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Evaluation of biological remains from excavations at Burnett House, Castle Street, Kingston-upon-Hull (site code: BHH04)

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by

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Summary

Twelve sediment samples, 17 'spot' samples, a small amount of hand-collected shell and one box of hand-collected bone, recovered from deposits encountered during excavations at Burnett House, Castle Street, Kingston-upon-Hull, were submitted for an evaluation of their bioarchaeological potential. The archaeological features revealed dated to the medieval and post-medieval periods through to modern.

Identifiable plant macrofossil remains were generally sparse in the five deposits evaluated, though peat (undoubtedly imported) was present in three of them and two of the 'spot' samples also proved to be rather large lumps of peat. Some of the fruits and seeds present originated in peat, though others must have arrived from other sources including occupation debris. Insect remains were present in three of the samples and though dilute were often well preserved. They included some remains of keds likely to be related to the working of hides or cleaning of wool. The remainder of the 'spot' samples examined were of wood. Artefacts of oak, elm and pine were present and the condition of the remains suggests that species identifications of the other wooden items recovered would be possible (if required).

Most of the hand-collected shell was of oyster. The small quantity of remains recovered and their rather variable, but often poor, preservation renders the assemblage of little value. However, it seems likely that the remains of marine shellfish derive from human food waste, all being of edible taxa, and were most likely a local resource (though the oysters may have been imported).

The vertebrate remains showed some potential for providing useful zooarchaeological and archaeological information for the reconstruction of aspects of human activity. These initial examinations showed that overall the assemblage was a mix of refuse representing both butchery and kitchen/table waste. The fish remains from the samples were also indicative of household/domestic refuse. Two components of the assemblage, a swan humerus and the remains of large marine fish, hinted at refuse from a fairly affluent household.

A programme of sampling and bioarchaeological investigation should accompany any further excavations at this site.

KEYWORDS: BURNETT HOUSE; CASTLE STREET, KINGSTON-UPON-HULL; EVALUATION; MEDIEVAL; POST-MEDIEVAL; PLANT REMAINS; CHARRED PLANT REMAINS; INVERTEBRATE REMAINS; SHELL; VERTEBRATE REMAINS; ?WOOL CLEANING; ?HIDE WORKING

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Introduction

An archaeological evaluation excavation was carried out by Northern Archaeological Associates at Burnett House, Castle Street, Kingston-upon-Hull (centred on NGR TA 0994 2846), during January and February 2004.

The excavation consisted of two trenches which revealed sequences of medieval construction and occupation and postmedieval construction, overlying palaeoenvironmental deposits.

Twelve sediment samples ('GBA'/'BS' sensu Dobney et al. 1992), 17 'spot' samples (mostly of wood/timber from eight contexts), a small amount of hand-collected shell and one box of hand-collected bone, were recovered from the deposits revealed by the excavation. All of the material was submitted to Palaeoecology Research Services Limited (PRS), County Durham, for an evaluation of its bioarchaeological potential.

Methods

Sediment and 'spot' samples

The sediment samples were inspected in the laboratory. Five were selected for the evaluation and their lithologies were recorded using a standard *pro forma*. Subsamples of the selected samples were processed, following the procedures of Kenward *et al.* (1980; 1986), for the recovery of plant and invertebrate macrofossils.

Plant remains and the general nature of the various washovers and wet residues were recorded briefly by 'scanning', identifiable taxa and other components being listed directly to a PC using *Paradox* software. In

addition, six of the unprocessed ('SPOT') samples, including timber for identification, were examined.

Insects in the flot were recorded using 'assessment recording' sensu Kenward (1992), creating a list of the taxa observed during rapid inspection of the flot, with a semiquantitative estimate of abundance, and a subjective record of the main ecological (e.g. aquatics, grain pests) or indicator/activity (e.g. for stable manure, Kenward and Hall 1997) groups present. A record of the preservational condition of the remains was made using scales given by Kenward and Large (1998). This scheme provides scales for chemical erosion and fragmentation (0.5-5.5, the higher figure representing the greatest degree of damage), and colour change (0-4), in each case giving a range and a value for the position and strength of the mode (Kenward and Large 1998, tables 2, 3 and 5-7).

When the residues were primarily mineral in nature they were dried, weighed and the components recorded.

