calculated following Dearing (1994).

## RESULTS OF SURVEY AND EXCAVATION

### SURVEY RESULTS AND SITE DESCRIPTION

Gob Eirer is a promontory stack on the north shore of the Camas Uig west of Crowlista (NB 03 SW 21; NGR: NB 0315 3398) (illus

2, 3 & 4). The stack is attached to the main shoreline by a pebble beach and accessed by a steep approach from the beach that leads up to a broad stone and turf wall with a narrow central entrance. The wall marks the limit of an area, of around 1200m<sup>2</sup>, naturally bounded on the other three sides by steep drops to the water. The topographic survey identified two possible rig features within the enclosed space (illus 3) but on excavation, these features were shown to have been formed through natural pedogenic processes within the topsoil and may relate to the underlying archaeological structures. The excavation was relatively small compared to the overall promontory area behind the wall but included the main visible features of the site. The results revealed a very shallow stratigraphy and the homogeneity of artefacts and material on the site, coupled with a lack of evidence for multi-phase occupation, suggests that the site had one main period of use, immediately prior to the introduction of a layer of cobbles which is described further below. It is possible, however, to divide the site into four phases of construction, probably representing alteration activity within a single continuous period of use. Unfortunately, severe iron panning had affected many areas of the excavated site, which confused the stratigraphy in certain places.

### EXCAVATION RESULTS

The excavation results are presented here by phase rather than by trench as this allows a clearer understanding of the chronology of the site. Key structural and stratigraphic contexts are shown on the illustrations. Four distinct phases of activity can be seen at Gob Eirer, which reflect the structural changes that the site underwent over its lifetime. However, there is no reason to believe that the site was abandoned and then reused, dating evidence supports a single-phase occupation. These



ILLUS 5 Phase 1 plan with main contexts located and key to section drawings shown



ILLUS 6 Phase 2 plan with main contexts located. Active contexts and stonework are indicated in dark grey



ILLUS 7 Phase 3 plan with main contexts located. Active contexts and stonework are indicated in dark grey

phases should therefore be considered as individual parts of one continuous period of use.

#### *Phase 1a* (illus 5)

The earliest activity on the site is probably represented by negative features (046, 052, 056 & 062). Contexts 046 and 052 are scoops in the natural substrate that ran east/west and contained some burnt bone fragments.<sup>1</sup> These scoops were filled by deposits 053 and 047 that also contained burnt bone, burnt peat and ceramics.<sup>2</sup> Features 056 and 062 appear to be stake-holes, also cut into the natural substrate. The relationship of these features to the primary construction phase of the stone building is unclear as the stone structure and the negative features lie adjacent to one another and do not have any apparent stratigraphic relationship. However, a *terminus ante quem* is provided by a soil horizon (006 & 012) that overlies all of the early features of the site including the initial stone structure and the stake-holes (056 & 062). This soil horizon marks the end of phase 1a activity. All the negative features could belong to an earlier

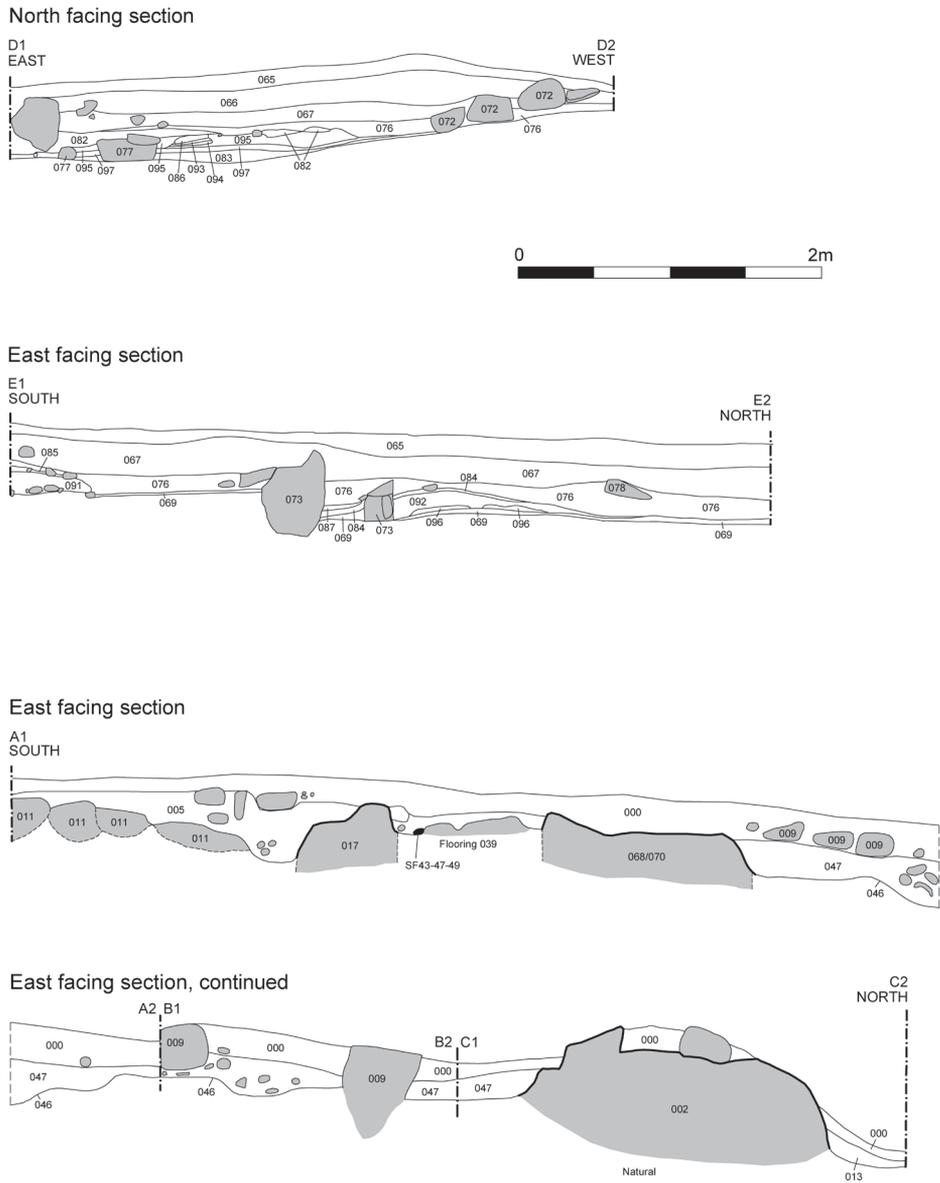
phase of use underlying the stone structures on site. Since they do not seem to run underneath major structural elements these negative features are thus termed 1a to reflect this possible ambiguity. If they are contemporary with the stone structures then their purpose is not clarified by this association.

#### *Phase 1b* (illus 5)

In phase 1b, a very large wall (001/002), 3–4m wide, was constructed across the eastern edge of the promontory from east to west. This has been interpreted as a stone base for a turf wall: with the lack of substantial wall collapse anywhere on site suggesting that it was unlikely to be more than the currently visible two or three courses high. This wall featured a narrow entranceway (010) marked by upright stone orthostats. The entrance area was paved with stones (011 & 039) and contained several pottery sherds, a quartz scraper and ironpan.<sup>3</sup> This paving extended to become a pathway connecting the entrance (010) with a rectilinear building to the west (068, 057, 063, 017, 070, 071, 073 & 078), which it entered through a clearly defined entrance. Abutting

TABLE 2  
Radiocarbon dates

<i>Sample details</i>	<i>Phase</i>	<i>Sample type</i>	<i>Reporting number</i>	<i>Date</i>	<i>Error</i>	$\delta^{13}\text{C}$	<i>Calibrated date AD</i>
GE S.28B C.67	1b	Barley grain	SUERC-30425	2365	35	-23.7	721–383 cal BC
GE S.28A C.67	1b	Barley grain	SUERC-30421	2320	35	-24.5	508–231 cal BC
GE S.49B C.97	1b	Barley grain	SUERC-30427	2440	35	-24.1	753–406 cal BC
GE S.49A C.97	1b	Barley grain	SUERC-30426	2445	35	-23.9	753–408 cal BC
GE S.23B C.47	1b	Barley grain	OxA-8573	2465	50	-24.4	764–412 cal BC
GE S.23A C.47	1b	Barley grain	OxA-8459	2470	50	-24.3	766–413 cal BC
GE S.12B C.28	1a	Barley grain	OxA-8467	2660	50	-23.8	919–771 cal BC
GE S.12A C.28	1a	Barley grain	OxA-8466	2580	50	-23.7	835–539 cal BC



ILLUS 8 Selected section drawings relating to trench edges identified in illus 5

this paving in the entrance to the building was a series of flat stones (072 & 077) separated with a gap and forming a linear feature running ENE/WSW, which could represent a continuation of the same paving, possible

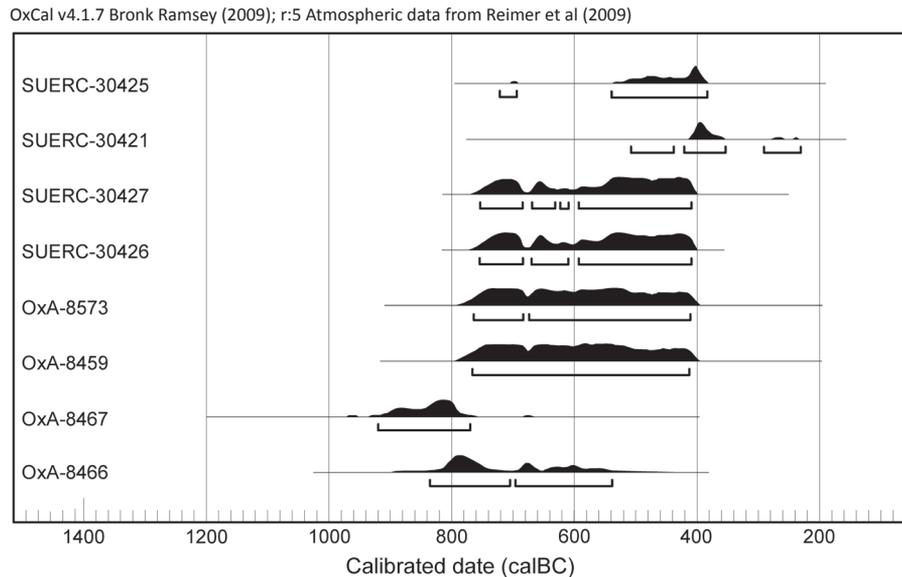
wall footings, or what could have served as a bench feature along the north wall. Within the building lay a deposit of peat ash and charcoal (097). A linear arrangement of five large flat stones (098), orientated north-east/south-

west may have been a similar pathway or bench leading left, or south, from the entrance paving. Overlying this were several deposits, perhaps making up floor levels, which appear to have been disturbed (043,<sup>4</sup> 044,<sup>5</sup> 076,<sup>6</sup> 082<sup>7</sup> & 086 – illus 8). Within these deposits were concentrated many of the small finds from the site, including several pot sherds, charcoal, pumice, bone and burnt bone, iron pan, worked quartz and hammerstones.

Also within the rectilinear building lay a compact area of peat ash and charcoal (094 & 095) that contained bone fragments and ceramics.<sup>8</sup> This compact area, together with deposits of iron pan (020) and sandy silt (093), was overlain by a compact brown silty clay (086 & 079), possibly representing a floor level. This was in turn overlain by an extensive deposit of organic sandy silt and pebbles (067 & 066). An alignment of stones (071) may be a continuation of the structural north wall of the building (068) but the discontinuity of

stonework and a change in alignment between 068 and 071 could suggest otherwise. The wall structure (068) was abutted inside the building by deposit 067 containing an assemblage of bone fragments and pottery rim sherds.<sup>9</sup>

To the south of the pathway outside the building, various levels of paving (018 & 039) and cobbling (038) sit between structural walls (017 & 049/019). The latter wall appears to have an entranceway oriented north-east with walling (054/055) forming the north-east jamb and rough paving (059) inside. The location of the two stakeholes (056 & 062 – discussed above) outside this entrance could be fortuitous, or could be associated. Alternatively, they could be associated with defining the southern edge of the main paved pathway (039). The curved nature of wall (019) in the south corner of the trench is puzzling, but there was paving (037) abutting this, and its continuation as wall 049 might be suggestive of the interior of a second building.



