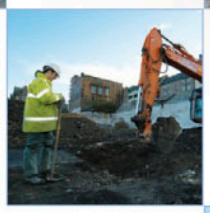
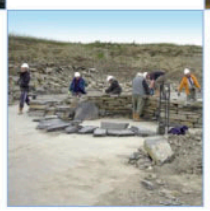
Benderloch, Oban

Summary Report

4385-28

September 2008





AOC Archaeology Group

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Human remains in cave deposits at Benderloch, Oban.

Summary report

On Behalf of:	**Historic Scotland** Longmore House Salisbury Place Edinburgh EH9 1SH
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Abstract

Human remains were discovered during landscaping works outside a cave at Benderloch, Oban. The remains derive from at least two humans. Fragments of decorated Bowl Food Vessel and a worked bone tool were also discovered. Midden deposits were also revealed. Radiocarbon dates were obtained from the middens and from the bones, placing them in the third to second millennia BC.

The dates obtained for the human bones and midden material fall within the range of currency of use of Food Vessels in Scotland, lending support to the hypothesis that the pot may have been a grave good associated with one of the burials.

The find is considered in the context of other similar cave finds in the Oban area.

Background

Landscaping works carried out with a mini-digger by the landowner at Cliff House, Main Street, Benderloch near Oban (NGR: NM 9051 3799: Figure 1) led to the disturbance of cave deposits which in turn led to the discovery of human remains. The landowner informed the police and the West of Scotland Archaeology Service (WoSAS). At the request of the police, Dr Jennifer Miller, (GUARD) visited the site and confirmed that the disturbed bone was of some antiquity. Dr Miller contacted West of Scotland Archaeological Service (WoSAS) who in turn contacted Historic Scotland to enquire whether the find could be dealt with under the terms of the Human Remains Call-off Contract. HS instructed AOC Archaeology Group to undertake the investigation.

The landscaping had impacted on a shallow natural cave penetrating a palaeo-cliff that formed the landward edge to a raised beach. Inspection of the site revealed that the vast majority of the previously *in situ* deposits, including midden material, had been disturbed and removed from site. Examination of the remaining *in situ* soils recovered a small quantity of decorated prehistoric pottery (most likely from a Food Vessel), a single worked bone tool and a small amount of human bone. Extensive quantities of small mammal bones and marine shells were identifiable within the disturbed material. The location of the remaining human bone was recorded by EDM survey and all the remains encountered at the site were collected. Initial examination of the human bone assemblage collected by the police and Dr Jennifer Miller, and subsequently examined by Dr Stuart W. McDonald, Glasgow University, indicates the presence of two adults with a single adolescent bone pointing to a third individual.

The site lies immediately due east of the A828, less than 150 yards east of the present high tide mark. The site was, until the recent landscaping works, visible as a very small, *c.* 0.5 m high, cave entrance at the top of a rocky slope some 3.5 to 4.0 m high.

The area around Oban is dominated by tertiary Basalt or Old Red Sandstone in andesitic lava flows (Bibby et al, 1982, 6). The soil deposits in this area of western Argyll are primarily shallow drift of principally colluvium and cryic deposits with Benderloch comprising sands and gravel from raised beaches, fluvioglacial and lacustrine deposits (ibid, 13).

Creag An Eig, Ledaig (NMRS NM93NW 13) is a cave site (NGR: NM 9046 3757) lying *c.* 175 m to the south of Cliff House. In *circa* 1869, a food vessel was recovered from this cave but with no record of any burial remains (RCAHMS 1975). Rock shelter sites in Oban may provide analogies to the Cliff House find as at Uamh nan Claigionn: "Cave of the Skulls" (NMRS NM82NW 2) RCAHMS 1975 or Carding Mill Bay (NMRS NM82NW 30). At the Carding Mill Bay site, rescue excavation of a shell midden was undertaken after its discovery during construction work. The site showed evidence of disturbance prior to excavation but it clearly consisted of two main elements, a shell midden containing 'Obanian' artefacts and, at the top of this, a fragmentary second millennium cist burial (Connock, Finlayson & Mills 1993).

Fieldwork

The project objectives and excavation methodology are summarised here and a more thorough account can be found in the Project Design (Gooder 2007) within the project archive. The main objective of the fieldwork was to ascertain whether the bone had come from previously disturbed and redeposited material or from *in situ* deposits and to monitor any further disturbance of the deposits required during the completion of the landscaping work. Prior to the archaeological investigations the working assumption was that the site had already been significantly disturbed and thus much of its contents compromised by potential contamination. Part of the fieldwork programme comprised collecting together all the bone held by the local constabulary, the land-owner and Dr Miller; searching the spoil-heap for further bone; clearing loose spoil and cleaning sections; and sampling for standard bulk samples, soil chemistry samples and marine shells. All location

recording was carried out by EDM survey and a comprehensive photographic record, in digital and conventional formats, was maintained throughout the work.

