

Excavation at Manish Strand, Ensay, Western Isles

D D A Simpson*, R A Gregory[‡] & E M Murphy*
with contributions from L Cram, A Gibson, S Hamilton-Dyer &
E Nelis

ABSTRACT

Survey and excavation at Manish Strand, Ensay, Western Isles in 1965, identified two midden deposits which date to the later Neolithic and Early Bronze Age. Two 'pit' burials containing Late Bronze Age human inhumations were also discovered during the course of the excavation.

INTRODUCTION

In 1965 a prehistoric midden deposit was discovered on the island of Ensay by D D A Simpson who was undertaking field survey in order to identify prehistoric sites comparable to the excavated midden site at Northton, Harris (Simpson 1976; Murphy & Simpson 2002; Simpson et al forthcoming).

The Ensay midden is located at the northern end of the island (NGR: NF 9737 8674; illus 1) on an area of *machair* found adjacent to a beach known locally as Manish Strand. It was first identified through a scatter of Bronze Age pottery and occupation debris which had eroded out from the seaward side of the *machair* dunes and had spilled down the steep eroding slope for a distance of c 9m. Following the discovery of this occupation material a small trench, c 1.5m in length, was excavated to a depth of c 1.5m parallel to the shore at the western end of the occupation scatter. In 1966 and 1968 the trench was extended by a further 1m. A scatter of Iron Age, Norse period and post-medieval period pottery was also found on the surface of the eroding *machair* close to the prehistoric middens (Campbell nd).

EXCAVATION

Unfortunately, no section drawings survive in the site archive. The following stratigraphic account is therefore based on a single surviving photograph (illus 2).

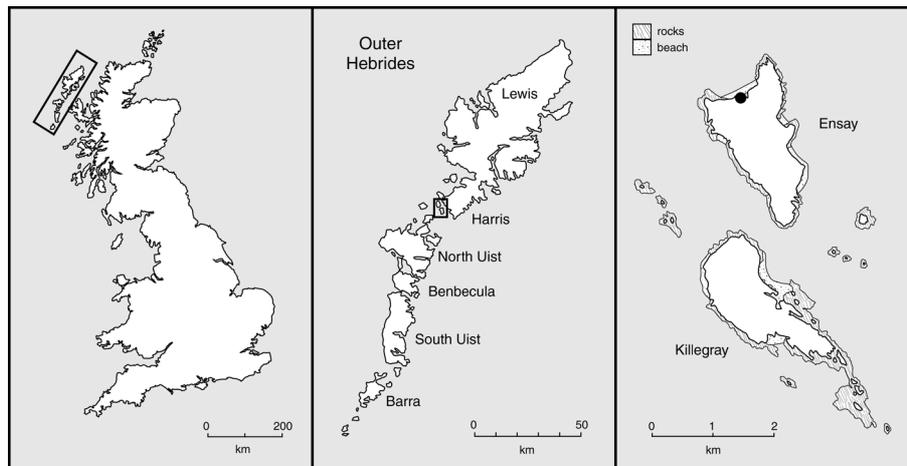
With the removal of the topsoil (C1) a layer of windblown sand (C2) with a thickness of c 0.2–0.4m was revealed (illus 2). This layer lay directly above a thick layer of midden deposit (C3), which ranged in depth from 0.08m to 0.6m. A deposit of stained, but sterile, windblown sand c 0.3–0.4m thick (C4) separated the upper midden (C3) from a second, much thinner, occupation layer (C5). The latter deposit was of a reddish colour and had a thickness of approximately 0.05–0.1m. The lower midden deposit was also found to lie above a layer of sterile sand (C6), approximately 0.1–0.35m thick, which rested on the natural boulder clay (C7).

The excavation suggested that the material which had weathered out from the dune had originated from the upper midden layer (C3). The deposit was stained black and contained charcoal, very large quantities of limpet shells, animal bone and Bronze Age pottery. Some areas of the midden also consisted of a solid mass of shells, unmixed with any other material.

Only a very small area of the lower midden (C5) was excavated. A number of limpet shells and two

* School of Archaeology & Palaeoecology, Queen's University Belfast, Belfast BT7 1NN

[‡] University of Manchester Archaeological Unit, University of Manchester, Manchester M13 9PL



ILLUS 1 The location of the midden at Manish Strand



ILLUS 2 The section through the midden deposits

sherds of Beaker pottery, which could not be located within the site archive, were recovered from this horizon. Although the insubstantial nature of the deposit suggested that it had formed through

less intensive occupation than was the case for the upper midden level, it is also possible that this thin midden layer is located at the periphery of a possible Beaker-period settlement. Information in the site

archive suggests that stone-built features were also found with the upper midden layer (Murphy & Simpson 2002). These features were constructed of large waterworn boulders and were found among the midden material on the seaward weathered slope of the dune. In addition, a small number of stones was discovered within the midden layer, which may represent in situ stone-built structures. The excavated area was too small, however, for the shape and extent of these potential structures to be discerned.

In addition to the stone-built features two pits were identified, one of which was stone-lined and had been dug into the upper midden deposit. Both pits contained crouched inhumation burials and one of these burials was also associated with two body sherds of plain undiagnostic pottery and two fragments of ovicaprid-sized long bone shaft. Only one of the burials was examined in detail, however, and the skeleton was initially removed to the Department of Human Palaeontology, British Museum, and later returned to Stornaway Museum, Lewis. The other skeleton was left in situ. Unfortunately, no plans or photographs of the two burials survive in the site archive and the artefacts associated with one of the inhumations could not be located.

RADIOCARBON DATES

Richard Gregory

Five animal bone samples from the upper midden layer (C3) and one human bone sample from the burial now held in Stornaway Museum were submitted to the SURRC for AMS dating. Unfortunately, all of the animal bone was found to have been contaminated from an unknown source since its removal from the midden during the 1960s. In consequence the samples produced anomalous results ranging in date from the first century cal AD through to the modern period.

In contrast, the human bone sample seems not to have been contaminated and its AMS date, which calibrates to the Late Bronze Age, is in keeping with

its stratigraphic position and mode of burial. This sample was extracted from a patella and the full results are set out in Table 1. The date has also been calibrated using OxCal v3.5.

BRONZE AGE POTTERY

Alex Gibson

In December 2002 the writer was asked to examine and prepare a report on the Bronze Age pottery from the upper midden layer (C3) at Ensay. The pottery had been illustrated and a preliminary catalogue prepared by Professor D D A Simpson (illus 3 & 4; cf Appendix for descriptions). The bags of pottery were opened and examined macroscopically in good fluorescent light. Vessel matches were made between bagged sherd groups and these are identified in the Appendix. Given the time constraints, little attempt was made to seek joining sherds though some were noted and it is considered that there are further opportunities for some minor refitting.