Hand-collected shell

The small amount of hand-collected shell was examined, identified as closely as possible and notes made on its state of preservation.

For oyster (*Ostrea edulis* L.) shell additional notes were made regarding: numbers of left and right valves; evidence of having being opened using a knife or similar implement; measurability of the valves; damage from other marine biota (polychaet worms and dog whelks); encrustation by barnacles.

Hand-collected vertebrate remains

For the hand-collected vertebrate remains that were recorded, data were entered directly into a series of tables using a purpose-built input system and *Paradox* software. Subjective records were made of the state of preservation, colour of the fragments, and the appearance of broken surfaces ('angularity'). Brief notes were made concerning fragment size, dog gnawing, burning, butchery and fresh breaks where applicable.

Where possible, fragments were identified to species or species group using the PRS modern comparative reference collection. Fragments not identifiable to species were described as the 'unidentified' fraction. Within this fraction fragments were grouped into a number of categories: large mammal (assumed to be cattle, horse or large cervid), medium-sized mammal 1 (assumed to be caprovid, pig or small cervid) and totally unidentifiable. These groups are represented in Table 3 by the category labelled 'Unidentified'.

Results

Sediment samples

The results are presented in context number order. Archaeological information, provided by the excavator, is given in square brackets. A brief summary of the processing method and an estimate of the remaining volume of unprocessed sediment follows (in round brackets) after the sample numbers. Sample numbers were derived from the context numbers for PRS internal recording keeping purposes.

Context 58 [dump deposit of what appears to be domestic waste within the back yard of the late medieval to post-medieval building]

Sample 5801/T (3 kg sieved to 300 microns with washover; approximately 36 litres of unprocessed sediment remain)

Moist, light to mid grey-brown to dark grey (and dark grey-brown from charred content), slightly crumbly

(working soft), slightly clay silt. Rotted mortar, ?bird and ?fish bone were present, and charcoal (mostly fine) was abundant.

The small washover of about 100 ml consisted of very decayed (uncharred) amorphous peat (to 5 mm) and some cinder (to 15 mm) and charcoal (to 10 mm). No identifiable seeds or charred peat were observed. There were traces of small mammal and fish bone fragments. If this is exclusively domestic waste, it is unusual in containing debris from what must have been imported peat.

There was a small residue (dry weight 0.5 kg) of sand and a few stones. Traces of brick/tile, pottery, coal, charcoal and cinders were all present, together with some iron nails, oyster shell (35 g, mostly fragments but including one left and one right valve) and bone.

The vertebrate material (around 200 fragments – 34 g) recovered from this sample was reasonably wellpreserved, although rather fragmented (most fragments were less than 20 mm in maximum dimension) and somewhat battered in appearance. A few fragments had been burnt or scorched. Most of the bones were small fragments of fish, many of which were unidentified spines and finrays. Some of the latter probably represented gadids. A number of other fragments were from larger fish, again probably gadids, which had been broken or possibly butchered. It was difficult to determine whether this had occurred in the past or more recently, i.e. during excavation. Fish taxa that were identified included herring (Clupea harengus L.), eel (Anguilla anguilla (L.)), cod (Gadus morhua L.), Gadidae, flatfish (Pleuronectidae), stickleback (Gasterosteus aculeatus L.) and Cyprinidae. Cod remains included fragments which represented fish of over one metre in length, together with vertebrae from a slightly smaller individual of between 0.6 and 0.7 metres.

In addition, there was a goose (*Anser* sp.) tarsometatarsus, a few unidentified bird shaft fragments and several large mammal rib and shaft fragments.

Context 91 [Fill of pit 90 – appears to relate to third/fourth phase of construction after demolition of a 14th century internal partition]

Sample 9101/T (4.5 kg sieved to 300 microns with washover; approximately 20 litres of unprocessed sediment remain)

Moist, mid grey-brown to light to mid orange-brown in places, crumbly and sticky (working soft and slightly sticky), slightly sandy, clay silt to silty clay. Stones (6 to 20 mm), pot, charcoal, large mammal bone and marine shells (including cockle – *Cerastoderma edule* (L.)) were present.