ILLUS 9 Calibrated radiocarbon dates, using OxCal v4.1.7 (Bronk Ramsey 2009) and atmospheric data from Reimer et al (2009)

Interestingly the main path (039) ignored the entrance to this possible second building and focused on the western structure.

#### *Phase 2 (illus 6)*

The beginning of phase 2 was marked by further, rather ephemeral, constructions of rounded boulders (045 & 026) that may have been structural, and an associated rubble wall (031). Cobbles (026) appear to define a 'cell' area that was filled with a silty soil deposit (025) containing a rim sherd.<sup>10</sup> Another 'cell' area was described by an arrangement of boulders (027) to the north of 026.

#### *Phase 3 (illus 7)*

In the final phase of the site, a rough wall (004) appears to delineate the south edge of an area of small cobbles (003) in the main entrance to the site. Other cobbles are scattered across the rest of the site (064, 014 & 015) among which were examples of heavily abraded pottery.<sup>11</sup> It is not clear whether the cobbling represents a gradual accumulation of stones or a single episode. The even coverage of the cobbles suggests that they do not represent a collapse of walling but rather they were deliberately placed and do not appear to have covered the interior of either rectilinear building. The cobbles were covered by soil horizons (022 & 007) that contained further ceramics including a substantial proportion of a single pot.<sup>12</sup>

### SITE CHRONOLOGY

The total bulk sampling strategy employed on the site meant that multiple short-lived (seasonal) terrestrial-based plant macrofossils were available from the main phases 1a and 1b for radiocarbon dating. Following the Historic Scotland protocol of Ashmore (1999), two single-entity barley (*Hordeum* sp.) grains were dated from four undisturbed

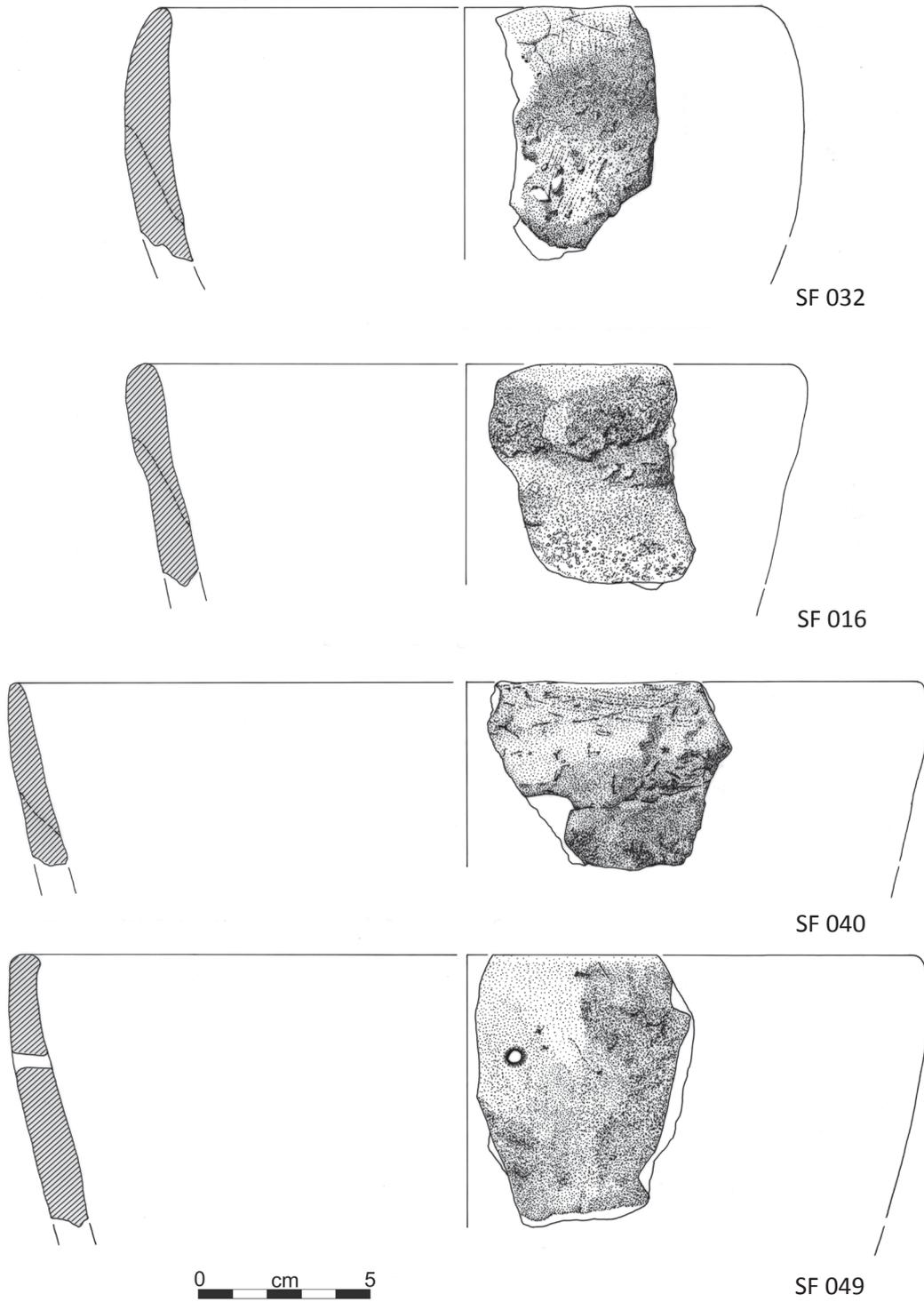
and key stratigraphic layers, totalling eight dates from the site in total. Four samples were sent to Oxford Radiocarbon Accelerator Unit and four samples to the Scottish Universities Environmental Research Centre for AMS radiocarbon dating (Table 2). The dates were calibrated using OxCal v4.1.7 (Bronk Ramsey 2009) and atmospheric data from Reimer et al (2009). When plotted together (illus 9), these dates show that the site was occupied during the Late Bronze Age/Early Iron Age from the 9th to the 4th centuries cal BC. It is notoriously difficult to achieve chronological precision during this period due to the radiocarbon plateaux from the 8th to 4th centuries BC that draws in date ranges from the early to the late 1st millennium BC (Dockrill et al 2006). Therefore, it is proposed that the site was, in effect, occupied during a single continuous phase during this time; so all of the analyses of the material culture and environmental remains treat the assemblages as single-phase blocks.

