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Ancient Monuments Laboratory
Report 52/88

THE BIRD BONES FROM EXCAVATIONS IN CHURCH CLOSE, HARTLEPOOL, CLEVELAND. 1984 AND 1985.

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Summary

Bird bones obtained by hand collection and from a limited number of sieved samples from the Church Close site, Hartlepool in 1984 and 1985 were identified. The majority of the bones were from Saxon and medieval buildings and associated features. Smaller amounts were recovered from pits which may have been of prehistoric date, from early medieval deposits (both pre- and post-conquest), and from late medieval garden soils. Domestic fowl and goose were the predominant species, with goose probably being of the greater economic importance. Several species of sea-bird are represented in assemblages from the early medieval pre-conquest period onwards. It is suggested that most of these could have been caught during fishing trips and that this implies that longer voyages into the open sea were being made during this period. This is corroborated by the evidence from the fish bones from the site.

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Introduction

The Church Close site in Hartlepool was excavated in 1984 and 1985. The earliest remains were pits which may have been prehistoric (possibly Iron Age). A number of Saxon buildings and other features associated with the monastery of St Hilda and dated to the mid 7th - 8th century were excavated. Early medieval deposits consisted of pre-conquest garden soil and silt, and post-medieval cultivation levels and a ditch. Medieval buildings and associated alleyways, pits and ploughsoils, and some later medieval garden soils were also excavated.

Bird bones were recovered mainly by hand but some deposits were sieved to improve recovery of smaller elements. Much of the bone was fragmentary, abraded and rather crumbly. Some had obviously broken into several pieces after excavation. Many bones also showed root damage which made detection of knife marks difficult, and some had been gnawed by rodents.

In all, a total of 1059 bird bones were examined. Of these, 519 fragments (49%) had been collected by hand, the remainder by sieving. Virtually all of the hand collected bone but only 68% of the sieved material was identifiable. The site was excavated in three areas. Area A produced the largest amount of bird bone. Only two fragments were recovered from Area C. A full list of the species recorded from the site as a whole is given in Table 1.

Whenever possible, bones of geese and domestic fowl were measured following the system of von den Driesch (1976). Data obtained is in possession of the author and a copy has been deposited with the Ancient Monuments Laboratory, H.B.M.C..

The bird assemblages

The ?prehistoric pits

A total of 178 bird bones were recovered from these features. Most were obtained from the two sieved samples which were taken, and 47% of the fragments (mainly pieces of vertebrae and ribs) were unidentifiable. A virtually complete skeleton (43 bones) of a female sparrowhawk (Accipiter nisus) was obtained from the fill of pit 2089. Eleven bones attributed to rock or stock dove (Columba livia or oenas), or possibly domestic dove, came from two birds. A tibiotarsus of a wood pigeon (Columba palumbus) with knife marks on the distal articulations and a single bone of a small Passerine species were also present.

The few goose bones were all comparable in size with domestic birds but could have belonged to either greylag (Anser anser) or bean goose (Anser fabalis). Shaft breadth measurements of the tarso-metatarsus appear to be relatively reliable for separating domestic and wild geese (Bramwell, 1977; Allison, 1985a), but none were present. Knife marks were possibly present

on the proximal end of a goose humerus. At least three domestic fowls (Gallus gallus) were represented, probably a cock and two hens. Two fowl bones were from birds under about 5 months of age.

Saxon buildings and associated features, mid 7th - 8th century

A greater number of bones (611) were recovered from Saxon deposits, including 319 from sieved samples. Fifteen percent were unidentifiable. Domestic goose and fowl were represented by the greatest numbers of fragments. Several of the goose and fowl tibiotarsi had knife marks on the distal articulations. The proximal articulation of a goose humerus and a goose coracoid also had knife marks. Twenty eight bones of 2 starlings (Sturnus vulgaris) were present, and house sparrow (Passer domesticus), woodcock (Scolopax rusticola), and rock/stock or domestic dove were also represented. A number of bones of wild geese were recorded. Several bones of a small Passerine were not identified to species.

