CHAPTER 11: THE HUMAN, ANIMAL, BIRD AND FISH BONE ASSEMBLAGES

11.1 HUMAN BONE FROM BALESHARE AND HORNISH POINT

F Lee (1987)

Human bones were retrieved from an extended inhumation at Baleshare and from a ritual burial of one individual in four pits, at Hornish Point.

11.1.1 Baleshare

An adult female skeleton aged over 35 years was retrieved during the excavation of the Baleshare midden in 1984. The skeleton was reasonably well preserved and most of the body was retrieved. A low degree of dental hygiene was evident in the presence of four abscesses, three in the upper jaw and one in the lower jaw. Many of the teeth had been lost and periodontal disease resulting in extreme alveolar recession was undoubtedly partially responsible. Degenerative change to the articular surfaces of the bones were noted but are not considered to be unusual considering the age of the individual. Osteoarthritis was present on the apophyseal joints of the vertebral column.

Age
The individual was found to be older than 35 years. This was estimated from a consideration of the pubic symphyses (Gilbert & Mckern 1973) in conjunction with the rate of dental attrition (Brothwell 1972).

Stature and physical type
The stature was estimated from the tibial length to be 167.1 ± 3.66 cm (Trotter & Gleser 1952). The skull was mesocranic or of average dimensions and the nasal index was also average.

Preservation
The preservation of the bones ranged from excellent to fair. The more fragile bones, in particular those of the vertebral column and the flat bones were those which had sustained the most damage.

Non-metric variations
Epigenetic variations and non metric traits are descriptions of minor morphological abnormalities in the skeleton. They are used in human bone studies to establish whether or not there is any degree of genetic proximity between groups. In this instance the following variants were simply noted where present (after Berry & Berry 1967; Finnegan 1973);
Cranial; Ossicles or wormian bones were present in the left lambdoid suture, at the lambda and at the right asterion. The mandible exhibited a mandibular torus.
Postcranial; Both of the innominate bones have an acetabular crease. The left patella exhibits a small vastus notch. The right tibia has a small squatting facet while both the left and right talus support a corresponding facet on the superior aspect of the bone. Finally the left calcaneum exhibits a double anterior facet.

Dentition
7 6 5 4 | 4 5 6 8
———————————-
| 4 8

The rate of dental wear was more marked on the right side of the jaw. Dental hygiene had clearly been poor. A minimum of ten teeth had been lost before death. Alveolar recession was particularly marked and had resulted in the loosening of the remaining teeth making their loss more likely. The degree of calculus on the crown and roots of the teeth ranged from medium to considerable. The occlusal surface of the upper 3rd right molar had been completely covered by the concretion indicating that the tooth was no longer in use. Calculus may help to initiate periodontal disease, an infection of the alveolar bone and soft tissues of the mouth (Brothwell 1972). Closely associated with periodontal disease are the presence of four dental abscesses. Three of these occur in the extant part of the mandible. The molars and premolars are the teeth affected and although this may indeed be associated with periodontal disease infection by exposure of the dental pulp through increased attrition must also be considered.

Pathology
Degenerative change to the articular surfaces of the bone were noted. This is considered here to be a feature of the ageing skeleton. Osteoarthritis was visible on the apophyseal joints of the 4th, 5th and 7th cervical vertebrae. All of the thoracic vertebrae had osteoarthritis of at least one of the apophyseal joints, while in the lumbar vertebrae only the third left inferior facet was affected. Invertebral osteochondrosis, the result of pathological changes in the invertebral disc, was present on the 6th and 7th cervical vertebrae, 1st and 2nd thoracic, and 1st, 3rd, 4th and 5th lumbar as well as on the bodies of the three late cervical vertebrae, the 1st, 4th, 5th, 6th and 10th thoracic and all of the lumbar vertebrae.

A complete catalogue of the bones can be found in the site archive.

11.1.2 Hornish Point

The remains of a single individual were found in four different pits, [138], [174], [178] and [481]. The remains were in a disarticulated state, although the excavator noted that many of the epiphyseal plates were in their correct anatomical positions at the end of the long bone diaphyses.

The age of the individual is estimated from the dentition to be 12 years ± 30 months and the ages for the appearance and fusion of the epiphyses would support this view. The sexing of juveniles is notoriously unreliable, but the evidence from the pelvis, sacrum and skull suggest, tentatively, that the individual was male.

Non-metric traits are of little value in the study of isolated individuals, they are used predominately to show the variability or genetic distance between groups of individuals. However the following variations were noted; the anterior condylar facets are double and there is a possible ossicle in the right lamboid suture.

There is evidence for *Spina Bifida Occulta*; this is a much less severe case of spina bifida, detectable in skeletal material as a bony defect and found on average in 2.7% of British

Plate 31. Hornish Point. Human vertebrae from the burial showing evidence of cutting

skeletons (Brothwell & Powers 1968). The spinal cord is usually normal and lies within its bony canal. The membranes are intact but the spinous processes and laminae of one or more vertebrae are defective, in life these would have been bridged by cartilage or membrane. In this individual the defect occurs in the first three sacral vertebrae. In most cases (and almost certainly here) it would not have given rise to symptoms, although in more severe cases it may be associated with paralytic deformities of the lower limb (Illingworth & Dick 1979). The dentition is normal and healthy with slight calculus on the labial surfaces.

The fourth and fifth lumbar vertebrae have been subjected to deliberate disarticulation or butchery. The damage suggests two diagonal chops or cuts applied to the back of the individual, slicing through the trunk in the waist to hip region. There is no evidence of damage to the ilium although the unfused iliac crest is absent. One cut has removed both of the inferior articular facets and the right lateral part of the body of L4, and the left superior articular facet and left lateral part of the body of L5. The second cut has removed both of the inferior articular surfaces of L5 and the right lateral part of the inferior body surface. The first of the sacral vertebrae is unaffected (Plate 31). The cleanliness of the cut suggests that it was made with a sharp instrument. It is impossible to ascertain exactly when the 'injury' occurred but it must have been either at death or postmortem. An injury of this kind would have been incompatible with life, nor is there any evidence for healing.

Another possibility is that it was a result of deliberate disarticulation of the individual after death. This could be supported by the evidence for the distribution of the body in it's four contexts. Essentially, [138] contains parts of the body below L5 including the lower right limb and part of the pelvic girdle. [174] contains the upper part of the trunk, upper limbs and skull, all above L4. [178] contains essentially the lower trunk and pelvic girdle, although it also includes a few oddities: the clavicle, two ribs, metacarpal and the lower condyles of the left femur. Finally [481] contains fragments of the left foot. Furthermore, there is evidence to suggest that some degree of excarnation or decomposition had occurred before the bones were placed in the 'post-holes'. [138] contains the left and right pubis and right ischium, while the rest of the pelvic girdle was found in [178]. [174] contains most of the hand and finger bones, but the left second metacarpal and first left proximal phalynx are found in [178]. Finally the left distal epiphysis of the radius in [178] is from the left radial diaphysis in [174]. In most instances however, the epiphyseal plates were noted to be in their correct positions at the ends of the diaphyses, suggesting that while excarnation may have occurred decomposition was not necessarily complete.