### MATERIAL CULTURE

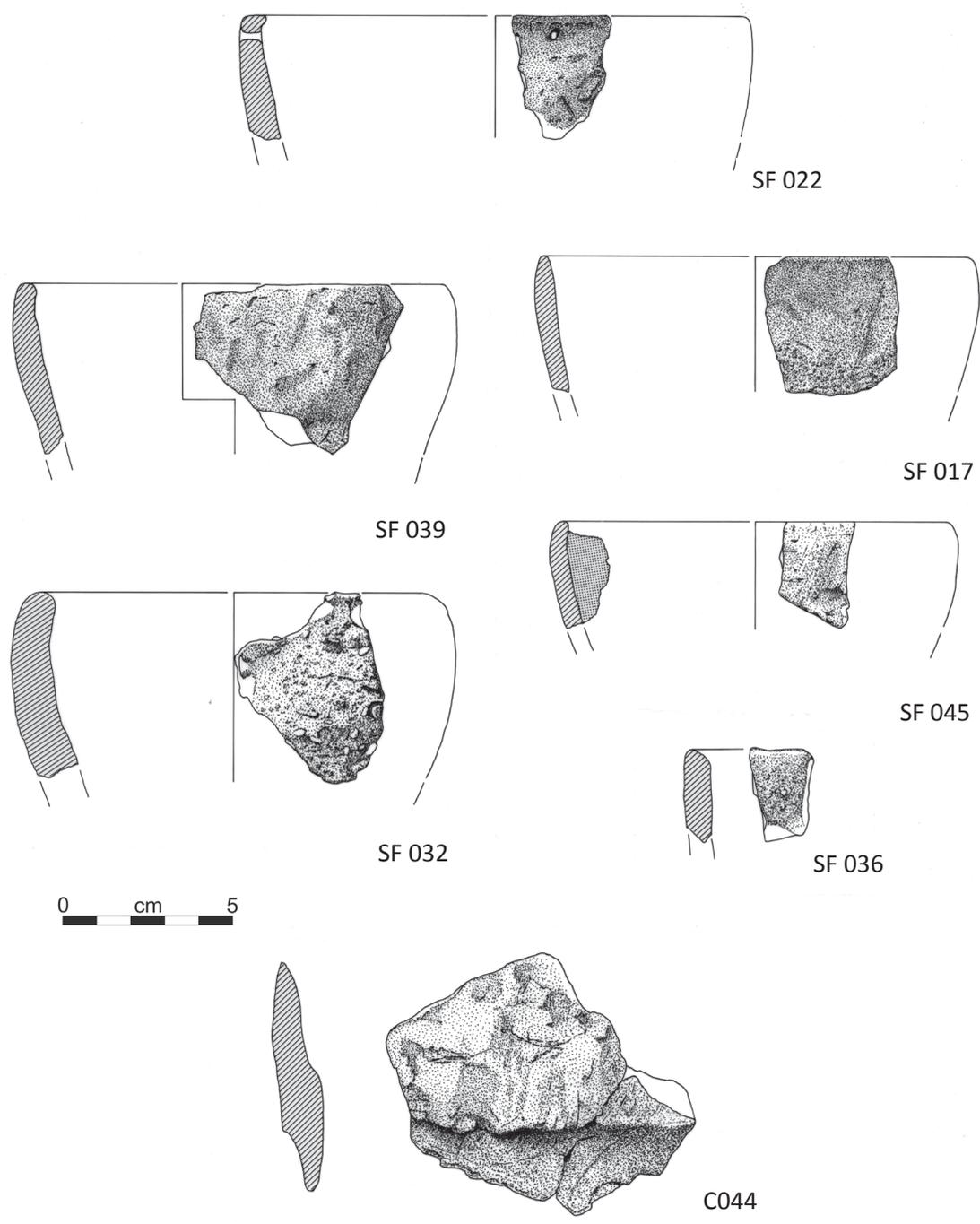
#### POTTERY

Ann MacSween with catalogue by  
Melanie Johnson

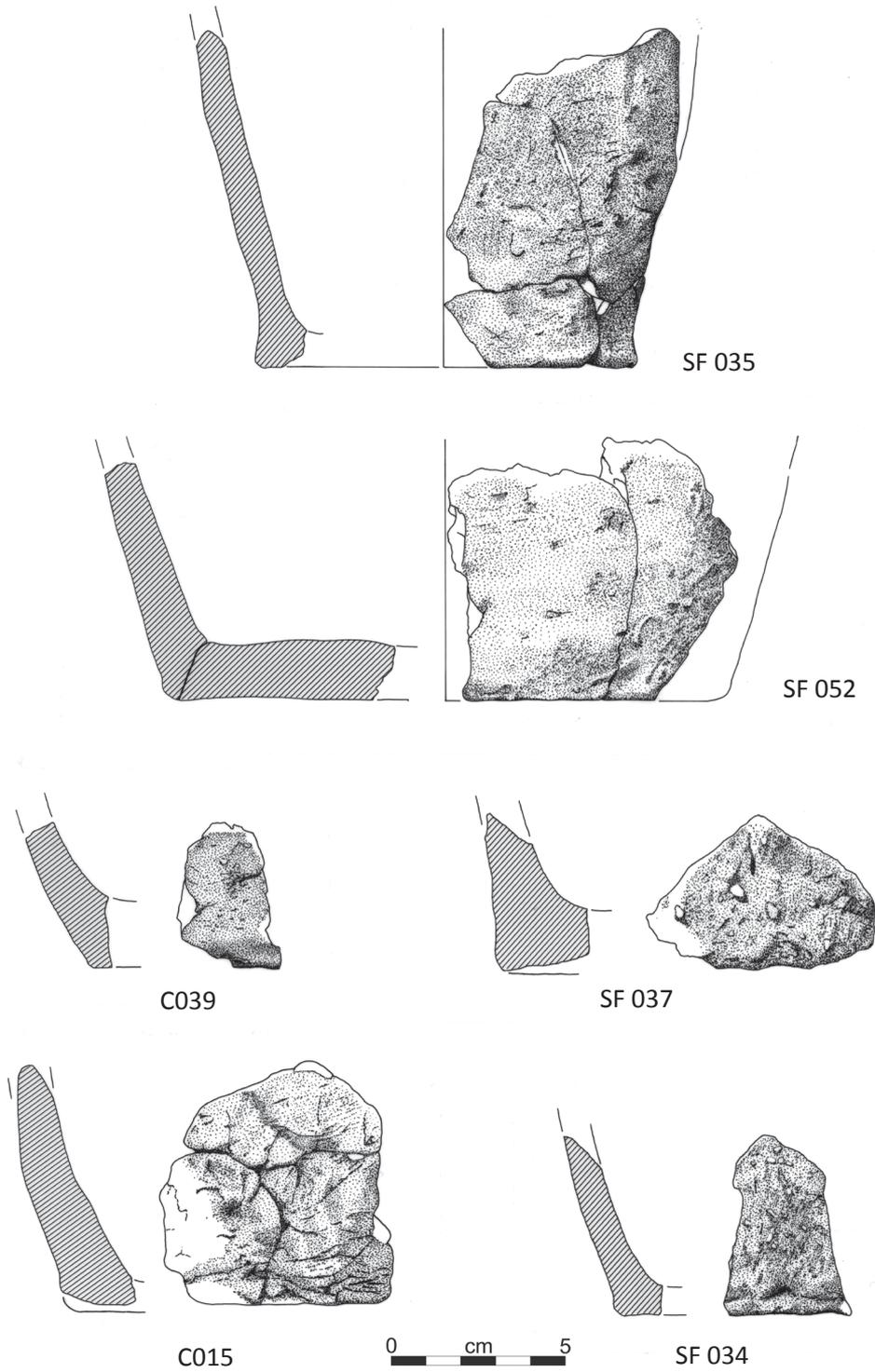
The fabrics used in production of the pottery from Gob Eirer are fairly consistent throughout the assemblage. The majority of sherds comprise sandy clay with 10–20% of larger fragments, usually large quartz but sometimes including larger rock fragments. Coarse sandy clays and fine sandy clays were also noted; it is difficult to differentiate between clay and added fragments as the 'temper' is larger quartz and the fabric descriptions should be regarded as providing an indication of the final mix. Grass impressions on the exterior of some sherds suggest that the vessels may have been rested on the ground during



ILLUS 10 Selected rim sherds from larger pottery vessels



ILLUS 11 Selected rim sherds from smaller pottery vessels



ILLUS 12 Selected pottery bases

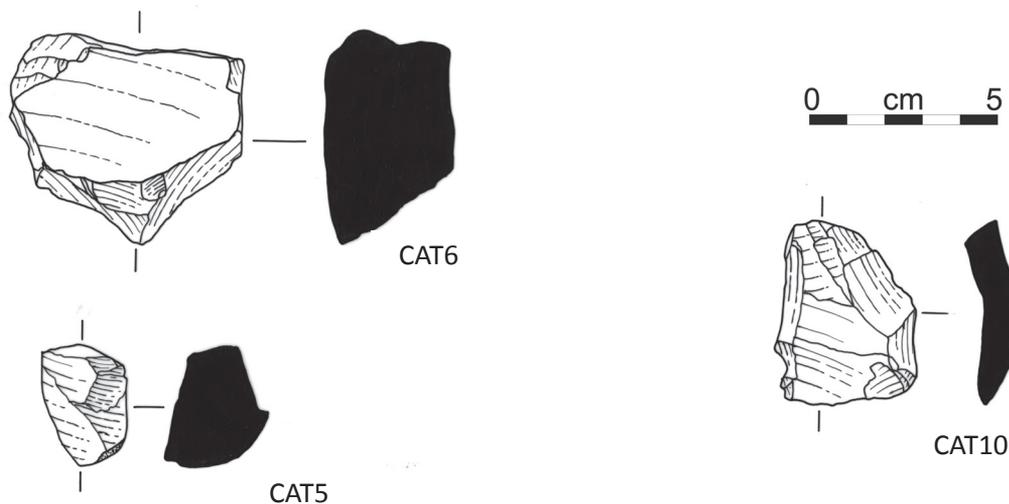
forming. Organics were noted in the breaks of some other sherds but not in quantities that indicate deliberate addition. Sherd thickness ranges from fine to medium/thick, with most sherds in the range 6–10mm. In general, the thicker sherds have a coarser mix. Most of the pottery has fired to grey/brown. The pottery is undecorated and there is little surface finish apart from what would be expected from the basic process of making a vessel. A variety of rims are represented (illus 10 & 11), mostly plain or flat rims, with occasional examples of interior bevelled, beaded and rolled rims. The bases are flat and, in profile, vessels were probably straight-sided or inverted (illus 12). There are examples of each type of rim in each phase and the overall impression is that the assemblage changed little in terms of typology through the life of the site. The available radiocarbon dates reflect this, indicating a date in the Late Bronze Age/Early Iron Age. There is very little material dating to this period in the Western Isles. Campbell (2002: 140) notes that the assemblage from Cladh Hallan in South Uist, recovered from a series of floor

deposits, provides the first detailed evidence for this area. The assemblage is characterised by a lack of decoration and fairly simple rim forms including plain and flattened (*ibid*). Another possible parallel is the Late Bronze Age Phase 1 assemblage from Baleshare, Uist (Barber 2003: 218–19). Here an undecorated assemblage with similar rim and base types and vessel shapes were noted (MacSween 2003: 127–9).

#### LITHICS (illus 13)

Torben Bjarke Ballin

From the excavations at Gob Eirer, 210 lithic artefacts were recovered (see Table 3). In total, 99% of the assemblage is debitage, supplemented by two core-tools, and one pebble-tool. The lithic raw materials exploited at Gob Eirer were subdivided into three main groups, namely quartz (67%), granite/gneiss (30%), and igneous materials (3%). The quartz is almost exclusively fine-grained quartz and the fact that many artefacts have abraded cortex indicates that



ILLUS 13 Selected worked quartz

most of the raw material was procured from the local beaches around the stack-site. A proportion of the assemblage consists of various coarse-grained forms of stone but due to the small sizes of these pieces it was not possible to define them more precisely than to the granite/gneiss group. Six fine-grained, dark pieces almost certainly represent igneous materials, such as dolerite, amphibolite, diorite or gabbro. All non-quartz materials would have been available in the local geological environment (Fettes

et al 1992), either as in situ material or in the form of beach pebbles or erratics. All hand-excavated finds (ie large objects) are quartz, whereas non-quartz objects were only recovered amongst the sieved residue.

Most of the assemblage (207 pieces or 99%) is debitage. A total of 74 pieces (36%) are chips, with flakes amounting to 91 pieces (44%), and indeterminate pieces (chunks) 42 pieces (20%). See Appendix 1 for a selected catalogue, with the full catalogue in the project archive. Some flakes were

TABLE 3  
Lithics

	<i>Quartz</i>	<i>Granite/gneiss</i>	<i>Igneous materials</i>	<i>Total</i>
<i>Debitage</i>				
Chips	62	12		74
Flakes	56	29	6	91
Indeterminate pieces	20	22		42
<i>Total debitage</i>	<i>138</i>	<i>63</i>	<i>6</i>	<i>207</i>
<b>Cores and tools</b>				
Core/scrapers	1			1
Core/piercers	1			1
Pebble-scrapers	1			1
<i>Total cores and tools</i>	<i>3</i>			<i>3</i>
<i>Total</i>	<i>141</i>	<i>63</i>	<i>6</i>	<i>210</i>

The definitions of the main lithic categories are as follows:

*Chips*: All flakes and indeterminate pieces the greatest dimension (GD) of which is  $\leq 10$ mm.

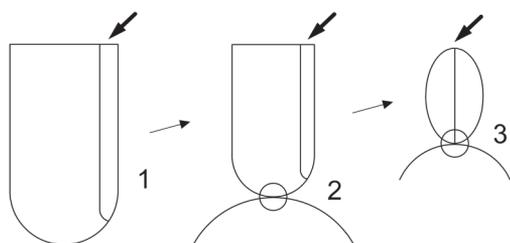
*Flakes*: All lithic artefacts with one identifiable ventral (positive or convex) surface,  $GD > 10$ mm and  $L < 2W$  ( $L$  = length;  $W$  = width).

*Indeterminate pieces*: Lithic artefacts which cannot be unequivocally identified as either flakes or cores. Generally the problem of identification is due to irregular breaks, frost-shattering or fire-crazing. *Chunks* are larger indeterminate pieces, and in the case of quartz, the problem of identification usually originates from a piece flaking along natural planes of weakness rather than flaking in the usual conchoidal way.

*Blades and microblades*: Flakes where  $L \geq 2W$ . In the case of blades  $W > 8$ mm, in the case of microblades  $W \leq 8$ mm.

*Cores*: Artefacts with only dorsal (negative or concave) surfaces – if three or more flakes have been detached, the piece is a core, if fewer than three flakes have been detached, the piece is a split or flaked pebble.

*Tools*: Artefacts with secondary retouch (modification).



ILLUS 14 Three classic percussion techniques:  
 (1) free-hand hard-hammer percussion;  
 (2) platform-on-anvil technique; and (3) bipolar  
 technique (adaptation of Callahan 1987)

produced by the application of traditional hard percussion, displaying standard bulbs-of-percussion, but much of the debitage appears to be bipolar waste, produced through the hammer-and-anvil technique. However, CAT 5 and 6 suggest that, most likely, the dominant approach to working stone at the site was through the platform-on-anvil technique, which is a hybrid approach. In this way, unprepared cores with flat cortical platforms were positioned on an anvil, and the platform was then struck by a hard hammerstone near the platform-edge (illus 14).

The assemblage includes no diagnostic artefact types but a number of factors support a later prehistoric date: (1) no formal tool types are present, with the only tools being expedient implements on recycled cores and an unprepared pebble; (2) although most quartz industries would tend to have been manufactured in either hard percussion or bipolar technique – or a combination of the two – the present assemblage seems to be based on the reduction of platform cores on anvils; and (3) pebbles, cobbles and blocks appear to have been reduced without any form of preparation, following an almost completely unsystematic/un-staged operational schema.

The fact that only 21 pieces (10%) were recovered by hand-excavation and the rest

(90%) from sieved residues indicates the general size of the individual artefacts. Basically, the vast majority of the assemblage is composed of tiny fragments, either chips, minuscule pieces of angular waste, or small flakes. Although this composition may, to a degree, be due to recovery policies (ie systematic sieving), there is some discrepancy between the numbers of large artefacts and the numbers of small artefacts, in the sense that there is much more micro-waste than one would expect from the production of the above 21 pieces (particularly considering the fact that little core preparation took place, such as decortication, crestring, trimming, or platform adjustment/rejuvenation). It is therefore suggested that the micro-waste may derive from activities other than traditional lithic reduction. Quartz, as well as other forms of stone, may have been crushed for the inclusion in pottery as temper (Gibson 2002), and it may have been crushed for distribution over monuments such as burials (Lebour 1914). Also, small-sized waste in granite/gneiss may have been produced in connection with the shaping of coarse stone tools or structural stone blocks. For example, the Bronze Age sites from Barabhas in north-west Lewis include many tools in a variety of coarse-, medium- and fine-grained igneous material, as well as gneiss (Ballin in prep). At present, though, there is no certain explanation for this phenomenon.

The composition of the larger artefacts allows a small number of activities to be identified, such as scraping (CAT 5 and CAT 19) and piercing (CAT 6). Several of the more regular flakes (eg CAT 1 and CAT 10) could easily have been used as unmodified/informal knives. The artefacts – hand-excavated as well as sieved pieces – were recovered throughout the site, and although the larger proportion of the assemblage was retrieved from Phase 1b contexts (all but one of the large objects,

as well as many sieved pieces), sieved pieces were also found in contexts from Phases 1a, 2 and 3. The typo-technological composition of the Gob Eirer assemblage is consistent with the radiocarbon dating that dates the site to the Late Bronze Age/Early Iron Age. The probable Early Iron Age quartz assemblage from Burland on Trondra, Shetland, was also produced by the application of anvil-supported platform technique (Ballin 2003, 2008).