Early medieval deposits

The early medieval period was divided into pre- and post-conquest phases. Neither produced substantial amounts of bird bone. The sieved sample taken from post-conquest deposits contained only 2 fragments. Domestic fowl and goose were the predominant species in both phases. Single bones of fulmar (Fulmarus glacialis), a large gull (Larus) sp. and a small wild goose were present in the pre-conquest assemblage. A very straight slender radius (GL 84.4) was not identified. Three species of seabird (again represented by single bones) were recorded from the post-conquest levels: herring or lesser black-backed gull (Larus argentatus or fuscus), great black-backed gull (Larus marinus) and razorbill (Alca torda).

Medieval buildings and alleyways and associated features

Deposits dated to the medieval period produced 198 bird bone fragments, 49 of which were from a sieved sample. Most of the fragments were complete enough to be identified. Domestic fowl and goose again accounted for the majority of the bones. Knife marks were present on the distal articulations of several tibiotarsi of both species. A single house sparrow was represented by 29 bones from the sieved sample. Five dove bones were recorded, including one of a very young bird, perhaps an indication that they are of domestic dove rather than its ancestor the rock dove or the osteologically similar stock dove. Again several species of sea bird were recorded: great northern diver (Gavia immer), fulmar, gannet (Sula bassana), eider duck (Somateria mollissima), a scoter (Melanitta), and herring or lesser black-backed and great black-backed gulls. Knife marks

were present on the single fulmar and eider bones.

A carpo-metacarpus of a male goshawk Accipiter gentilis was recovered from ploughsoils. Some rather large duck bones, two of which were of young birds, may have belonged to domestic rather than wild mallards (Anas platyrhynchos). At least one other species of duck was also represented. A distinctive, dorso-ventrally flattened toe phalanx was not identified.

Late medieval garden soils

The 11 fragments recorded from these deposits consisted of 2 domestic goose and 9 domestic fowl bones. Two of the latter were of young birds.

General discussion

The bird bones appear to have chiefly been the remains of food. The main exceptions to this are likely to have been the sparrowhawk from the ?prehistoric pit, and the starlings and house sparrow which were all found as virtually complete skeletons. The two latter species commonly live, and die, around areas of human occupation.

Domestic fowl and goose were the most commonly occurring species in Saxon through to late medieval deposits. Goose bone does tend to fragment more easily than fowl bone but, even so, geese were probably of greater economic importance since one bird would provide about three times as much meat as a domestic fowl, as well as other useful products, particularly feathers. The domestic fowl were small. Measurments from the Church Close specimens were rather few but the range of variation in the size of each skeletal element is very similar to that found in a much larger sample of bone from Anglo-Scandinavian and medieval deposits in York (Allison, 1985a).

The most striking feature of the bird assemblages from the different periods on the site is the occurrence of a number of sea bird species from the early medieval pre-conquest period onwards. Sea bird fowling has been carried out in many parts of Britain in the past and still occurs on Sula Sgeir in the Outer Hebrides at the present day. Where it was of any economic importance, such as on St Kilda, breeding colonies were always exploited as they provided the most easily available source of large numbers of birds and their eggs. There is archaeological evidence for the exploitation of sea bird colonies from several sites in England. Guillemots (Uria aalge) and razorbills were transported many miles inland to York in the Anglo-Scandinavian and medieval periods, for example (Allison, 1985a). A breeding colony of sea birds has existed on the Farne Islands on the Northumberland coast at least since the 7th century A.D., and some birds from there could have ended up in the markets of north-eastern towns. A few bones of auks and other colonial

