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**Assessment of biological remains from excavations at Lime Tree Lane,
Bilton, Hull (site code: BIL93)**

by

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Summary

Two samples of sediment, one spot find, and two bags of hand-collected bone from medieval deposits revealed by excavations at Lime Tree Lane, Bilton, Hull were submitted for an assessment of their bioarchaeological potential.

It is suggested that with tighter dating further work could usefully be carried out on the charred plant remains from Sample 2 (F26) but no further analysis is recommended for the animal bone assemblage. However, none of the deposits remaining at the site should be destroyed without appropriate excavation and sampling.

Keywords: LIME TREE LANE; BILTON; HULL; ASESSMENT; MEDIEVAL; PLANT REMAINS; CHARRED SEEDS; VERTEBRATE REMAINS

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Introduction

Excavations were carried out at Lime Tree Lane, Bilton, Hull, during 1993. Two General Biological Analysis samples ('GBAs' *sensu* Dobney *et al.* 1992), two bags of hand-collected animal bone, and one small bag of hand-collected charcoal, were submitted for an assessment of their biological potential. The material came from a pit and various ditches (mostly rather shallow) of probable medieval date.

Methods

All of the material was initially inspected in the laboratory. A 3 kg subsample was taken from one of the GBAs for extraction of macrofossil remains, following procedures of Kenward *et al.* (1980; 1986). Apart from a 1kg voucher, which was retained, the remainder of the sample was bulk-sieved. The other GBA sample was treated entirely as a BS sample.

The washovers and residues resulting from processing were examined for their content of plant and invertebrate macrofossils, and animal bone. Notes were made on the quantity of fossils and principal taxa.

Results and Discussion

The results are presented in plot and sample number order. Context information provided by the excavator is given in square brackets.

Sediment samples

Plot 19, Feature 10

Sample 1/BS, Context 1030

[Primary ditch fill]

15 kg processed

Just moist, light-mid greyish brown, indurated (working crumbly to sticky, then plastic, when wetted), sandy clay with flint and chalk stones at the 2-6 mm scale present to common. Flakes of mollusc shell were also present.

The residue consisted almost entirely of sand and stones, with a single piece of pottery, and a few, unidentifiable, fragments of mollusc shells. A small quantity of bone was also recovered: approximately thirty-five amphibian bones; a maxilla and a pelvis tentatively identified as ?common lizard (cf. *Lacerta vivipara* Jaquin); a bank vole (*Clethrionomys glareolus* Schreber) mandible; and two bones from small sparrow-sized birds (Passeriformes).

Plot 24, Feature 26

Sample 2/T

[Pit fill - was this fill associated with an oven used for domestic baking?]

Moist, moderately heterogeneous mixture (at the mm scale) of black to dark grey and dark brown material with some pale orange/brown patches (probably burnt sediment). There was some evidence of structure at the cm scale. The sediment was a soft (working just plastic) sandy clay silt with abundant charcoal.

3 kg GBA and 20 kg BSXS

A large proportion of the residue (BSXS) and almost all of the washover (GBA) from this sample consisted of charred plant remains, the bulk of it cereal grains. Preservation was rather variable, but a high proportion of the seeds were somewhat abraded or 'puffed'. A few specimens were in excellent condition. The charred cereals included wheat (probably a form of bread wheat, *Triticum 'aestivo-compactum'*), barley (*Hordeum*) and oats (*Avena*), some of the last of these being present as whole spikelets and therefore identifiable as cultivated oat (*A. sativa*). Much of the finer fraction of the charred material consisted of chaff, of which a large proportion was probably also oats. A few charred field bean (*Vicia faba*) seeds were also present. Amongst the other identifiable remains were charred seeds of a modest range of arable weeds likely to have been gathered with the crop plants.

There were no invertebrate remains present in either the washover or residue. A small amount of bone was present in the residue (see Archive list below).

Spot sample of charcoal - CHI

The four pieces of charcoal (approx 1- 2 cm in size) were identified as *Alnus glutinosa* (L.) Gaertner (alder).

Hand-collected bone

All the hand-collected animal bone (with the exception of the unstratified material) was examined and records were made of preservation, quantities, and identifications, where appropriate.

A very small assemblage of animal bones, of broad medieval date, was recovered from the excavations. This consisted of only 129 fragments (3955g) of which 54 were identifiable (2644g); these included 6 measurable fragments and 3 mandibles with teeth (Table 1).

Overall, the bone was of fair preservation, with much of the material being brown or fawn in colour. Three contexts (1003, 1004, 1005) contained poorly preserved and eroded fragments. Few of the bones showed evidence of dog gnawing or fresh breakage. Butchery was noted, but only rarely.