COARSE STONE

Dawn McLaren

Eight worked stones have been identified in the assemblage from Gob Eirer and are summarised in Table 4, the remainder of the assemblage are unworked or simply fire-cracked. The coarse stone from Gob Eirer consists of prosaic, everyday tools: three abraded fragments of dark brown pumice and five cobble tools, including two pounders, a smoother and an anvil or working surface (see Appendix 1 for selected catalogue). These tools have been produced using locally sourced rounded beach cobbles, lacking preparation or modification prior to use. Although none of the tools is chronologically

distinctive, they are consistent with the Late Bronze Age/Early Iron Age date indicated for the use of the promontory enclosure by radiocarbon dating.

The assemblage is limited in scale and also in range of tool-types present but provides evidence of quartz knapping, leather working and other craft or subsistence tasks being undertaken at the promontory site. All of the tools have been produced from water-worn cobbles of typical metamorphic rock types of the area that are not lithologically diverse. The site location at a promontory stack next to a rocky beach gave a ready supply of cobbles nearby that could be used as tools and yet the quantity of utilized stone is small and characterised by a general lack of well-defined wear.

Five dark-brown pumice clasts were recovered; only three have evidence of use. Each of these worked pieces displays use as an abrasive, indicated by the presence of flattened ground surfaces. In one piece, SF 128 (illus 15), the wear is faceted, creating three distinct abraded platforms at one end of the broken fragment. The pumice from Gob Eirer is black, glassy, vesicular, basaltic clasts likely to have floated to the western shores

TABLE 4  
Range of stone tool type by phase (\*=site code only identified on finds bag)

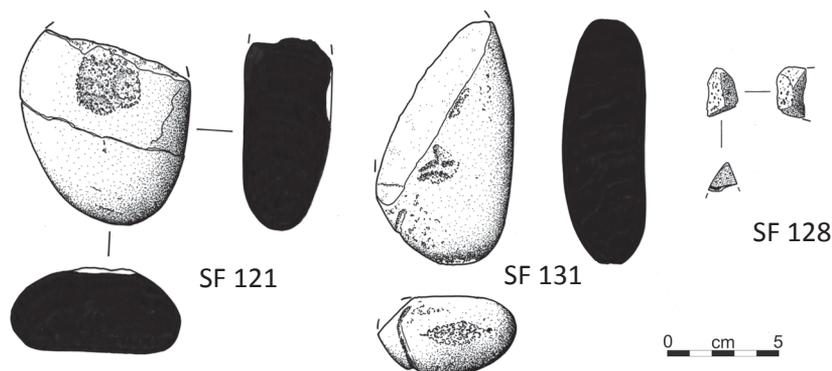
<i>Tool type</i>	<i>Phase</i>			
	<i>1b</i>	<i>2</i>	<i>3</i>	<i>Unphased</i>
Abraded pumice	SF 13	SF 128		
	SF 31			
Pounder	SF 69		SF 129	
Anvil	SF 121			
Smoother	SF 130			
Combination tool				SF 131*

of northern Scotland from Iceland (Newton 2000: 405–6). It cannot be confirmed whether the fragments were collected as drift material immediately succeeding a volcanic eruption or retrieved from ancient beach deposits in the area. Utilized pumice is a typical find on later prehistoric coastal sites in northern Scotland and can be paralleled on many Western Isles sites such as Sollas and Eileen Maleit, North Uist (Campbell 1991: 164; Armit 1998: 269, 270), A’Cheardach Bheag, A’Cheardach Mhor and Dun Vulcan, South Uist (Young & Richardson 1959: 164; Fairhurst 1971: 100; Parker Pearson 1999: 232), Cnip and Galson, Lewis (Edwards 1924: 198; Newton 2006: 153–4), amongst others. Although the specific function is often elusive, this material could be used as an abrasive in hide processing, pottery production and for finishing wood, bone or metal points and pins. The latter function typically leaves distinctive traces on the pumice, in the form of abraded grooves, but no such evidence is present at Gob Eirer.

A small smoother (SF 130), with a flattened abraded face stained red-brown, is likely to have been associated with leatherworking. Such stones, often referred to as polishers or slickers, were used to remove fat and smooth out the hide, resulting in a red-brown organic

residue or stain adhering to the stone (Lane & Campbell 2000: 179). Interestingly, similar wear and staining has been identified on the underside of the anvil or working surface (SF 121 – illus 15). It is not possible to confirm which form of use was primary but the combination of these two functions is not typical.

The other cobble tools comprise two pounders, an anvil or working surface and a combination pounder/working surface. Each category could be considered to be general-purpose tools capable of being used for a range of tasks, including food-processing or crushing up pigments or stones for use as temper in pottery production. When considered alongside the struck lithic evidence from the site, it is likely that each of these tools could be related to the quartz-working on site. Although no hammerstones were identified amongst the assemblage, the anvil and pounders are likely to be related to quartz tool production, particularly the anvil or working surface (SF 121) which has a distinct circular pitted hollow created by repeated direct or indirect percussion against another stone (illus 14). Similar anvil stones are known from knapping sites such as Den of Boddam, Aberdeenshire (Saville, forthcoming).



ILLUS 15 Selected coarse stone tools (SF 121 & SF 131) and worked pumice (SF 128)

In contrast to the coarse stone from nearby An Dunan, the Gob Eirer stone generally lacks well-defined wear facets (McLaren, forthcoming). With the exception of SF 121, the wear is slight enough to leave the original shape of the cobble largely unmodified and probably indicates only short-term use. Also in contrast to An Dunan, all but one of the Gob Eirer cobble tools is fire-cracked. This indicates a repeated practice of tools being reused as pot-boilers after their primary use had ceased.

Fire-cracked gneiss cobbles are abundant amongst the assemblage, particularly from phase 1b contexts. This use of stones as pot-boilers in phase 1b is consistent with the distribution of the cobble tools which also cluster in this phase, associated with continuing construction and occupation of a rectilinear building on the promontory. Although none of the coarse stone is chronologically distinctive, the tools are consistent with Late Bronze Age/Early Iron Age assemblages from the Western Isles in general (McLaren, forthcoming).

#### IRON PAN AND BOG ORE

Dawn McLaren

Over 1.5kg of amorphous fractured plates and nodules of red-brown sandy bog ore and iron pan were recovered from 12 contexts throughout the site (contexts 000, 013, 020, 022, 028, 029, 047, 067, 074, 082, 085 & 088). None of the material displays signs of use or modification and is likely to have formed in situ after site abandonment.

#### MATERIAL CULTURE SYNTHESIS

Dawn McLaren

The artefact assemblage recovered during excavations at the promontory site at Gob Eirer comprises a small and fairly homogenous suite of objects, dominated by quartz debitage

and undecorated, straight sided, plain- or flat-rimmed handmade ceramic vessels of Late Bronze Age/Early Iron Age date. Also present are a small quantity of chronologically indistinct cobble tools and abraded pumice clasts.

#### *Function*

Looking at the assemblage as a whole, the ceramics, lithics and coarse stone all tell complementary stories. Despite the large amount of quartz debitage recovered, only three tools were present: two expediently produced scrapers and a single point. Ballin suggests that the micro-waste flakes and chips may derive from activities other than traditional lithic production, perhaps the deliberate breaking up of quartz to use as temper in pottery. This is supported by examination of the fabric compositions of the ceramic vessels, which indicate the tempering of the clay with large quartz fragments. The presence of anvil stones and pounders amongst the cobble tool assemblage also complements the evidence of both hammer-and-anvil and platform-on-anvil techniques for working quartz. In addition to this evidence for pottery production, leather working is hinted at by stone smoothers. Three small fragments of abraded pumice may also have been used to prepare hides. A number of fire-cracked cobbles are also present.

#### *Resources*

All the material is likely to have derived from local sources. Pumice is known to have floated to the western shores of northern Scotland from Iceland and it is likely that the worked pumice clasts had been collected from the local beach. The cobble tools have all been produced from water-worn cobbles of typical metamorphic rock types of the area, lacking preparation or modification

prior to use. The location of the site next to a rocky beach suggests a ready supply of stone nearby which could be collected as required. Similarly, many of the quartz artefacts have abraded cortex surfaces remaining, suggesting that the raw quartz was procured from the local beaches rather than being quarried from an outcrop. The source of the clay is unknown, but on the evidence presented by the other material types from the site, it is likely to have been collected locally.

#### *Date*

Little amongst the assemblage is chronologically distinctive but, as a whole, the artefacts are generally consistent with the Late Bronze Age/Early Iron Age date indicated by the radiocarbon assays. The pottery assemblage is dominated by undecorated, straight-sided or inverted profile pots displaying a variety of rim forms. Most are plain- or flat-rimmed vessels, similar in form and composition to Late Bronze Age assemblages elsewhere in the Western Isles (Campbell 2002: 140). Although none of the quartz is directly datable, the lack of formal tools, the combination of techniques used and the lack of preparation of the quartz prior to knapping all point towards a late date for the production of this material.

### ENVIRONMENTAL ARCHAEOLOGY

#### Mike Church

Samples were taken from the in situ archaeological contexts, using a total sampling strategy (Jones 1991), to retrieve ecofacts for palaeoenvironmental and palaeoeconomic reconstruction, principally carbonised plant macrofossils and calcined bone fragments observed during excavation. Routine sedimentary tests were undertaken to analyse

ecofact preservation and taphonomy and bulk samples to retrieve ecofact remains (see Methods above). The samples were processed as part of doctoral research to produce a regional synthesis on the later prehistoric and historic use of plants in Lewis, from 10 sites of Bronze Age to post-medieval date (Church 2002a). A number of recurrent research questions were formulated for the archaeobotanical remains from each of these sites including;

1. Is it possible to propose a generic taphonomic model for the origin, preservation and subsequent dispersal of the carbonised plant macrofossils on the site?
2. What materials were used for fuel?
3. What wood was used and how was it procured?
4. Can aspects of arable agriculture be seen in the archaeobotanical record, from the crops grown to the crop-processing procedures employed?
5. What other plants were gathered and for what purpose?

### ENVIRONMENTAL RESULTS AND DISCUSSION

The environmental remains are discussed as one phased assemblage due to the homogeneity of the radiocarbon dates recovered from the main structural phases from the site. The research questions identified in the introduction to this section are addressed in turn below.

#### *Ecofact preservation and taphonomy*

The soils on the site largely comprised wet, acidic, organic sandy silts (see Table 5) with a large amount of post-depositional formation of iron panning across the site. This meant that many of the contexts had a

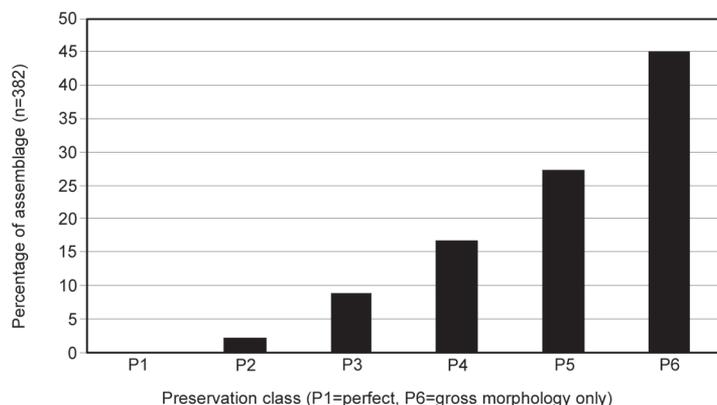
low mineral magnetic component (indicated by the generally low values for mass-specific magnetic susceptibility  $\chi$ ), despite having large amounts of burnt peat/turf fragments that are usually associated with peat ash and enhanced mineral magnetism (Peters et al 2000; 2004). The ferromagnetic components of the ash seem to have been leached out of the soils and redeposited in the layers of iron panning that concentrated around the stonework on the site. Only a few of the layers had enhanced magnetic signatures and these concentrated in the Phase 1b floor levels and structural fills in the south-west part of the excavated trench, which had less evidence for iron panning. The pedogenic history of the site also meant that many of the macrofossils and the charcoal acted as filters for the iron pan formation across the site and this will have severely degraded and destroyed many of the more fragile macrofossils, such as seeds and cereal chaff.