As had been expected the site had been extensively disturbed and the bulk of the human bone removed by the time the archaeologists arrived on site. A small amount of bone was visible within the disturbed material on site and on the spoil-heap, but most of it was derived from animals, predominantly small mammals. A single long bone and lower jaw were the only definite human remains recovered from the site during AOC's work. The long bone came from an *in situ* secure context whilst the jaw bone came from disturbed material. The assemblage recovered by the Police and Dr Jennifer Miller were examined by Dr Stuart W. McDonald, whose report is quoted below.

The contexts of origin of the bones recovered by the police and Dr Jennifer Miller are unclear beyond the fact they derived from deposits in and around the cave. Amongst the bones collected, Dr McDonald's assessment noted the presence of numerous sheep/goat and cow bones along with rarer pig bones. Of these species both long bones and mandibles were present. Additionally, bird bones and a selection of marine shells including, limpet, oyster and mussels, were identified.

The inferred stratigraphy, based primarily on sediment stains on the adjacent cliff face (Figures 3 & 4) of the cave would suggest two periods of midden activity - [101] (Figure 5) and [103] - with an intervening event represented by a sand layer [102]. The lower midden layers lay directly over rocky scree, [104]. Either side of the cave entrance the cliff face slopes outward. Between the base of the cave [108] and the vertical cliff face a fissure, present only on the northern side, was infilled with deposit [105] which contained decorated prehistoric pottery sherds and a worked bone tool.

Examination of the cave walls suggested that context [105] might be an extension of context [103], but due to the removal of material prior to the archaeological works any actual stratigraphic link was lost. Similarly context [106] derived from crevices and fissures within the cave roof and walls to the northern side of the cave entrance. As with context [105], by using the sediment stains as indicators, the evidence in the field suggested that [106] is the same as context [101] (Figures 3 - 5). Post-excavation analysis have clarified these relationships.

Analysis of the artefacts and ecofacts

Radiocarbon dates

Two cereal grains from two midden deposits were dated. One midden deposit [103] lay above the deposit containing the human bone, thus providing a *terminus post quem* for the deposition of the bones. The deposits lay on either side of the cave entrance and the other midden deposit was dated to ascertain whether they might be contemporaneous.

Four fragments of human bone were dated. The analysis of the human bone retrieved from the site indicated that at least two and possibly three individuals were present. Three samples of bone from the cave floor context [104] were dated. A sample from a femur head, which showed signs of osteoarthritis, suggested it derived from an older adult. An ulna had epiphyseal fusion lines still visible, indicating the presence of an adolescent between 12 – 16 years when they died (Scheuer and Black 2000). The third sampled bone from this context, the meta-tarsal, displayed no age indicators, so may have come from the older individual (but been unaffected by arthritis) or from a third person.

The unusual step of dating a sample of bone from an unstratified context was taken. Due to unavoidable circumstances there is a large assemblage of unstratified human bone from this site and it was considered worthwhile to obtain dates from some of it to check it was all approximately the same date, or whether the area might have been used for burial over several millennia. In addition, the bone was a human mandible, displaying evidence of age at death in the form of attrition on the teeth. The state of wear on the teeth

suggested the mandible may be from an adolescent / young adult. Therefore it may have derived from the same individual as the ulna.

The dates, presented in Table 1 below, indicate that the dates from all four bone samples and one midden context [105] are statistically indistinguishable. In particular, the dates, obtained from the ulna and the mandible, are statistically close. Thus, it is possible that they could be from the same individual. It can be argued, then, that the mandible, is likely to be from the same burial horizon as the stratigraphically secure bones and to date from the centuries around the start of the second millennium BC. As the radiocarbon dates from the four human bone samples are statistically indistinguishable it would appear likely that most of the human bone from the site had derived from the same burial horizon, most likely reflecting burial events that are reasonably contemporaneous.

The dates obtained from carbonised cereal grains from the midden contexts are statistically different with the midden context [103] which lay above the bones dating to later than the bones and also to later than the other midden context [105]. Therefore the two deposits on either side of the cave mouth are not from the same midden.