ANALYSIS

Fabric

Three fabrics were identified from macroscopic analysis with the benefit of a x10 hand lens. No microscopic analysis was undertaken and consequently only broad descriptions of the fabric groups are attempted here. It must be stated at the outset that the assemblage is generally very homogeneous and the fabrics have been differentiated purely by the size of the non-clay inclusions visible in the vessel sections and, occasionally, their surfaces. Most of these inclusions appear to have been deliberately added to the clay although some sandy fabrics may be natural given the local environment. A subtype (a) containing organic voids in the fabric (as well as occasionally in the surfaces) has also been identified in fabric groups 1 and 2, although it is more common amongst the sherds in Fabric 1. The fabrics are defined as follows:

TABLE 1

AMS date from the Ensay burial

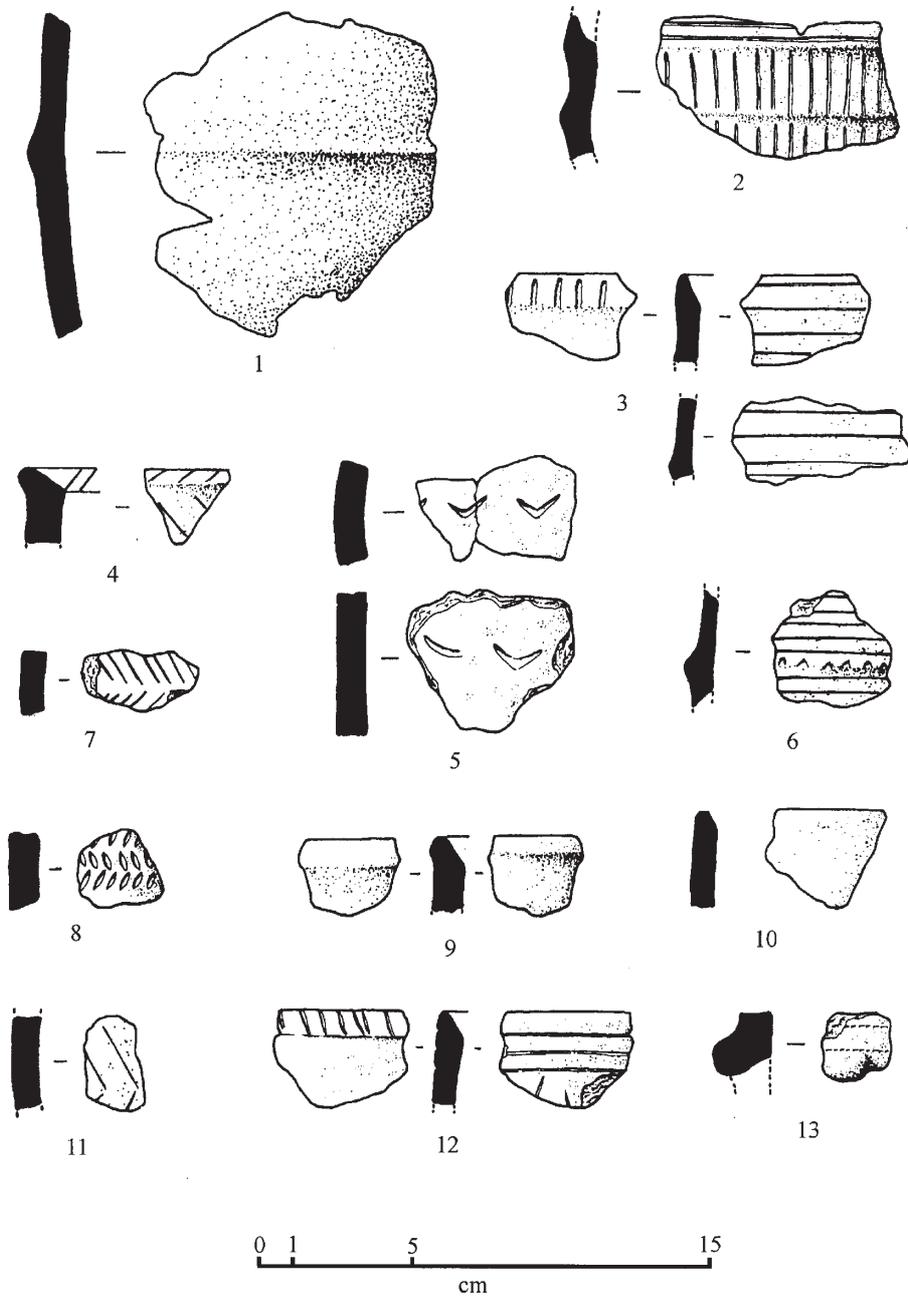
Sample Number	Sample Details	Radiocarbon Age BP	$\delta^{13}\text{C}$	Calibrated date 95.4% probability
AA-52522	Human patella from a pit burial which cut into midden layer C3	2750 ± 35 BP	-19.1‰	1000–820 BC



ILLUS 3 Bronze Age pottery

1 Sand inclusions. Generally rounded beach sand with small stones reaching up to but not exceeding 2mm across.

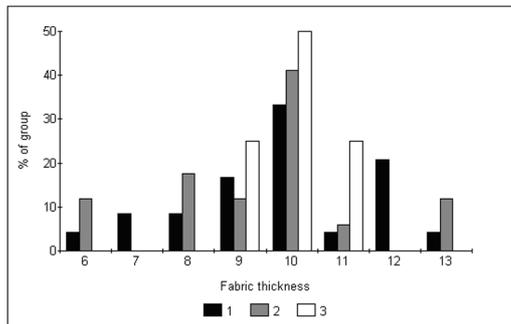
1a Fabric with circular organic voids, possibly grass, giving the sherds a porous texture. These do not occur on their own but generally in combination with the Fabric 1 sherds.



ILLUS 4 Bronze Age pottery

2 Stones 2–5mm across. Sand may also be present but the angular stones are more visible.
2a As Fabric 2, but with organic voids as in Fabric 1a, above.

3 Stones over 5mm across. Often angular, some stone may have been crushed.
Sand-filled fabric (Fabric 1) is the most commonly represented being recorded in 31 instances (48%).



ILLUS 5 Vessel thickness and fabric groups

Of these vessels, five (16%) belong to the 'a' subtype. Fabric 2 is the next most common being recorded in 20 instances (31%) of which only one sherd group (5%) is attributable to 2a. There were no organic voids recorded in the four sherds (6%) in the coarsest Fabric 3. The fabric of a further nine vessels (14%) could not be determined as the illustrated sherds were not located amongst the bagged material. The use of statistical analysis in such a small sample is dangerous, but when vessel thickness is plotted against the fabric groups (illus 5), there appears to be a general tendency for the finer Fabrics 1 and 2 to come from thinner-walled vessels. Having said this, however, all fabrics appear to have been preferentially used for vessels with walls c 10mm thick. While Fabric 3 displays a definite trend towards vessels of 9–11mm thick, once again it must be remembered that this is a very small fabric group.

