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**Assessment of biological remains from  
excavations at Hayton, East Riding of  
Yorkshire (site code: 06-01-02)**

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by

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**Summary**

*Dried washovers from forty-two bulk sediment samples (processed by the excavator) and four large boxes of hand-collected bone, recovered during excavations at Hayton, East Riding of Yorkshire, were submitted for an assessment of their bioarchaeological potential. The material was recovered from a range of features (including ditches, pits, gullies and a kiln/oven) which provisional stratigraphic and ceramic interpretation dated as late Iron Age, Romano-British, medieval and post-medieval.*

*It is clear that all the deposits examined in more detail yielded at least a few charred cereal grains and that concentrations of grains were usually rather high for rural deposits in this area. The largest concentrations, perhaps not surprisingly, came from deposits of Roman date associated with a kiln or oven and presumably representing crops dried in the structure. Chaff and weeds were very scarce, and the assemblages are therefore likely to represent fully processed grain, perhaps from a store. Other remains indicating cultivated or collected plant resources were limited to very sparse legumes and hazel (nutshell). The assemblages are typical of deposits of their period, with pulses a little more in evidence in the medieval deposits than the Roman, evidence of spelt wheat early but not later, and rye later but not earlier. The records are especially useful in adding to the corpus of data from an area where assemblages of charred plant remains from rural contexts are sparse and usually small.*

*The bulk of the vertebrate material was of rather variable preservation and damaged by fresh breakage. A restricted suite of species was identified which included the major domestic mammals.*

*The lack of cereal chaff means that the possibility of closer identification of the cereals is limited. Other deposits from related features showing a high content of charred material should perhaps be examined to provide a firmer picture of the distribution of crop remains through the sequence at Hayton. Given the limited amount of evidence that has been published regarding the vertebrate material from rural sites of Romano-British date, a basic data archive of the current material should be produced for the purposes of regional comparisons. Additionally, previous excavations at Hayton have produced an assemblage of bone which is available for use as comparanda.*

**KEYWORDS:** HAYTON; EAST RIDING OF YORKSHIRE; ASSESSMENT; LATE IRON AGE ROMANO-BRITISH; MEDIEVAL; POST-MEDIEVAL; PLANT REMAINS; CHARRED PLANT REMAINS; CHARRED GRAIN; SNAILS; VERTEBRATE REMAINS

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## Assessment of biological remains from excavations at Hayton, East Riding of Yorkshire (site code: 06-01-02)

### Introduction

An archaeological excavation was carried out by MAP Archaeological Consultancy Ltd (MAP) at Hayton, East Riding of Yorkshire, during 2002.

The excavations revealed deposits of late Iron Age, Romano-British, medieval and post-medieval dates within a range of feature types including ditches, pits, gullies and a kiln/oven.

Washovers from forty-two bulk sediment samples ('GBA'/'BS' *sensu* Dobney *et al.* 1992) and four large boxes (each of ~40 litres) of hand-collected bone, were submitted to Palaeoecology Research Services Ltd (PRS), County Durham, for an assessment of their bioarchaeological potential.

### Methods

#### *Sediment samples*

Plant remains in a series of dried washovers from sieving of forty-two samples (carried out on site by the excavator) were inspected in the laboratory. Twelve of the washovers (where greater concentrations of remains were observed) were selected for closer examination and material was recorded briefly by 'scanning', identifiable taxa and other components being listed directly to a PC using *Paradox* software.

#### *Hand-collected vertebrate remains*

For the hand-collected vertebrate remains that were recorded, data were entered into an *Excel* spreadsheet. 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 (assumed to be caprovid, pig or small cervid) and totally unidentifiable. These groups are represented in Table 1 by the category labelled 'Unidentified'.

### Results

#### *Sediment samples*

The results of the investigations are presented in context number grouped by date. Archaeological information, provided by the excavator, is given in square brackets. A brief summary of the processing method follows (in round brackets) after the sample numbers.

2<sup>ND</sup> TO 4<sup>TH</sup> CENTURY

**Context 1233** [fill of clay lined pit]

Sample 31 (33 litres processed by excavator with washover)

The small washover (of about 100 ml) was mainly of rather well-preserved hexaploid wheat grains; some ?sprouting and some grains perhaps somewhat 'wasted' before charring. There were very few other cereals present (traces of barley, *Hordeum*) and a trace of glume-wheat chaff that may be more closely identifiable with further study.

**Context 1258** [pit fill]

Sample 32 (33 litres processed by excavator with washover)

The very small washover, of about 100 ml, was of grain, including some large and rather well-preserved hexaploid wheat, a trace of spelt (*Triticum spelta* L.) glume-bases and barley rachis internodes. There was also a little charcoal (to 10 mm), a few weed seeds and some charred herbaceous detritus.