The bulk of the remains represented major domesticates such as cattle, caprine, horse and pig. Maxillary teeth from a single individual (Plot 19) represented 12 of the 14 horse fragments. Interestingly, the roots of some of the cheek teeth appeared to be abnormal, being flared at their base. Evidence of possible hobbling was noted on a horse metacarpal fragment from Context 1012. This was apparent from the localised inflammatory reaction around the proximal shaft and was similar in appearance to (although not as severe as) a condition noted on two metacarpals from Tower 10, City Walls, York (Jaques and Dobney 1996, 5). This particular bone had also been chopped longitudinally.

A single duck (*Anas* sp.) tarso-metatarsus, and one synsacrum fragment identified only as ?duck, were also recorded. The former was of a size consistent with mallard and may represent a wild individual. Additionally, a piece of worked antler had been recovered from the site; this was identified as red deer (*Cervus elaphus* L.).

Statement of potential

If the assemblage from Sample 2 (F26) can be tightly dated, it would be worth making a proper record of the plant assemblage, since rural medieval crop-plant assemblages from primary contexts are rather rare in Britain; for this work, a total of 7.5 hours would be required for sorting, identification and reporting.

The small size of the vertebrate assemblage and the limited number of bones which can be used to obtain age-at-death and biometrical information precludes useful detailed recording and interpretation. Lack of contextual information and the broad date of the material further limits the potential of the assemblage. No further detailed analysis is recommended. However, should the site be taken forward to the publication stage, then 7.5 hours would be required to produce publication text and tables.

Recommendations

If further excavations take place on this site then every effort should be made to sample and investigate any revealed deposits. The deposits certainly should not be damaged by development without proper excavation and sampling, and commensurate funding for post-excavation analysis should be made available.

Retention and disposal

Any sediment remaining from the samples taken from Plot 19 and F26 should be retained for future research. The vertebrate remains should also be retained for archive purposes. All washovers and residues should be retained in the longer term.

Archive

All extracted fossils and flots are 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. Hand-collected vertebrate remains from Lime Tree Lane, Bilton.

Species		No. fragments	No. measurable	No. mandibles	Weight (g)
<i>Equus f. domestic</i>	horse	14	-	-	505
cf. <i>Equus f. domestic</i>	?horse	1	-	-	11
<i>Sus f. domestic</i>	pig	2	-	2	57
<i>Cervus elaphus</i> L	red deer	1	-	-	32
<i>Bos f. domestic</i>	cattle	20	5	1	1887
Caprine	sheep/goat	14	-	-	147
<i>Anas sp.</i>	duck	1	1	-	1
cf. <i>Anas sp.</i>	?duck	1	-	-	4
<i>Sub-total</i>		54	6	3	2644
Unidentifiable bird		1	-	-	7
Unidentified		74	-	-	1304
<i>Sub-total</i>		75	-	-	1311
Total		129	6	3	3955

Appendix 1

Archive of vertebrate remains from Lime Tree Lane, Bilton. Key: *preservation* - represents the general condition of the bone surfaces; *angularity* - represents the nature of the broken surfaces; (*m*) = measurable.

Hand-collected bone

OS1 F3 Context 1003

Preservation: Variable
 Colour: Brown
 Angularity: Variable

0-10% fresh breakage
 0-10% dog gnawing

Cattle - 3 tibia fragments (2 m), 1 mandible (P4 - M3), 1 pelvis fragment.
Caprine - 1 pelvis fragment
Unidentified - 20 fragments, cow-sized lumbar vertebra fragments and a sacrum. Represent a single individual.

Weight of identifiable fragments: 799g
 Weight of unidentifiable fragments: 735g

OS2 F4 Context 1004

Preservation: Variable
 Colour: Fawn
 Angularity: Variable

0-10% fresh breakage

Cattle - 1 scapula fragment (m), 1 radius fragment, 1 tibia fragment (m), 1 carpal.
Caprine - 1 metatarsal shaft.
Duck - 1 tarsometatarsus (m), mallard -sized.
Unidentified - 18 fragments, including cow-sized vertebra and shaft fragments.

Weight of identifiable fragments: 189g
 Weight of unidentifiable fragments: 202g

OS3 F4 Context 1005

Preservation: Fair
 Colour: Fawn
 Angularity: Spiky
 0-10% butchery

0-10% dog gnawing

Cattle - 1 maxilla, 1 pelvis fragment.
Caprine - 1 horncore (ram), 1 humerus fragment, 1 tibia shaft, 1 metatarsal fragment.
?Horse- 1 x cranial fragment.
Unidentified - 7 fragments, including cow-sized vertebra, shaft and rib fragments

Weight of identifiable fragments: 175g
 Weight of unidentifiable fragments: 87g

OS4 F5 Context 1012

Preservation: Good
 Colour: Fawn
 Angularity: Spiky

0-10% butchery
 0-10% dog gnawing
 0-10% fresh breakage

Cattle - 1 calcaneum fragment.
Horse - 1 first phalanx, 1 metacarpal fragment (pathological and split longitudinally).
Unidentified -12 fragments, including cow-sized and sheep-sized fragments

Weight of identifiable fragments: 146g
 Weight of unidentifiable fragments: 131g

OS5 F6 Context 1017

Preservation: Fair
 Colour: Brown
 Angularity: Spiky

Unidentified - 1 sheep-sized shaft fragment.