species have been identified from archaeological deposits in Holy Island Village (Allison, 1985b), Newcastle (Allison, 1987) and Jarrow (Allison, in prep.). The range of species found on the Church Close site, however, suggests that most of the speices represented may have been obtained in a different way. The fulmar for example, now breeds on most of the suitable cliffs around the coasts of Britain and Ireland, but until 1878 breeding was restricted to St Kilda. Similarly gannets did not breed on the east coast south of the Bass Rock in East Lothian until Bempton cliffs in Yorkshire were colonised in 1937 (Sharrock, 1976). Both species disperse out to sea outside the breeding season although gannet colonies are occupied for much of the year. These birds and the gulls seem most likely to have been caught at sea by fishermen since they will all follow ships for offal. Several species of gull, for example, were caught in Scottish waters on hooks baited with offal thrown from fishing boats (Baxter and Rintoul, 1953), and gannets and shearwaters have also been caught in a similar way (Baldwin, 1974). Gannets were also caught in the past by placing a fish as bait on a submerged board. Beaks of birds plungings into the water after the bait became embedded in the board and the birds could then be pulled in and clubbed. (MacPherson, 1897). The lack of these species in the earlier Saxon deposits from this site suggest that a change in fishing activities may have occurred by the early medieval period involving longer voyages into the open sea. This is corroborated by the evidence from fish bones from Church Close, in the monastic period a range of shallow water, inshore fish and freshwater species were present, but deep sea fish (particularly cod, ling and haddock) predominated in early medieval and medieval deposits (Locker, 1987).

Great northern diver, barnacle or brent goose and other wild geese with the exception of the greylag, are autumn and winter visitors to Britain and indicate some fowling activity in coastal regions during those months.

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TABLE 1

Numbers of bird bones of each species from different periods on the Church Close site, Hartlepool.

Numbers in brackets give number of bones of young birds included in the total for that species.

H = bones recovered by hand collection

S = bones recovered by sieving

	?Prehistoric		Saxon		Early Medieval pre-conq.	Early Medieval post-conq.		Medieval		Late Medieval
	H	S	H	S	H	H	S	H	S	H
Gavia immer (Brunnich)	-	-	-	-	-	-	-	1	-	-
Fulmarus glacialis (Linnaeus)	-	-	-	-	1	-	-	1	-	-
Sula bassana (Linnaeus)	-	-	-	-	-	-	-	3	-	-
Anser anser (Linnaeus) cf. domestic	12	-	135	113	16	13	-	63(2)	-	2
Anser anser (Linnaeus) or A. fabalis (Latham)	-	-	2	-	-	-	-	-	-	-
Branta leucopsis (Bechstein) or B. bernicla (Linnaeus)	-	-	1	-	-	-	-	-	-	-
wild goose sp(p.) indet.	-	-	5	-	1	-	-	2	-	-
goose sp(p.) indet.	-	4	1	-	-	-	1	-	-	-
Anas platyrhynchos Linnaeus ?domestic	-	-	-	-	-	-	-	5(2)	-	-
Somateria mollissima (Linnaeus)	-	-	-	-	-	-	-	1	-	-
Melanitta sp.	-	-	-	-	-	-	-	1	-	-
Anatidae sp(p.)	-	-	-	-	-	-	-	5	-	-
Accipter gentilis (Linnaeus)	-	-	-	-	-	-	-	1	-	-
Accipiter nisus (Linnaeus)	12	31	-	-	-	-	-	-	-	-
Gallus gallus Linnaeus	5(1)	17(1)	130(19)	90	17(4)	6	1	51(6)	-	9(2)
Scolopax rusticola Linnaeus	-	-	1	-	-	-	-	-	-	-
Larus argentatus Pontoppidan or L. fuscus Linnaeus	-	-	-	-	-	1	-	5	-	-
Larus marinus Linnaeus	-	-	-	-	-	1	-	1	-	-
Larus sp. large	-	-	-	-	1	-	-	-	-	-