Table 1: the radiocarbon dates

Context (material)	RC date BP	SUERC No	1 σ cal date range (68% prob)	2 σ cal date range (95% prob)	$\delta^{13}C$ ($^0/_{00}$)	$\delta^{15}N$ ($^0/_{00}$)
103 (grain)	3385 ± 35	SUERC 17901 (GU-16492)	1740BC – 1630BC	1770BC – 1530BC		
105 (grain)	3755 ± 35	SUERC 17902 (GU-16493)	2280BC – 2050BC	2290BC – 2030BC		
Unstratified (human mandible)	3655 ± 35	SUERC 17906 (GU-16494)	2130BC – 1960BC	2140BC – 1920BC	-21.4	10.9
104 (human metatarsal)	3675 ± 35	SUERC 17907 (GU-16495)	2140BC– 1980BC	2200BC - 1950BC	-21.0	10.3
104 (human femur)	3680 ± 35	SUERC 17908 (GU-16496)	2140BC – 2020BC	2190BC – 1960BC	-21.9	4.9
104 (human ulna)	3605 ± 35	SUERC 17909 (GU – 16497)	2030BC – 1910BC	2120BC – 1880BC	-21.1	3.2

Human bone

Stuart McDonald and Melissa Melikian

The human bones derived from at least two, but more likely three or more individuals. On the basis of pelvic morphology and arthritic change of the vertebral column, one was an aged female, displaying signs of osteoarthritis on the femoral head. The vertebral column containing T6 – T12 vertebrae, all the lumbar vertebrae and the sacrum and paired hip bones were all from this individual. A second right femur and right pelvic bone indicated the presence of a second adult, the sex of which is indeterminate. The likelihood of a third subject is indicated by the presence of a left metacarpal bone, which showed an epiphyseal growth plate that had nearly closed, indicative of late adolescence. A fragment of radius and two fragments of ulna also displayed epiphyseal fusion lines. A pubic bone derived from a possible juvenile may also have belonged to this individual.

One intact and one fragmented thoracic vertebra seemed likely to be from a separate and smaller person than the other vertebrae. Again this suggests at least two individuals are represented.

The full human bone report, including full details of the methodology used is available in the site archive (Melikian 2007). A catalogue of the bones collected by Dr Miller and the police and submitted to the University of Glasgow is also available (McDonald 2007).

Early Bronze Age pottery

Alison Sheridan

The assemblage comprises 25 small sherds, around 20 fragments (pieces smaller than 10 mm in their largest dimension) and miscellaneous crumbs and detached lithic inclusions. They constitute less than five percent of a single vessel – identified below as a Bowl Food Vessel – and all seem to have come from its lower section (i.e. belly and base). The freshness of the fracture surfaces attests to recent breakage.

Surviving base and lower belly sherds indicate that the base diameter had been c. 70 mm and that the lower belly had splayed out above a low pedestal; as far as can be seen from the small sherds, the base had been flat inside and out. The pot had been thin-walled (c. 7.5 mm at the lower belly and base) and the surfaces had been carefully smoothed – probably wet-smoothed, creating a slip-like appearance on the exterior – prior to decoration. The exterior is a pale grey-brown, and the core and interior are black; this colouration suggests a fairly rapid firing, possibly in an inverted position. Despite the thinness of the walls and the careful smoothing of the surfaces, the clay contains abundant crushed stone filler, consisting mostly of crushed quartz; the fragments are clearly visible on the interior. Most fall within in the 1–5 mm size range, but one detached quartz fragment is c. 7 x 3.5 x 2 mm and a detached angular fragment of dull grey stone is as big as 10.5 x 5.3 x 4 mm. The overall inclusion density is c. 10%.

Decoration extends over the pot's exterior, including its base, and is mostly comb-impressed; part of the basal design comprises short radial impressions, possibly made with a finger- or thumb-nail. The comb-impressed design had been made using at least two rectangular-toothed combs: one, c. 6 mm long and c. 0.4 mm wide, with four or five teeth, and the other at least 14.5 mm long and c. 1 mm wide. The decoration on the base had probably consisted of a cruciform design featuring multiple lines of shallow comb-impressed lines; traces of seven parallel lines can be seen on one sherd. In between the arms of the putative cross, near the edge of the base, lie the short radial impressions. The fact that the base is decorated suggests that it was intended to be seen, and that the pot may well have been a drinking vessel. Elsewhere, not enough of the vessel survives to determine its overall decorative scheme, but it consisted of a dense and complex design, featuring a triple stretch of herringbone impressions immediately above the base, framed and separated by single horizontal lines. Above this, on one sherd, is a set of three nested vertical chevrons with vertical lines above them; these probably formed part of a panel in which vertical lines are framed above and below by running vertical chevrons. Above this, further diagonal lines may have formed a pattern of small running diamonds, filled with short impressions.

