

Assessment of biological remains from excavations at Hayton, East Riding of Yorkshire (site code KINCM1995.1020)

by

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Summary

This report presents the results of the assessment of vertebrate remains recovered from excavations undertaken at Hayton, East Riding of Yorkshire between 1995 and 1999. Deposits from the site spanned a wide time period from the neolithic through to the post-medieval period. Additionally, five sediment samples from a wooden tank-like feature were examined for assessment of their potential for further bioarchaeological work.

Insect remains were rather abundant in samples from the fill of a wood-lined cistern or well. They appeared to have entered randomly and so have the potential to provide a reconstruction of the surroundings. There was no evidence of material having been dumped into the structure, and only a few aquatics and one waterside species probably lived in it.

The bones from this site form a large assemblage, with most of the more significant material dating to the Iron Age and Roman period. Of particular interest were a group of animal burials, mostly representing juvenile caprovids. Unfortunately, dating evidence was rather sparse for these deposits. Further analysis would be necessary for their interpretation as 'special deposits' to be confirmed. Pit and ditch fill deposits produced moderate-sized assemblages, with a diverse range of species represented. Whilst the importance of this assemblage is acknowledged, its usefulness in providing large datasets is limited by the extremely fragmented nature of the bones.

Further analysis of both the insect and the vertebrate remains is recommended.

Keywords: HAYTON; EAST RIDING OF YORKSHIRE; ROMAN; IRON AGE; VERTEBRATE REMAINS; ANIMAL BURIALS; INVERTEBRATE REMAINS

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Introduction

Excavations of deposits of primarily Iron Age and Roman date at Hayton, East Riding of Yorkshire took place between 1995 and 1999, under the direction of Martin Millett (University of Southampton) and Peter Halkon (University of Hull). This work was undertaken as part of a landscape archaeology project investigating a 3 x 3 km block of land centred on the village of Hayton. Results from these interventions will be combined with information from aerial survey, detailed field walking and geophysical survey to form a composite picture of the landscape in this area of East Yorkshire during the Iron Age, Roman and medieval period (Halkon *et al.* 1999).

Twelve boxes (approximately 650 litres in total) of bone have been recovered from the site to date and these, along with five sediment samples from a well, were submitted to the EAU for assessment of their potential for further bioarchaeological work.

Methods

Sediment samples

Subsamples of 1kg of sediment from each of five tubs of sampled fill of a wooden tank-like feature (fill context 1117) were 'test' processed (Kenward *et al.* 1980; 1986) and rapidly assessed for their content of invertebrate remains, especially insects.

Vertebrate remains

Bone was scanned from deposits where more than 30 fragments had been recovered or where interesting additional species were present. Subjective records were made of preservation, angularity (i.e. the nature of the broken surfaces) and colour for all the scanned material, whilst species present, and numbers of bones of use for biometrical and age-at-death analysis (i.e. measurable fragments, mandibles with teeth *in situ* and isolated mandibular teeth) were noted where the deposit produced more than 100 fragments. In addition, brief notes were made of fragment size, and of burning, butchery, fresh breakage and dog gnawing. A systematic sieving programme was employed at this site and all vertebrate remains recovered from wet sieving were scanned.

Results

Sediment samples

All five flots were moderately rich in insect remains. Preservation was generally superb. The assemblages were species-rich and represented a range of habitats. They appeared to have formed by slow accretion over a moderately long period (subjectively at least a decade or so). All five were essentially similar, though with subtle variations which may prove significant in reflecting changes in the surroundings on detailed analysis.

There were a few synanthropes, representing the fauna of the adjacent buildings. *Ptinus ?fur* and *Cryptophagus* sp. probably both fall in this category. Unusually for any Roman site, grain pests were conspicuously rare (restricted to a single *Cryptolestes*, whose identity with the grain pest *C. ferrugineus* needs to be checked). The relative paucity of synanthropes perhaps reflects the way the fauna accumulated rather than their rarity in the surroundings, for there is no evidence of dumped material or waste within the structure which would have introduced or supported such species.