11.1.3 Catalogue of human bones from Hornish Point

The full catalogue is presented here to illustrate the division of bones between the four pits.

Pit [178]
Pelvis; 3 incomplete fragments. Left pubis, right pubis and ischium (rami fused, acetabulum unfused).
Femur; 5 incomplete fragments. Right-diaphysis & lower condyles (unfused).
Patella; 1 complete frag, right only.
Tibia; 3 incomplete frags, Right-diaphysis and condyles (unfused).
Unidentified; 5 frags.

Pit [174]
Skull; 98 fragments, incomplete. Almost all of the cranium and face is present, but the mandible is absent.
Thoracic; 17 fragments; incomplete. Fragments of 3 neural arches and a minimum of 6 bodies (body epiphysis present but unfused) all are middle to late thoracic.
Lumbar; 2 fragments, incomplete. One upper lumbar vertebra.
Ribs; 52 fragments, incomplete. Minimum no 7 right. Minimum no 8 left
22 fragments side unidentified. (epiph unfused).
Clavicle; 2 fragments, incomplete. Left-medial end and lateral part of shaft.
Scapula; 6 fragments, incomplete. Left: 5 fragments glenoid cavity and coracoid process unfused. Right: coracoid process only.
Humerus; 4 fragments, incomplete. Left humerus diaphysis, head and capitulum unfused.
Radius; 2 fragments, incomplete. Left frags of diaphysis.
6 fragments, incomplete. Right-diaphysis and proximal and distal epiphyseal plates unfused.
Ulna; 2 fragments, incomplete. Left fragments of diaphysis.
4 fragments, incomplete. Right-fragments of diaphysis and distal epiphysis.
Carpels; 8 fragments, incomplete. Left and right lunate and hamate; right capitate, 3 x unidentif.
Metacarpals; 8 fragments, incomplete. Left head of 1st, 4th and 5th present (distal end unfused). Right-all present (unfused).

Phalanges; 11 fragments, incomplete. 8 x proximal, 3 x middle.
Sternum; 3 fragments, incomplete; manubrium and 2 segs (unfused) of sternum body.

Pit [138]
Thoracic; 3 fragments, incomplete. Neural arch of early thoracic vertebrae and 1 x unfused epiphyseal plate for body.
Lumbar; 3 fragments, incomplete. L4 and L5 present and the neural arch of L2 or L3.
Sacrum; 2 fragments, incomplete. 1st-3rd sacral vertebrae, 2nd and 3rd fusing.
Ribs; 2 fragments, incomplete. 2 x right ribs.
Clavicle; 1 fragment, incomplete; 1 Right lateral end.
Radius; 1 fragment, incomplete. Distal epiphyseal plate only.
Metacarpal; 1 fragment, incomplete. Left 2nd M/C, distal end unfused.
Pelvis; 3 fragments, incomplete. Left ilium and ischium (unfused); Right-ilium.
Femur; 1 fragment, incomplete. Left lower condyles unfused.
Phalanges; 1 fragment, incomplete. 1st proximal (hand).

Pit [481]
Metatarsals; 3 fragments, incomplete; Left 3rd–5th (unfused).
Phalanges; 1 fragment, incomplete; 1st proximal phalanx.

11.2 ANIMAL BONES FROM BALESHARE AND HORNISH POINT

P Halstead (1987)

11.2.1 Introduction

Mammalian faunal material from the late Bronze/early Iron Age coastal sites of Baleshare and Hornish Point was submitted for analysis. The following questions were posed by the excavator:

i) Are the 'midden' deposits at Baleshare and Hornish Point true farmyard middens or accumulations of domestic refuse?

ii) What are the relative contributions of wild and farmyard animals to the economy? Were deer present on the islands?

iii) Does butchery practice or the selection of particular cuts/species of meat support the idea that Baleshare and Hornish Point lie at the bottom of a social/settlement hierarchy rising via wheel-houses, forts and duns to brochs?

iv) Is the mineral deficiency (eg copper and cobalt) of the machair reflected in the faunal assemblage?

v) Can the nature of local animal husbandry be clarified?

vi) On the basis of this pilot study, would a large scale project allow more detailed reconstruction of animal husbandry?

vii) How appropriate were the applied techniques for the recovery of faunal material? Should they be revised for a large scale project?

Questions *i–v* are concerned with the original animal population of the region and with human selection of particular animals on the basis of species, age and sex, and of particular body parts for different purposes. Faunal evidence for such selective human behaviour is based on the identification of particular carcasses or body parts in the discarded food refuse. The reconstruction of discard practices is also of relevance to question *i*. After faunal material is discarded it may be subject to further selective distortion (cf Clarke 1973) and possible factors may be as follows:

i) during deposition, eg by dogs, weathering,

ii) after deposition, eg by chemical action in the ground,

iii) during retrieval, eg by incomplete recovery,

iv) during analysis, eg by recording of inappropriate variables.

Retrieval bias
Retrieval bias is the subject of questions *vi* and *vii* and the effects of (post-) depositional distortion should be identified before the data are interpreted in terms of questions *i* to *v*. In effect, archaeozoological interpretation involves retracing the sequence of distorting filters to which the data have been subject between prehistoric economy and contemporary computer printout.

Prior to addressing the specific questions outlined above, the sequence of filters is considered followed by presentation of certain basic characteristics of the two assemblages relevant to pre-depositional human behaviour.

