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**Evaluation of biological remains from excavations at County Hall,
Beverley, East Riding of Yorkshire (sitecode: CHB2001)**

by

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Summary

A series of sediment samples, a small quantity of hand-collected shell, and four boxes of hand-collected bone from deposits revealed by excavations at County Hall, Beverley, East Riding of Yorkshire, were submitted for an evaluation of their bioarchaeological potential.

Four of the sediment samples produced assemblages of charred plant remains, which seem to have formed through the burning of thatch. Examples of this kind of material are extremely rare. In view of the unusual nature of the plant material, further analysis of the samples from the present evaluation is recommended.

The small quantity of hand-collected shell was mostly well-preserved oyster valves of only limited interpretative value.

A small but very well preserved assemblage of vertebrate remains from 46 very closely dated contexts which, with one exception, were dated to the 12th and 13th centuries. A limited range of species was identified, revealing a predominance of caprovids which is analogous to similarly dated assemblages from Beverley. There was a high proportion of mandibles and measurable bones, making the County Hall assemblage particularly valuable for comparative analysis.

KEYWORDS: COUNTY HALL; BEVERLEY; EAST RIDING OF YORKSHIRE; EVALUATION; MID 12TH TO MID 13TH CENTURY; MEDIEVAL; POST-MEDIEVAL; PLANT REMAINS; CHARRED PLANT REMAINS; SHELL; VERTEBRATE REMAINS

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Introduction

An archaeological evaluation excavation was carried out by Humber Field Archaeology at County Hall, Beverley, East Riding of Yorkshire, during the first quarter of 2001.

A series of sediment samples ('GBA'/'BS' *sensu* Dobney *et al.* 1992), a small quantity of hand-collected shell, and four boxes (approximately 70 litres in total) of hand-collected bone, were recovered from the deposits. Preliminary dating evidence suggests a mid 12th to mid 13th century date for most of the deposits.

All of the material was submitted to the EAU for an evaluation of its bioarchaeological potential.

Methods

Sediment samples

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

The flots, washovers and residues were examined for plant remains. The flots and washovers were also examined for invertebrate remains, and the residues were examined for other biological and artefactual remains.

Table 1 shows a list of the submitted samples and notes on their treatment.

Hand-collected shell

A small quantity of hand-collected shell (representing material from eight contexts) was submitted. Brief notes were made on the preservational condition of the shell and the remains identified to species where possible.

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 (e.g. polychaete worms and dog whelks); and encrustation by barnacles.

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'). Additionally, for the larger assemblages, notes were made concerning fragment size, dog gnawing, burning, butchery and fresh breaks.

Where possible, fragments were identified to species or species group, using the reference collection at the Environmental Archaeology Unit, University of York. 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 (assumed to be caprovid, pig or small cervid), bird, fish and totally unidentifiable.

Results

Sediment samples

The results are presented in context number order. Archaeological information, provided by the excavator, is presented in square brackets.

The insect remains recovered from the samples were restricted to very decayed scraps of cuticle of no interpretative value.

Context 57 [Ashy deposit, rakings from hearth or oven. Mid 12th-mid 13th century]

Sample 3/T (3 kg sieved to 300 microns with washover)

Moist, mid to dark grey-brown, crumbly (working slightly plastic), sandy clay silt (probably ash-rich). Stones (2 to 20 mm) and charcoal were present in the sample.

This subsample yielded a washover about 60 cm³ of charred material: angular charcoal (to 10 mm in maximum dimension), with 'rusty' concreted material patchily adhering to it (perhaps the amorphous material seen in other samples). The large residue of about 650 cm³ was of sand and gravel with some charcoal; much of the material was calcareous concreted sandy sediment (to 35 mm), with an unusual speckled mix of rusty brown and yellowish white coloration, often adhering to charcoal fragments, as in the washover. This is most likely to be ash of some kind. The rest of the residue consisted of sand and grit and there were traces of pottery (to 30 mm) and bone (including fish, amphibian and bird).

The bone was well preserved and ginger in colour, weighing 7 g in total. Fragments identified included a large gadid vertebra, the third phalanx of a sheep, and the complete and measurable tibiotarsus of a chicken.