While the thinness of the walls and the presence of comb-impressed decoration is reminiscent of some Beaker pottery, several features – namely its shape, its fabric and its decoration – indicate that this had been a finely-made Bowl Food Vessel, probably of tripartite form. The presence of basal decoration is rare on Beaker pottery (Clarke 1970), but it is a feature of some Food Vessels, as can be seen for example on the famous Bowl from the Glebe Cairn in the Kilmartin Valley, Argyll & Bute (Clarke et al. 1984, fig. 5.27). Often the basal design is cruciform (as at Scalpsie Bay, Bute: Bryce 1904, figs. 29 and 30), and sometimes there is a radial arc or circle of impressions (as at Shiskin on Arran); an unpublished and unprovenanced Food Vessel in Banff Museum has a design similar to that envisaged for the Benderloch base. (Unpublished images of both these pots are in the D D A Simpson archive, NMS.). The layout of the design on the belly can also readily be paralleled among Food Vessel pottery.

The presence of a Bowl Food Vessel at Benderloch fits with a fairly dense distribution of this kind of pottery in Argyll (e.g. RCAHMS 1975, fig. 4; Ritchie 1996), and indeed at least two other Food Vessels are known from Benderloch village and environs (Clerk & Stuart 1876, 468; Crichton Mitchell 1933, 326). One of these was found, apparently unassociated, at the foot of a cliff (Dun Bhaile an Righ) near the road leading south

from Benderloch. A parallel for the cave/rock shelter find context is offered by the fragmentary Food Vessel, associated with human remains, at Carding Mill Bay II, near Oban (Connock et al. 1993).

It is tempting to assume that the newly-discovered vessel had been deposited in a funerary context, and had been associated with one of the individuals whose remains were found. The four radiocarbon dates from the Benderloch human bone (representing at least two individuals and ranging between c 2100 and c 1900 BC) all lie within the date range for the currency of Food Vessel use in Scotland (Sheridan 2004) and Ireland (Brindley 2007), and so it is quite plausible that the bowl had been a grave gift for one of the individuals.

Bone artefact (SF 2)

Alison Sheridan

A worked bone object (SF 2), was found in context [105]. It is a piece of longitudinally-split long bone from a mammal, 116.6 mm long, 30.3 mm wide at its broadest point, and 14.5 mm thick. The species of mammal remains to be identified, but it is clear that the users had selected a robust, compact bone. The shape of the bone, and the presence of cancellous bone at its broader end, indicate that it has been bevelled at mid-shaft.

The inner face of its narrow end had been bevelled at an angle of c 45 degrees, probably through chopping, and then partly smoothed (with the smoothing extending beyond the bevelled surface on one side of the bone, to a distance of c. 28 mm from its end); this bevelled end is around 17 mm wide. Traces of a chop scar remain on part of the bevelled surface. There is also a shorter, shallower bevel on the outer side of the bone. The bevelled edge is 1.5 mm thick and is slightly faceted, rather than sharp or rounded.

Numerous shallow striations – visible by eye, but best seen under a microscope – run across the bevelled surface on both sides, mostly uni-directionally, and extend beyond it to the limit of the smoothed area on the inner side, and to around 21 mm from the end on the outer side. That these striations are more likely to represent use-wear than manufacture traces is suggested by other signs that the object had been used, namely: i) the presence of localised patches of wear-smoothing to the high points of the bone at and near its broader end (indicating that it had been hand-held), and ii) nibble damage and shallow surface flaking at the bevel edge, the latter cutting across pre-existing striations. If one assumes that the striations are indeed use-wear traces, this suggests that the object had been used as a smoothing or burnishing tool, being rubbed sideways over a slightly abrasive surface. Without more detailed examination using microwear analysis, little more can be suggested regarding its function; it does, however, seem that one can rule out its use as a limpet hammer or limpet scoop, a function attributed to some bevelled bone artefacts (e.g. Mellars 1987, regarding Late Mesolithic examples from Caisteal nan Gillean 1 shell midden, Oronsay).