Following standardisation (see Methodology above), 18 macrofossil and 26 charcoal samples remained from the various generic occupation layers (Tables 7 & 8). The macro-fossil concentration for the assemblage (mean QC/litre) was low, as were the average number and weight of

the charcoal fragments (charcoal fragment & weight/litre). The low concentrations in part reflect the post-deposition pedogenic destruction of the charred material. The total archaeobotanical assemblage (n = 584) was dominated by grain (65%), with some chaff (9%) and rather more wild components (26%). The taphonomic history of the carbonised plant and bone assemblage was hard to demonstrate but it seems likely that the charred material was carbonised on hearths – due to the association of burnt peat with most of the samples with significant numbers of plant macrofossils – the common carbonisation model for Atlantic Scotland (cf Church & Peters 2004; Church et al 2007). Illustration 16 presents the preservation class of the barley grains from the site, following preservation criteria of Hubbard and al Azm (1990). This poor preservation profile is consistent with grain becoming carbonised within hearths in Atlantic Scotland (Church 2002b; Church & Peters 2004), rather than crop-processing accidents. The harsh soil conditions also contributed to the grain and culm base/rhizome rich nature of the assemblage as these are the more hardy parts of plants, judging by the carbonisation experiments undertaken by Boardman and Jones (1990). The preservation of bone and

TABLE 5  
Summary routine soil tests

<i>Sedimentary test (total samples= 49)</i>	<i>Units</i>	<i>Range</i>	<i>Average</i>	<i>Standard deviation</i>
Organic content	%	3.0–43.8	12.9	6.7
pH	SI Units	4.6–6	5.3	0.3
$\chi$	( $10^{-8}\text{m}^3\text{kg}^{-1}$ )	0.02–2.52	0.15	0.37
$\chi_{fd}\%$	%	0–12.5	4.2	3.8



ILLUS 16 Preservation of barley, following preservation classes of Hubbard and al Azm (1990)

shell was only possible through burning and calcination, presumably as part of material spread from hearths, because the site soil system was too acidic for unburnt bone preservation.

#### *Zooarchaeological analysis*

Louisa Gidney and Emily Blake

Hundreds of burnt bone fragments were recovered from the bulk samples but most of these were too small to be identified. Seven fragments were identified to genera (Table 6), including four sheep/goat bones, two cattle bones and one limpet shell fragment. The

bone elements were from a range of parts of the body. The types of animals present are consistent with the contemporary assemblages in the Western Isles (Smith & Mulville 2004).

#### *Fuel use and wood procurement*

Many thousands of pieces of burnt peat/turf were recovered from across the site, indicating that the dominant fuel type

was peat/turf. The extensive tracts of blanket bog on the Uig peninsula would have been in place by the 1st millennium BC (Pankhurst & Mullin 1994; Flitcroft 1997) and so it is likely that much of the fuel used was peat. The burning of turf is also indicated by the significant presence of smaller culm bases/rhizomes that are produced in large numbers as a by-product of this fuel (Dickson 1998; Church et al 2007). The use of peat and turf requires social organisation, and perhaps some form of control or ownership of parts of the moorland, because the peat/turf bank needs to be prepared, the fuel cut and then left to dry for many weeks. The fuel is then

TABLE 6  
Zooarchaeological remains

<i>Context number</i>	<i>Zooarchaeological remains</i>
C42	Calcined sheep/goat radius shaft fragment
C43	Calcined limpet ( <i>Patella</i> spp.) fragment
C95	Calcined cattle carpal (2 + 3) fragment
C96	Calcined sheep/goat pubis fragment
C97	Calcined cattle proximal metacarpal/metatarsal, sheep/goat carpal and pubis fragments

TABLE 7  
Archaeobotanical remains

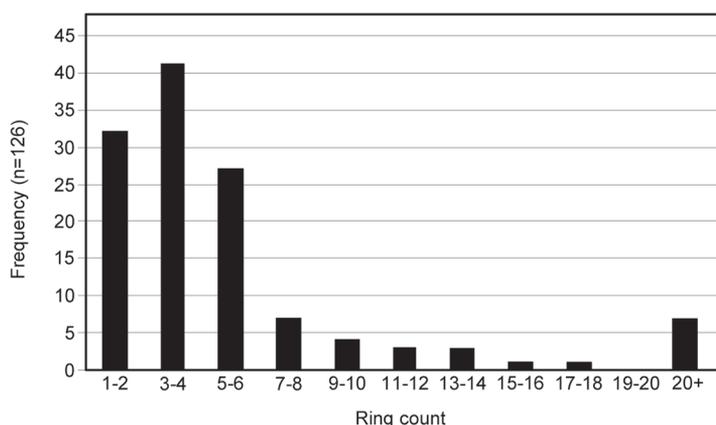
<i>Volume for 18 macro samples (litres)</i>		<i>574</i>
<i>Grain</i>	<i>Common name</i>	
<i>Hordeum</i> sp.	Barley grain	121
H. naked	Naked barley grain	10
H. naked asymmetric	Straight naked barley grain	1
H. hulled	Hulled barley grain	156
H. hulled symmetric	Straight hulled barley grain	13
H. hulled asymmetric	Twisted hulled barley grain	17
Cereal indeterminate	Indeterminate cereal grain	64
	<i>Grain total</i>	<i>382</i>
<i>Chaff</i>		
H. <i>vulgare</i> L.	Six-row barley rachis internode	5
Cereal/monocotyledon (> 2mm)	Cereal-sized culm node	8
Cereal/monocotyledon (> 2mm)	Cereal-sized culm base	40
	<i>Chaff total</i>	<i>53</i>
<i>Wild species</i>		
<i>Brassica/Sinapis</i> spp.	Cabbage/mustard seed	2
<i>Carex</i> spp (biconvex)	Sedge nutlet	1
<i>Carex</i> spp (trigonus)	Sedge nutlet	1
<i>Chrysanthemum segetum</i> L.	Corn marigold achene	1
<i>Corylus avellana</i> L.	Hazelnut fragment	2F
<i>Plantago lanceolata</i> L.	Ribwort plantain seed	4
Poaceae undiff (medium)	Grass grain	1
<i>Polygonum aviculare</i> L.	Knotgrass nutlet	1
<i>Rumex acetosella</i> L.	Sheep's sorrel nutlet	1
<i>Sorbus aucuparia</i> L.	Rowan seed	1
Cereal/monocotyledon (< 2mm)	Small grass-sized culm node	5
Cereal/monocotyledon (< 2mm)	Small grass-sized culm base	42
Indeterminate rhizome	Indeterminate rhizome	84
Indeterminate seed/fruit	Indeterminate seed/fruit	5
	<i>Wild total</i>	<i>149</i>
	<i>Total Quantifiable Components (QC)</i>	<i>584</i>
	<i>Average QC/litre</i>	<i>1</i>

transported to the place of burning in its dried form.

A wide range of charcoal genera were recovered, with 39% of the fragments deciduous roundwood, 16% deciduous timber, less than 1% coniferous roundwood, 15%

coniferous timber and 29% indeterminate (Table 8). The majority of the fragments had small ring counts, a function of their size and also the large proportion of small roundwood in the assemblage (illus 17). Ling heather and birch were the most numerous of the deciduous

roundwood, with some hazel and Pomoideae undifferentiated and a few fragments of alder. The deciduous timber was largely birch, with some alder, oak and a little ash. The birch and hazel could grow in Lewis in areas where sheep are excluded, for example, on cliffs or on inaccessible islands. It is possible that



ILLUS 17 Ring counts for charcoal fragments, excluding Ling heather

some form of managed woodland could have existed in the resource catchment of the site (cf Church 2002b). The ash is the only species that is unlikely to have grown in the Western Isles (Pankhurst & Mullin 1994) because it prefers the base-rich deep soils of the mainland (Stace 2010). Its presence, along with the fragments of oak, raises the intriguing question of the importation of timber or perhaps opportunistic gathering of driftwood. The coniferous timber consists largely of pine with some spruce and a little larch. Much of this would have been collected as driftwood as the spruce and larch were not native to the British Isles at this time (Dickson 1992). The pine could also have been driftwood because only a very small amount of pine roundwood was recovered from the site, perhaps indicating its local presence but no more.

Seventy Ling heather fragments were analysed from the site and the ring counts are presented in illus 18. The mature to degenerate age of Ling heather within blanket bog is between 16–30 years (Barclay-Estrup & Gimingham 1969; Grime et al 1988). It is assumed that a ‘natural’ *Calluna* heath would have a range of ages of heather and that the burning of a range of ages of heather plants in a hearth would produce a varied distribution of ring profiles. It can therefore be proposed that heather was collected and burnt (deliberately or accidentally) in the hearths from a relatively wide range of ages with a slight emphasis on younger plants (less than 10 years). This may indicate limited heathland management in the form of something

similar to muirburn or perhaps the preferential gathering of younger heather plants that would be softer for bedding and less coarse fodder for animals.

#### *Arable agriculture*

The identifiable cereals were all barley, with approximately 58% of the barley hulled and 3% naked. All five rachis internodes recovered were of the six-row species, though the ratio between the symmetric:asymmetric hulled barley grain was 1:1.3 (n=30), suggesting that the two-row species may also have been present. The only other chaff types present were large culm nodes and bases, presumably parts of the barley straw. Though there are no local pollen diagrams to confirm the presence of local agriculture, it is likely that the cereal remains stem from locally grown

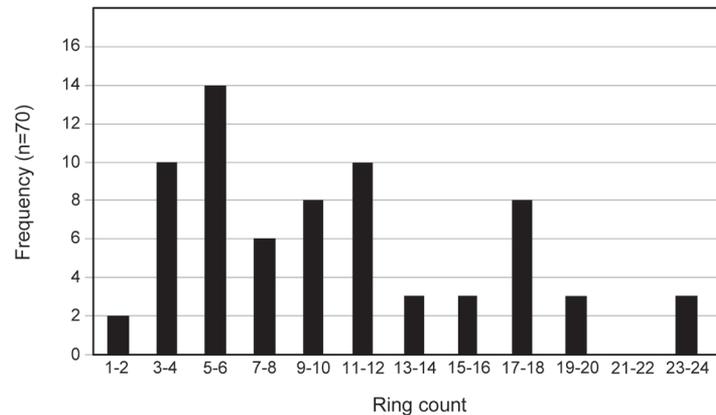
crops, perhaps on amended rigs similar to the post-medieval examples immediately adjacent to the site today. Some of the wild plant seeds recovered may have been weed seeds associated with the barley crop but it is not possible to be certain of this because the burning of peat and turf can introduce a range of seeds from a wide range of habitats. The presence of cereal-sized culm bases suggests that the crop was uprooted, a prehistoric tradition in the Western Isles that maximises the straw yield from the harvest (Church 2002b; Smith & Mulville 2004). A barley monoculture was in place in Atlantic Scotland from the Neolithic period (Bishop et al 2009) and it is only in the later 1st millennium AD that oat and flax appear in significant quantities (Dickson & Dickson 2000; Church 2002a; Smith & Mulville 2004).

#### *Wild plant gathering*

The wild components were dominated by smaller culm nodes, culm bases and rhizomes, a function of their durability and the probable burning of some form of peat and turf. The very low concentration of wild seeds included Cabbage/Mustard, sedge, Ribwort plantain, Corn Marigold, grass, Knotgrass and Sheep's sorrel. These species cover a range of possible habitats including arable, disturbed ground, rough pasture and moorland. Two fragments of hazel nutshell and a single seed of Rowan point to the presence of local woodland and its exploitation in the form of nuts and berries becoming incorporated into the hearth.

## DISCUSSION

The radiocarbon dating of the site places its sole occupation securely in the Late Bronze Age/Early Iron Age. In terms of our understanding of the archaeology in the Western Isles, Gob Eirer appears to be a new site type for this



ILLUS 18 Ring counts for Ling heather fragments

period. Other comparable sites do exist in the form of promontory enclosures on stacks around the Lewis coastline (see Burgess 1999; Church & Burgess 2003) but only one of these, Dunasbroc, has been the subject of archaeological investigation (McHardy et al 2009). Dunasbroc yielded dating evidence linking the site with use in the Neolithic period with a secondary phase of use in the 2nd century AD following an apparent hiatus. However, there is no evidence for Late Bronze Age/Early Iron Age use.