11.2.2 'Distorting filters'

Analysis
The methodology of this study is described in Chapter 9. The mammals identified are sheep (*Ovis aries*), cattle (*Bos taurus*), pig (*Sus scrofa*), red deer (*Cervus elaphus)*, dog (*Canis familiaris*), seal and otter (*Lutra lutra*), in descending order of abundance (Tables 10 & 11). Although the single largest identified group is 'sheep/goat', no specimens were identified to goat (*Capra hircus*), whereas over 200 specimens from most parts of the skeleton could be assigned to sheep. It can therefore be safely assumed that all the sheep/goat material belongs to sheep. Red deer are represented by numerous fragments of antler while a number of postcranial pieces and one tooth are compatible with red deer in terms of size and morphology. Some of the cervid material is too fragmentary to be definitely assigned to red deer but it is almost certain that the biogeographically less plausible fallow deer *Dama dama* is not present (cf Berry 1979). On the basis of size, the few bones of seal should probably be assigned to the

Block	Sheep	Cow	Pig	Dog	Seal	Otter	Red Deer	Total
1	11	13	–	–	–	–	1	25
2	176	85	17	–	1	–	1	280
3	19	16	3	–	–	–	2	40
4	1	–	–	–	–	–	–	1
5	45	2	3	–	–	–	–	50
6	40	12	3	–	1	–	–	56
7	6	36	3	–	1	–	–	46
8	2	3	2	–	–	–	–	7
9	15	8	2	–	1	–	–	26
11	62	9	2	–	–	–	3	76
14	19	22	6	–	–	–	–	47
15	107	65	8	1	–	–	2	183
16	200	138	18	–	1	–	3	360
17	35	17	1	–	–	–	1	54
18	51	49	1	–	–	–	1	102
19	15	8	2	–	–	–	–	25
20	36	18	7	–	–	–	–	61
21	3	3	1	–	–	–	–	7
22	128	53	5	1	–	–	1	188
23	22	24	1	–	1	1	2	51
24	69	32	23	4	–	–	–	128
25	68	27	3	–	–	–	–	98
26	38	46	4	1	–	–	2	91
27	37	190	3	–	–	–	–	50
28	1	–	1	–	–	–	–	2
Totals	1206	696	119	7	6	1	19	2054
	59%	34%	6%	<1%	<1%	<1%	1%	

Table 10. Baleshare. Minimum numbers of identified anatomical units

common seal (*Phoca vitulina*). A few eroded pieces of whale bone have not been further identified and could possibly be flotsam collected from the beach. Rabbit (*Oryctolagus cuniculus*) was represented only by a single specimen from a modern deposit at Hornish Point. Three isolated limb bones from immature rodents (of mouse/vole, rather than rat, size – cf Berry 1979, 35, Table 5) in Blocks 2, 17 and 24 at Baleshare could not be precisely identified and could easily be intrusive.

The method of quantification adopted (minimum numbers of selected anatomical units) reduces the risk of repeatedly counting the same fragmented specimen, but also reduces the size of the assemblage. Nonetheless, the size of the assemblages is modest and this prevents systematic comparison of the faunal material from different blocks. Indeed, for many purposes, the assemblages from the two sites are considered together. Overall the number of sexable specimens is very small and the dental evidence for age at death is highly fragmentary.

The patterns of mortality are only discussed for the two commonest species – sheep and cattle. Because so much of the mandibular material consists of loose teeth, analysis of butchery, gnawing, etc is restricted here to postcranial material.

Retrieval

All the bones were retrieved with a 5mm mesh sieve. As a result, recovery of larger mammal remains is excellent with even loose neonatal epiphyses and carpal bones of sheep have regularly been recovered. The method of excavation, outlined in Chapter 9, resulted in only partial excavation of most features. Caution must be exercised, therefore, in interpreting the absence of particular body parts in deposits which seem to contain substantial parts of individual carcasses.

Post-depositional destruction

Although the assemblages are highly fragmented and contain a high proportion of very vulnerable neonatal material, there is no sign of serious post-depositional damage to bone surfaces.

A few specimens exhibit surfaces suggesting abrasion by blown sand, but the main source of depositional destruction is gnawing and, to a lesser extent, digestion by carnivores. 11% of postcranial material at Baleshare, and 20% in the smaller assemblage from Hornish Point is affected in this way. The primary agents of this destruction are presumably domestic dogs, although actual remains are scarce on the sites (Tables 10 & 11). The pattern of destruction to be expected of dogs is complex and depends on such factors as the age and hunger of the dog (Payne & Munson 1985), the age, sex, season of death and the prior treatment by man of the carcass/skeleton in question (Binford & Bertram 1977). Nonetheless, in the larger assemblage from Baleshare, the frequency of different body parts of sheep is broadly comparable with that reported from two modern Navajo cases where complete sheep were fed to dogs (Binford & Bertram 1977, 100 & Table 3.5). Both at Baleshare and in the Navajo case (averaging the results from the winter and summer sites), the mandible is the most commonly represented element,

Block	Sheep	Cow	Pig	Dog	Seal	Otter	Red Deer	Total
1	3	14	-	-	-	-	-	17
2	7	1	2	-	-	-	-	10
5	25	15	3	-	-	-	3	46
6	30	12	6	-	-	-	-	48
7	-	3	2	-	-	-	-	5
8	3	1	-	-	-	-	-	4
9	2	-	1	-	-	-	-	3
10	5	3	-	-	-	-	-	8
11	1	-	2	-	-	-	-	3
12	12	6	9	-	-	-	-	27
13	10	5	4	-	-	-	-	19
15	8	11	1	-	-	-	-	20
17	12	8	5	-	-	-	-	25
18	11	15	5	2	-	-	1	34
19	30	18	7	1	-	-	-	56
20	76	3	2	-	-	-	-	81
22	5	3	1	-	-	-	-	9
23	1	1	2	-	-	-	-	4
26	6	4	1	-	-	-	-	11
27	9	-	-	-	-	-	-	9
28	3	-	-	-	-	-	-	3
32	1	-	-	-	-	-	-	1
Totals	260	123	53	3	-	-	4	443
	59%	28%	12%	1%	-	-	1%	

Table 11. Hornish Point. Minimum numbers of identified anatomical units

while the phalanges are particularly scarce. The most common postcranial elements include distal humerus, proximal radius, pelvis and distal tibia in both cases, proximal tibia, proximal and distal metacarpal at Baleshare only, and scapula in the Navajo case only. Much of the variability in the frequency of body parts therefore, at least among the Baleshare sheep, may be attributed to destruction by dogs. The observed differences may simply be a product of small sample size or incompatible methodology.

Discard

The circumstances surrounding the discarding of bone at Baleshare and Hornish Point can be clarified in a few cases. The most striking case is that of the remains of two cattle and two sheep found in pits [138, 178 & 481] at Hornish Point (see description for Block 18). The carcasses of these animals had been exploited for their skins, meat and marrow, before their dismembered and, in the case of cattle, splintered, bones were collected and buried. Two other forms of apparently deliberate burial are the 'butchery waste' (feet, or heads and feet, of sheep) at Hornish Point in [465] (see description for Block 27), [314] and [413] (see description for Block 20), and the neonatal calf and lambs at Baleshare in [098] (see description for Block 7) and [126] (see description for Block 11) and Hornish Point [314] (Block 20). In each case, two things point to deliberate, or at least rapid, burial. Firstly, several elements apparently derived from the same limb or carcass have remained in association. Secondly, the incidence of gnawing is extremely low, occurring on average in only 3% of post-cranial material in these deposits compared with 14% in the remainder of the two assemblages. The incidence of whole bones is also very high with an average of 81% compared with only 24% for the remainder of the two assemblages.