The very small washover of about 70 ml consisted of charcoal and cinder (both to 10 mm) with some uncharred peat (to 5 mm) and some small (less than 2 mm) wood fragments. There were also some very decayed water flea (*Daphnia*) resting eggs (ephippia), which must have formed originally in water and a few rather poorly preserved charred cereal grains (barley, *Hordeum* and bread/club wheat, *Triticum 'aestivo-compactum'*). There was also a single well preserved fig (*Ficus carica* L.) seed. There is little to say, from these remains, about the nature of this pit fill other than that it received some domestic waste (more clearly shown by the shell and bone recorded from the residue – below) and held water at some point (unless the *Daphnia* arrived with water imported from elsewhere).

The medium-sized residue (dry weight 1.2 kg) consisted of roughly equal proportions of sand and stones. Small amounts of brick/tile, pottery, coal, cinder, charcoal, cockle and mussel shell (28 g, mostly cockle with only a few fragments of mussel – *Mytilus edulis* L.) and bone were all present.

The small assemblage of bone (around 120 fragments – 33 g) from this sample resembled that recovered from Sample 5801 (Context 58). Preservation of the remains was recorded as 'fair'; a few of the fragments had rather rounded edges and some were burnt. Although a number of larger fragments (pig cranium and isolated teeth, caprovid upper molar, and medium-sized mammal shaft fragments) were recorded, most fragments were less than 25 mm in overall dimension and many were of fish bone. The latter included the remains of herring, flatfish, gadid and stickleback.

Context 94 [medieval (12th-14th century) floor deposit] Sample 9401/T (3 kg sieved to 300 microns with paraffin flotation; approximately 22 litres of unprocessed sediment remain.)

Just moist, light to mid brown to mid to dark greybrown, brittle to crumbly (working soft), humic (in patches, or perhaps lumps of peat), slightly sandy silt. Stones (2 to 6 mm) and rotted mortar/plaster were present.

There was a moderate-sized residue of about 500 ml of granular material, mainly amorphous peat (probably a fen peat), some sand, grit, gravel, and charcoal. The identifiable fruits and seeds were very dilute and all rather worn; some must have originated in the peat (such as bogbean, *Menyanthes trifoliata* L. and white water-lily, *Nymphaea alba* L.) whilst the variety of remains from weeds of various kinds must have arrived as the deposit formed. There was at least one well preserved fig seed. Only two taxa were present in more than very low concentrations: caryopses of grasses (Gramineae) and seeds of goosefoot (*Chenopodium*

Section *Pseudoblitum*). The latter most likely represent plants growing on drying mud at the edge of a pond, mud from a ditch, or perhaps plants in a salt-marsh environment (though there were no other taxa present to add weight to the last of these). In view of the interpretation of the context as a floor, we may be dealing here with material brought in on muddy feet. The peat was presumably used as some kind of litter; further examination of an unprocessed sample of the deposit might assist in determining if the excavator's suggestion that the deposit was a 'form of grass matting' is tenable—though the nature of the residue is not really consistent with this.

The flot was quite small. Insects were rather rare, but there were considerable numbers of *Daphnia* ephippia (of the order of 100) and earthworm egg capsules ('many'), and 'several' statoblasts (resting eggs) of the bryozoan *Lophopus crystallinus* (Pallas). The first and last of these indicate an aquatic environment, with water which was not too polluted. The insects were a limited assemblage of species from a range of habitats. Preservation was moderately good to a little poor (E 2.5-3.5, mode 3.0 weak); F 2.0-3.5, mode 3.0 weak). This invertebrate material has only limited potential for further investigation.

Context 1074 [secondary fill of ditch 1073 – medieval] Sample 107401/T (3 kg sieved to 300 microns with washover; approximately 26 litres of unprocessed sediment remain.)

Moist, mid brown to mid grey-brown to black internally (from sulphide staining - the sample smelled strongly of sulphides when lumps were broken open), stiff (working soft and somewhat plastic), clay silt. There were no obvious inclusions.

There was a minute residue (so small that no separate flot or washover was taken) consisting of about 20 ml of herbaceous detritus and a little gravel. The plant material was rather blackened (with reduced iron sulphide) and the jar in which the material had been stored stained orange with oxidised iron salts. Some of this herbaceous detritus may have originated in culmbases of small grasses. The modest assemblage of rather variably preserved plant remains offered a suggestion of the presence of cut grassland vegetation, perhaps hay or material from stable manure. There was at least one seed each of fig and linseed (Linum usitatissimum L.), representing material from occupation. A trace of leaves of the bog moss Sphagnum imbricatum Hornsch. ex Russ. might, with both the fig and linseed, have originated in faecal waste but this is very scant evidence, if so. A trace of charred barley grains was also noted.