Context 76 [Floor silts. Mid 12th-mid 13th century]

Sample 4/T (5 kg sieved to 300 microns with washover)

Moist, mid grey-brown, crumbly (and slightly brittle) and soft (working somewhat plastic), sandy clay silt with some lumps of 'natural' clay. Pieces of chalk (2 to 60 mm) were abundant and flint, charcoal and bone were present in the sample.

The tiny washover comprised a few cm³ of charred material (mainly charcoal, including oak (*Quercus*) to 5 mm), with some very decayed uncharred wood and a few unidentified snails; there were also traces of charred cereal grains—oats (*Avena*) and a single

?bread/club wheat (*Triticum* cf. *aestivo-compactum*). The moderately large residue of about 1100 cm³ was of slightly concreted silty sediment, sand, and chalk gravel (to 65 mm), with a little pottery (to 45 mm), brick/tile (to 50 mm) and bone.

There was a total of 32.7 g of bone, which was generally fawn or occasionally dark brown in colour. The identified remains consisted of a caprovid humerus, a first phalanx and molar fragment of a cow, a complete and measurable chicken humerus, and a medium-sized mammal rib.

Context 100 [Pit fill with much charcoal. Mid 12th-mid 13th century]

Sample 5/T (3 kg sieved to 300 microns with paraffin flotation and washover)

Wet, black, soft and somewhat thixotropic (working crumbly), mostly charcoal with a little mineral sediment and perhaps a little uncharred organic matter.

The tiny flot consisted of charred plant material which was mainly leaf fragments of saw-sedge, *Cladium mariscus* (L.) Pohl. More was recovered from the small washover of about 70 cm³, along with saw-sedge culm, grass/cereal culm (stem) material (probably straw and/or reed) and perhaps rush (*Juncus*) stem fragments, as well as some lumps of amorphous charred material. Also present were some charred seeds, all of which might have been introduced with cut vegetation, whether cereal straw or wetland plants like reed or sedge. Amongst these was a cluster of achenes of the cornfield weed stinking mayweed, *Anthemis cotula* L. This material was perhaps most likely to have formed through smoke-blackening of thatch (cf. Letts' (1999) study of plant materials in late medieval thatch in Southern England). The large residue of about 400 cm³ consisted of sand, chalk gravel (to 50 mm) and charcoal, with traces of bone, and pottery (to 35 mm).

The vertebrate remains were gingery brown in colour and well preserved, weighing 4.7 g. There were single vertebrae of a gadid fish, a medium-sized mammal and a bird, and three unidentified fragments.

Context 111 [Pit fill. Mid 12th-13th century]

Sample 7/T (3 kg sieved to 300 microns with washover)

Moist, mid grey-brown, crumbly (and slightly brittle) and soft (working somewhat plastic), stony (chalk fragments of 2 to 60 mm were abundant), sandy clay silt with some charcoal present.

The washover comprised a few cm³ of charred material and amorphous material with rusty concretion attached; there was also some saw-sedge leaf and a few poorly preserved uncharred seeds which were essentially from cornfield weeds. The large residue was of chalk gravel (to 40 mm) and sand, with traces of pot (to 45 mm), and bone.

This sample contained two fragments of gingery brown bone, one of which was an immature chicken radius, and the other unidentified.

Context 118 [Pit fill with much charcoal. Mid 12th-mid 13th century]

Sample 6/T (3 kg sieved to 300 microns with washover)

Waterlogged (semi-liquid), black sandy silt with abundant charcoal.

The modest-sized washover of about 150 cm³ was mainly charred material, mostly in the form of amorphous lumps of charred organic material, as in Sample 5/T. Some of these had evidently formed round thin wooden rods and other plant material to judge from impressions on their surfaces, and it is suspected this may be soot from smoke-blackened thatch. The large residue of about 600 cm³ comprised sand and gravel with lumps of fused charred plant stem (to 60 mm) in an amorphous charred organic matrix, presumably 'fused' thatch or similar. It appeared to contain 'straw', bracken stalk and saw-sedge leaves, at least, and there was rather more of the last of these in the finer fractions of the residue. There were also traces of burnt and unburnt bone, as well as pottery (to 50 mm). Again, the small numbers of charred propagules present were all consistent with an origin in the kinds of cut plant material used for roofs (or possibly floors).