One small group of specimens should also be noted. Among the loose deciduous teeth from Baleshare, there are five mandibular d4s (three of cow, two of sheep) with roots indicating that they had been shed naturally (Table 12). The cow specimens are from [21] (Block 5), [270] (Block 23) and [40] (Block 24); the sheep specimens are from [52] and (diagnosis uncertain) [57] (Block 2). Blocks 2, 5 and 24 are described as middens or dumps and so these finds perhaps hint that these deposits included stall manure as any deciduous teeth shed in the byre would have become mixed in with manure and bedding material and so could have been incorporated into midden deposits during mucking out. The cattle tooth from Block 23 was found in 'windblown sand' and so could perhaps have been shed *in situ* by a grazing beast. Alternatively, the anthropogenic items and the loose tooth in this deposit may reflect the admixture of midden material during a brief cultivation episode.

The circumstances of the deposition of the remaining material are less clear. The proportion of the identifiable material bearing unambiguous signs of carnivore gnawing or digestion, 14% (above) is certainly an underestimate, not least because gnawed bone is much less likely to be identifiable. The proportion of the assemblage, excluding the deposits with deliberately buried material, displaying clear signs of human action in the form of cut marks (5%) and burning (16%) is also low. Burnt bone is less likely to survive and be identifiable than unburnt while cut marks are not always made during butchery and may only be discernible on well preserved bone surfaces. This last point is reinforced by the high frequency of cut marks among the unusually well

a) Sheep

d4	Baleshare		Hornish Pt	M3	Baleshare	Hornish Pt
0		**3	–	0	–	–
2A		1	–	2A	2	–
5A		1	–	4A	–	–
8L		1	–	5A	–	1
13L		4	–	6G	1	–
14L		8	–	7G	3	–
16L		11	6	8G	1	1
17L		3	1	9G	1	1
18L		–	–	10G	1	1
20L		–	–	11G	9	1
22L	(1)	–	–	12G	–	–
23L	(2)	–	–	13H	–	–
Total	**(35)**	**33**	**7**		**18**	**5**

b) Cattle

d4	Baleshare		Hornish Pt	M3	Baleshare	Hornish Pt
a		7	3	a	–	–
b		**18	3	b	–	–
c		2	–	c	–	–
d/e		1	–	d	1	–
f/g		3	–	e	–	–
j		4	–	f	–	–
k		–	***2	g	4	–
l		–	–	j	3	–
n	(2)	–	–	k	1	2
>n		1	–	>m	–	–
Total	**(38)**	**36**	**8**		**9**	**2**

Table 12. Baleshare & Hornish Point. Age at death – wear of mandibular d4 and M3

preserved material in the deliberately buried deposits (19% – in spite of the large proportion of unbutchered neonatal remains). There is no reason, therefore, to doubt that most of these two assemblages were initially discarded by man, after the removal of skins, meat and perhaps, to judge from their highly fragmented state, marrow. The major exception to this concerns the large proportion of neonatal bones (cattle 36%, sheep 9%), which would not have survived gnawing by dogs and so perhaps represent further (unrecognised or disturbed) deliberate burials.

11.2.3 The assemblages

Species composition

In terms of minimum numbers of identified anatomical units, sheep predominate (59% at both Baleshare and Hornish Point), followed by cattle (34% and 28% respectively) and then pigs (6% and 12%). The remaining large mammals (dog, red deer, common seal and otter) together constitute less than 2% of each assemblage (Tables 10 & 11). Given the small size of the assemblages particularly from Hornish Point, no significance can be attached to the minor differences between the two sites, nor can chronological change within either site be investigated.

Age and sex structure of cattle and sheep

For both cattle and sheep, dental evidence suggests a bimodal pattern of mortality (Table 12). At Baleshare, the first mortality peak of cattle spans the eruption and early wear of mandibular d4: 28 out of 36 unshed teeth are less worn than stage *f/g* and so probably come from calves in just the first few weeks of life (Serjeantson nd). Two of the three heavily worn d4s were apparently shed and so probably do not indicate deaths in the period just before P4 erupted (at *circa* 2.5-3 yrs – Grigson 1982). The second and smaller peak is represented by M3s in an advanced stage of wear. These latter teeth cannot reliably be assigned an age in years, but they represent animals of breeding and/or working age. The smaller sample from Hornish Point is compatible with that from Baleshare, except that a pair of mandibles from the unusual 'funerary feast' deposit in Block 18 context 138 falls between the two main peaks of mortality, (d4s late in wear stage *K*).

For sheep, the first mortality peak occurs slightly later. Although a few unworn or lightly worn d4s attest to neonatal deaths, most d4s are in an advanced state of wear: 22 out of 33 unshed specimens from Baleshare fall between wear stages *14L* and *17L*, and 11 of these fall in stage *16L*. The rate of tooth wear is more variable than the rate of tooth eruption, so the first mortality peak for sheep is more difficult to age in absolute terms than the corresponding peak for cattle. Fortu-

	Baleshare		Hornish Point		
a) Sheep					
age stage	neonatal*	older*	neonatal*	older*	% dead
new born	135	816	41	210	15%
	(90)	(771)	(6)	(111)	(9%)
	unfused**	fused**	unfused**	fused**	% dead***
6-10 months	24	66	4	19	25 (36)
13-28 months	92	74	24	27	54 (61)
30-36 months	48	22	10	3	70 (75)
36-42 months	58	13	14	7	78 (81)
b) Cattle					
age stage	neonatal*	older*	neonatal*	older	% dead
newborn	194	291	41	109	37
	(178)	(264)	(41)	(60)	36
	unfused**	fused**	unfused**	fused**	% dead***
7-10 months	2	2	2	2	-
12-18 months	27	40	23	10	50 (69)
24-36 months	9	14	7	4	47 (67)
36-48 months	22	9	7	2	73 (83)