The second ecological group was a range of decomposers typically associated with fairly foul conditions, together probably indicative of dung: *Aphodius* species, and *Platystethus arenarius*. These probably reflect livestock in the surroundings, and perhaps grazing land. Remains of what appeared to be *Damalinia* lice offer a hint that this 'well' was drunk from by livestock: the specimens observed were lacking good identification characters, but closer identification of further specimens may indicate the identity of the livestock allowed access to the 'well' - which may have been a drinking trough.

There were some species associated with litter in open ground, but no more than could survive in an intensively disturbed area with a few weeds, or might arrive in flight from an open agricultural landscape.

Aquatics were present in moderate numbers, and included *Daphnia* (water fleas) and some beetles. There were a few individuals of waterside taxa, notably *Lesteva* sp., a genus very likely to have colonised the walls of a feature of this kind. Aquatic *Helophorus* water beetles, normally the most abundant in water bodies of this kind, were rare or even absent: all the *Helophorus* appeared to be *H. nubilus* or *H. rufipes/porculus*. These are beetles of well-drained soils in open landscapes, such as arable.

Plant feeders were abundant, and suggested a landscape lacking in trees and with varied herbaceous vegetation. They included the nettlebug *Heterogaster urticae*, probably indicative of temperatures above those of the present day, and a large coreid bug which may prove to be climatically significant. The latter may tie in with records of southerly bugs from the Roman well at The Bedern, York (Kenward *et al.* 1986): these were probably imported in hay, but whether from a warmer Yorkshire or from the south of England (or even further afield) is uncertain. Importation of hay to the Hayton site over a distance of hundreds of kilometres is perhaps much less likely than to the military establishment in the major centre at York.

No species associated with living trees or dead wood were recognised, although the former might be overlooked at this stage since precise identification of many of the remains is not feasible during assessment. Tree species, especially those living in dead wood, may have poor dispersal ability, however, leading to under-representation, and examination of nearby contemporaneous natural deposits would be very desirable, should they exist and contain useful quantities of insects.

There were rather few ground beetles (Carabidae) or other ground-living insects, suggesting that this structure did not act as a pitfall trap (those which had entered probably did so by climbing or in flight).

Vertebrate remains

A total 12,809 fragments, representing 421 contexts, were recovered from the excavations at Hayton. Of these deposits, only 58 contained >50 fragments and only 29 produced >100 fragments. Spot dates provided 129 different date categories by which the material could be grouped. For the purposes of this assessment, an attempt was made to produce a broad chronological framework (see Table 1). From this, it is clear that the bulk of the material was recovered from deposits of 3rd-4th and 4th century date. The other large group was composed of material for which there was no information. A number of the assemblages from this group would be worthy of further analysis but only if a tight dating framework could be achieved. It is possible that stratigraphic evidence and further artefactual analysis may tie this and

the more broadly dated material down to particular periods. Small assemblages of material were also recovered from mid-late Iron Age and 1st to 3rd century deposits.

A wide range of features produced bone, but the largest assemblages were those recovered from pits, including well fill deposits (20% of the assemblage) and ditches (22%). Animal burials also formed a large proportion (23%) of the assemblage. Unfortunately, a number of these deposits were only very broadly dated or not dated at all.

Variability of preservation, angularity and colour was observed within material from most deposits. Differences in context type or date did not generally appear to reflect differences in preservation. It was noticeable that many of the caprovid burials (Contexts 1272, 1344, 1412 and 1431) were well preserved, and material from well fill 1056 and pit fill 1586 was also recorded as having 'good' preservation. However, most of the assemblage contained varying proportions of battered and rounded fragments, perhaps indicating the presence of redeposited material. The material from Contexts 1596 and 1599 (mid to late Iron Age deposits), in particular, was extremely fragmented and rather battered in appearance, whilst very eroded fragments were recovered from Context 1787.

Heavy fragmentation of the vertebrate remains was widespread and characteristic of much of the vertebrate assemblage from the site. For the material from some contexts (638, 1056, and 1849 for example), this could be attributed partly to fresh breakage during the excavation and/or the post-excavation process. However, it was apparent from the nature of the broken surfaces of the bones that much of the fragmentation occurred in the past (e.g. vertebrate remains from Contexts 703 (wall of corn dryer), 1517 and 1813 (ditch fills) and 1586 (pit fills)).