Few technological indicators are visible in the small assemblage but generally colours range through light brown to black. Some vessels have mottled surfaces indicative of open firing, although these surface colours may also be influenced by post-depositional conditions. Coil breaks are noticeable on some sherds indicating ring or strap building.

Little can be said of the size-range of the vessels given the paucity of reconstructable rims, bases and vessel profiles. At about 230mm diameter at the rim, Vessel 3 appears to be the largest, closely followed by Vessel 2. However, neither of these vessels is significantly larger than the other partially reconstructable pots (1 & 5) and, given the uniformity in fabric thickness seen above, it suggests that there is little variation in the sizes of vessels in the assemblage.

Incisions (at least 19 examples) and comb impressions (18 examples) are by far the most common decorative techniques in the assemblage. Various oval, circular or triangular impressions are also common (seven instances) while fingernail impressions (three instances), whipped cord (two instances) and shell impressions (one instance) are much more rare. False relief formed by opposed triangular impressions was noted on Vessel 29. Motifs are generally simple, being based on encircling, vertical or diagonal lines. Herringbone appears to be the most common motif though this is difficult to judge given the small size of the sherds. The complex motif combination on Vessel 4 is unusual and, when combined with the multi-carinated profile, suggests an elaborate vessel.

DATING & ANALOGIES

The fabric, decoration and vessel forms suggests a Food Vessel assemblage of the earlier Bronze Age. While the profiles of Vessels 2 and 3 may hint at an element of Beaker, nonetheless these too are comfortable within the bipartite vase Food Vessel series and the comb decoration noted on other sherds is also not unique to Beakers. The false relief decoration on Vessel 29 is also common in Food Vessel pottery, particularly vessels of the Hiberno-Scottish series. The multi-carinated Vessel 4 is more difficult to parallel and it is reminiscent of the Neolithic Hebridean carinated bowls and jars. However the decoration is too complex for this earlier tradition, and it may be better to seek parallels amongst contemporary Irish material and in particular once more with the Hiberno-Scottish Bowl series. Absolute dates are difficult to estimate, but the presence of cord and comb impressions certainly suggests a date of before 1200 cal BC and indeed a date of around 2000 cal BC might be closer.

The closest parallels for the assemblage are from the coastal settlements at Ardnave, Islay (Ritchie & Welfare 1983) and Dalmore, Lewis. At the former site, various vase and jar forms are represented including multi-carinated forms (Ritchie & Welfare 1983, fig 8.1 & 7). Broad incision, herringbone, cross-hatching and false relief are also present in this assemblage as are whipped cord impressions and the rare use of shell (ibid fig 8.2) and comb (ibid fig 8.6). A whipped cord decorated bowl Food Vessel from Ardnave (ibid fig 9.17) is very similar to Vessel 5 from Ensay in its use of encircling lines,

maggots to define a carination (albeit a slack one), and zoned oblique lines. As reconstructed, however, the Ardnave vessel is more upright than that from Ensay. The S-shaped profile of Vessel 5 from Ardnave resembles the bipartite vase form of Ensay Vessels 2 and 3. Radiocarbon dates from Ardnave straddle 2000 cal BC (ibid, 317).

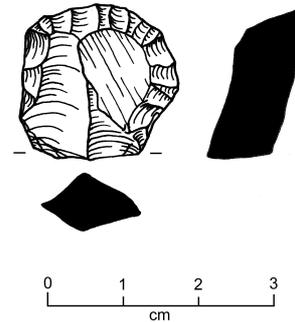
The pottery from Dalmore is unpublished but has been examined by the writer. Again the parallels with Ensay are close. Notable is the Food Vessel shape of many vessels and the use of broad incision, false relief and comb impressions. Multi-carinated forms are also present. One vessel is close in shape and decoration to Vessel 2 from Ensay save in the Dalmore example the decoration is formed by a toothed comb. The multiple chevrons of Ensay Vessel 4 may also be paralleled on a vessel from Dalmore although in the latter example the pot does not have a multi-carinated profile and the dot fringes are missing.

Given the proximity of Ensay to Northton, it is notable that the assemblages are quite different (Gibson, forthcoming). While fabric similarities are apparent and may be expected given the local geology, none of the Northton Beaker element seems to be present at Ensay, although again one must reiterate the small size of the sherd material from the present site, and that the Beaker sherds from the lower midden were not available for examination. The decorative techniques used also find comparison, particularly the broad, deep incision, but these techniques are so common in northern Bronze Age material that this point of comparison is hardly surprising. Current typochronologies might suggest that the Ensay material is slightly later than the Northton assemblage.

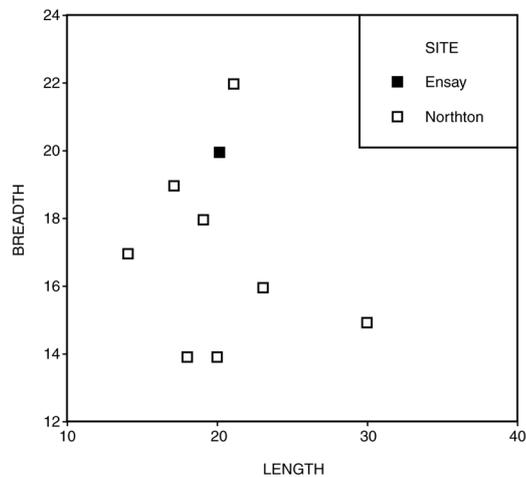
CHIPPED STONE ARTEFACT

Eiméar Nelis

One piece of flint was recovered from the Ensay Bronze Age midden layer (C3). This is a small thumbnail scraper, measuring 20mm (L) x 20mm (B) x 8mm (T), with a mass of 3.8g. The piece has a milky white patina, and is uncorticated and the platform, which is large and planar, remains intact, measuring 13mm (breadth) by 8mm (thickness). The scraping end is located at the distal end, but both laterals have been modified and incorporated into the tool. The left lateral has been modified into a straight edge, with the convex scraping edge



ILLUS 6 Flint thumbnail scraper



ILLUS 7 Length by breadth (mm) of the Ensay thumbnail scraper relative to those found in Bronze Age deposits at Northton, Harris

continuing along most of the right lateral and therefore, when viewed conventionally and orientated by its platform, the piece lacks symmetry (illus 6). However, if it is viewed along a SW/NE axis, it is quite a symmetrical convex thumbnail scraper, with straight laterals tapering towards the base of the tool. Similar thumbnail scrapers relating to Bronze Age activity are found elsewhere on the islands, as at Allt Chrisal, Barra (Wickham-Jones 1995), Eilean an Tighe, North Uist (Scott 1951) and Northton (illus 7; Nelis, forthcoming). A thumbnail scraper with a similarly large planar platform was found at Northton, but in this case hornfels was used and the tool was retouched ventrally; at Northton, scrapers formed on platform flakes tended to use non-flint materials, such as rock crystal and hornfels (ibid), whereas the flint

examples were more commonly formed on bipolar flakes and blades.