A few quite well preserved insects were picked out while plant remains were being examined: they included aquatics and a few terrestrial forms. A single puparium, which appeared to be the sheep ked *Melophagus ovinus* (Linnaeus), was present. A very large subsample might produce an interpretatively useful group of invertebrate remains.

Context 1075 [primary fill of ditch 1073 – medieval] Sample 107501/T (3 kg sieved to 300 microns with washover; approximately 25 litres of unprocessed sediment remain)

Moist, light brown to light to mid grey-brown, to mid to dark grey to black internally (from sulphide staining the sample smelled strongly of sulphides when lumps were broken open), stiff and sticky (working soft and very sticky), clay silt. There were no obvious inclusions, but white ?mould was noted on the surface of the sample.

This sample yielded another very small residue of about 20 ml (again, no separate flot or washover was taken) of herbaceous detritus (rather contradicting the excavator's description of the deposit as being rich in organic material—unless this was all very fine humic matter) with moderate numbers of achenes (almost all fragmentary) of hemp (Cannabis sativa L.) all of which were somewhat worn but by no means poorly preserved. There was also a single large and well preserved seed of grape, Vitis vinifera L. seed. The wood fragments present may include chips whilst the finer fractions contained what may have been plant fibres (e.g. from ?Cannabis) and whose closer identity might be pursued. The rest of the small assemblage was mixed with some weeds, aquatics and possible hay/cut grassland indicators.

A few insect remains were recovered during botanical investigation. Their preservation was quite good, and there were representatives of aquatic and foul-matter habitats. It is possible that a very large subsample from this layer would produce an interpretable assemblage.

'Spot' samples

The results of the examination of the six timbers and other 'spot' samples selected for the evaluation are given in Table 1.

Hand-collected shell

Hand-collected shell with a total weight of 368 g was recovered from 11 stratified contexts (there were a further 85 g of unstratified remains). Most of the individual contexts gave only small amounts (less than

50 g) of remains. Preservation was rather variable (ranging from very poor to good) but, on the whole, fairly poor. All of the material was assessed and the taxa identified as closely as possible. Table 2 summarises the remains by context.

The remains were predominantly of edible marine shellfish (mostly oyster). One deposit (Context 1063) gave two fragments of freshwater mussel valve, and a common whelk (*Buccinum undatum* (L.)) and a few land snails were present in the unstratified material.

The oyster shell showed very variable preservation (approximately 64% of the valves could still be identified as being either left or right valves). About 17% of the valves for which 'side' could be determined were measurable (measurements were not taken as part of this assessment). Possible evidence of the oysters having been opened using a knife or similar implement (as shown by 'V'- or 'W'-shaped notches on the shell margins) was noted on only two of the valves. Up to 32% of the valves showed some fresh breakage presumably caused during recovery of the remains (some of the bags of shell from individual contexts also contained small flakes of shell showing that the valves had disintegrated further post-excavation). There was no evidence of damage to the valves (e.g. polychaet worm burrows, dog whelk holes) or encrustation (e.g. by barnacles) by other marine biota.

Hand-collected vertebrate remains

The entire assemblage from Trenches 1 and 2, recovered mainly from deposits of medieval and post-medieval date, amounted to 171 fragments (representing 21 contexts). Most of the deposits produced less than ten fragments, with the exceptions of Contexts 3 (21 fragments), 56 (40 fragments), 65 (21 fragments), 91 (19 fragments) and 1051 (14 fragments). The recorded assemblage included 21 measurable fragments and five mandibles with teeth *in situ*, of use for providing biometrical and age-at-death data. Details of the range of species and number of fragments for the hand-collected material can be found in Table 3.

Most fragments were recorded as being of 'good' or 'fair' preservation. The colour of the bones was typically fawn or dark brown, with some variations noted in material from Contexts 69 and 91. These deposits also included a small component of fragments that were rather battered in appearance and this was also the case for the material from Context 68. In general, there was little indication of dog gnawing on the bones, but rodent gnawing was recorded on a chicken femur from Context 69. Butchered fragments were quite frequently observed, and included split cattle shaft fragments and chopped large mammal vertebrae.