Within the confines of the assessment, it was not possible to conclude whether the bones had been chopped during carcass preparation/processing or whether damage had been caused by prolonged exposure and surface trampling. The condition of the vertebrate remains suggested that some time elapsed between initial disposal and their eventual deposition into the ditches and pits. The better preservation of the bones from the animal burials (although some are quite fragmented) suggested that these individuals were fairly quickly and deliberately buried.

Most of the vertebrate remains scanned or recorded for this assessment were those recovered from the 29 deposits with >100 fragments. This amounted to approximately half of the total assemblage recovered.

Perhaps one of the most interesting aspects of the assemblage were the animal burials. Unfortunately, no spot dates were available for most of them. The few with dates showed that these burials spanned the whole of the Roman period. Most of them were caprovids and most represented juvenile individuals. In some cases, as in Context 890, more than one body was represented. Preliminary observations show that most of the skeletons were represented mainly by head (cranial, mandible and teeth fragments) and lower limb elements (metapodials and phalanges). Some variations were noted, including one (Context 866) where cranial fragments were rather scarce but some upper limb elements (scapula, humerus, radius, femur and tibia) were present. Another sheep recovered from Context 880 had fragments of upper limb elements but these bones had all been burnt, whilst the head and lower limb elements had not. This was also the case for the individual from Context 135. Material from Context 909 appeared to represent a cremated sheep.

Burials of other animals were rare, but part skeletons of dog (Contexts 737, 767 and 1243), pig (Contexts 737 and 1466) and cow (Contexts 716 and 727) were also recorded. Contexts 737 and 767 (both deposits associated with a corn dryer) also contained bones representing a range of other species. This included the bones of a very young pig and those of a puppy, along with hare (*Lepus* sp.), chicken (adult and juvenile individuals), duck and caprovid. This assemblage seems to be completely different to the other burials, with the dogs and pig dumped with the rest of the rubbish rather than specially buried.

As has already been noted, apart from the animal burials, only a few large groups of bones were recovered from this site. A number of the well fills (Contexts 638 and 1056) produced quite substantial quantities of material. Fragments representing three cattle skulls, adult and juvenile individuals, were identified from Context 1056, whilst, in addition to the usual domestic mammals, cat, chicken and Columbidae (pigeon/dove family) fragments were recorded from Context 638.

Pit and ditch fills produced assemblages containing the remains of the usual domestic species, including cattle, caprovid, pig and some chicken. Horse remains were not numerous but were recorded, as were dog. Some utilisation of wild resources is hinted at by the presence of fragments of hare (*Lepus* sp.), roe deer (*Capreolus capreolus* (L.)), duck (most likely to be wild) and ?brent goose (Context 583). A poorly preserved red deer antler fragment (a pedicle - sawn not shed) was recovered from Context 512. This does not necessarily represent individuals hunted and eaten by inhabitants, but could be material imported for antler working activities. A further deposit (Context 703), described by the excavator as 'wall of corn dryer' also produced a large and diverse accumulation of material, which additionally included the remains of hare (*Lepus* sp.), plover (*Pluvialis* sp.), unidentified fish bones and a large pig radius (possibly representing a wild boar).

Material dated to the Iron Age was rather scarce but some mid to late Iron Age pit fill deposits produced moderate assemblages of bone. Initial examination showed that, on the whole, these were similar in content to the assemblages recovered from the later Romano-British deposits, although they were slightly more restricted in the range of species present.

As a result of the extremely fragmentary nature of the material, mandibles with teeth and measurable bones were uncommon. The assessed material produced only 72 measurable fragments, 37 mandibles with teeth *in situ* and 23 isolated teeth of use for providing age-at-death data (Table 2).

Bones from samples

Although some of the sieved sediment samples produced quite large quantities of fragments, they were mostly very small (<2 cm in dimension) and largely unidentifiable. Preservation varied, as with the hand-collected material and many deposits included burnt fragments. Occasional amphibian and small mammal fragments were present, which included the remains of shrew (*Sorex* sp.) and bank vole (*Clethrionomys glareolus* (Schreber)). No concentrations of these were revealed, but they were recorded in small numbers consistently throughout the sieved assemblages. Very few additional measurable fragments or isolated teeth were recorded.