*Table 13. Baleshare & Hornish Point. Age at death – postcranial evidence. Key: * = minimum numbers of anatomical units – all identified postcranial elements (totals excluding recognised neonatal burial s in parentheses). ** = minimum numbers of anatomical units – sheep: 6–10 months, scapula, dist humerus, prox. radius, pelvis (acetab): 13–28 months, distal tibia, distal metacarpal/tarsal, prox. phalanx 1–2: 30–36 months, prox. ulna, prox. femur, calcaneum: 36–42 months, prox. humerus, distal radius, distal femur, prox. tibia: cow 7–10 months, scapula, pelvis (acetab): 12–18 months, distal humerus, prox. radius, prox phalanx 1–2: 24–36 months, distal tibia, distal metacarpal/tarsal: 36–48 months, prox. humerus, distal radius, prox. ulna, prox. & dist. femur, prox. tibia, calcaneum. *** excluding neonatal mortality (figures in parentheses adjusted to allow for neonatal mortality of 15% [sheep] and 37% [cattle])*

nately, four of the d4s from stage *16L* are associated in mandible fragments with M1 (once at wear stage *2A* and three times at *7A*) and M2 (once in the earliest stage of eruption). (A fifth d4 at the heavily worn stage *23L* is associated with M1 at *9A* and M2 at *5A*). In other words, the first peak of sheep mortality falls around the time when M1 is in early wear and M2 is just beginning to erupt, ie probably at a little under one year of age. The second peak of sheep mortality is again represented by M3s in an advanced stage of wear, suggesting animals of breeding age. In fact this peak may be rather clearer than is suggested by Table 12, as several M3s have a distinctive 'flaw' in the enamel which may cause age to be underestimated on the recording system used here. Again, the smaller sample from Hornish Point is compatible with its larger counterpart from Baleshare.

Epiphyseal fusion is a notoriously problematic source of evidence for reconstructing mortality patterns (Chapter 4), but the postcranial material from Baleshare and Hornish Point offers a useful check on the dental evidence (Table 13). The neonatal category accounts for 37% of cattle and 15% of sheep postcranial elements, excluding the recognised burial deposits (see descriptions for Baleshare Blocks 7 and 11, Hornish Point Blocks 18, 20 and 27). Thereafter epiphyseal fusion suggests a more or less even division of mortality between the first 1-1.5 years (cattle) or 1-2 years of life (sheep) and 2-4 years or later. The timing of the younger deaths is unclear, but they may well correspond with the early first year mortality of cattle and late first year mortality of sheep indicated by the dental evidence.

The results of the two lines of evidence are fairly clear and mutually consistent. For both sheep and cattle, a small number of animals was kept to an advanced age suitable for breeding or in the case of cattle, traction. Of younger cattle deaths, the majority fell in the first few weeks of life and a minority a little later. The first peak of sheep mortality, on the other hand, fell in the latter part of the first year.

A few sexed pelves with fused acetabulum provide the only evidence for the sex structure of sheep and cattle (Table 14). As the reported fusion age for the acetabulum of sheep is 6–10 months, this limited evidence suggests that a majority of the sheep dying in their first year were males, while those surviving to a greater age were mostly females.

Carcass utilisation

The proportions of the assemblages bearing signs of human intervention, principally cut marks and burning, have already been noted. The frequency of cut marks is the same for cattle and sheep bones (5%), but sheep bones are more commonly burnt (19%) than cattle bones (8%). Large animals tend to be more thoroughly dismembered and filleted before cooking than smaller animals. The burning of the sheep bones could have been caused by the cooking of joints on the bone and probably more likely, by throwing the bones into the hearth after meals. Most of the cut marks observed appear to have

	Baleshare		Hornish Point	
	Female	Male	Female	Male
Sheep	15	5	8	-
Cattle	2	1	1	-

Table 14. Baleshare & Hornish Point. Sex structure of cattle and sheep

been made with a knife, a few with apparently a heavier cleaver. All marks are compatible with sharp, metal tools.

Metrical data
Standard measurements were taken, but the small size and fragmented state of these two assemblages prevent useful discussion of the size of the animals represented.

11.2.4 Addressing the research questions

i) The nature of the midden deposits at Baleshare and Hornish Point
A few deposits appear to be deliberate burials of new born animals, of butchery waste and perhaps in one case, of the remains of a 'funerary feast'. Most deposits contain animal bone, usually including specimens with traces of human activity, eg cut marks, burning and canine, eg gnawing, activity. In other words, most deposits include domestic refuse, much of which has at some stage been discarded in a location accessible to dogs. Unfortunately, domestic refuse partly gnawed by dogs might equally be expected in habitation contexts, in domestic rubbish dumps, in farmyard middens and in 'middened' cultivation horizons. Indeed if occupation sites were quarried for fertiliser or even selected for cultivation *in situ*, there may be no clear distinction between these different types of midden/site. Deposits classified on archaeological grounds as 'midden', 'cultivation' and 'windblown sand' deposits contain very similar proportions of gnawed, burnt, cut, complete and newborn bones and a very similar ratio of cow to sheep bones. Recognisable 'features' (buildings, pits, etc) are distinguished by more cut and complete bones, more sheep phalanges and fewer burnt bones; all characteristics of the 'burials' which dominate these features. The incidence of complete and recognisable cut bones would probably decrease, however, if these deposits were reworked through middening.

All this is consistent with the archaeological identification of the Baleshare and Hornish Point sites as a mixture of true middens, middened cultivation horizons and occupation deposits subject to reworking or *in situ* cultivation. The bone component of these deposits would have contributed phosphate to arable land, while horn, hoof and blood would have added nitrogen (FMA 1981). Finally, a few naturally shed deciduous teeth may hint that the middens contained stall manure, the greatest potential contribution of livestock to soil fertility.

ii) The relative importance of wild and farmyard animals
The mammal bone assemblages are overwhelmingly dominated by domestic sheep, cattle and pigs, and the paucity of remains of wild mammals is most unlikely to be an artefact of taphonomic bias. Red deer specimens include a range of postcranial elements as well as antler, but the sample is far too small to determine whether these represent a red deer population living on the islands or just the occasional skin, joint of meat and antler brought from the mainland or one of the inner islands.

iii) Butchery practice and social hierarchy
The concentration of cattle mortality in the very young and old age groups – a far from 'gourmet' strategy of husbandry – is consistent with, though hardly indicative of low status. At Hornish Point Block 18, two cattle were, exceptionally, slaughtered at an intermediate, prime meat bearing age and their association with an unusual funerary deposit is both striking and significant. The apparent rarity of either sheep or cattle of breeding age suggests limited demographic potential for producing further animals of prime meat age for export to settlements of higher status. Much of the observed variation in the abundance of different anatomical units is explicable in terms of attrition by dogs. Detailed consideration of selective human usage of particular body parts would require substantially larger assemblages. Above all, investigation of the relationship between social status, on the one hand, and butchery practices and the exchange of animals, on the other, needs comparable assemblages from other levels in the settlement hierarchy.