WORKED BONE

Eileen Murphy

Two examples of worked animal bone were recovered during the excavations at the Ensay midden (illus 8). These artefacts comprise a perforated bone point and a bone rubber or spatula both of which were located within the Early Bronze Age midden horizon (C3).

The bone point had originated from a longitudinally-split long bone of a large mammal, presumably cattle or deer. The object was sub-triangular, with a concave section and had a broad end and a narrow end that tapered to a crude point (illus 8.1). The tip had been formed by shaving along both sides and was smooth as a consequence of wear. It had a greatest length of 41.7mm and a midpoint breadth of 13.5mm. A perforation, with a diameter of approximately 3mm, was situated near the broad end of the implement. The perforation was slightly larger and more distinct on the interior surface of the fragment and it is probable that it had been bored through from that side.

The bone rubber/spatula had been made from a fragment of cetacean bone, possibly a rib. It was in a fragmentary condition and one of its longitudinal sides was incomplete (illus 8.2). It had a semi-circular section and tapered slightly to one end where it was rounded and partially worn. Clear evidence of smoothing due to wear was notably pronounced on one side of the tapered end. The object appeared to have been chopped transversely across at its broader end. It had a length of

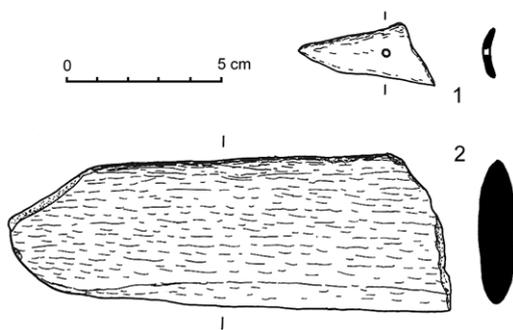
approximately 140mm, a midpoint breadth of around 49mm and a thickness of 12.2mm.

The rubber/spatula was similar to bone implements recovered from later Neolithic and Beaker horizons at the midden site at Northton (Murphy & Simpson, forthcoming). The objects from Northton had been fairly crudely manufactured and it is probable that they had served an everyday, utilitarian purpose. This is also likely to have been the case for the implement from Ensay. Objects of similar morphology, referred to as 'bevel-ended tools', have been recovered from other prehistoric (7350–1250 cal BC) shell middens in western Scotland. Recent use-wear and experimental analyses of these objects has suggested that their primary function was for the processing and, possibly, collection of limpets (Griffitts & Bonsall 2001). It has also been proposed that such objects were used for hide processing (Finlayson 1995). Similarly, the bone point has parallels with the Northton bone points, although none of these bone points was perforated. It is probable that the perforation had enabled suspension of the object. Given its crude nature it would seem more probable that it had been suspended for convenience rather than decorative purposes. Alternatively, the perforation may have enabled the bone point to form a component of a more complicated composite tool.

MAMMAL BONES

Leslie Cram

The mammal bones were recovered from layers C3 (n=297) and C5 (n=16). The layers were hand-dug rather than sieved, and it is probable that many smaller bones were not retrieved. The bones were in a generally good state of preservation, with little surface erosion. The mammal bones were examined in the early 1970s by the present author and again in 2003, with the exception of those recovered from C5 which could no longer be traced. Among the sheep-sized bones were 25 fragments, which could only be identified as small ruminant (sheep, goat or roe deer). As roe deer is not known to have been present in the Western Isles during the Bronze Age these bones were classed as sheep or goat (ovicaprids). The diagnostic bones which enable the differentiation between sheep and goat were all characteristic of sheep (cf Boessneck 1969). Nevertheless the term ovicaprid is generally used throughout the report.



ILLUS 8 Worked bone artefacts

TABLE 2
Mammal bones, frequencies of species (not including worked bone).

Species	Context	Frag	Frag%	MNI	MNI%
Cattle	C3	15	19	1	16.6
Red deer	C3	8	10.1	1	16.6
Pig	C3	1	1.3	1	16.6
Ovicaprids	C3	54	68.3	2	33.3
Seal	C3	1	1.3	1	16.6
Cattle size	C3	60	—	—	—
Sheep size	C3	63	—	—	—
Unidentifiable	C3	95	—	—	—
<i>Total</i>	<i>C3</i>	<i>297</i>	<i>100</i>	<i>6</i>	<i>100</i>
Cattle	C5	1	25	1	33.3
Red deer	C5	0	0	0	0
Pig	C5	1	25	1	33.3
Ovicaprids	C5	2	50	1	33.3
Sheep size	C5	2	—	—	—
Unidentifiable	C5	10	—	—	—
<i>Total</i>	<i>C5</i>	<i>16</i>	<i>100</i>	<i>3</i>	<i>100</i>

Frag = Number of Fragments; MNI = Minimum Number of Individuals

TABLE 3
Frequencies of body parts for the different species recovered from C3.

	Cattle	Cattle size	Red deer	Ovicaprids	Sheep size
Loose teeth	4	2	0	13	0
Skull/mandible	1	0	3	11	2
Rib/vertebra	0	20	0	3	17
Scapula	1	1	0	3	0
Humerus/Radius	0	4	2	5	3
Carpal/Metacarpal	2	0	0	2	0
Pelvis	0	0	0	4	2
Femur/tibia	0	1	0	4	3
Tarsal/Metatarsal	5	1	3	7	0
Metapodial	0	1	—	2	0
Phalanges	2	0	0	0	0
Long bone	0	30	0	0	36
<i>Total</i>	<i>15</i>	<i>60</i>	<i>8</i>	<i>54</i>	<i>63</i>

The frequencies of species recovered from C3 (Early Bronze Age) are shown in Table 2; the 79 fragments identifiable to species approaching a large enough sample to have some statistical value. Ovicaprids were predominant in terms of numbers of specimens ($n = 54$) although it is possible that all bones may have originated from two individuals, one of which was mature while the other was aged around six months with first permanent molar coming into wear (cf Silver 1969). Only 15 cattle bones were recovered, providing an MNI value of one. Only a single pig bone with no age-at-death information was recovered. Three of the eight red deer bones comprised antler, two tines and a shed

burr. Only a single individual was represented. The one seal bone was an atlas of grey seal. The frequencies of the body parts that were present for the different species are presented in Table 3.

Two of the bones were burnt, two displayed cut marks and a cattle-sized rib revealed marks characteristic of an axe. The long bones too had generally been split lengthwise along the shaft; of the 58 ovicaprid and sheep-sized long bones, 42 were split lengthwise, while of the 39 cattle and cattle-sized fragments a total of 33 elements had been split in this way. Metrical analysis of the cattle and pig bones indicated that the bones had derived from small, presumably domesticated animals (Table 4).