There were five fragments of bone weighing 2.1 g. These consisted of a burnt bird bone, three burnt medium-sized mammal rib fragments, and part of a tooth root.

Context 132 [Organic pit fill – possible cess pit/garderobe – containing burnt daub and wattle. Mid 12th-mid 13th century]

Sample 8/T (2 kg sieved to 300 microns with paraffin flotation and washover)

Waterlogged, black, soft and somewhat thixotropic (working crumbly), mostly charcoal with a little mineral sediment and ?a little uncharred organic matter.

The flot consisted of a few cm³ of charred material, mainly amorphous 'char' and ash beads, with some grass/cereal culm and saw-sedge leaf fragments, together with traces of fine modern rootlets and one uncharred elderberry (*Sambucus nigra* L.) seed. Some of the burnt material appeared to be 'sooted'—a granular coating and/or a shiny varnish of carbon on surfaces of plant fragments. The washover about 50 cm³ consisted of more charred plant material, mostly charcoal. The large residue of about 500 cm³ was of sand and charcoal (probably mostly oak, to 35 mm), with quite a lot of daub-like material (to 25 mm). There were again some large charred grass/cereal culm fragments (from cereal straw and/or reed) and more charred saw-sedge leaf fragments. All of the few other identifiable charred plant remains were consistent with an origin in cut vegetation, and we are probably again dealing with burnt roofing.

There were seven very small fragments of bone totalling 0.7 g in weight. Colour varied from brown, black, grey or white. The material consisted of a single calcined herring vertebra, three other fish bones and four burnt unidentified fragments.

Context 142 [Burnt floor silts. Mid 12th-mid 13th century]

Sample 1 (Description only)

A moist mixture of light to mid grey-brown clay silt and bright mid red-brown and dark grey-brown ?ash.

No further investigation of this sample was undertaken.

Hand-collected shell

Eight contexts each gave a small quantity of shell, mostly only a few, or single, remains. The material was almost all well-preserved oyster valves, a few of which showed evidence of having been opened by humans, with a single mussel (*Mytilus edulis* L.) valve from Context 10. Only occasional traces of damage from other marine biota were noted. Terrestrial taxa were restricted to *Helix* sp. (present in three of the eight contexts) and a single ?*Cepaea/Arianta* sp.—all of these remains were suspiciously well-preserved and perhaps modern.

Hand-collected vertebrate remains

Medieval

There were 45 bone bearing contexts dating from the 12th-13th centuries, with most of the material defined as late 12th-early 13th century. Bones were found in a

range of feature types, including post hole, foundation and pit fills, occupation layers, floor surfaces and dumps. Preservation was described as 'good', occasionally 'excellent', and there were two contexts where bones varied between 'good' and 'excellent'. Angularity was described as 'spiky' for all contexts, with only an occasional rounded or battered fragment (Contexts 22, 77, 84 and 120). Colour was much more variable, both between contexts (ranging from beige through to black), and in twelve cases, within contexts, where the variation was more subtle. Most common were shades of fawn, often tinged with black, and gingery-brown. Negative features generally contained bones of darker hues, while fragments from occupation layers were frequently lighter in colour. Bones from dump deposits were more variable in colour. The degree of fragmentation was fairly high, with most bones falling between 5 cm and 20 cm in maximum dimension, and only a few larger fragments (from Context 13). Slot, cut and post hole fills appeared most likely to contain bones of less than 5 cm, while bones from foundation fills and yard surfaces seemed to be in a similar state of preservation to those from dumps, occupation layers and pit fills. Dog gnawing was noted, but was never present in proportions of 10% or more. Similarly, most contexts contained the occasional burnt fragment, but these only reached significant proportions in four contexts, of which only Context 71 (an occupation deposit) and Context 84 (a clay dump) contained more than five fragments. More than 10% of the bones in two thirds of the contexts showed evidence of butchery, with fifteen contexts having butchery marks on between 20% and 50% of their fragments. Butchery was most evident as chop marks (either cutting into or splitting the bone) and less commonly as knife marks. Proportions of fresh breakage were high, and considering the good state of bone preservation, this must relate to activities during and after excavation.