Weight of unidentifiable fragments: 5g

OS6 F7 Context 1019

Preservation: Fair
 Colour: Brown

Angularity: Spiky

Pig - 1 mandible (M1, M2), hypoplasia lines visible on teeth, 1 mandible, no teeth.

Unidentified - 1 sheep-sized shaft fragment.

Weight of identifiable fragments: 57g

Weight of unidentifiable fragments: 2g

OS7 F8 Context 1022

Preservation: Fair

Colour: Fawn

Angularity: Not recorded

Unidentified - 1 fragment.

Weight of unidentifiable fragments: 7g

OS8 F9 Context 1025

Preservation: Fair

Colour: Brown

Angularity: Not recorded

Unidentified - 2 cow-sized fragments, rib and vertebra.

Weight of unidentifiable fragments: 26g

OS9 F12 Context 1038

Preservation: Fair

Colour: Brown

Angularity: Not recorded

0-10% butchery

Cattle - 1 humerus (m), chopped.

Weight of identifiable fragments: 120g

OS10 F12 Context 1039

Preservation: Fair

Colour: Brown

Angularity: Not recorded

Unidentified - 1 cow-sized vertebra fragment.

Weight of unidentifiable fragments: 48g

OS12 F12 Context 1022

Preservation: Fair

Colour: Brown

Angularity: Not recorded

Cattle - 1 mandible, no teeth.

Weight of identifiable fragments: 104g

OS13 F26 Context 1082

Preservation: Good

Colour: beige

Angularity: Not recorded

Red deer - 1 antler fragment, worked.

Weight of identifiable fragments: 32g

OS14 F26 Context 1084

Preservation: Good

Colour: Fawn

Angularity: Spiky

0-10% butchery

0-10% dog gnawing

0-10% fresh breakage

Caprine - 1 axis, chopped, 1 scapula fragment, 1 tibia fragment, 1 metatarsal fragment.

Bird - 1 humerus shaft fragment, possibly goose.

Unidentified - 6 sheep-sized fragments.

Weight of identifiable fragments: 46g

Weight of unidentifiable fragments: 19g

OS15 F26 Context 1085

Preservation: Good

Colour: Fawn

Angularity: Spiky

Caprine - 1 first phalanx.

?*Duck* - 1 synsacrum fragment.

Unidentified - 4 fragments, including cow-sized rib and sheep-sized cranial fragments, cranial fragments are burnt.

Weight of identifiable fragments: 6g

Weight of unidentifiable fragments: 38g

OS16 F26 Context 1087

Preservation: Fair
Colour: Brown
Angularity: Variable

Cattle - 1 metatarsal.
Caprine - 1 metacarpal.
Unidentified - 1 fragment.

Weight of identifiable fragments: 196g
Weight of unidentifiable fragments: 4g

OS17 F26 Context 1089

Preservation: Fair
Colour: Brown
Angularity: Not recorded

Cattle - 1 horncore fragment.

Weight of identifiable fragments: 69g

OS18 F26 Context 1090

Preservation: Fair
Colour: Brown
Angularity: Variable

Cattle - 1 first phalanx.
Caprine - 1 maxillary molar, 1 first phalanx.

Weight of identifiable fragments: 21g

OS20 Plot19/20

Preservation: Fair
Colour: Brown
Angularity: Spiky

Cattle - 1 mandible (P3-M2), maxilla with teeth.

Weight of identifiable fragments: 243g

OS21 Plot19

Preservation: Good
Colour: Not recorded
Angularity: Not recorded

Cattle - 1 M3
Horse - 1 lower cheek tooth, 6 upper incisors, 5 maxillary premolars, from same individual.

Weight of identifiable fragments: 448g

Bone from bulk-sieved samples

Plot19 Context 1030 1/BS

Caprine - 1 radius fragment, acid-etched.
Pig - 1 maxillary canine.
Dog - 1 mandible fragment, no teeth.
Bird - 1 tibiotarsus, 1 ulna fragment, from small passerines.
Small mammal - 1 bank vole mandible, 1 ulna and 1 tibia - murine/microtine.
Amphibian - 35 fragments.
Lizard - 1 pelvis and 1 maxilla fragment, possibly common lizard.
Unidentified - 9 fragments.

Weight of identifiable fragments: 10g
Weight of unidentifiable fragments: 4g

F26 2/BSXS

Bird - 2 fragments, including a duck ilium fragment.
Amphibian - 1 vertebra fragment.
Unidentified - 27 fragments, including 11 burnt fragments.

Weight of identifiable fragments: 1g
Weight of unidentifiable fragments: 4g