Additionally, several (10) cattle ribs from the same individual from Context 1051 had been cut with a saw.

The major domestic species were identified, including the remains of cattle, caprovids and pigs. A preliminary examination of the range of skeletal elements for cattle showed a predominance of butchery waste, indicated by the presence of mandible fragments and distal limb elements. Sheep remains included a larger proportion of meat-bearing bones but butchery waste was again dominant. Pig bones were too few for useful interpretation. Several deposits (Contexts 65, 84 and 1007) contained skeletal elements of very young, possibly neonatal, individuals, representing all three of the main domesticates.

Birds included chicken, duck (*Anas* sp.) and goose remains; the last being the most numerous. A swan (*Cygnus* sp.) distal humerus was recovered from Context 94, whilst a single rabbit (*Oryctolagus cuniculus* (L.)) was identified from Context 17. These remains are likely to be refuse from food preparation and consumption.

On the basis of their size and the nature of the butchery techniques, the sawn cattle ribs and vertebrae and the caprovid humerus from Context 1051 are likely to be of modern origin. This may also be the case for the remains from Context 1065.

Discussion and statement of potential

Identifiable plant macrofossil remains were generally sparse in these deposits, though peat (undoubtedly imported) was present in three of them and two of the 'spot' samples (Context 94AB and Context 1065AI) included with the timbers proved to be rather large lumps of peat. Certainly some of the fruits and seeds originated in peat, though others must have arrived from other sources—including occupation debris—as the deposits formed. Insect remains were present in three of the samples and though dilute were often well preserved. They included some remains of keds (puparia) of a parasitic fly, perhaps Melophagus ovinus, likely to be related to the working of hides or cleaning of wool. Larger samples would be needed to address specific archaeological questions.

All of the other 'spot' samples examined were of wood and species identifications were

possible in each case. Artefacts of oak, elm and pine were present and the condition of the remains suggests that species identifications of the other wooden items recovered would be possible (if required).

Most of the hand-collected shell was of oyster. The small quantity of remains recovered and their rather variable, but often rather poor, preservation renders the assemblage of little value. However, it seems likely that the remains of marine shellfish derive from human food waste, all being of edible taxa, and were most likely a local resource (though the oysters may have been imported).

The vertebrate remains show some potential for providing useful zooarchaeological and archaeological information for the reconstruction of aspects of human activity. Initial examinations showed that overall the assemblage was a mix of refuse representing both butchery (cattle, caprovid and pig head and lower limb elements) and kitchen/table waste (bird and rabbit remains and the meatbearing elements of the major domesticates). The fish remains from the samples were also indicative of household/domestic refuse.

Two components of the assemblage, the swan humerus and the presence of remains of large marine fish, hint at refuse from a fairly affluent household. Remains of swan are typically associated with high status activities and are frequently mentioned in historical documents (Albarella and Thomas 2002); these birds may also have been given as gifts of patronage. With regard to the fish, however, the location of the site in Hull would have made their acquisition somewhat easier and, therefore, it would probably have been a relatively cheaper commodity than for a household in, for example, York.

Recommendations

There is probably no justification for further work on the sediment or 'spot' samples, unless

specific archaeological questions arise. However, the potential for survival of well preserved (albeit dilute) remains has been demonstrated and the deposits available for examination as a result of this excavation have added to the growing body of evidence for imported peat in Hull during the medieval period. There were also some hints of craft activities from the invertebrate remains.

No further investigation of the recovered shell is warranted.

Although the small size of the recovered bone assemblage precludes any further detailed recording and interpretation, the potential of the deposits for preserving bone is highlighted, particularly by the recovery of the small fish assemblage from the processed subsamples.

A programme of sampling and bioarchaeological investigation should accompany any further, more extensive, excavations at this site to elucidate aspects of site economy and environment and to explore further the use of imported materials and the possible evidence for working of hides or wool.

Retention and disposal

All of the current material should be retained for the present.

Archive

All material is currently stored by Palaeoecology Research Services (Unit 8, Dabble Duck Industrial Estate, Shildon, County Durham), along with paper and electronic records pertaining to the work described here.