TABLE 4
Animal bone measurements (mm) (cf Driesch 1976).

Species	Body part	Measurement
Cattle	Scapula	SLC 52.3
Cattle	Scapula	SLC 64.3
Cattle	Astragalus	GLI 46.7, GLm 42.1, Bd 30.7, Dm 27.2, DI 26.3
Cattle	Astragalus	GLI 46.0, GLm 42.2, Bd 30.4, Dm 27.0
Cattle	Second phalanx	GL 42.0, Bp 28.7
Red Deer	Antler	39–102, 41–95
Red Deer	Humerus	BT 43.7
Sheep/goat	Scapula	SLC 16.2, LG 24.7
Sheep/goat	Tibia	Bd 20.2, Dd 17.4
Sheep/goat	Calcaneus	GL 53.1

The measurements are taken on bones shown to be mature by the fusion of the epiphysis, with the exception of antler and the astragalus which have no epiphysis to show maturity, and the cattle scapulae where the epiphysis (acromion) is missing.

Details of the frequencies of the species recovered from C5 (Beaker) are presented in Table 2. All of the bones were considered to have been derived from domestic animals. Cattle and pigs were each represented by a single bone, while two ovicaprid bones were recovered. The bovid was represented by a worn deciduous fourth premolar, indicating the presence of an animal with an age-at-death of around three years. The suid element comprised a worn second permanent molar from an adult pig. It was not possible to obtain ageing information from the ovicaprid bones (cf Silver 1969). A single skeletal element had been burnt.

The mammalian bone assemblage from Manish Strand is small and allows little to be concluded, although it does contain a similar range of species to those recovered from the Beaker levels at Northton (Finlay 2001). For example, the Beaker I and II levels at Northton contained evidence of domestic sheep, cattle and pig. At Northton evidence for the exploitation of wild mammal resources was also present and the remains of red deer, seal and whale were retrieved. The two samples of mammal bone recovered from the Ensay midden indicated that ovicaprids and cattle were the main domesticates to have been exploited, with pigs used to a much lesser extent. The use of wild resources is also indicated by the presence of skeletal remains from red deer, grey seal and whale in the assemblage.

BIRD BONES

Sheila Hamilton-Dyer

The material was retrieved from midden deposit C3 (Early Bronze Age). Eight bird bones were

submitted for identification. Species identifications were made using the modern comparative collections of the author. Where identification is not certain the closest probable match (cf) is listed. At least six taxa are represented by the eight bones. All are common seabirds that can be found in the area today (Snow & Perrins 1998). The remains may be incidental and no cut marks were observed on any of the bones, but this is not unusual even where it is certain that the remains are food waste. The flesh of seabirds may not be to modern taste but they have been used in the past and, indeed, were exploited until relatively recently (Serjeantson 1988). A more extensive avifauna was listed for Early Historic and Norse levels at the Udal, North Uist. The gannet is a frequent find but is not among the few finds in this sample. Auks, apart from a possible puffin, are also absent. These, including the extinct Great Auk, are also frequently identified and have been found at prehistoric sites such as Baleshare (Serjeantson 1988). It is interesting to note that these two types of seabird gather in large numbers for breeding whereas the cormorant and shag, and to some extent the other taxa found here, occur in small numbers all year round. It must be stressed however that this sample is extremely small and may not be representative.

HUMAN REMAINS

Eileen Murphy

The archive notes for the excavation at the Ensay midden indicated that two pits were discovered dug into the midden deposit, one of which was stone lined. Both pits were found to contain crouched

TABLE 5
Bird bone species from midden layer C3.

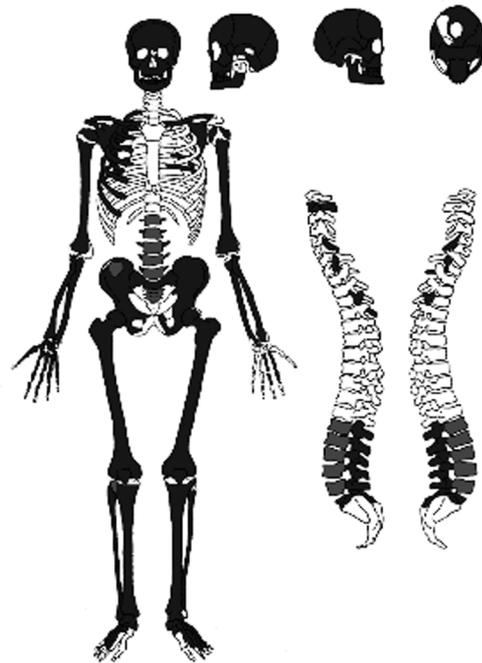
ID	No	Identification
202	74	Cormorant, <i>Phalacrocorax carbo</i> , right humerus, proximal 20%.
204	77	Gull, cf herring/lesser black-backed, <i>Larus argentatus/fuscus</i> , right ulna, mid-shaft fragment.
205	79	Shag, <i>Phalacrocorax aristotelis</i> , right humerus, mid-distal shaft 20%.
206	78	cf fulmar, <i>Fulmarus glacialis</i> , left tibiotarsus, midshaft 75%.
207	80	Small wader, cf <i>Calidris</i> type, possibly dunlin, <i>C. alpina</i> , left femur, distal half.
208	81	Small bird, immature, bone eroded, possibly but not certainly young puffin, <i>Fratercula arctica</i> , distal femur.
221	2	Shag, <i>Phalacrocorax aristotelis</i> , left ulna, complete, GL 130.2, Bp 10.4, Sd 4.9mm.
248	5	Gull, cf great black-backed, <i>Larus marinus</i> , left ulna, mid-shaft fragment.

inhumation burials. Only one of the burials was examined in detail and the skeleton removed, while the other skeleton was left in situ. Unfortunately, no records pertaining to the two burials survive in the archive for the site. The extant skeleton in Stornaway Museum, Isle of Lewis, was subject to osteological analysis, the results of which will be discussed below. Two sherds of plain pottery and two fragments of ovicaprid-sized long bone shaft were associated with the skeleton. It is possible that these objects represented grave goods that had been deliberately deposited with the skeleton in the interior of the cist, or alternatively artefacts that were re-deposited from the midden material dug out for the insertion of the graves. The only disarticulated human bone to have been recovered during the excavation at the Ensay midden was an adult left patella, which was retrieved from midden deposit C3.

The human remains reported upon here date to the Late Bronze Age and were of a single individual. A visual inventory of the bones present is provided in illus 9. The skeleton was in a good state of preservation, with approximately 60–70% of bone present. The majority of the bones were complete, although the more delicate parts of the bones, particularly the epiphyses and vertebral bodies, were invariably eroded and fragmentary. Metrical information derived from the skeletal remains is provided in Table 6.