The structural record at Gob Eirer basically consists of a large dry-stone and turf promontory wall, with a narrow defensible entrance, leading on to a paved pathway providing access to a substantial drystone and turf building, with architectural hints suggesting rectilinear construction

TABLE 8

Charcoal remains with the charcoal fragment counts indicated by xF and the mass (g.) of the fragments in brackets

<i>Volume for 26 charcoal samples (litres)</i>		758
<i>Deciduous roundwood</i>	<i>Common name</i>	
<i>Alnus</i> sp. roundwood	Alder roundwood	1F(0.11)
Bark roundwood	Bark roundwood	1F(0.12)
<i>Betula</i> sp. roundwood	Birch roundwood	33F(3.92)
<i>Calluna vulgaris</i> (L.) roundwood	Ling heather roundwood	70F(3.72)
<i>Corylus</i> sp. roundwood	Hazel roundwood	6F(0.38)
Pomoideae undiff. roundwood	Rose family roundwood	7F(0.63)
<i>Deciduous timber</i>		
<i>Alnus</i> sp.	Alder timber fragment	5F(0.3)
<i>Betula</i> sp.	Birch timber fragment	31F(2.73)
<i>Fraxinus</i> sp.	Ash timber fragment	1F(0.15)
<i>Quercus</i> sp.	Oak timber fragment	4F(0.15)
<i>Coniferous roundwood</i>		
<i>Pinus</i> sp. roundwood	Pine roundwood	1F(0.09)
<i>Coniferous timber</i>		
<i>Larix</i> sp.	Larch timber fragment	1F(0.81)
<i>Picea</i> sp.	Spruce timber fragment	4F(0.13)
<i>Pinus</i> sp.	Pine timber fragment	32F(2.48)
<i>Indeterminate</i>		
Indet. roundwood/rootwood	Indeterminate rootwood/roundwood	42F(2.53)
Indet.	Indeterminate charcoal fragment	28F(2.66)
Bark fragment	Bark fragment	3F(0.45)
<i>Total identified</i>		250F(20.3)

rather than the cellular or circular tradition more usually associated with later prehistoric buildings in Atlantic Scotland. Another potential building is also present although the pathway appears to ignore its entrance. The finds assemblage from the site is consistent with the Late Bronze Age/Early Iron Age date suggested by the radiocarbon assays. The assemblage is dominated by quartz debitage and plain handmade ceramics with a small quantity of cobble tools and pumice

clasts. Only three quartz tools were present among the large amount of debitage: two expediently produced scrapers and a single point. Ballin has suggested that micro-waste flakes and chips may derive from activities other than traditional lithic production. This is supported by the fabric compositions of the ceramic vessels, which seem to indicate the clay was tempered with large quartz fragments. The presence of anvil stones and pounders complements the evidence of both

hammer-and-anvil and platform-on-anvil techniques for working quartz. However, the lack of wear on these stones could indicate a relatively short-lived use-life. In addition to this evidence for pottery production, stone smoothers hint at leather working. Three small fragments of abraded pumice may also have been used to prepare hides. A number of fire-cracked cobbles are also present. Fire-cracked cobbles are consistent with burnt mounds known from the same period elsewhere in Atlantic Scotland, the closest excavated site to Gob Eirer being at Geirisclett in North Uist (Dunwell et al 2003). Gob Eirer does not, however, exhibit any of the other characteristic aspects of a burnt mound; there is no fresh water supply to it, no trough in evidence and the amount of fire-cracked stones is negligible compared to the substantial horseshoe mounds that often characterise these sites. These stones do, however, suggest the heating of water on-site. The environmental evidence indicates a range of resources were used by the occupants of the site including cows and sheep, shells from the foreshore, locally grown barley, driftwood timber and the possible presence of small areas of local woodland, comprising birch and hazel small trees and shrubs. One of the main areas exploited was the blanket bog and moorland through the cutting and gathering of peat and heather for fuel, bedding and perhaps fodder.

Therefore, it could be proposed that the site represents the fragmentary remains of a defensive domestic homestead, located in an area that is well positioned to access specific resources, such as the foreshore for driftwood, marine resources and pumice. Barley could be grown adjacent to the site and animals would have a large area of rough grazing to feed on. The moorland is also easily accessed for peat and heather. In addition, and potentially most important given its exposed location, the stack

is a strategically important position within the wider Camas Uig, because it would allow all sea travel into and out of the protected bay of Uig to be observed.

However, it could also be argued that the finds assemblage reflects a small-scale industrial location. Armit has argued that in the Bronze Age 'economies may have followed a logistic pattern with a range of economic activities carried out at specialised activity areas some distance from a permanent or semi-permanent base' (Armit 1994: 77). If this is the case, then what we are seeing at Gob Eirer could be an industrial area for pottery production and/or leather working, which was related to but not especially close to the nearby contemporary dwelling at Guinnerso, Uig.

Interestingly, the limited number of Late Bronze Age dwellings that are known in the Hebrides and Atlantic Scotland suggest the choice of very different locations and architecture than that represented at Gob Eirer. Dwellings usually take the form of a roundhouse (Armit 1996: 94; Branigan 2000: 327) or semi-subterranean structures dug into the machair (Parker Pearson et al 2004). In addition, there is no fresh water supply within the enclosure and the nearest source is currently a stream immediately opposite the stack on the mainland, although a lack of fresh water on-site is not unusual for many prehistoric settlements and especially other promontory locations. The use of sea-girt promontories has always been seen as potentially problematic for year-round domestic occupation due to their extremely exposed nature, and the location of Gob Eirer means it is vulnerable to the full might of the Atlantic Ocean and its westerly gales. Perhaps this is why the site is used only briefly, for a single phase of use, utilizing stone-based turf walls rather than a full drystone architecture.

The closest comparable promontory excavation is the Dunasbroc site and its Neolithic phase assemblage is not considered consistent with domesticity either (McHardy et al 2009: 100). The assemblage included two rare objects, a broken leaf or lozenge shaped arrowhead of imported flint and a large oval stone, smoothly polished on one side. These finds, associated with large quantities of burnt material and the site's liminal geography, have led McHardy et al to propose a ritual use for the site, perhaps as a place where votive deposits or offerings were made. Gob Eirer has no such prestige objects or objects that have been imported; all the material in the finds assemblage is likely to have derived from local sources, other than the pumice which could be collected from the local beach. Nor does it have any evidence for use prior to the Late Bronze Age. Gob Eirer has evidence for burning, though not on the large scale that may be indicative of repeated ritual events suggested by the deposits of peat ash at Dunasbroc, and indeed, in the hearth feature at nearby An Dunan. However, the liminal nature of the site at the point where land gives way to water must also be considered in less functional terms than a strategic location for the control of water-borne transport. Gob Eirer is particularly ambiguous in its location, separated from the mainland by a small beach and straddling the division between land and sea. It can be argued that the sea framed experience of landscape since this was the main routeway of the prehistoric past. As well as being associated with status and control of access, intertidal areas that are in a constant state of flux and are punctuated by the cosmological physics of the tide, have been argued to carry a spiritual significance for humans (Willis 2007:108).

One of the interesting aspects of the site at Gob Eirer is the apparent deliberate closure of the site with the rubble wall (004) across

the access pavement and a layer of cobbles covering the area between the building walls. There is no evidence for burial on the site, no skeletal remains, and no obvious reason for abandonment, for example, there is no evidence for a violent end to the site. It is possible that a ritual closure of the site with stone could echo the closure of tombs, a phenomenon that is known in the Western Isles during the Bronze Age (Armit 1996: 107). This closure of burials may reflect the finality of death, or the end of an era, and perhaps the act can be seen translated to the site at Gob Eirer at the end of its period of use; Brück has argued that 'fragmentation and transformations were central cultural metaphors through which people conceptualised the passing of time' (2006: 310).

## CONCLUSIONS

The dearth of excavated comparanda for the site at Gob Eirer makes it difficult to draw firm conclusions about the nature of the site. What we can say for certain is that the site had only one period of use, in the Late Bronze Age/Early Iron Age. We may entertain three hypotheses based on the chronological context of the site within its region and against the existing archaeological record; (1) that the site is the fragmentary remains of a defensive domestic structure located in a strategically important position within the wider Camas Uig, (2) that the site was a centre for industry, whether that was leather processing or pottery manufacture (or both) and (3) that the site was used as a locus for ritual activity determined by its liminal geography. In practice, it is likely that aspects of all three interpretative models are intertwined into the Late Bronze Age/Early Iron Age use of the site; it is unfortunate that we cannot gain greater chronological

precision since this period was obviously one of great change, seeing the introduction of iron, the potential collapse of Bronze Age trading networks and the beginnings of the massive stone architecture that characterises the Atlantic Scottish Iron Age. The site at Gob Eirer provides evidence for potential pottery manufacture and leather working, but whether or not the site was a short-lived functional node in the Uig landscape, its closure with a layer of cobbles is indicative of a meaning beyond its function to the later prehistoric community who made use of it.

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### NOTES

- 1 SF 050.
- 2 SF 053, 057, 059, 051 and 052.
- 3 SF 045, 043, 044, 046 and 048.
- 4 SF 058.
- 5 SF 029–031.
- 6 SF 080, 082, 092, 096, 083, 084, 089, 093, 094, 095, 097 and 091.
- 7 SF 099, 105, 101 and 104.
- 8 SF 113, 114, 118, 119, 124, 110 and 123.
- 9 SF 078, 076, 077, 068, 069 and 071–075.
- 10 SF 016.
- 11 SF 010 and 003.
- 12 SF 035 and 041.

### APPENDIX 1

#### ILLUSTRATED SMALL FINDS CATALOGUE

##### *Pottery*

Colours are based on Munsell's Soil Colour Chart (1994).

SF 032 C038 1 rim × 9–13mm thick, 60g.  
Inturning rounded rim, diameter unknown.  
Diagonal wiping on exterior, sooting on