Plate 32. Sheep mandible showing a heavy development of calculus

iv) Mineral deficiency of the machair
No pathological conditions were observed which can be attributed to the copper or cobalt deficiency of the machair. A possible hint of different dietary problems in the local herbivore populations comes from an adult sheep mandible from Hornish Point Block 1, in which heavy development of calculus has obscured the occlusal surface of P2, while P4 and M1 have been subject to abnormally heavy wear (Plate 32). This condition is common in severe form in modern sheep feeding on seaweed along the shoreline in North Ronaldsay and has tentatively been related to this specialised diet (Baker & Britt 1984). Seaweed was apparently introduced to the Baleshare and Hornish Point sites, possibly as fodder (Thew *infra*).

v) The nature of local animal husbandry
Despite the small size of the samples the type of husbandry practices can clearly be identified. Evaluation of the abundance of neonatal remains is complicated by differences in the treatment of neonatal and older carcasses, with the former perhaps more likely to be preserved by rapid burial. Significantly, however, the abundance of neonatal cattle remains is matched by the scarcity of evidence for juvenile deaths. Conversely, the relative paucity of neonatal sheep remains is offset by abundant evidence of mortality among juvenile sheep. Since the sites of Baleshare and Hornish Point include domestic rubbish dumps and 'middened' cultivation horizons, as well as burials, it seems unlikely that any age group is entirely unrepresented because of discard practices. The abundance of neonatal cattle remains

is unlikely, therefore, simply to reflect natural infant mortality exaggerated by taphonomic factors.

Such a severe cull of very young calves is characteristic of a specialised dairy economy (Legge 1981; Payne 1973). Young sheep were apparently raised for their meat and killed off towards the end of the first year. Whether this occurred in autumn, to coincide with the end of the summer flush of grazing, or during the course of winter, to compensate for lower or non-existent milk yields from the cattle, cannot as yet be determined. The predominance of females over males suggests that breeding rather than wool production was the principal role of adult sheep. In the later assemblage from the Udal, North Uist, the ratio of sheep to cattle is *circa* 3:1 to 4:1 (Serjeantson nd), compared with only 2:1 at Baleshare and Hornish Point, which is possibly related to the documented importance of woollen textiles in historical times. Sheep may also have been prized as providers of manure. This same combination of cattle raised under a high input, high output, high risk dairy strategy and of sheep raised under a low input, low output, low risk meat strategy also characterises the later assemblage from the Udal.

Together the young cow and sheep deaths document occupation at Baleshare and Hornish Point at least during spring and during autumn or winter.

vi) The potential for more detailed reconstruction of anima l husbandry

A broad outline of the animal economy can be provided if the entire assemblages from Baleshare and Hornish Point are pooled. To provide a similar level of information for each site or for individual periods with either site, commensurately larger assemblages would be needed (see Mulville 1999 for Dun Vulan). Even taking the existing assemblages together, the degree of resolution in economic reconstruction is limited. Far larger assemblages would be required for detailed mortality profiles with reliable sex ratios, particularly in the case of cattle. Similarly a useful sample of pathological observations on dietary deficiencies or possibly on the use of cattle for traction, would demand a massive increase in the size of assemblage. Larger assemblages, from a much larger number of contexts of different types, would also allow more detailed reconstruction of bone discard and deposition pathways with advantages both for the reliability of inferences about animal husbandry and for the understanding of middening practices and the use of animal products in maintaining soil fertility in the arable sector. In this latter context, investigation of recent middens could also be very instructive.

As noted earlier with reference to question *iii*, a major priority is to acquire bone assemblages from other categories of site. Indeed the most profitable strategy, in terms of costs and benefits, may be to extract faunal assemblages, comparable in size and quality to that from Baleshare, from a series of sites of varying date, location and presumed hierarchical status.

vii) The appropriateness of the recovery techniques

Present recovery techniques are excellent for the larger mammals and indeed the mesh size could be increased somewhat without loss of information if this significantly speeded up recovery. Sample sieving to a finer mesh size would be necessary for recovery of small mammal (and also of fish and bird) bones and might clarify some biogeographical issues concerning the rodent fauna of the Outer Hebrides (Berry 1979).

11.3 FISH REMAINS FROM BALESHARE AND HORNISH POINT

A K J Jones (1987)

11.3.1 Introduction

A total of 140 fish bones was recovered, together with the animal bone from deposits excavated at Baleshare, while 111 were recovered from the site at Hornish Point. Most were large bones of fish of a metre or longer in length. Many of the fish remains were broken fragments of robust bones (eg the distal portion the premaxilla and the centra of vertebrae) suggesting that the more fragile elements had not survived the passage of time and the excavation procedures. Despite the fragmentary nature of the remains, relatively few of the bones (fifteen from Baleshare, eleven from Hornish Point) were unidentifiable. However, it has not proved possible to assign all the identified remains to species, some were attributed to family, or broader taxonomic group.

Because 5 mm aperture meshes were used in the sieves to recover the bulk of the fish remains, it is very likely that remains of several species of small-boned fishes, which were present in the deposits at the time of excavation, passed through the sieves and were lost. Nevertheless, the assemblages are composed of the remains of a great diversity of fishes, ranging from large sharks, large gadoids (the bulk of the remains), wrasse, mackerel and several kinds of flatfishes. (Fish remains from wet-sieving and flotation not analysed but remain available in the archived material).

Table 15 is a summary of the data showing the numbers of identifiable remains for each taxon present in the two assemblages. Catalogues of the fish bones are presented in Tables 16 and 17.

11.3.2 Discussion

All the fish represented in the deposits were marine species and illustrate the diversity of fishes exploited during the period of occupation. Bones of gadoids, (hake, cod, saithe, pollock and ling) comprise 75% of the identified remains from Baleshare and almost all the identifiable remains from Hornish Point. Other species of gadids were restricted in their distribution. Ling, for example, was present in a single layer at Baleshare, the midden of Block 16.

Hake is a fish which was, and still is, subject to considerable variation in abundance. Hickling (1935, 62), reviewing records of the hake fishery reaching back to 1746 AD concludes that '...long before the amount of fishing carried on was enough to matter, there were variations in the abundance of hake, since bad years as well as good years were reported...'. Thus short-time scale variations in the abundance of hake may help to explain why hake were common at one site, but were less abundant at the other. Cod, on the other hand, is less susceptible to fluctuations in abundance.