**Context 1337** [pit fill]

Sample 34 (unknown volume processed by excavator with washover)

The very small washover (of about 30 ml) was of grain and rather 'silted' charcoal (to 5 mm, including oak, *Quercus*). Bread/club wheat (*Triticum 'aestivo-compactum'*), barley and oats (*Avena*) were all present, and there were trace quantities of spelt glume-bases.

**Context 1558** [kiln/oven deposit]

Sample 41 (1 litre processed by excavator with washover)

There was a large washover of about 150 ml almost exclusively of grain. Individual grains were very eroded/spongy but perhaps mostly of barley, with a little hexaploid wheat, and trace of oats. There were also many cereal grain fragments and, in the finer fraction, some very eroded ?barley rachis internodes. Almost no wood charcoal and only a few small weed seeds were noted.

**Context 1560** [kiln/oven deposit]

Sample 42 (1 litre processed by excavator with washover)

The large washover was of about 75 ml and consisted of charcoal (to 10 mm) and grain, the latter mainly barley, with a little bread/club wheat, and traces of field bean (*Vicia faba* var. *minor*) cotyledons. The grains were, in the main, rather heavily charred but some were rather better preserved.

12<sup>TH</sup> TO 14<sup>TH</sup> CENTURY**Context 9** [pit fill]

Sample 7 (33 litres processed by excavator with washover)

The small washover (of about 80 ml) was of grain and charcoal (to 20 mm, including oak) with some peas (*Pisum sativum* L.). The cereal grains were rather eroded but mostly barley (some sprouting a little), with some bread/club wheat.

**Context 455** [pit fill]

Sample 9 (unknown volume processed by excavator with washover)

There was a small washover of about 25 ml of very silty charcoal (to 15 mm) and a few rather poorly-preserved (though not especially eroded/vesicular) charred grains (including bread/club wheat and barley).

**Context 475** [hearth]

Sample 10 (33 litres processed by excavator with washover)

The small washover (of about 100 ml) was of charcoal (to 10 mm, including oak) and cereal grains. The latter were mostly moderately well-preserved barley (some grains quite large and some perhaps with short sprouts), plus a little bread/club wheat and oats, and rare ?rye (cf. *Secale cereale* L.). In general, preservation of grains was quite variable and there were many small cereal grain fragments. There was also some 'bread-like' charred organic material in clasts (to 10 mm).

## POST-MEDIEVAL

**Context 480** [deposit]

Sample 11 (11 litres processed by excavator with washover)

The small washover was of about 20 ml and mainly of rather eroded and/or distorted charred grains—mostly barely and a little bread/club wheat—with a little charcoal (to 10 mm) and a trace of charred hazel (*Corylus avellana* L.) nutshell.

**Context 605** [fill of rectangular feature]

Sample 17 (33 litres processed by excavator with washover)

The very small washover (about 40 ml) was of grain and charcoal (to 15 mm). The grains were of bread/club wheat and barley, all rather or very eroded. In addition, there were a few charred weed seeds and a single charred field bean seed.

**Context 1392** [charcoal]

Sample 35 (unknown volume processed by excavator with washover)

The moderately large washover was of about 220 ml, mainly grain, with some charcoal (to 20 mm, including oak). The grains were mostly rather well-preserved (occasional grains sprouting) barley, with rather a lot of small oat grains and a trace of bread/club wheat. There were also traces of charred pulses (?pea and field bean).

UNDATED

**Context 704** [burnt layer in pit fill]

Sample 40 (unknown volume processed by excavator with washover)

The small washover was about 140 ml of grain, with a little charcoal (to 20 mm) and some 'bread-like' charred organic material (to 15 mm). The grain was mostly barley, with a little bread/club wheat; all rather eroded, though there were some specimens with a little pericarp present. No cereal chaff or weeds were seen.

*Shell from the samples*

Seven deposits gave small amounts of remains which were submitted as shell along with the bone recovered from the same samples. For five of the deposits (Contexts 4, 43, 642, 693 and 1242, Samples 8, 3, 18, 19 and 26, respectively) the remains consisted of either one of two fragments of *Gryphaea* sp. (the fossilised remains of Jurassic bivalves, also known as 'Devil's toenails'). Context 91 (Sample 6) gave two unidentified ?shell fragments and Context 1258 (Sample 32) a single rather crushed land snail (?*Oxychilus/Aegopinella* sp.) and two other unidentified land snail shell fragments.

*Vertebrate remains from the samples*

Thirty-four samples produced 1,523 fragments of bone weighing 526g. Most of the deposits from which the samples were taken could not be dated, but those for which information was available ranged in date from the late Iron Age through to the medieval period.