Of 882 fragments assigned a medieval date, 339 were identified to species, yielding a fairly typical urban mammalian fauna: dog, cat, pig, horse, cow, sheep, goat and rat. Three species (chicken, goose and duck) represented birds, while fish were limited to the gadids, including positive identifications of cod and ling. Large and medium-sized mammal fragments, in almost equal proportions, dominated the rest of the assemblage (although the former weighed nearly four times as much as the latter). Similar amounts of unidentified fish and bird fragments were also recorded (Table 2). Of the identified taxa, caprovid remains were more than twice as frequent as cattle, while pig bones were slightly less common overall, but still well represented. Single dog tibia and humerus fragments were present in Contexts 11 and 43 respectively, while the immature cat remains from Contexts 21 and 22 could have originated from the

same individual. Neither the cat nor the dog bones bore skinning marks. Horse was represented by a scapula from Context 10, two isolated incisors from Contexts 21 and 89, and a fragment from the mandibular ramus from Context 28. Of the 146 fragments identified as caprovid, two were positively identified as goat, these being a single horncore and radius from Contexts 12 and 28 respectively.

Most contexts contained small amounts of bone, with no concentration of any particular element type. Overall element distribution for caprovids appeared to be weighted towards elements bearing little meat, such as the skull, metapodials, and mandibles (23 of which 16 could be assigned ages). Conversely, the radius was also well represented, while the calcaneus and astragalus were rare. The low frequency of phalanges, carpals and tarsals is likely to relate to their small size, precluding regular hand collection. Six horn core fragments were recovered, and a number of skulls bore the evidence of horn core removal. Within the medium-sized mammal group, long bone fragments, most likely to belong to caprovids, were common, as were ribs. It is possible that the higher proportion of elements of low meat capacity may relate to their greater robustness, and to the fact that they may have been processed in a different way to more muscular joints. In view of this, there were no deposits for which it can be suggested that any concentrated specialised activity was taking place. There were 63 measurable and seventeen unfused bones.

There was a total of 68 fragments of cattle, fourteen of which were measurable and eleven unfused, together with a single mandible able to provide age-at-death data. Overall, there seemed to be an even element distribution, with no concentrations in particular contexts, although dump deposits seemed to have slightly higher proportions of low meat bearing elements such as head and distal limb bones.

Pig was represented by a total of 48 fragments, of which thirteen were measurable, seventeen were unfused and three were ageable mandibles. As is common with archaeological pig remains, jaws bones were the most abundant elements, but there also appeared to be a slight bias towards the forequarters, which may suggest that specific joints had occasionally been consumed on the site.

Late medieval/post-medieval

This period was represented only by Context 3, a pit fill dating to 1475-1550. Preservation was 'excellent', angularity 'spiky', and colour was fawn, tinged with black. Fragmentation was similar to that observed in the medieval deposits, with a high proportion of butchery and occasional fresh breakage damage.

There were 83 fragments, 27 of which were identified to species, with cow and caprovid in equal proportions and single bones of goose, fowl and duck. Fifteen of these bones were measurable and three mandibles were ageable.

Discussion and statement of potential

Four of these deposits have, together, provided an extremely rare example of material which seems to have formed through the burning of thatching. Charred saw-sedge remains have been recorded from several sites in the vicinity of the present one—Magistrates' Courts (Hall *et al.*, 2001), Well Lane (Carrott *et al.* 1999a) and Lord Roberts Road (Carrott *et al.* 1999b)—but this is the first occasion such abundant and coherent evidence has been found for this kind of material.

The hand-collected shell assemblage is of little interpretative value beyond indicating the importation and consumption of marine shellfish. The terrestrial snails recovered were all of catholic taxa and quite possibly of modern origin.

Although the vertebrate assemblage is tightly dated, very well preserved, and contains a high proportion of mandibles and measurable bones, it is still a little small for any firm conclusions to be drawn. The small amount of dog gnawing and retention of spiky surfaces both imply that the bones were rapidly incorporated into deposits. The overall appearance of the medieval and later material is of general domestic refuse, with a small component of primary butchery waste that might originate from whole animals being brought onto the site.

Although all elements seem to be represented, there are no concentrations in any contexts that might suggest that any specialised activity was being carried out at particular times. However, the presence of skulls and horncores with butchery marks

might suggest that some horn-working waste found its way into the deposits. Another possibility was that horn sheaths were removed from their cores before being sold to itinerant traders.