Remains of sharks were restricted to the lower levels at Baleshare, none being found above Block 16, nor at Hornish Point. External features on the centra suggest that the majority of mineralised vertebral centra were from the tope, *Galeorhinus galeus*, a determination confirmed by X-radiography. All shark remains were large mineralised

	Latin name	Common name	Baleshare	Hornish Point
1	*Elasmobranchii*	Shark	2	0
2	*Galeorhinus galeus*	Tope	5	0
3	*Squatina aquatina*	Angel Shark	1	0
4	*Merluccius merluccius*	Hake	52	2
5	*Gadus Morhua*	Cod	29	72
6	*Pollachius pollachius*	Pollack	4	0
7	*P.virens*	Saithe	1	7
8	*Molva cf molva*	Ling	9	1
9	*Gadoid*	Hake or Gadidae	10	17
10	*Labrus bergylta*	Ballan wrasse	1	0
11	*Scomber scombrus*	Mackerel	1	0
12	*Pleuronectidae*	Flatfish	4	1
13	*Pleuronectidae Platessa*	Plaice	3	0
14	*?Hippoglossoides platessoides*	?Long rough dab	1	0
15	*Hippoglosoides bothidae*	Left-eyed flatfish	2	0
		Unidentified	15	11
		Total	140	111

Table 15. Baleshare & Hornish Point. Fish species present

Species*	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**UnID**
Block																
1				**22**	**5, 6, 13, 21**	**4, 21 (3)**				**23, (5), ?**	**14**			**3**		
U (3)																
5				**21 (2)**												
6				**21, 22**					**2**		**1**		**3**			**U**
9				**21 (8)**	**4, 6**		**22**									**U**
11				**22**												**24**
14									**25, 1**			**21**				
15		**24 (2)**			**1, 22 (2)**				**2**			**28**				
16		**24**		**5, 21 (28), 24 (12), 22**		**6, 21 (3), 24 (8)**					**22 (9)**	**22**				
	17												**28 (3)**			
18		**24(2)**			**22**			**22**	**3**						**23**	
20	**24**				**21**				**15**							
22			**24**													
23					**12**											
24					**7, 21**								**18**			
25				**4**	**21**				**14**					**19**		**U (2)**

Table 16. Baleshare. Catalogue of fish bones (for species see Table 16). Key: 1= Parasphenoid; 2 = Basioccipital; 3 = Vomer; 4 = Dentary; 5 = Articular; 6 = maxilla & premaxilla; 7 = Quadrate; 8 = super-cleithrum; 9 = Cleithrum frag; 10=inter-operculum; 11 = Subopercular; 12 = Post-temporal; 13 = Ceratohyal; 14 = Pharynageal; 15 = Brachial; 16 = Palatine; 17 = Squamosal; 18 = Urohyal; 19 = Anal pterygihore; 20 = First vertebra; 21 = Precaudal vertebra; 22 = Caudal vertebra; 23 = Vertebral centra; 24 = Vertebrae; 25 = Vertebral spine; U = unid*

vertebral centra of 10 mm width. One other species of cartilaginous fish was identified, the angel shark, *Squatina squatina*. Two shark centra could not be assigned to species. Large sharks rarely occur in substantial numbers in British waters. The distribution of shark vertebrae (present at Baleshare but absent at Hornish Point) is difficult to explain, and probably is related to factors which have been obscured by the passage of time. (Of course, it is possible that people at Baleshare liked to catch and eat sharks, while those at Hornish Point did not!) However, scavengers and other natural agents may have influenced the material which has survived at the two sites.

While the bulk of the fish remains were from large individuals, mainly of the cod family or hake, a small number of remains from smaller fish were present. Sieving to 5 mm produced bones of mackerel, at least one medium sized gadid, and several species of flatfish, while flotation yielded three bones of small (less than 20 cm total length) gadids, probably saithe, *Pollachius virens*.

Signs of butchery were restricted to a single cod maxilla from Hornish Point which bore a shallow knife mark on its aboral face.

All the species recovered from the site are found today in the waters around North Uist. While there is no direct evi-

Species*	4	5	6	7	8	9	12	UnID
Block								
1	4	1 (2), 2, 3 (2), 4, 5, 6 (2), 12, 22 (12)						U (11)
2								U (1) ?
5				22				U (3)
6		1, 2	21		8			U (2)
12	21							
13								15
15								U
17				10, 22				
18		6, 7, 11, 21 (7), 24						
19		12, 21 (3)		4, 6, 10, 24		24		U (4)
22		21						
27							22	
28		1, 2 (2), 3, 5, 10, 16, 17, 21 (9), 24 (15)						

Table 17. Hornish Point. Catalogue of fish bones (for species see Table 16). Key: 1 = Parasphenoid; 2 = Basioccipital; 3 = Vomer; 4 = Dentary; 5 = Articular; 6 = maxilla & premaxilla; 7 = Quadrate; 8 = super-cleithrum; 9 = Cleithrum frag; 10=inter-operculum; 11 = Subopercular; 12 = Post-temporal; 13 = Ceratohyal; 14 = Pharynageal; 15 = Brachial; 16 = Palatine; 17 = Squamosal; 18 = Urohyal; 19 = Anal pterygihore; 20 = First vertebra; 21 = Precaudal vertebra; 22 = Caudal vertebra; 23 = Vertebral centra; 24 = Vertebrae; 25 = Vertebral spine; U = unid*

dence for the fishing methods used to capture the fishes all species can be caught using lines bearing baited hooks. Very small saithe can also be caught using hooks of the appropriate size, but it is traditional to catch these small shoaling fish when they come close inshore during the late summer and autumn by using handnets operated from the shore or from boats (Baldwin 1982). Hand-lines and hand-nets were surely available to the sites' inhabitants.

This report shows that remains of a large number of different kinds of fishes occur in the deposits at the two sites. There is good reason to believe that further species will be recovered if sufficient samples of selected deposits (for example, floor deposits, pit fills and midden layers) are sieved on 1 mm meshes. However, the quantities of fish remains recovered so far may indicate that fish remains are not particularly abundant in the deposits.

Recent experimental work by Payne and Munson (1985), Jones (1986) and others has clearly demonstrated that bones, particularly fish bones, are very vulnerable to taphonomic loss caused by scavengers and other agents. By considering the elements recorded in Tables 16 and 17 it is clear that the bones so far identified from the sites are robust elements of the species present. This evidence suggests that very large numbers of fragile elements have been lost from the deposits. Indeed, it is possible that some species which were exploited by the Late Bronze Age and Early Iron Age populations of North Uist have left no detectable trace.

Thus it is possible that the deposits now contain so few fish remains that archaeologists will never be confident that representative samples of the fish originally deposited at the site are recovered. Consequently detailed questions concerning the nature of fish exploitation at the sites may continue to go unanswered. Nevertheless, the results of this trial work are most encouraging and it is to be hoped that a sampling strategy involving the use of 1 mm sieving will be executed during future excavations.