SEX, AGE & STATURE

The sex of the individual was determined on the basis of a morphological examination of the pelvic and cranial bones (cf Buikstra & Ubelaker 1994, 19–20), and from a metrical analysis of the bones present with known sexually dimorphic characteristics. The morphology of the pelvis and the skull



ILLUS 9 Visual inventory (not to scale) of the skeletal elements of the individual from Ensay. The bones present are shaded in black, while those that were very eroded are shaded in grey

indicated that the individual was definitely female. In addition, metrical analysis of the left glenoid cavity of the scapula also suggested that the individual was female (cf Krogman & Iscan 1986, 227). The vertical diameter of the head and the bicondylar width values of the femora, however, were midway between the accepted values for males and females (cf Pearson 1917–19, 56; Stewart 1979, 100–1). Nevertheless, since morphological characteristics are considered to be more reliable than metrical

TABLE 6

Metrical analysis (mm) of the post-cranial skeleton of the individual from Ensay based on Brothwell (1981, 85–7) and Bass (1987, 212–14).

	Left	Right
Femur		
FeL1 Max L	438	438
FeL2 Oblique L	437	437
FeD1 A/P D Sub T	24.1	23.1
FeD2 M/L D Sub T	32.1	32.1
FeD5 Long D Head	C 43.5	44.5
C Circ Mid Shaft	87	87
FeE1 Bicondylar width	c 74.1	74.9
Tibia		
TiL1 Max L	364	362
TAL Artic L	361	358
TiE1 Bicondylar Width	–	–
TiD1 A/P D at Nut For	32.7	34.1
TiD2 M/L D at Nut For	24.3	24.1
Fibula		
FiL1 Max L	342	–
Humerus		
HuL1 Max L	–	–
HuD5 Head D	–	–
HC Circ Mid Shaft	81	82
Radius		
RaL1 Max L	237	–
Ulna		
UIL1 Max L	–	c 264
Scapula		
GC1 L Glenoid Cav	38.7	–
GC2 B Glenoid Cav	23.6	–

analysis, for the purposes of sex determination, it is concluded that the individual was female.

The age at death of the individual was determined using a number of methods. The sternal end of the left clavicle was completely fused indicating that the individual had an age at death greater than 30–32 years (cf McKern 1970, 46), while the state of tooth eruption and attrition provided an age at death of 25–35 years (cf Brothwell 1981, 72). The auricular surface age determination method provided an age at death estimate of around 27–31 years (cf Lovejoy et al 1985). All of the age determination indicators, therefore, would tend to suggest that the individual was an adult, with an age at death value of 25–35 years.

The estimated living stature was calculated on the basis of the greatest length of the femora and tibiae using the combined tibia-femur regression

equation devised by Trotter and Gleser (1952; 1958) for white females. An estimated living stature of 164cm, or approximately 5ft 4in, was obtained (standard deviation ± 3.55).

NON-METRIC TRAITS

A full suite of non-metrical traits was not recorded for the individual, but a number of interesting traits were noted. Septal apertures were visible in both distal humeri, while an Allen's fossa was apparent on both proximal femora. Medial squatting facets were present on the distal tibiae, and double anterior facets were apparent on the calcanei (cf Finnegan 1978).

SKELETAL PALAEOPATHOLOGY

An oval-shaped depressed area, which measured 19.1mm medio-laterally by 14mm antero-posteriorly, was apparent on the anterior margin of the medial condyle of the right tibia. The localized nature of the lesion and its location at the margin of the condyle would tend to suggest that it had occurred as a result of a crushing, traumatic injury to the right knee which had resulted in the development of a compression fracture. The corresponding medial distal condyle of the right femur and the right patella had a normal appearance. It is possible that the injury was a 'depressed plateau type', which causes a large part of the articular surface of the condyle to be depressed into the shell of the bone. The fractured piece remains as a single fragment of bone, without any further fragmentation. This type of injury is more common in the lateral tibial condyle than the medial condyle. Fractures of the tibial condyles are generally caused by forces that abduct the tibia upon the femur, while the foot remains fixed on the ground (Adams 1978, 244–6).

DENTITION

The dental formula for the individual is provided in *illus 10*. The incisors and canines were found to have displayed more extensive attrition patterns than the premolars and molars. Plaques of dental calculus were not visible on any of the teeth, but such deposits may have been lost due to the preservation of the dental remains. No caries or hypoplastic defects were evident on the teeth. It was impossible to assess the nature of any periodontal

NP	8 7 6 5 4 3 2 1	1 2 3 4 5 6 7 8	NP
NP	8 7 6 5 4 3 2 1	1 2 3 4 5 6 7 8	NP

ILLUS 10 Dental formula for the individual from Ensay. Symbols: / = tooth lost post-mortem, NP = tooth congenitally absent

disease due to the poor preservation of the alveolar bone surrounding the teeth.

SUMMARY

The human skeleton recovered from the interior of one of the pits had originated from a 25–35-year-old female, who would have had an approximate living stature of 164cm. The only palaeopathological lesion evident in the remains was a traumatic injury to the right knee, which appeared to have resulted in a compression fracture of the anterior margin of the medial condyle of the right tibia.

DISCUSSION

The presence of Beaker-period occupation and a later phase of Early Bronze Age activity are characteristic of many *machair* areas in the Western Isles. To date 17 ‘domestic’ sites have been identified in the region which are found with Beaker or Food Vessel pottery, and all but one of these sites have been discovered on the *machair* plain (cf Simpson et al, forthcoming). Although the density and distribution of sites is linked to recent phases of aeolian and coastal erosion, which have effectively facilitated the process of site discovery, site location may suggest that the *machair* plain was eminently suitable for the establishment of early settlement. Indeed, it is probable that the *machair* plain offered a comparatively fertile, albeit fragile, environment, which was well suited to burgeoning techniques of agriculture, particularly if it had been enriched through the deposition of midden material. Moreover, the environs surrounding the *machair* at Manish Strand were probably also desirable as they offered a selection of wild marine and terrestrial resources which could be ‘harvested’ by the prehistoric communities

of the region. The position of the coastline during this period may, however, have differed from its position as encountered today. Research into the evolving coastline of the region suggests, for example, that during the later Neolithic/Early Bronze Age sea level probably lay at a few metres below present (Lambeck 1995). In this respect, given the shallow nature of the contemporary seas in the Straits of Harris it is entirely possible that the later Neolithic/Early Bronze Age site at Manish Strand was originally situated several kilometres from the coast.