In assessing the likely date of this object, neither the site-contextual information nor comparanda offer much assistance. While the radiocarbon-dated barley grain from context [105] indicates activity around 2200–2000 BC, in line with three other dates from Benderloch, one cannot rule out the possibility that this artefact had been a later (or indeed earlier) deposit in the fissure filled with context [105]. It is perhaps unlikely to represent an Early Bronze Age grave good associated with the human bone and Food Vessel found in context [105], since no example of the use of bevelled bone tools in this manner is known to the author. As regards comparanda from other findspots, bevelled bone tools span a wide chronological range, from the Mesolithic (as indicated by the aforementioned examples from Oronsay, along with others from around Oban (Lacaille 1954) and on Risga (Foxon 1991, 108)) until at least the first half of the first millennium AD (as indicated by examples from Iron Age examples from North Uist as discussed by Ywonne Hallén: Hallén 1994, 207–9). The use of many of these bevelled bone artefacts as tools for the treatment of hide has been suggested. The only way of determining the date of the Benderloch artefact would be by direct radiocarbon dating of a small sample.

Assessment of the Animal Bone

Jackaline Robertson

A full report, including the methodology used, is lodged within the site archive (Robertson 2007a)

The assemblage consisted of sheep/goat, cow, dog and pig. Sheep, cow and dog were the dominant species present (Table 1). The assemblage was dominated by skull, mandible, astragalus, metapodials, and phalanx fragments. Long bone, rib and pelvis fragments were also present but in much smaller quantities. The exception was dog which appeared to have suffered less noticeable disarticulation. Six complete bones in good condition were measured (Appendix A). One possible pathology and evidence of butchery was identified on two bones. Rodent bones were also present and there was evidence of gnawing attributable to rodent activity. In context [102] the only remains recovered consisted entirely of rodent bones supporting the theory that it represents a layer of windblown sand rather than an anthropogenic deposit.

Table 2: The identifiable bone fragments

Species	Fragment Count	MNI
Sheep	30	2
Cow	9	2
Pig	8	1
Dog	16	2
Large Mammal	106	-
Small Mammal	26	-
Indeterminate	236	-
Total	431	7

Given the small size of the assemblage and poor condition of the bone, any meaningful conclusions concerning species numbers, cull patterns, carcase utilisation, butchery, pathology and taphonomy are difficult to establish. Interpretation of this material is further complicated by the disturbed nature of the deposits from which it was derived. What can be stated with some surety is the presence of numerous sheep/goat, cow, dog and to a smaller degree pig bones. The presence of burnt bone suggests this midden was used to dispose of cooking refuse and animal carcasses. However it is difficult to state whether selective disposal occurred with regards to skull and feet elements as these contexts have experienced earlier disturbance which may have contributed to loss and destruction of material.

Butchery marks were identified on a sheep tibia and metatarsal. The marks are similar to those made during skinning or the removing of cuts of meat as opposed to chopping. A hole appears to have been made in the shaft of the tibia towards the distal end. This could have been done to allow the bone to be hung. Evidence of a lesion is also present on the tibia although it is not possible to ascertain whether this affected the animal's health.

Epiphyseal fusion evidence from sheep elements including the humerus, ulna, tibia, metatarsal, the first and second phalange suggest these animals were between one and two years old, or possibly older. The second phalange identified as pig is completely fused and this suggests the animal was a minimum of one year old before death. This was confirmed by tooth wear (Payne 1973), which suggests that these animals had at the very least reached adulthood, however, there is no evidence that any of these animals had reached an advanced age.

The fragmented nature of this assemblage is not unexpected given the nature of the contexts. The presence of this faunal material is in all likelihood representative of cooking refuse and carcass disposal. The dog remains came from the wet sieving of samples from two secure contexts: the cave floor [104] and the upper midden layer [101]. In addition, five dog bone fragments were retrieved by hand from unstratified contexts. Apart from one scapula fragment among the unstratified material only one dog was represented among the

faunal remains. Six dog bones were retrieved from the cave floor, this may represent a burial as the elements come from throughout the skeleton and a minimum of one individual is present. Likewise the five dog bones in the midden [101] may represent the dumping of a carcass in the midden, or the redeposition of a disturbed burial. No butchery marks were present to indicate the dogs been skinned or had any other economic function. The presence of rodent remains appears to be intrusive.

Plants

Jackaline Robertson

The samples were wet sieved using a flotation tank. The light floating material (flot), was collected in two sieves with mesh sizes of 1mm and 300 microns. The heavy residue (retent), was collected in a 1 mm mesh. All fractions were allowed to slowly dry before further processing. Macro plant remains were recovered from the 2 and 1 mm fractions. The macroplant remains were identified as far as possible to species or genus then assessed for their general condition and state of preservation following Renfrew (1973) and Jacomet (2006).