The elements and limited range of taxa, with an absence of wild species, might indicate that the depositors were not of particularly high status. They were not, however, so lowly that they could not afford more choice joints or relatively more expensive birds. The high proportion of caprovids compared to cattle and the relatively large amount of pig is interesting in the light of comparable sites from Beverley, including Lurk Lane (Scott, 1991) and Eastgate (Scott, 1992), and similarly dated material from most sites in York, including Tanner Row (O'Connor 1988), Coppergate, The Bedern, 21-33 Aldwark, 46-54 Fishergate, 1-2 Tower Street and 9 Blake Street (Bond and O'Connor 1999, 378). The York, Eastgate and Lurk Lane (Phase 6) assemblages are dominated by cattle, while that from Lurk Lane Phase 7 is more akin to the County Hall assemblage, with a predominance of caprovids and relatively high proportions of pigs. This increase in the consumption of sheep is thought to relate to the development of the wool industry in East Yorkshire during the 12th and 13th centuries (Scott, 1991).

Recommendations

In view of the extremely unusual evidence for burnt plant material which appears to have originated as thatch it is suggested that further analysis of samples from these excavations is done in order to check for the presence of these characteristic remains in any deposits not so far examined. A proper record of the remains from at least some of the samples evaluated should be made, using further raw sediment and appropriately gentle disaggregation. Some study of the nature of the amorphous charred material by a geochemist may be appropriate, too, as a piece of research beyond the remit of the

present intervention and the responsibility of the developer. Any further excavation should certainly be accompanied by extensive sampling to establish, if possible, a better context for the charred roofing material in terms of structural evidence for buildings in the vicinity. It would also be important to search for supporting evidence from charred, or otherwise preserved, insect remains likely to originate in thatch.

No further work is recommended on the recovered shell.

The vertebrate assemblage is both tightly dated and excellently preserved. This combined with the large number of mandibles and measurable elements, means that the material would be of great value when used as a comparative data set for other similarly dated sites in Beverley and the wider region. Thus, it is recommended that the bones should be fully recorded and a complete metrical archive created.

Retention and disposal

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

Archive

All material is currently stored in the Environmental Archaeology Unit, University of York, along with paper and electronic records pertaining to the work described here.

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Table 1. County Hall, Beverley, East Riding of Yorkshire: list of examined sediment samples with notes on their treatment.

Context	Sample	Notes
57	3	3 kg sieved to 300 microns with washover
76	4	5 kg sieved to 300 microns with washover
100	5	3 kg sieved to 300 microns with paraffin flotation and washover
111	7	3 kg sieved to 300 microns with washover
118	6	3 kg sieved to 300 microns with washover
132	8	2 kg sieved to 300 microns with paraffin flotation and washover
142	1	Description only

Table 2. County Hall, Beverley, East Riding of Yorkshire: Hand-collected vertebrate remains from deposits of medieval date.

Taxon		Measurable	Unfused	Mandibles	Total Fragments	Total Weight
<i>Rattus</i> sp.	rat				1	0.5
<i>Canis</i> f. domestic	dog	1			2	25
<i>Felis</i> f. domestic	cat		3		4	11
<i>Sus</i> f. domestic	pig	13	17	3	48	743
<i>Equus</i> f. domestic	horse	1			4	406
<i>Bos</i> f. domestic	cow	14	11	1	68	2688
<i>Ovis</i> f. domestic	sheep			1	1	19
<i>Capra</i> f. domestic	goat	1			2	26
Caprovid	sheep/goat	63	17	15	146	3089
<i>Anser</i> sp.	goose	12			13	80
<i>Anas</i> cf. <i>platyrhynchos</i> L.	?mallard	1			1	2
<i>Gallus</i> f. domestic	fowl	20			27	74.7
<i>Gadus morhua</i> L.	cod				6	12
<i>Molva molva</i> (L.)	ling				2	16
Gadid					7	20.5
<i>Sub-total</i>		126	48	20	332	7212.7
Unidentified bird					22	37.1
Unidentified fish					23	30
Large mammal					249	3436
Medium mammal					250	987
Unidentified					6	2.5
<i>Sub-total</i>					550	4492.6
Total		126	48	20	882	11705.3