Unfortunately, due to the very small area examined at Manish Strand, little is known of the extent or form of the Beaker-period or Early Bronze Age occupation. This occupation appears, however, to have post-dated the initial formation of the *machair* plain, and consists of two thin midden layers interlaced within the windblown carbonate deposits. Of these midden horizons the Early Bronze Age layer contains the highest concentration of artefactual and faunal material. This material, which consists of pottery, worked bone and flint and animal bones, suggests the use of both wild and domestic resources and appears indicative of domestic activity of some description. The midden may, for instance, have been deposited as a means of enriching and stabilizing the fragile surface of the *machair* during episodes of early cultivation and would, therefore, be comparable to the Early Bronze Age cultivation horizons identified at sites such as Rosinish, Benbecula (Shepherd & Tuckwell 1977) and Silgenach, South Uist (Sharples 1998). In view of the large waterworn boulders associated with the midden layer, which appear to be the remnants of stone built structures, it seems more likely, however, that the deposit was perhaps derived from one or more stone-built houses perhaps of the kind found at other later Neolithic/Early Bronze Age *machair* sites, such as Northton (Simpson et al, forthcoming) and Barvas and Dalmore (Cowie 1986; 1987; Sharples nd). At these sites the houses are U-shaped in plan and are

constructed within an intentionally excavated hollow, which is usually revetted with waterworn boulders. These houses also form a focus for anthropogenic discard and subsequent midden formation, and this may explain the presence of the midden deposits at Manish Strand.

Following the formation of the Early Bronze Age midden horizon two crouched inhumation burials which probably date, on the basis of a single AMS date, to the Late Bronze Age were interred at the site. The burials were placed in two separate pits, one of which was stone lined. Possible grave goods were also associated with one of the burials and these included two body sherds of plain undiagnostic pottery and two fragments of ovicaprid-sized long bone shaft, although it is equally feasible that these objects represent residual artefacts derived from the earlier midden horizons. The discovery of these Late Bronze Age burials is fortunate, as burials dating to this period are poorly represented in the archaeological record of the Western Isles (cf Armit 1996). The available evidence may suggest, however, that Late Bronze Age burial in this region centred on two distinct contexts. One context appears to focus explicitly on the Late Bronze Age 'home' and is typified by a number of burials discovered beneath the floors of certain roundhouses, such as those excavated at Cladh Hallan, South Uist (M Parker Pearson, pers comm.). Moreover, these burials may represent a special form of burial which was perhaps connected to certain cosmological and/or ancestral referents, particularly as a number of the bodies from Cladh Hallan were potentially curated for sometime before actual burial (M Parker Pearson, pers comm.). The second context of burial appears to fall outside the actual living area but is often found on the site of earlier domestic occupation. The burials from Manish Strand represent a clear example of this locational preference, and these are paralleled at the nearby site of Northton, where two Late Bronze Age burials were also discovered, one

of which truncated an earlier Beaker midden horizon (Simpson et al, forthcoming). Although the placement of such burials may merely be serendipitous, it does seem likely that the choice of burial site might indicate the continued, albeit altered, significance of these earlier domestic sites. These earlier sites may, for example, have acted as a viable connection between burial and certain notions of ancestry which presumably formed an important theme for the Late Bronze Age communities of the region.

ACKNOWLEDGEMENTS

The post-excavation project was generously funded by Historic Scotland and we are grateful to Patrick Ashmore for his help. We are also grateful to Mike Parker Pearson for supplying material in advance of publication and Libby Mulqueeny for preparing the illustrations. We would also like to thank Dr Mary MacLeod, Local Authority Archaeologist for the Western Isles and Dr Ian Armit and Dr Colm Donnelly of Queen's University, Belfast. Leslie Cram would like to thank Richard Sabin of the Natural History Museum in London for assistance in identification of one of the cattle scapulae.

APPENDIX: Bronze Age Pottery Catalogue

Each illustrated vessel is identified by its vessel no (eg V9) and its fabric.

V01 Fabric 3 Illus 3.1. Vessel with bevelled and moulded rim and high shoulder carination. Decoration comprises incised cross-hatching on rim bevel and zones of vertical comb impressions on rim moulding, neck and body. Fabric has light brown-grey outer and inner surfaces and contains stone inclusions up to 8mm across. 11mm thick.

V02 Fabric 1 Illus 3.2 Vessel with 'S'-shaped profile, concave neck and slightly angular belly carination. rim is simple and decoration comprises bordered zone of oblique incisions internally and on outside is broad incised bordered zone of interrupted herringbone below which are incised pendant triangles. Vessel appears to be undecorated below carination. Hard, grey-brown fabric with sand inclusions and well finished surfaces.

V03 Fabric 1 Illus 3.3 Vessel with pointed angular rim, concave neck and angular shoulder carination. Lower part of neck appears to be decorated with crowsfoot fingernail impressions and there are traces of oblique incisions on belly. Fabric has brown surfaces; contains sand inclusions and coil break is visible.

V04 Fabric 2 Illus 3.4. Multi-carinated vessel with complex decorative schema. From top of sherd decoration comprises two oblique lines, three encircling lines above first carination, double row of stabs, triple running chevron fringed with dots, four encircling lines above second carination, double row of stabs, zone of cross-hatching, four encircling lines above third carination, row of stabs and traces of zone of multiple dot-fringed chevrons. All decoration is incised. Not all illustrated sherds were identified. Fabric has light brown surfaces with black core and contains stone inclusions up to 5mm across. It averages 12mm thick.

V05 Fabric 3 Illus 3.5. Vessel with internally bevelled rim, narrow concave neck, high shoulder carination, rounded body and pronounced flat base. Decoration comprises vertical lines of whipped cord impressions on bevel and three encircling lines of same technique in neck. Whipped cord maggots accentuate shoulder then there are four encircling lines below shoulder leading to zone of oblique maggots. There are further seven(?) encircling lines, zone of vertical maggots and four encircling lines above base. Not all sherds were located. Fabric is black on outside and grey internally. Stone inclusions are up to 9mm across and fabric averages 12mm thick.

V06 Fabric ? Illus 4.1. Undecorated carinated vessel. Sherds not identified in examined assemblage.

V07 Fabric ? Illus 4.2 Multicarinated vessel, perhaps Hebridean bowl. Decorated above upper carination with two horizontal incised lines. Lower carination has zone of vertical incisions above and below. Sherds not identified in examined assemblage.

V08 Fabric ? Illus 4.3. Simple internally bevelled rim and carinated sherd. Bevel is decorated with vertical incisions. Outer surface is decorated with encircling incised lines. Sherds not identified in examined assemblage.

V09 Fabric 1 Illus 4.4 Rim, Sand & small stone, grey throughout. Decorated with comb impressions.

V10 Fabric ? Illus 4.5. Sherds decorated with shallow V-crescentic impressions. Sherds not identified in examined assemblage.

V11 Fabric ? Illus 4.6. Shouldered sherd decorated with horizontal finely incised lines with shoulder accentuated with inverted V-shaped impressions. Sherds not identified in examined assemblage.