Cereal grains were recovered from contexts [101], [103] and [105]. Preservation levels of the cereals ranged from adequate to poor. The majority of the barley grains were concentrated in [105] and were better preserved than those from the other samples. Of the thirty six recovered grains, twenty five exhibited morphological characteristics indicative of hulled barley. The degree of surface abrasion experienced by the cereal recovered from contexts [101] and [103] made further analysis impossible. The lack of chaff and any other diagnostic features prohibited further identification or interpretation.

Table 3: the plant remains

Context no.	101	102	103	105	106
species					
cereal grain					
Hulled *Hordeum* sp				25	
Hordeum sp	3		4	10	
Indet cereal			5		
Other species					
Chenopodium sp	1				
Vicia sp	1			2	2
Linum usitatissimum	1				
Indet fruits, seeds, nuts	2				
Volume of soil					

The results support the hypothesis that the context [102] between midden layers [101] and [103] is a sterile layer of natural sand. It contains no plant remains.

With the exception of context [103] modern contamination was detected in all contexts, although it was minimal. The plants represented were uncharred *Persicaria hydropiper* L (water pepper), *Polygonaceae* sp (knotweed), *Rubus idaeus* L. (raspberries) and *chenopodium* sp. (goosefoot). These are all common weed seeds typically associated with agriculture, wasteland and disturbed ground. These, in all likelihood, were growing on or near the site.

The wild taxa were dominated by *Vicia* sp. and given their small size and limited nutritional benefits they were in all probability transferred to the site accidentally or were growing *in situ* nearby. Other charred plant material present were two possible spores and a badly degraded *Linum usitatissimum* L.

The charred macroplants derived from midden deposits [101], [103] and [105]. The better preserved examples were present in [105] and most could be identified as hulled barley (*Hordeum* sp). The grains retrieved from [101] and [103] had suffered such a degree of surface abrasion that some could not be

identified to species and no information about whether they were hulled was visible. The marked difference in preservation observed in the cereal grains from midden contexts [103] and [105] indicates different taphonomic processes operating on the midden layers and thus supports the dating evidence (above) that the two midden contexts separated by the cave mouth, do not derive from the same midden.

The full report, including details of the methodology employed, has been lodged in the site archive (Robertson 2007b)

Lithics

R P Engl

The excavation at Benderloch, Argyll produced a small lithic assemblage consisting of a flint platform rejuvenation flake (SF 05) recovered from context [104] and sixteen pieces of quartz from contexts [102] and [103].

Flint Platform Rejuvenation Flake

SF 05 (30.4 mm x 14.0 mm x 5.4 mm)

This artefact is made on an inner flake of fresh, pale grey flint. The flake has been side-struck in order to remove numerous flake scars and step fractures caused by previous removals from the cores striking platform. A flat bulb of percussion is visible with a small, crushed platform.

Quartz context [103]

Eight pieces of quartz were recovered from this context. These consisted of six chips, one chunk and a blade-like flake. All but the latter artefact were made on fine, grey translucent material, with the flake made on a coarser dull grey type. All appear worked, with the translucent quartz having the typically 'greasy' feel of struck material. The blade-like flake has dimensions of 31 mm x 16 mm x 8 mm and shows two previous removals on the dorsal face.

Quartz context [102]

Nine pieces of quartz were retrieved from context [102]. These consisted of four chips, three chunks and two flakes. As with the artefacts from context [103] these pieces appeared struck. The nature of the material ranged from fine translucent grey to coarse brown.

The working of quartz is a common component of lithic assemblages throughout the west coast of Scotland as quartz can readily be found as beach cobbles and as outcroppings. Scottish quartz assemblages are often Mesolithic in date especially around the Oban area, however the working of quartz is also frequently associated with Neolithic and Bronze Age assemblages throughout Scotland. Quartz is often one of a wide range of commonly occurring raw materials used to supplement finer quality materials such as flint.

The discovery of debitage would suggest that the working of lithics was being practiced on site using readily occurring locally derived raw materials.

Shells and snails

Ruby Ceron-Carrasco

Over 150 marine shells and terrestrial snails were examined for this assessment. The marine shell derived from five contexts [101], [103], [104], [105] and [106]. The terrestrial snails derived from contexts [101], [102], [103], [105] and [106]. These contexts are mainly sand and midden layers.