Preservation was generally fairly good, although four deposits (Contexts 4, 43, 642 and 895) were noted as being poor and four (Contexts 480, 1159, 1287 and 1524) were recorded as well-preserved. Burning was noted on material from many of the deposits and included bones which had been both calcined and burnt black.

A number of species were represented in these samples. Cattle, sheep/goat, pig, dog and cat remains were present in small numbers, together with bones of small mammals and amphibians. Birds were represented by the remains of chicken and a small passerine. Some fragments of fish were noted, although these could not be identified to species. By far the largest quantity of bones, 1460 fragments, was assigned to the 'unidentified' category.

*Hand-collected vertebrate remains*

Two hundred and eighty-seven deposits, including pit, ditch and gully fills, produced an assemblage of hand-collected animal bone amounting to 3818 fragments, of which 24 were mandibles with teeth *in situ* and 67 were measurable. Material from all the deposits was briefly examined. Preliminary examination of the pottery assemblage suggested that almost half of the remains (1508 fragments, ~40%) were from deposits of Romano-British date, whilst the medieval deposits produced 1141 fragments. Smaller numbers of fragments were recovered from deposits of Iron Age and post-medieval date, with a further 496 fragments being recovered from deposits of (as yet) unknown date.

Preservation of the bones was generally good, although several deposits (including Contexts 62, 95, 664, 913 and 1344) produced material that was recorded as being of poor preservation. The surfaces of a number of the fragments had been damaged by erosion and several showed evidence of acid etching and fresh breakage damage. Evidence of dog gnawing was scarce, whilst burnt material was noted from only four deposits (Contexts 602, 1131, 1346 and 1625).

Many of the remains had been heavily butchered, particularly those recovered from deposits of Roman date. A characteristic of the assemblage was the many cattle shaft fragments that had been split longitudinally. This was probably for the extraction of marrow and has been noted from many sites of Roman date (e.g. Dobney *et al.* 1996). Other evidence included a cattle skull with chopped occipital condyles (probably resulting from removal of the head from the rest of the carcass), and a set of carpals and tarsals from a cow skeleton that showed repeated cut marks. Knife marks were also noted on the inside of the acetabulum of a sheep/goat pelvis, whilst a single horse metatarsal had cut marks on the proximal shaft.

A restricted suite of species was identified, with the assemblage being dominated by the main domesticates, particularly cattle and pig. However, the relative importance of these species was exaggerated by the presence of a number of complete and part skeletons. Two cattle skeletons were recovered, one of late Iron Age/Romano-British date (from Context 620) and one from a deposit dating to the medieval period (from Context 824). The former was fairly complete, although some of the smaller skeletal elements were missing. From the fusion data, this individual appeared to have been between 24 and 36 months old when it died. Knife marks were identified on several of the bones. The medieval example was a younger animal and only some of the long bones, teeth and lower limb bones were present. Several pig skeletons were also recovered, again of both Romano-British and medieval date. Those

dated to the earlier period included the almost complete skeleton of a female individual, aged between 12 and 24 months (Context 404), whilst a younger animal, probably less than 12 months old when it died, was recovered from Context 1252. The latter was represented only by elements of the forelimbs, and some fragments of rib, vertebrae and cranium. Pig skeletons of medieval date, included that of another young animal from Context 519 (of a similar age to that from Context 1252) and of an older individual from Context 573. Both of these skeletons were almost complete. Additionally, an articulated leg of a calf was found in Context 819 and part skeletons of both a cow and a pig were identified from Context 56.

Horse and caprovid remains were also present although in much smaller numbers. Of the minor domesticates, dog bones were recovered from several deposits, whilst a single cat bone was noted from Context 93. Wild mammals were restricted to two cervid bones (one of which was from a roe deer), and a hare metatarsal. Birds were also only present in small numbers, the most common being goose and chicken. Their remains were recovered from deposits of both Roman and medieval date and included a part chicken skeleton (Romano-British), consisting of leg and wing bones, from Context 1436. Corvid (Context 1180) and duck (Contexts 196 and 1027) were also identified, together with three bones from an immature bird of prey (Context 998). Some of these remains were from deposits that have not as yet been dated.

Several bones showed examples of pathological conditions. These included a medium-sized mammal rib (dating to the Roman period) with evidence for a healed fracture, a sheep/goat phalanx from the 2<sup>nd</sup> to 3<sup>rd</sup> century which showed extra growth of the distal condyle, and a horse phalanx from the same period with evidence of exostosis.