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Table 1. Burnett House, Castle Street, Kingston-upon-Hull: identifications of 'spot' samples submitted as wood (or ?wood). The three specimens in 85/AB have been numbered separately here to distinguish them.

Context	Sample	Identification	Comments
85 – probably medieval (14 th to 15 th	AB1	Quercus (oak)	stake
century) levelling layer	AB2	Quercus	small fragment (perhaps originally part of AB1)
	AB3	Pinus (?sylvestris) (pine, ?Scot's pine)	rounded stake
94 – 12 th -14 th century floor deposit	AB	-	lump of somewhat indurated peat, felted, 120 x 65 x 25 mm
1065 – infill deposits of a 14 th century	AA	Ulmus (elm)	plank
well sealed beneath post-medieval cellar	AB	Pinus (?sylvestris)	half barrel lid?
floor	AI	-	lump of compressed, felted plant detritus (peat) to 100 x 50 x 40 mm
1067 – redeposited clay levelling layer sealing medieval pit 1076	AC	Quercus	small squared rod

Table 2. Burnett House, Castle Street, Kingston-upon-Hull: summary information for the hand-collected shell by context. A '?' before numbers indicates possible numbers (e.g. '2/?3 = definitely 2, possibly 3). Key: 'Cn' = Context number; 'left' = number of left (or lower) valves; 'right' = number of right (or upper) valves; 'in' = number of valves of indeterminate side or large valve fragments; 'meas' = estimated number of measurable valves; 'e' = average erosion score for valves; 'f' = average fragmentation score for valves; 'kn' = number of valves showing damage characteristic of the oyster having been opened using a knife or similar implement; 'worm' = number of valves showing damage by polychaet worms; 'barn' = number of valves with barnacles; 'dog' = number of valves showing damage from dog whelk boring; 'fr' = number of valves showing fresh breakage; 'wt' = total weight of shell in grammes; 'u/s' = unstratified; for 'mussel' and 'cockle' numbers are of valves represented.

	Oyster															
Cn	left	right	in	meas	e	f	kn	worm	barn	dog	fr	mussel	cockle	whelk	other taxa	
u/s	2	1	3	0	3	3	?1	0	0	0	1	0	0	1	1 x Aegopinella ?nitidula	85
															(Draparnaud); 1 x other unid.	
															land snail as fragments	
56	2	5	2	0	2	2	?1	0	0	0	?2	0	2	0		151
60	0	0	1	0	3	3	0	0	0	0	0	1	0	0		6
65	1	0	0	0	3	2	0	0	0	0	1	1	0	0		87
68	0	1	0	?1	2	1	0	0	0	0	0	0	0	0		38
85	1	1	2	0	2	2	0	0	0	0	2	0	0	0		34
88	0	1	0	1	1	2	0	0	0	0	1	0	0	0		8
91	0	0	0	-	-	-	-	-	-	-	-	0	1	0		2
92	1	0	0	1	1	1	0	0	0	0	?1	0	0	0		10
94	1	0	2	0	2	3	0	0	0	0	?1	0	0	0		12
1063	0	0	0	-	-	-	-	-	-	-	-	0	0	0	2 x freshwater mussel valve	10
															fragments	
1065	1	0	0	1	1	1	0	0	0	0	0	0	1	0		10
Total	9	9	10	3/?4			?2	0	0	0	5/?9	2	4	1		453

Table 3. Burnett House, Castle Street, Kingston-upon-Hull: hand-collected vertebrate remains from Trenches 1 and 2. Key: Total frags = total number of fragments recorded; No. meas = total number of measurable bones; No. mands = total number of mandibles with teeth in situ.

G .		Total	No.	No.
Species		frags.	meas	mands
Oryctolagus cuniculus (L.)	rabbit	1	-	-
Sus f. domestic	pig	9	-	-
Bos f. domestic	cattle	19	4	3
Caprovid	sheep/goat	30	14	2
cf. Cygnus sp.	?swan	1	1	-
Anser sp.	goose	7	-	-
Anas sp.	duck	1	1	-
Gallus f. domestic	chicken	1	1	-
cf. Gallus f. domestic	?fowl	1	-	-
Unidentified		101	-	-
Total		171	21	5