The condition of the marine shell remains is quite good in terms of erosion levels and preservation, particularly the gastropods periwinkle (*Littorina litttorea*) and limpet (*Patella vulgata*). Bivalve species however were quite eroded mainly due to the fact that these have less sturdy shells than gastropods and tend to be more lamellar in nature and therefore likely to flake and break more easily. The bivalve species

present are common mussel (*Mytulis edule*), razor shell (*Ensis ensis*), common cockle (*Cerastoderma edule*) and otter shell (*Lutraria lutraria*).

The condition of the terrestrial snails is quite fragile due to the fact that these are generally thinner than marine gastropods. Species present include *Discus rotundatus, Cepaea nemoralis, Clausilia bidentata* and *Cochlicella acuta.*

The table below lists of all the samples containing the marine and terrestrial mollusca remains recovered from the sorting processing at AOC Archaeology, Edinburgh, showing presence of the different species noticed during scanning of the samples.

Table 4: The shells

Sample No.	Area/Context	Species
0	101	Limpet, periwinkle, common cockle, mussel, *Discus rotundatus* and *Cepaea nemoralis*
3	101	Otter shell
2	102	*Discus rotundatus, Cepaea nemoralis, Clausilia bidentata, Cochlicella acuta*
4	103	Limpet, periwinkle, mussel, razor shell, *Discus rotundatus* and *Cepaea nemoralis*
7	104	Mussel
6	105	Limpet, periwinkle, mussel, razor shell, *Discus rotundatus* and *Cepaea nemoralis*
	106	Limpet, periwinkle, mussel, razor shell, *Discus rotundatus* and *Cepaea nemoralis*
	106 (u/s)	Limpet, periwinkle, mussel

The marine shell remains from Benderloch contain several species of shell-fish, of which the most abundant are edible periwinkle and limpet. Both these species of gastropod have quite sturdy shells and survive well in archaeological deposits.

Other species present include cockle, razor shell, and common mussel; their remains however consisted of mainly broken shell fragments.

Most of the species described above have been used as foodstuff from the earliest identified human habitation in Scotland as attested by the archaeological record (Fenton 1984, Pollard 1994, Ceron-Carrasco 2005).

The terrestrial snail *Discus rotundatus* is one of the commonest terrestrial shelled mollusc in Scotland. Ubiquitous in human-altered terrain and in woods and often recorded around the edges of raised bog or in lagg woodland but usually where there are signs of human disturbance or attempts at cultivation. *Cepaea nemoralis* is abundant in natural situations only on or near the coast in dunelands etc

Clausilia bidentata is abundant in most areas on walls and rocks, also on tree boles and fallen timber. Usually found in open sites. *Cochlicella acuta* is entirely coastal and found widely on dunes and neglected sandy ground (after Kerney & Cameron 1996).

All the species present in the Banderloch marine shell assemblage are commonly found by the shore throughout the Scottish coastline. The landsnails are associated with sand and calcareous deposits.

General Discussion

The archaeological investigation and post-excavation analysis of the disturbed deposits at Benderloch have demonstrated that at least three human skeletons appear to be represented along with a Food Vessel and a worked bone tool. Extensive disturbance prior to the arrival of the archaeologists meant that the

relationships of these skeletons to each other and to their burial context have been lost. However, the retention of the human remains has allowed a limited amount of data to be obtained from them. An aged female with signs of osteoarthritis in her hip (head of the femur) was present, along with a second adult and an adolescent. The sex of the latter two individuals could not be determined from the bones present. Other than the degenerative changes on the femur head brought about by osteoarthritis, no signs of pathology were noted on the bones. This may reflect the poor condition of the bone when it was retrieved, rather than indicating that there had never been any pathology present.

The radiocarbon dates obtained for the human remains range from *c.* 2200 BC to 1900 BC. These dates lie within the date range for the use of Food Vessels in Scotland (Sheridan, *supra*). Therefore it seems reasonable to conclude that the Food Vessel was probably associated with one or more of the burials despite the fact it was discovered in the lower deposit [105] not in the rocky scree talus [104] from which the bones seem to have derived.

The date obtained for the midden layer [103] which lay above the scree layer [104] from which the bones were retrieved is 1770 – 1530 BC at 2 sigma, considerably later than all the closely correlated dates obtained from the human bones. Conversely, the date obtained from a cereal grain retrieved from the sample taken from layer [105] is slightly earlier than the bone dates, suggesting that this layer predates the bone and is unlikely to equate with midden layer [103]. The date obtained from the cereal grain in [105] was 2290 BC – 2030 BC still within the time range associated with the use of Food Vessels in Scotland (23rd century BC to 19th century BC: Sheridan *supra*).