- exterior, iron pan on interior and breaks. Few grass marks on surfaces. Fabric – *c* 10% stone inclusions up to 10mm. Abraded. Interior yellowish-brown (10YR 5/4), core grey (10YR 5/1), exterior pale brown to greyish-brown (10YR 6/3 – 5/2).
- SF 016 C025 1 rim × 10mm thick, 64g. Thick rounded rim, bucket-shaped vessel, diameter unknown. Joins between coils visible on interior, 10–15mm apart. Wiping on interior, charred residue on exterior, finger marks on surfaces. Fabric is sandy clay with *c* 30% stone inclusions. Abraded. Interior brown (10YR 5/3), core greyish-brown to dark grey (10YR 5/2 – 4/1), exterior dark grey (10YR 4/1).
- SF 040 C038 1 rim × 6–8mm thick, 44g. Bucket-shaped vessel, thin rounded rim, diameter at least 270mm. Finger marks on surfaces, sooting and charred residue on exterior. Lots of grass marks on surfaces and breaks. Possible angled slab construction. Abraded. Interior greyish-brown (10YR 5/2), core greyish-brown to grey (10YR 5/2 – 5/1), exterior dark greyish-brown to dark grey (10YR 4/2 – 4/1). Fabric – sandy clay with *c* 20% larger fragments.
- SF 049 C039 1 rim × 7–10mm thick, 77g. Inturning flat-topped rim with slight internal lip, diameter unknown. Perforated by a small hole 29mm below the rim, measuring 6mm wide on exterior, 4mm wide on interior. Smoothed surfaces and finger marks, sooting and charred residue on exterior. Abraded. Interior brown to greyish-brown (10YR 5/3 – 5/2), core grey (10YR 5/1), exterior brown to dark greyish-brown (10YR 5/3 – 4/2). Fabric – coarse sandy clay.
- SF 022 C032 1 rim × 6–9mm thick, 12g. Bucket-shaped vessel, flat-topped rim, moulding has produced an internal lip, diameter unknown. Perforated by a small hole 4mm below the rim, measuring 2mm wide on exterior, and 2 × 4mm wide on interior: has been pushed through at a slight sideways angle, and impression of implement is visible in the walls of the perforation. Smoothed surfaces, finger marks and moulding around rim. Slight sooting on top of rim and exterior just below rim. Grass marks on surfaces. Fabric is sandy clay with *c* 10% stone inclusions up to 10mm.
- Abraded. Interior and core greyish-brown (10YR 5/2), exterior brown (10YR 5/3).
- SF 039 C027 1 rim × 6–8mm thick, 29g. Bucket-shaped vessel, flat-topped rim, diameter 150mm. Smoothed exterior, finger marks on both surfaces and pinching along rim. Slight charred residue on exterior. Grass marks on surfaces. Fabric – sandy clay with *c* 20% stone fragments up to 9mm. Abraded. Interior greyish-brown (10YR 5/2), core dark grey (10YR 4/1), exterior greyish-brown to dark grey (10YR 5/2 – 4/1).
- SF 017 C028 1 rim, 1 body × 4–11mm thick, 34g. Belong to different vessels. Bucket-shaped vessel, thin rounded rim, diameter approx. 150mm. Quite fine, 4–5mm thick, rim fabric coarse sandy clay; body fabric sandy clay with many small grits. Smoothed surfaces and sooting on rim exterior, wiping on interior of body sherd. Abraded. Interior brown to dark greyish-brown (10YR 5/3 – 4/2), core dark grey to very dark grey (10YR 3/1 – 4/1), exterior dark greyish-brown to dark grey (10YR 4/2 – 4/1).
- SF 045 C011 1 rim × 4–5mm thick, 8g. Inturning, thin rounded rim, diameter unknown. Smoothed exterior. Possible slag encrustation on interior measuring 28mm × 10mm × 10mm thick. Abraded. Interior and exterior brown (10YR 5/3), core dark grey (10YR 4/1). Fabric – sandy clay.
- SF 032 C038 1 rim × 9–13mm thick, 60g. Inturning rounded rim, diameter unknown. Diagonal wiping on exterior, sooting on exterior, iron pan on interior and breaks. Few grass marks on surfaces. Fabric – *c* 10% stone inclusions up to 10mm. Abraded. Interior yellowish-brown (10YR 5/4), core grey (10YR 5/1), exterior pale brown to greyish-brown (10YR 6/3 – 5/2).
- SF 036 C038 1 rim, 1 body × 5–10mm thick, 15g. Belong to different vessels, body sherd has external face missing. Upright rim moulded at an angle producing a slight internal bevel, diameter unknown. Smoothed surfaces, slight charred residue on interior of body sherd. Lots of grass marks on body sherd surface, stone inclusions up to 7mm. Abraded/very abraded. Interior brown to very dark

- grey (10YR 5/3 – 3/1), core grey to very dark grey (10YR 5/1 – 3/1), exterior brown (10YR 5/3). Fabric – sandy clay with *c* 10% larger inclusions.
- SF 035 C023 7 base, 1 rim, 17 body × 6–7mm thick, 427g. All belong to the same vessel. Complete circuit of base present though basal plate missing (except for one small sherd). Six body sherds join to base, giving a partial profile to a height of 90mm, and four other body sherds join. Partially conserved with Paraloid B72. Inturning rounded rim, diameter unknown. Footed base, diameter 100mm. Pinching around base exterior. Charred residue on wall interior and base exterior, iron pan on interior. Grass marks on surfaces. Abraded/very abraded. Interior greyish-brown (10YR 5/2), core greyish-brown to dark grey (10YR 5/2 – 4/1), exterior dark greyish-brown to pale brown (10YR 4/2 – 6/3). Fabric – coarse sandy clay with *c* 20% larger fragments
- SF 052 C047 2 base (actually three separate sherds) × 9–13mm thick, 110g. Sherds join together and join Cat no 22. Plain base, diameter 140mm. Thick charred residue and iron pan on interior. Fabric – sandy clay with *c* 10% larger fragments up to 16mm. Angled slab construction, broken along angle with basal plate. Abraded. Interior very dark grey (10YR 3/1), core dark grey (10YR 4/1), exterior brown (10YR 5/3).
- SF 037 C000 1 base, 2 body × 12–16mm thick, 132g. All belong to the same vessel but do not join. Footed base, diameter unknown. Smoothed interior, charred residue and iron pan on interior. Fabric is sandy clay with *c* 20% stone fragments up to 13mm, grass marks on surfaces and breaks. Very abraded. Interior brown to greyish-brown (10YR 5/3 – 5/2), core dark grey (10YR 4/1), exterior brown to yellowish-brown (10YR 5/3 – 5/4).
- SF 034 C028 1 base × 7–9mm thick, 24g. Plain base, diameter unknown. Pinching around base exterior, slight charred residue on interior wall. Few grass marks on surfaces. Abraded. Interior greyish-brown (10YR 5/2), core greyish-brown to very dark grey (10YR 5/2 – 3/1), exterior brown (10YR 5/3). Fabric – sandy clay with *c* 10% larger fragments.
- C039 1 base, 5 body × 6–12mm thick, 89g. Four vessels represented, two sherds join. Plain base, diameter unknown. Angled slab construction of base, broken along angle with basal plate, basal plate missing completely. Finger marks on surfaces, sooting and charred residue interior, iron pan exterior of one sherd. Some grass marks on surfaces. Abraded. Interior very dark grey to dark greyish-brown (10YR 3/1 – 4/2), core very dark grey (10YR 3/1), exterior brown to dark greyish-brown (10YR 5/3 – 4/2). Basal sherd – in a separate bag. The fabric is sandy clay with *c* 10% larger fragments which has fired hard and is black with a brown exterior surface. Exterior surface sooted. Residue on the interior sherd. Body sherds – sandy with *c* 10% larger fragments.
- C015 2 base, 1 body × 7–11mm thick, 80g. Sherds join, conserved with Paraloid B72. Plain base, diameter unknown. Some wiping on interior, finger marks on exterior. Fabric – fine clay with *c* 10% stone fragments up to 15mm, and organics. Very abraded. Angled slab construction. Interior dark greyish-brown to yellowish-brown (10YR 4/2 – 5/4), core dark grey (10YR 4/1), exterior light brown (7.5YR, 6/4).

#### *Lithics*

CAT 5 C065 has been classified as a small core-scraper (21 × 29 × 22mm) and it has two opposed platform-edges with opposed negative bulbar scars. However, it is quite likely that these opposed concavities were formed when the core was placed on an anvil and struck on its flattest cortical surface, thus applying force to both ends of the core. Most likely, most of the resulting flakes would appear to be bipolar blanks, with two opposed terminals, whereas some flakes would obtain the characteristic attributes of hard-hammer flakes. Both opposed platform-edges are abraded, most likely from secondary use as a scraper.

CAT 6 C067 (core-piercer) is a related piece, although considerably larger (35 × 64 × 61mm). It is defined by two parallel flat surfaces (in this case probably two internal fault planes), which were used as striking platforms. Like CAT 5,

some of the flake scars appear to be defined by bulbar negatives at either end, suggesting that this piece was also worked in platform-on-anvil style. The detachment of two adjacent flakes formed a strong protruding spur, which displays macroscopically visible abrasion, or rounding, of its tip. This core clearly found secondary use as a piercer.

CAT 010 C075 is a regular retouched quartz flake possibly used as an unmodified or informal knife.

#### *Coarse stone tools*

##### Worked pumice

SF 128 C025 Small corner fragment of pumice, detached from larger pebble. Three faces have been flattened by abrasion at a slight angle.

L 23.5mm W 14.5mm Th 14mm S11

#### COBBLE TOOLS

##### *Anvil/? smoother*

SF 121 C083 Two joining fire-cracked fragments of a flattened ovoid mafic gneiss cobble; one end lost to heat damage. At the original centre of one face is a shallow, roughly pecked, circular hollow (D 32mm). The opposite face is flattened and smoothed from light abrasion with a slight sheen and patches of red-brown staining, possibly from use as a smoother. The staining could be the result of iron pan formation.

L 95.5mm W 77.5mm Th 37mm  
426.3g

##### *Combination tool*

SF 131 Pounder/working surface. Fragment of ovoid metabasite cobble, one end lost in antiquity with clean natural diagonal break along a natural joint plane across the width of the stone. The surfaces are naturally pitted but adjacent to the broken edge on one face is a circular concentration of peck-marks (diam 25.5mm) and a smaller oval peckmarked facet (20 × 5.5mm). A small oval peckmarked facet (26 × 15mm) is present at the remaining blunt rounded end.

L 116.5mm W 65mm Th 37mm 398.6g

#### REFERENCES

- Armit, I 1986 *Excavations at Loch Olabhat, North Uist 1986: First Interim Report*. Department of Archaeology Project Papers 5. Edinburgh: Edinburgh University.
- Armit, I 1990 *Beyond the Brochs: Changing Perspectives on the Later Iron Age in Atlantic Scotland*. Edinburgh: Edinburgh University Press.
- Armit, I 1994 'Archaeological field survey of the Bhalto (Valto) peninsula, Lewis', *Proc Soc Antiq Scot* 124: 67–93.
- Armit, I 1996 *The Archaeology of Skye and the Western Isles*. Edinburgh: Edinburgh University Press.
- Armit, I 1998 'Re-excavation of an Iron Age wheelhouse and earlier structure at Eilean Maleit, North Uist', *Proc Soc Antiq Scot* 128: 255–71.
- Armit, I 2006 *Anatomy of an Iron Age Roundhouse: The Cnip Wheelhouse Excavations, Lewis*. Edinburgh: Society of Antiquaries of Scotland.
- Armit, I, Campbell, E & Dunwell, A 2008 'Excavation of an Iron Age, Early Historic and medieval settlement and metalworking site at Eilean Olabhat, North Uist', *Proc Soc Antiq Scot* 138: 27–104.
- Ashmore, P J 1999 'Radiocarbon dating: avoiding errors by avoiding mixed samples', *Antiquity* 73: 124–30.
- Ashmore, W & Knapp, A B 1999 *Archaeologies of Landscape: Contemporary Perspectives*. London: Wiley-Blackwell.
- Ballin, T B 2003 *The Lithic Assemblage from Burland on Trondra, Shetland*. Unpublished data.
- Ballin, T B 2008 'Quartz Technology in Scottish Prehistory', *Scottish Archaeological Internet Reports* 26, available at <http://www.sair.org.uk/sair26/index.html>. Accessed 23 May 2011.
- Ballin, T B in prep *The Lithic Finds from Barabhas 1, 2, 3, 2000, and 2001, as well as Various Surface Collections from that area*. Report commissioned by the Barabhas Machair Project.