Alca torda Linnaeus	-	-		-	-		-	1	-		-	-		-
Columba palumbus Linnaeus	1	-		-	-		-	-	-		-	-		-
Columba livia Gmelin, C.oenas Linnaeus or domestic dove	-	11		-	3		-	-	-		(1)	4		-
small non-Passerine	-	-		-	-		-	-	-		-	1		-
Passer donesticus (Linnaeus)	-	-		-	1		-	-	-		-	29		-
Sturnus vulgaris Linnaeus	-	-		2	26		-	-	-		-	-		-
small Passerine	-	1		-	9		-	-	-		-	1		-
unidentified	-	-		-	-		1	-	-		1	-		-
indet.	1	83		15	77		1	1	-		7	14		-
TOTALS	31	147		292	319		36	23	2		149	49		11

Measurements of domestic fowl and goose bone from Church Close, Hartlepool

All measurements in millimetres following the system of von den Driesch (1976), The measurement of animal bones from archaeological sites. Peabody Museum Bulletin 1. Harvard.

DOMESTIC FOWL

?Prehistoric

Femur

GL	Lm	Sc	Bd
-	-	7.0	16.2

Tibiotarsus

GL	La	Dip	Sc	Bd	Dd
95.7	93.1	18.3	5.6	11.0	10.6
-	-	-	6.5	11.9	11.6

SAXON 7th - 8th century

Coracoid

GL	Lm	Bb	BF
55.1	52.3	-	13.8
57.8	55.6	-	14.3
55.1	52.7	14.1	11.5
54.5	51.9	13.2	12.1
51.0	48.8	13.9	11.1
47.0	44.9	12.7	11.1

Scapula

GL	Dic
-	12.9
-	11.3

Humerus

GL	Bp	Sc	Bd
-	-	-	15.6

-	17.0	-	-
-	-	6.5	-
73.4	19.5	6.9	15.6
-	-	-	13.4
65.6	17.4	6.4	13.8
73.6	19.7	7.0	15.7
63.5	17.9	6.1	14.1
-	17.6	6.3	-
63.2	17.3	6.2	13.9
-	-	-	13.0
63.6	17.1	6.4	14.1
-	20.0	7.2	-
74.9	20.4	7.2	16.3
-	20.2	6.9	-
-	-	7.3	15.6
78.3	21.7	7.6	16.2
66.7	-	6.5	-
71.0	19.8	6.9	15.6
66.0	16.7	6.4	13.4
61.0	17.1	6.5	12.7
-	17.2	-	-
-	20.1	-	-
72.0	19.2	7.0	15.4

Humerus continued

GL	Bp	Sc	Bd
63.5	17.8	6.4	14.4

Radius

GL	Sc	Bd
66.3	3.2	7.5
66.1	3.1	7.5
57.6	3.2	6.6
-	-	6.2
54.8	2.7	6.2
62.9	2.9	7.0
65.4	3.2	7.5
56.3	2.8	6.4

Ulna

GL	Dip	Bp	SC	Did
-	-	8.8	3.9	9.7
-	-	-	4.0	-
60.0	-	7.7	3.6	8.7
-	-	-	4.0	-
61.6	-	7.7	3.7	8.6
-	-	-	4.8	10.5
71.4	13.8	8.7	4.2	9.6
72.2	13.8	9.2	4.6	10.2
60.3	11.4	7.9	3.8	8.8
61.2	12.2	8.6	3.9	8.8
-	-	-	4.7	-

-	-	-	4.3	10.1
74.5	13.9	9.2	4.4	10.3

Carpometacarpus

GL	Bp
39.6	12.5

Femur

GL	Lm	Sc	Bd	
-	-	7.0	-	
-	80.1	7.2	16.9	
-	-	7.3	-	
-	60.8	5.3	-	
77.7	72.9	6.7	15.2	
70.1	64.9	5.8	13.3	
67.8	63.4	6.1	13.0	
69.7	65.1	6.1	13.8	medullary bone present

Femur continued

GL	Lm	Sc	Bd	
69.1	64.3	6.0	12.9	medullary bone present
-	-	6.3	-	
81.7	-	7.3	-	
-	70.7	6.7	-	
-	-	7.5	-	