## Discussion and statement of potential

It is clear that all the deposits examined in more detail yielded at least a few charred cereal grains (as well as some wood charcoal, mostly oak), but that concentrations of grains were usually rather high—exceptionally so for rural deposits in this area (where concentrations of a few grains per litre or kilogramme of sediment are the norm in the author's (AH) experience). The largest concentrations, perhaps not surprisingly, came from deposits of Roman date associated with a kiln or oven and presumably representing crops dried in the structure. Chaff and weeds

were very scarce, and the assemblages are therefore likely to represent fully processed grain, perhaps from a store—though clearly from different periods within the same area. The lack of chaff means that identification of the grain can only be taken to a low level. Other remains indicating cultivated or collected plant resources were limited to very sparse legumes (mainly field bean) and hazel (nutshell).

The assemblages are typical of deposits of their periods, with pulses a little more in evidence in the medieval deposits than the Roman, evidence of spelt wheat early but not later, and rye later but not earlier. Intriguingly, some limited evidence of sprouting was seen in material from each of the periods represented.

The records are especially useful in adding to the corpus of data from an area where assemblages of charred plant remains from rural contexts are sparse and usually small.

No interpretatively useful shell remains were recovered.

The current vertebrate assemblage from Hayton, although seemingly quite large, has suffered extensively from fresh breakage damage, resulting in the creation of many additional fragments representing the same collection of bones. Preservation was reasonably good although, again, the high degree of fragmentation precluded the identification of many fragments to species. Few fragments were of use for providing age-at-death and biometrical data. Particularly interesting, however, were a number of whole and part skeletons of varying dates, including some recovered from deposits of late Iron Age/Romano-British date. Animal burials have been recovered from a number of rural sites in the area dating to this period (including from previous excavations in the vicinity) and it has been suggested that they may have some ritual significance and represent a continuation of practices

undertaken during the Iron Age (Dobney 2001).

The butchery from this site, particularly the extensive chopping of all major elements and the splitting of long bones is typical of vertebrate assemblages from many Roman sites throughout Britain, e.g. Tanner Row, York (O'Connor 1988), Lincoln (Dobney *et al.* 1996) and Exeter (Maltby 1979). These practices suggest a centrally organised system for the processing of cattle carcasses. However, the bones of birds and smaller mammals, such as caprovid, dog and cat, suggest that domestic waste was also represented.

There are few bone assemblages from rural sites of Iron Age/Romano-British date, or for that matter of medieval date, in the region that have been fully analysed and published, rendering this material of some importance. Additionally, another large assemblage of vertebrate remains exists from previous excavations at the site, and together, the two could provide useful information regarding animal husbandry and economic practises at this site during the Iron Age and Romano-British period.

## Recommendations

The lack of cereal chaff means that the possibility of closer identification of the cereals is limited. This assessment may, therefore, be a sufficient record of the nature of the assemblages. Other deposits from related features showing a high content of charred material but not included in this assessment should perhaps be examined to provide a firmer picture of the distribution of crop remains through the sequence at Hayton.

Given the importance of vertebrate material of this date, it is recommended that a basic archive, including biometrical and age-at-death data, should be produced for the current vertebrate remains from all well-dated deposits. These data are of limited use on their

own, but could provide valuable information when used in conjunction with data from other vertebrate material collected during excavations at the site between 1995 and 2000.

## Retention and disposal

The washovers, any remaining unprocessed sediment and all of the hand-collected bone should be retained for the present.

## Archive

All material is currently stored by Palaeoecology Research Services Ltd (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. Hand-collected vertebrate remains from Hayton, East Riding of Yorkshire: total numbers of fragments, and number of deposits from which they were recovered by spot date groups. Key: LIA = Late Iron Age; RB = Romano-British; u/s = unstratified.

Spot date groups	No. of fragments	No. of contexts
LIA/RB	71	13
?LIA/RB	491	1
RB	929	109
?RB	377	10
RB ?2 <sup>nd</sup>	40	7
1 <sup>st</sup> /2 <sup>nd</sup>	63	9
2 <sup>nd</sup>	55	2
2 <sup>nd</sup> /3 <sup>rd</sup>	34	3
3 <sup>rd</sup> /4 <sup>th</sup>	10	1
medieval	16	4
?medieval	494	10
11 <sup>th</sup> /12 <sup>th</sup>	17	2
12 <sup>th</sup>	49	10
12 <sup>th</sup> /13 <sup>th</sup>	403	9
12 <sup>th</sup> /14 <sup>th</sup>	92	13
13 <sup>th</sup> /14 <sup>th</sup>	44	5
14 <sup>th</sup> /15 <sup>th</sup>	3	2
15 <sup>th</sup>	16	2
15 <sup>th</sup> /16 <sup>th</sup>	7	2
post-medieval	1	1
17 <sup>th</sup>	3	1
17 <sup>th</sup> /18 <sup>th</sup>	64	7
18 <sup>th</sup>	40	3
19 <sup>th</sup>	3	1
No date (including u/s)	496	60
<b>Total</b>	<b>3818</b>	<b>287</b>