- Ballin Smith, B 1994 *Howe: Four Millennia of Orkney Prehistory*. Edinburgh: Society of Antiquaries of Scotland.
- Barber, J 2003 'Bronze Age farms and Iron Age mounds of the Outer Hebrides', *Scottish Archaeological Internet Reports* 3, Available at <http://www.sair.org.uk/sair3/>. Accessed 23 May 2011.
- Barclay-Estrup, P & Gimingham, C H 1969 'The description and interpretation of cyclic processes in a heath community I. Vegetation change in relation to the *Calluna* cycle', *Journal of Ecology* 57: 737–58.
- Barrett, J 1981 'Aspects of the Iron Age in Atlantic Scotland: a case study in the problems of the archaeological record', *Proc Soc Antiq Scot* 111: 205–20.
- Bishop, R R, Church, M J & Rowley-Conwy, P A 2009 'Cereals, fruits and nuts in the Scottish Neolithic', *Proc Soc Antiq Scot* 139: 47–103.
- Boardman, S J & Jones, G E M 1990 'Experiments on the effects of charring on cereal plant components', *Journal of Archaeological Science* 17: 1–11.
- Branigan, K 2000 'The Earlier Prehistory of Barra and Vatersay', in Branigan, K & Foster, P (eds) *From Barra to Berneray: Sheffield Environmental and Archaeological Research Campaign in the Hebrides*, 319–33. Sheffield: Sheffield Academic Press.
- Branigan, K & Foster, P 2000 *From Barra to Berneray: Sheffield Environmental and Archaeological Research Campaign in the Hebrides*. Sheffield: Sheffield Academic Press.
- Bronk Ramsey, C 2009 'Bayesian analysis of radiocarbon dates', *Radiocarbon* 51: 337–60.
- Brück, J 2006 'Fragmentation, personhood and the social construction of technology in Middle and Late Bronze Age Britain', *Cambridge Archaeological Journal* 16: 297–315.
- Burgess, C P G 1999 'Promontory enclosures on the Isle of Lewis, the Western Isles, Scotland', *Northern Archaeology* 17/18: 93–104.
- Burgess, C P G & Church, M J 1995 'Uig Sands to Aird Uig, Isle of Lewis (Uig Parish)', *Discovery and Excavation in Scotland* (1995): 96.
- Burgess, C P G, Church, M J & Gilmour, S M D 1996 'Isle of Lewis Coastal Erosion Survey', *Discovery and Excavation in Scotland* (1996): 112.
- Callahan, E 1987 *An evaluation of the Lithic Technology in Middle Sweden during the Mesolithic and Neolithic*. Uppsala Archaeological Studies 8, Uppsala University Institute of North European Archaeology.
- Campbell, E 1991 'Excavations of a wheelhouse and other Iron Age structures at Sollas, North Uist, by R J C Atkinson in 1957', *Proc Soc Antiq Scot* 121: 117–73.
- Campbell, E 2002 'The Western Isles pottery sequence', in Ballin, T B, Smith, B & Banks, I (eds) *In the Shadow of the Brochs*, 139–44. Stroud: Tempus.
- Church, M J 2002a *Plants and People in the Later Prehistoric and Norse Periods of the Western Isles of Scotland*. Unpublished PhD thesis, University of Edinburgh.
- Church, M J 2002b 'The archaeological and archaeobotanical implications of a destruction layer in Dun Bharabhat, Lewis', in Ballin Smith, B & Banks, I (eds) *In the Shadow of the Brochs: The Iron Age in Scotland*, 67–75. Stroud: Tempus.
- Church, M J & Burgess, C 2003 'Assessment survey: Lewis', in Dawson, T (ed) *Coastal Erosion and Archaeology in Scotland*, 55–64. Edinburgh: Historic Scotland.
- Church, M J & Peters, C 2004 'Application of mineral magnetism in Atlantic Scotland archaeology 2: magnetic susceptibility and archaeobotanical taphonomy in West Lewis, Scotland', in Housley, R A & Coles, G M (eds) *Atlantic Connections and Adaptations: Economies, Environments and Subsistence in Lands Bordering the North Atlantic*, 99–115. Oxford: Oxbow Books.
- Church, M J, Peters, C & Batt, C M 2007 'Sourcing fire ash on archaeological sites in the Western and Northern Isles of Scotland, using mineral magnetism', *Geoarchaeology* 22: 747–74.
- Clapham, A R, Tutin, T G & Moore, D M 1987 *Flora of the British Isles*. 3rd edn. Cambridge: Cambridge University Press.

- Dearing, J 1994 *Environmental Magnetic Susceptibility*. Kenilworth: Chi Publishing.
- Dickson, C A 1994 'Plant remains', in Ballin Smith, B (ed) *Howe: Four Millennia of Orkney Prehistory*, 125–39. Edinburgh: Society of Antiquaries of Scotland Monograph Series 9.
- Dickson, C A 1998 'Past uses of turf in the Northern Isles', in Milles, C & Coles, G M (eds) *On the Edge: Settlement in Marginal Areas*, 105–9. Oxford: Oxbow.
- Dickson, C A & Dickson, J H 2000 *Plants and People in Ancient Scotland*. Stroud: Tempus.
- Dickson, J H 1992 'North American driftwood, especially *Picea* (spruce), from archaeological sites in the Hebrides and Northern Isles of Scotland', *Review of Palaeobotany and Palynology* 73: 49–56.
- Dockrill, S J, Batt, C M & Outram, Z 2006 'Time and place: a new chronology for the origin of the broch based on the scientific dating programme at the Old Scatness Broch, Shetland', *Proc Soc Antiq Scot* 136: 89–110.
- Dunwell, A, Johnson, M & Armit, I 2003 'Excavations at Geiriscllett chambered cairn, North Uist, Western Isles', *Proc Soc Antiq Scot* 133: 1–34.
- Edwards, A J H 1924 'Report on the excavation of an earth-house at Galson, Borve, Lewis', *Proc Soc Antiq Scot* 58: 185–203.
- Fairhurst, H 1971 'The wheelhouse site A Cheardach Bheag on Drimore Machair, South Uist', *Glasgow Archaeological Journal* 2: 72–106.
- Fettes, D J, Mendum, J R, Smith, D I & Watson, J V 1992 *Geology of the Outer Hebrides*. London: HMSO.
- Flitcroft, C 1997 *A Preliminary Investigation of the Palaeoenvironment of Loch Ruadh Guinnesso*. Unpublished BSc dissertation, University of Edinburgh.
- Gibson, A 2002 *Prehistoric Pottery in Britain and Ireland*. Stroud: Tempus.
- Grime, J P, Hodgson, J G & Hunt, R 1988 *Comparative Plant Ecology: A Functional Approach to Common British Species*. London: Unwin Hyman.
- Harding, D W 2000 *The Hebridean Iron Age: Twenty Years Research*. Edinburgh: Department of Archaeology, University of Edinburgh, Occasional Papers 20.
- Harding, D W & Armit, I 1990 'Survey and Excavation in West Lewis', in Armit, I (ed) *Beyond the Brochs*, 71–107. Edinburgh: Edinburgh University Press.
- Harding D W & Dixon, T N 2000 *Dun Bharabhat, Cnip: An Iron Age Settlement in West Lewis*. Edinburgh: Department of Archaeology, University of Edinburgh, Calanais Research Series Number 2.
- Harding, D W & Gilmour, S M D 2000 *The Iron Age Settlement at Beirgh, Riof, Isle of Lewis*. Edinburgh: Department of Archaeology, University of Edinburgh, Calanais Research Series Number 1.
- Hather, J 1993 *An Archaeobotanical Guide to Root and Tuber Identification; Volume 1 – Europe and South West Asia*. Oxford: Oxbow Monograph 28.
- Hodgson, J M (ed) 1976 *Soil Survey Field Handbook*. Harpenden: Soil Survey of England and Wales.
- Hubbard, R N L B & al Azm, A 1990 'Quantifying preservation and distortion in carbonised seeds, and investigating the history of *friké* production', *Journal of Archaeological Science* 16: 103–6.
- Jones, M 1991 'Sampling in palaeoethnobotany', in Zeist, W van, Wasylkova, K & Behre, K-E (eds) *Progress in Old World Palaeoethnobotany*, 53–62. Rotterdam: A.A. Balkema.
- Kenward, H K, Hall, A R & Jones, A K G 1980 'A tested set of techniques for the extraction of plant and animal microfossils from waterlogged archaeological deposits', *Science and Archaeology* 22: 3–15.
- Lane, A & Campbell, E 2000 *Dunadd: An Early Dalriadic Capital*. Oxford: Oxbow.
- Lebour, N 1914 'White quartz pebbles and their archaeological significance', *Transactions of the Dumfriesshire & Galloway Natural History & Antiquarian Society Series III*, Vol 2: 121–34.

- MacSween, A 2003 'The pottery from Balelone, Baleshare, Hornish Point, South Glendale and Newton Ferry', in Barber, J (ed) *Bronze Age farms and Iron Age mounds of the Outer Hebrides. Scottish Archaeological Internet Reports* 3, 126–33. available at <http://www.sair.org.uk/sair3/>. Accessed 23 May 2011.
- McHardy, I, Barrowman, C & Macleod, M 2009 *STAC: the Severe Terrain Archaeological Campaign – Investigation of Stack Sites of the Isle of Lewis 2003–2005*. Edinburgh: Scottish Archaeological Internet Report 36.
- McLaren, D forthcoming 'The coarse stone', in Church, M, Nesbitt, C & Gilmour, S M D 'A special place in the saltings. Survey and excavation of an Iron Age estuarine islet at An Dunan, Lewis, Western Isles'. To be submitted to *Proc Soc Antiq Scot* in 2012.
- Munsell Soil Color Charts. 1994. New Windsor, US: Kollmorgan Instruments Corporation.
- Nesbitt, C, Church, M J, Gilmour, S M D & Burgess, C P G in press 'Small-scale evaluation of a post-Medieval blackhouse at Bereiro, Lewis, Western Isles of Scotland'. *Journal of the North Atlantic*.
- Newton, A J 2000 'Two fragments of pumice', in MacKie, E W 'Excavations at Dun Ardtreck, Skye, in 1964 and 1965', *Proc Soc Antiq Scot* 131: 405–6.
- Newton, A 2006 'The pumice', in Armit, I *Anatomy of an Iron Age Roundhouse. The Cnip Wheelhouse Excavations, Lewis*, 153–4. Edinburgh: Society of Antiquaries of Scotland.
- Pankhurst, R J & Mullin, J M 1994 *Flora of the Outer Hebrides*. London: HMSO.
- Parker Pearson, M 1999 'The pumice', in Parker Pearson, M & Sharples, N *Between Land and Sea. Excavations at Dun Vulan, South Uist*, 232. Sheffield: Sheffield Academic Press.
- Parker Pearson, M & Sharples N 1999 *Between Land and Sea. Excavations at Dun Vulan, South Uist*. Sheffield: Sheffield Academic Press.
- Parker Pearson, M, Sharples N & Symonds, J 2004 *South Uist: Archaeology and History of a Hebridean Island*. Stroud: Tempus.
- Peters, C, Church, M J & Coles, G M 2000 'Mineral magnetism and archaeology at Galson on the Isle of Lewis, Scotland', *Physics and Chemistry of the Earth. Part A, Solid earth and Geodesy* 25: 455–60.
- Peters, C, Church, M J & Batt, C 2004 'Application of mineral magnetism in Atlantic Scotland archaeology 1: techniques, magnetic enhancement and the identification of fuel sources', in Housley R A & Coles G M (eds) *Atlantic Connections and Adaptations: Economies, Environments and Subsistence in Lands Bordering the North Atlantic*, 86–95. Oxford: Oxbow.
- Reimer, P J et al (27 co-authors) 2009 'IntCal09 and Marine09 radiocarbon age calibration curves, 0–50000 years cal BP', *Radiocarbon* 51: 1111–50.
- Rennel, R 2008 'Exploring "everyday" places in the Iron Age landscape of the Outer Hebrides', in Davis, O & Sharples, N (eds) *Changing Perspectives on the First Millennium BC*, 43–60. Oxford: Oxbow.
- Saville, A forthcoming *Excavations at Den of Boddam, Aberdeenshire*.
- Schweingruber, F H 1990 *Microscopic Wood Anatomy*. 3rd edn, Birmensdorf, Switzerland: Swiss Federal Institute for Forest, Snow and Landscape Research.
- Sharples, N 1998 *Scalloway: A Broch, Late Iron Age Settlement and Medieval Cemetery in Scotland*. Oxford: Oxbow.
- Smith, H & Mulville, J 2004 'Resource management in the Outer Hebrides: An assessment of the faunal and floral evidence from archaeological investigations', in Housley, R & Coles, G M (eds) *Atlantic Connections & Adaptations: Economies, Environments and Subsistence in lands bordering the North Atlantic*, 48–64. Oxford: Oxbow.
- Stace, C 2010 *New flora of the British Isles*. 3rd edn. Cambridge: Cambridge University Press.
- Tilley, C 1997 *A Phenomenology of Landscape: Places, Paths and Monuments*. London: Berg.

- van der Veen, M 1992 *Crop Husbandry Regimes: An Archaeobotanical Study of Farming in Northern England, 1000 BC–AD 500*. Sheffield: Collis Publications.
- van der Veen, M & Fieller, N 1982 ‘Sampling seeds’, *Journal of Archaeological Science* 9: 287–98.
- Willis, S 2007 ‘Sea, coast, estuary, land and culture in Britain during the Iron Age’, in Haselgrove, C C & Moore, T (eds) *The Later Iron Age in Britain and Beyond*, 105–29. Oxford: Oxbow.
- Young, A & Richardson K M 1959 ‘A Cheardach Mhor, Drimore, South Uist’, *Proc Soc Antiq Scot* 93: 135–73.

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