V12 Fabric 2 Illus 4.7. Light brown outer, black inner. Fine stone up to 4mm, 9mm thick, finely incised herringbone.

V13 Fabric 1 Illus 4.8, Hard, well fired, well finished surfaces. Join void visible. Sand inclusions, with incised line visible below oval imps.

V14 Fabric ? Illus 4.9. Rim with rounded external moulding and internal bevel. Undecorated. Sherds not identified in examined assemblage.

V15 Fabric ? Illus 4.10. Simple rounded rim. Undecorated. Sherds not identified in examined assemblage.

V16 Fabric ? Illus 4.11. Body sherd decorated with fine incised herringbone motif. Sherds not identified in examined assemblage.

V17 Fabric ? Illus 4.12. Rim sherd with internal bevel decorated with slightly oblique impressions. Sherds not identified in examined assemblage.

V18 Fabric ? Illus 4.13. Body sherd with rounded lug decorated above with two horizontal comb lines. Sherds not identified in examined assemblage.

REFERENCES

- Adams, J C 1978 *Outline of Fractures*, 7th edn. London.
- Armit, I 1996 *The Archaeology of Skye and the Western Isles*. Edinburgh.
- Boessneck, J 1969 'Osteological Differences between Sheep (*Ovis aries Linne*) and Goats (*Capra hircus Linne*)', in Brothwell, D R & Higgs, E (eds), 331–58.
- Brothwell, D R 1981 *Digging up Bones*, 3rd edn. London.

- Brothwell, D R & Higgs, E (eds) 1969 *Science in Archaeology*. London.
- Buikstra, J & Ubelaker, D H (eds) 1994 *Standards for Data Collection from Human Skeletal Remains*. Arkansas.
- Burgess, C B & Miket, R (eds) 1976 *Settlement and Economy in the Third and Second Millennia BC*. Oxford (= Brit Archaeol Report, Brit Ser, 33).
- Campbell, E nd *A Report on the Pottery from Ensay*. Unpubl report.
- Cowie, T 1986 'Barvas', *Discovery Excav Scot 1986*, 52–3.
- Cowie, T 1987 'Barvas', *Discovery Excav Scot 1987*, 62.
- Finlay, J I 2001 *Report on the Faunal Material Recovered from Northton, Harris*. Unpubl report.
- Finlayson, B 1995 'Complexity in the Mesolithic of the western Scottish seaboard', in Fischer, A (ed) *Man and Sea in the Mesolithic Coastal Settlement Above and Below the Present Sea Level*, 261–4. Oxford (= Oxbow Monogr, 53).
- Finnegan, M 1978 'Non-metric variation of the infracranial skeleton', *J Anatomy*, 125, 23–37.
- Gibson, A forthcoming 'Pottery', in Simpson, D D A, Murphy, E M & Gregory, R A.
- Gregory, R A & Simpson D D A forthcoming 'The history of the Northton machair', in Simpson, D D A, Murphy, E M & Gregory, R A.
- Griffitts, J & Bonsall, C 2001 'Experimental determination of the functions of antler and bone 'bevel-ended tools' from prehistoric shell middens in western Scotland', in Choyke, A M & Bartosiewicz, L (eds) *Crafting Bone: Skeletal Technologies Through Time and Space*, 207–20. Oxford (= Brit Archaeol Report, Int Ser, 937).
- Krogman, W M & Iscan, M Y 1986 *The Human Skeleton in Forensic Medicine*, 2nd edn. Springfield.
- Lambeck, K 1995 'Glacial isostasy and water depth in the Late Devensian and Holocene on the Scottish Shelf west of the Outer Hebrides', *J Quaternary Sci*, 10, 83–6.
- Lovejoy, C O, Meindl, R S, Pryzbeck, T R & Mensforth, R P 1985 'Chronological metamorphosis of the auricular surface of the Ilium: a new method for the determination of adult skeletal age at death', *Amer J Phys Anthropol*, 68, 15–28.
- McKern, T W 1970 'Estimation of skeletal age: from puberty to about 30 years of age', in Stewart, T D (ed) *Personal Identification in Mass Disasters*, 41–56. Washington.
- Murphy, E & Simpson, D D A 2002 *Ensay Bronze Age midden: Excavations 1965–1968*. Unpubl report.
- Nelis, E L forthcoming 'Chipped and polished stone', in Simpson, D D A, Murphy, E M & Gregory, R A.
- Pearson, K 1917–1919 *A Study of the Long Bones of the English Skeleton I: the femur*. London (= Company Research Memoirs Biometric Series X, Univ London, Dept Applied Statistics).
- Ritchie, G & Welfare, H 1983 'Excavations at Ardnave, Islay', *Proc Soc Antiq Scot*, 113, 302–66.
- Scott, W L 1951 'Eilean an Tighe: a pottery workshop of the second millennium BC', *Proc Soc Antiq Scot*, 85 (1950–1), 1–37.
- Serjeantson, D 1988 'Archaeological and ethnographical evidence for seabird exploitation in Scotland', *Archaeozoologia*, 2, 209–24.
- Sharples, N M 1998 *Excavations at Silgenach, Cill Domain, South Uist 1998*. Cardiff (= Cardiff Stud Archaeol Specialist Rep, 12).
- Sharples, N M nd *Dalmore 1983: Interim Report*. Unpubl report.
- Shepherd, I 1976 'Preliminary results from the Beaker settlement at Rosinish, Benbecula', in Burgess, C B & Miket, R (eds), 209–20.
- Shepherd, I A G & Tuckwell, A 1977 'Traces of beaker-period cultivation at Rosinish, Benbecula', *Proc Soc Antiq Scot*, 108 (1976–7), 108–13.
- Silver, I A 1969 'The ageing of domestic animals', in Brothwell, D R & Higgs E (eds), 283–301.
- Simpson, D D A 1976 'The Later Neolithic and Beaker settlement of Northton, Isel of Harris', in Burgess, C B & Miket, R (eds), 221–6.
- Simpson, D D A, Murphy, E M & Gregory, R A forthcoming *Excavation at Northton, Isle of Harris*.
- Snow, D W & Perrins, C M 1998 *The Birds of the Western Palearctic*. Oxford.
- Stewart, T D 1979 *Essentials of Forensic Anthropology*. Springfield.
- Trotter, M & Gleser, G C 1952 'Estimation of stature from long bones of American whites and negroes', *Amer J Phys Anthropol*, 10, 463–514.

Trotter, M & Gleser, G C 1958 'A re-evaluation of estimation of stature taken during life and of long bones after death', *Amer J Physical Anthropol*, 16, 79–123.

Wickham-Jones, C 1995 'The flaked stone tools', in Branigan, K & Foster, P (eds) *Barra: Archaeological Research on Ben Tangaval*, 120–39. Sheffield.

The paper is published with the aid of a grant from Historic Scotland