11.4 BIRD BONES FROM BALESHARE AND HORNISH POINT

D Serjeantson (1987)

11.4.1 Baleshare

Approximately ninety bird bones were recovered from the excavation at Baleshare, of which sixty-one were identified to species (Table 18). Vertebrae, ribs, phalanges and small undiagnostic fragments were not identified. The identification of some of the incomplete bones is not certain; this is indicated in the table below. The twenty-four bones of the fulmar are from one bird. They were found in the backfill between passage walls (Block 7). Today fulmars use stubs of walls for nesting, so the possibility must be considered that this bird used the site at a time when the settlement was abandoned, and died there. There is no reason however to doubt that most of the other species would have been brought to the site by the inhabitants. There is firm evidence for human activity in the case of the ulna of the great auk found in the midden (Block 24), which has a short butchery cutmark across the olecranon process (Figure 79c). Among the birds present are a number of waterfowl and waders as well as seabirds. Today the waterlogged backswamps of the machair dune system on the west Uist coast are important wetlands, and the waterfowl among the bones indicate that this habitat was present in prehistoric times. The seabirds are (or were) species which bred round the coast in late spring and early summer. Others such as the whooper swan today are winter visitors (Hopkins & Coxon 1979).

Two extinct birds are represented among the bones recovered, the great auk and a crane. A distal tibia (Plate 33) from the midden (Block 16) is similar to, but larger than, the common crane. It is probably from the north-west palaearctic crane (Milne-Edwards 1856), a large extinct crane which was described by Harrison and Crowles (1977). Other bones of this crane have been found at Glastonbury and in late Bronze Age or early Iron Age levels in the Kings Cave, Jura (Mercer 1978). The great auk is a common find at prehistoric coastal

Species		SC	HU	RA	UL	CO	FU	FE	TT	CM	TM	SY	AC	MN	PH	VT	Total
Latin name	**Common name**																
Fulmarus glacialis	*Fulmar*	*1*	*2*	*1*	*2*	*2*		*2*	*2*	*2*	*2*	*1*	*2*	*2*	*1*	*2*	*24*
Puffinus puffinus	*Manx shearwater*		*1*														*1*
Sula bassana	*Gannet*		*1*					*1*									*2*
Phalacrocorax carbo	*Cormorant*								*1*								*1*
Anser anser	*Greylag goose*	*1*															*1*
Cygnus cygnus	*Whooper swan*						*1*										*1*
Anas platyhrhynchos	*Mallard*								*1*								*1*
Anas cf penelope	*?Wigeon*																*1*
Melanitta nigra	*Common scoter*										*1*						*1*
Grus primigenia	*Crane*								*1*								*1*
Tringa cf nebularia	*?Greenshank*							*2*									*2*
Tringa cf totanus	*?Redshank*		*1*		*1*												*2*
Calidris alpina	*Dunlin*					*1*											*1*
Larus sp.	*Gull ?herring*								*1*								*1*
Alca impennis	*Great auk*				*1*				*1*	*1*						*2*	*5*
Uria aalge	*Guillemot*						*1*		*1*	*1*							*3*
Fratercula artica	*Puffin*		*1*							*1J*							*2*

Table 18. Baleshare. Bird species present. Key: SC = Scapula; TT = Tibiotarsus; HU = Humerus; CM = Carpometacarpus; RA = Radius; TM = Tarsometatarsus; UL = Ulna; SY = Synsacrum; CO = Coracoid; AC = Acetabulum; FU = Furculum; MN = Mandible; VT = Vertebra; PH = Phalanx; FE = Femur

sites around the north and west of Scotland and the small offshore islands are characteristic of the type of location in which it used to breed.

The number of different species identified (19) is high in relation to the number of bones identified. This is a typical feature of assemblages of bird bones from archaeological sites in the Northern and Western Isles (Serjeantson 1988). It does suggest that wild fowl were a casual rather than a major resource.

11.4.2 Hornish Point

Twelve bird bones from six species were identified (Table 19). The humerus identified as crow or rook is likely to be from a hooded crow as North Uist today is beyond the range of the rook. Most interesting are two bones of the great auk, both with cut marks. A coracoid from the midden was chopped or heavily cut in two directions above the area of articulation with the sternum, and a further three superficial parallel cuts on the bone show where preliminary attempts were made (Figure 79a). A distal tibia from Block 13 has cuts across the lateral and medial ridges (Figure 79b). Four bones of a mallard found together in the post-medieval structure (Block 20) are from a complete discarded wing. There is a cutmark where the wing was disarticulated on the proximal humerus.

Species		HU	RA	UL	CO	TT	CM	TM	Total
Latin name	**Common name**								
Puffinus puffinus	*Manx shearwater*	*1*			*1*				*2*
Anas platyrhynchos	*Mallard*	*1*	*1*	*1*			*1*	*1*	*5*
Alca impennis	*Great auk*				*1*	*11*			*2*
Turdus sp	*Thrush/redwing?*	*1*							*1*
Corvus corax	*Raven*	*1*							*1*
Corvus sp	*Crow?rook*	*1*							*1*
	Unidentified								9

Table 19. Hornish Point. Bird species present. Key: SC = Scapula; TT = Tibiotarsus; HU = Humerus; CM = Carpometacarpus; RA = Radius; TM = Tarsometatarsus; UL = Ulna; SY = Synsacrum; CO = Coracoid; AC = Acetabulum; FU = Furculum; MN = Mandible; VT = Vertebra; PH = Phalanx; FE = Femur

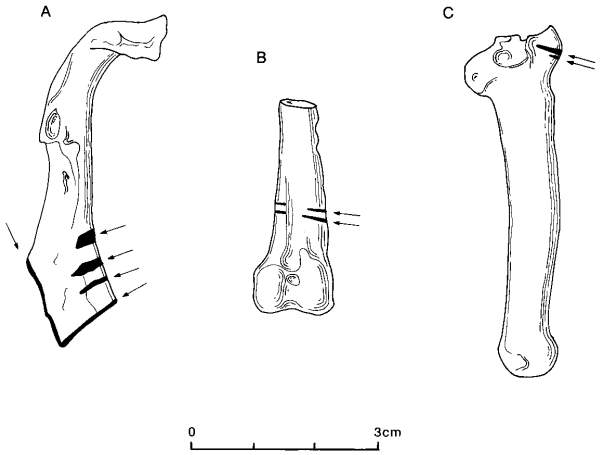

Figure 79. Butchery marks on bird bones from Baleshare and Hornish Point. a) Hornish Point; sternum of great auk. b) Hornish Point; distal tibia of great auk. c) Baleshare; ulna of great auk

Plate 33. Baleshare. Distal tibia of extinct crane species from Block 16