Tibiotarsus

GL	La	Dip	Sc	Bd	Dd
114.2	111.2	-	6.9	11.9	12.4
-	-	-	6.7	12.3	12.1
-	-	-	6.4	-	-
-	-	21.6	-	-	-
-	-	17.9	5.5	-	-
-	-	-	5.1	10.1	10.0
98.6	95.7	17.8	5.5	-	-
-	-	19.6	-	-	-
-	-	-	5.5	-	-
98.0	94.2	18.7	5.8	10.8	10.8
95.1	92.0	17.3	5.3	10.1	9.9

Tarsometatarsus

GL	Bp	Sc	Bd	
68.4	11.7	5.8	12.2	unspurred

EARLY MEDIEVAL AND MEDIEVAL

Coracoid

GL	Lm	Bb	BF
50.2	47.7	-	10.9
58.2	54.8	16.0	12.9

Scapula

GL	Dic
-	11.2
-	11.7
-	12.1

Humerus

GL	Bp	Sc	Bd
71.0	20.0	6.7	15.5
-	19.7	-	-
59.5	16.1	5.6	12.7
60.6	16.5	6.3	13.2
63.8	17.9	6.7	14.0
78.8	21.4	7.7	17.0
66.1	18.1	6.2	14.4
-	-	-	15.7
-	20.1	7.4	-
-	-	7.3	15.9
68.0	18.8	6.6	15.1
76.7	21.2	7.5	17.3
67.2	18.2	6.4	14.5
74.0	20.6	7.3	16.5
-	-	-	14.8

Radius

GL	Sc	Bd
58.8	3.1	6.2
53.5	2.7	6.1
65.8	3.4	7.1

Ulna

GL	Dip	Bp	Sc	Did
-	-	-	3.5	8.8
-	-	-	-	10.9
75.6	13.5	9.2	4.4	10.2
66.4	12.5	8.4	3.9	8.9

Carpometacarpus

GL
35.0

Femur

GL	Lm	SC	Bd	
-	-	6.2	12.3	
-	-	6.2	13.2	
-	-	6.7	-	medullary bone present
75.4	70.3	6.3	14.7	
85.8	79.4	8.0	17.0	
-	-	6.5	13.5	medullary bone present
-	-	7.4	-	medullary bone present
-	-	7.4	-	

Femur continued

GL	Lm	SC	Bd	
-	-	7.2	-	
-	-	-	13.3	
73.9	69.0	6.5	13.5	?medullary bone present
-	-	6.5	-	medullary bone present
-	-	7.1	-	
86.9	81.7	7.9	-	
-	-	-	14.5	medullary bone present

Tibiotarsus

GL	La	Dip	Sc	Bd	Dd	
-	-	-	5.1	10.2	10.0	
110.8	116.6	20.1	6.6	10.9	12.0	
-	115.9	-	6.7	12.5	-	
-	-	17.7	-	-	-	
98.2	94.5	18.9	5.9	10.7	10.9	
-	-	-	-	10.1	-	
-	-	-	5.5	10.4	10.6	
-	-	-	6.8	-	-	
-	-	-	6.5	12.8	12.9	
97.4	94.5	18.9	5.3	10.9	10.6	
-	-	-	7.2	12.6	12.7	
-	-	-	5.1	9.3	-	
-	-	-	5.8	10.7	-	medullary bone
-	-	17.7	-	-	-	
-	-	-	5.6	10.8	-	
97.9	94.5	16.9	5.5	10.0	10.0	

Tarsometatarsus

GL	Bp	Sc	Bd	
69.5	12.1	6.0	-	unspurred
66.8	12.1	6.4	13.1	unspurred
73.6	13.1	6.7	14.0	unspurred
-	-	7.8	15.0	spurred, spur 15.6
-	11.7	5.7	-	unspurred

cf DOMESTIC GOOSE

?PREHISTORIC

Scapula

GL	Dic
102.7	22.5

Humerus

GL	Bp	Sc	Bd
-	36.8	12.2	-
-	35.7	11.7	-
-	35.7	-	-

SAXON

Coracoid

GL	Lm	Bb	BF
-	-	-	27.8
69.7	61.9	28.8	28.7
-	67.4	-	-
70.7	-	-	-
78.1	67.9	34.0	32.6
71.1	62.9	-	29.1
74.2	64.3	-	30.0