Thus the dates obtained from these excavations correlate closely with the little stratigraphic evidence available and with the artefactual evidence from the Food Vessel found in the midden-like layer [105].

The layers [101], [103], [105] and [106] produced animal bone assemblages typical of midden deposition, indicative of carcass butchery and disposal; and cooking waste. Shells from common edible shellfish species were abundant in these layers. Similarly the presence of cereal grains in contexts [101], [103] and [105] indicate the likelihood of them being midden deposits. Midden layers [101] and [103] were separated by a sterile layer [102] that appears to be a natural deposit. This may represent a short-term event, such as a storm, blowing sand over the middens; or it may reflect a slower build up of sand, over weeks, years or centuries.

A worked bone artefact was retrieved from context [105]. It is a split long bone with a bevelled working edge, probably used for scraping or burnishing, possibly during the treatment of hides (Sheridan, *supra*). Tools of this type span a wide chronological range, from the Neolithic to the First Millennium AD.

There are several examples of caves containing human remains in the Oban area. The following four examples all lie close to each other within the town of Oban itself, approximately 9 km from the Benderloch site.

MacKay Cave (NMRS NM83SE 4: NGR NM 8595 3059), unfortunately destroyed by blasting operations to make way for building development in the early twentieth century, was said to have contained the skeletons of a man and a child together with dog bones. The child was aged around eight years old, deduced by the eruption and wear of the teeth and the fusion of the skull bones (Turner 1895). The adult was sexed by the prominence of the supra-orbital ridge and the size of the mandible. The discovery was reported in the Proceedings of the Society of Antiquaries in 1895 (Turner 1895); and in the Oban Times in 1933. The retrieved human remains and flint artefacts were later interpreted by Lacaille (1954) as being Mesolithic.

Gas Works Cave (NMRS NM83SE 5: NGR 8605 3005) was destroyed in the 19th Century to make way for coal storage for the eponymous industrial works. Human skeletons were found but appear not to have been retained. During further expansion of the coal storage area in 1877 additional remains – shells; animal teeth and bones; and pot described as a cinerary urn reminiscent of those of the late Neolithic and Bronze Age were retrieved (Turner 1895).

Later construction works in Oban to build warehouses for the Oban Distillery revealed a cave (NM83SE 7: NGR 8598 3015) in the face of the rock. This was cleared of "cartloads" of shells (Turner 1895) in which some human bones were found and cleared away by workmen before they reached the attention of the authorities. The few bones that remained at the far end of the cave were collected and forwarded to the Society of Antiquaries of Scotland. The retrieval of eight mandibles provided ageing and sexing information and indicated that the bones in the cave had derived from at least eight individuals. There were three adults, two probable males, one female; a young adult (around 24); three children in which the first permanent molars had erupted but the milk molars had not yet been shed and an infant in which only the milk sockets were seen. The presence of both adults and children was also recognised in the limb bones and vertebrae submitted to Turner (1895) for analysis.

MacArthur Cave (NMRS NM83SE 9: NGR 8592 3043) is now regarded as the type-site of the Obanian culture (RCAHMS). Parts of the skeletons of at least four individuals were discovered in the thick deposits of unknown date that sealed the Mesolithic layers. Three of the skeletons were adult and the presence of a child was indicated only by one vertebra fragment that appeared to have come from a vertebra much smaller (25% smaller) in diameter than the others in the assemblage. The adults were one male, a possible male and a possible female.

It can be seen that human remains in caves in Oban are not uncommon and tend to be well documented, if not so well excavated and retrieved. As in the case at Benderloch, most have been revealed as a result of building development, destroying the caves and their associated deposits.

Conclusion

The discovery of human remains in caves in Oban is a well documented phenomenon. Unfortunately, as most of the discoveries were made in the late nineteenth and early twentieth centuries, little is known of the date or provenance of the finds. It is fortunate, in the case of Benderloch, that, despite the bones being removed from their archaeological context, and significant disturbance to the stratigraphy of the deposits, archaeological methods have advanced to the stage where that stratigraphy can be reconstructed from adjacent deposits and dates can be obtained from the bones and from cereal remains in these contiguous midden deposits. All dated from around 2200 BC to 1700 BC Similarly, modern techniques have enabled the retrieval of many small fragments of diagnostic pot, a Bowl Food Vessel, the known period of use of which dates to the same period.

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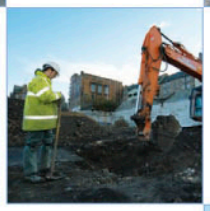



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