Scapula

GL	Dic
-	21.8
-	20.2
-	20.0
-	22.7

Humerus

GL	Bp	Sc	Bd
168.0	-	11.0	-
-	33.1	-	-
-	34.5	-	-
-	-	-	26.1
-	-	10.6	-
176.0	-	12.4	25.4
-	-	11.4	-
-	-	11.3	-

Humerus continued

GL	Bp	Sc	Bd
-	-	11.7	25.5
169.0	35.1	-	25.1
-	37.5	-	25.8
172.0	-	10.9	25.3

Radius

GL	Sc	Bd
-	-	9.7

Carpometacarpus

GL	Bp
82.5	20.2

Femur

GL	Lm	Sc	Bd	Dd
82.3	77.0	8.7	20.8	-
-	-	9.1	-	-
-	-	8.4	-	-
82.6	77.7	8.4	19.9	16.0
83.3	-	8.7	-	-
83.0	-	8.8	-	-
-	-	7.8	19.6	15.5
-	73.0	8.3	20.2	16.2
83.3	78.6	9.0	20.8	17.0
83.2	78.9	8.9	20.6	16.9
79.3	74.0	9.2	20.3	17.3
85.6	81.1	9.2	21.9	18.5
78.3	-	8.3	-	-
78.7	73.6	8.7	20.5	-
83.5	78.5	8.6	22.1	-
78.9	-	8.4	-	-
81.0	75.2	8.8	20.4	-
-	-	9.0	-	-
-	-	9.7	-	-

Tibiotarsus

La	Dip	Sc	Bd	Dd
-	-	8.8	-	-
-	-	8.9	17.2	-
-	-	8.4	18.0	-
-	25.3	-	-	-
-	28.2	9.7	18.6	18.5
-	-	8.1	17.2	-

Tibiotarsus continued

La	Dip	Sc	Bd	Dd
-	-	8.2	-	-
-	25.0	-	-	-
139.1	25.9	9.1	17.4	-
-	-	9.5	19.0	19.1
141.6	-	8.3	17.9	18.4
-	-	-	19.0	-
-	26.8	8.9	-	-
-	25.8	-	-	-
-	-	9.2	17.5	-
-	-	8.6	-	-
-	-	8.6	17.8	-

Tarsometatarsus

GL	Bp	Sc	Bd
80.5	-	7.5	17.8
-	18.4	8.3	-

EARLY MEDIEVAL AND MEDIEVAL

Scapula

GL	Dic
-	21.2

Humerus

GL	Bp	Sc	Bd
-	-	11.8	24.2
-	-	12.7	25.3
-	-	-	25.3
-	32.9	-	-
-	-	10.8	-

Radius

GL	Sc	Bd
140.4	4.8	10.2

Ulna

GL	Dip	Bp	Did
164.0	21.8	16.9	17.4

Carpometacarpus

GL	Bp
-	22.2
90.8	22.1

Femur

GL	Lm	Sc	Bd
-	-	9.1	-
-	-	8.7	-
-	77.4	9.0	-
-	-	8.5	-
-	-	8.8	20.6
-	76.4	9.3	20.8
-	-	-	20.1
-	-	8.5	19.7

Tibiotarsus

La	Dip	Sc	Bd	Dd
-	25.4	8.5	-	-
-	-	8.3	-	-
-	-	8.4	16.9	15.9
-	-	-	17.5	-
-	-	8.3	-	-
-	-	-	17.9	-

Tarsometatarsus

GL	Bp	Sc	Bd
-	-	8.6	-
87.7	19.3	8.2	-
-	-	8.3	-

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