Discussion and statement of potential

Invertebrate remains

Most of the fauna probably arrived in flight, which means that it reflects a fairly wide area, and is thus of substantial value in reconstructing a picture of land use and natural environment (if any!) the surroundings of the settlement. This deposit is of particular value in that it can be argued to be contemporaneous with the main phase of occupation at the site, rather than one of degeneration or abandonment, as appears to be the case for the assemblages recovered from most Roman deep wells.

Vertebrate remains

The large vertebrate assemblage recovered from deposits at Hayton shows some potential for providing useful zooarchaeological and archaeological information. Preservation of the material was recorded as variable, with the material from mid-late Iron Age deposits being particularly poorly preserved. Variability of 'angularity' was observed within material from most deposits throughout the context types and periods represented, possibly implying redeposited or residual bone present in varying amounts. In general, the complete or part skeletons tended to be better preserved than the material recovered from pit and ditch fills. Overall, the bones were extremely fragmented, regardless of context type or date. Recent damage to the bones (i.e. during excavation) was partly to blame for this, but it was also evident that much of the damage occurred in antiquity. The fragile nature of burnt bones, where present, also contributed to the fragmentary condition of the material. Unfortunately, this has substantially reduced the number of elements that could provide useful biometrical information.

Clearly the animal burials (if adequate dating information became available) form a significant part of this assemblage. Articulated skeletons, animal skulls and limbs, have been found at numerous other sites of Iron Age and Roman date, and have, as a result of their deposition or association with other finds, sometimes been interpreted as possibly ritual in nature.

Those from Hayton may indeed represent ritual deposition, particularly as their preservation suggests that they were quickly incorporated into the deposits, suggesting that they were deliberately buried. Detailed recording of these skeletons would be required to establish the range of animals represented, the skeletal element representation, their age-at-death and information regarding other artefacts recovered from the features.

Few large rural bone assemblages of Iron Age and Roman date have been recovered from this region. The concentration on urban and military bone assemblages has resulted in a dearth of information concerning rural settlements such as Hayton. The importance of this rural assemblage is that it represents continuous occupation from the Iron Age through to the later Roman period and a detailed study of aspects of this material may aid our understanding of the social, cultural and economic development of the settlement at Hayton. It may also enable us to investigate the extent of Roman influence on native settlements. Simple changes in the relative importance of species may even indicate varying degrees of acculturation through time. Continuity of ritual activities may also be explored by a detailed study of the animal burials in conjunction with an evaluation of other lines of evidence (i.e. detailed dating –perhaps even C14 dating of a number of selected skeletons, context type and associated finds).

Archaeological evidence indicates that “ a high level of continuity in settlement and land use and, by implication social and economic organisation, exists between late Iron Age and Romano-British periods” (English Heritage 1991). This transitional period has been designated as a research priority by English Heritage (English Heritage 1991).

Recommendations

It is recommended that a subsample of 3-5 kg from each sediment sample from Context 1117 be examined in detail, an attempt being made to identify as many of the remains as closely as possible, in order to bring precision to the environmental reconstruction and to locate any further species of climatic significance. Samples of this size would also improve the chance of recovering further (identifiable) lice, and additional synanthropic species which might indicate the amount of contact with well-established population centres rich in such species (Kenward 1997).

It is recommended that further detailed analysis of vertebrate remains from all well-dated deposits be undertaken. Particular attention should be paid to recording skeletal element representation and age-at-death data for the animal burials.

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Table 1. Total number of bone fragments by date group recovered from deposits at Hayton, East Riding of Yorkshire.

Date group	Number of fragments
mid to late Iron Age	465
1st-2ndC	644
2ndC	248
2nd-3rdC	204
3rd	432
3rd-4th	2621
4th	2827
Iron Age/Roman	511
broadly dated neolithic	57
broadly dated Roman	1010
broadly dated medieval	86
broadly dated post-medieval	608
No information	3096
Total	12809

Table 2. Number of measurable fragments, mandibles with teeth in situ and isolated mandibular teeth by period from the scanned deposits from Hayton, East Riding of Yorkshire.

Date group	measurable	mandible	isolated teeth
mid to late Iron Age	4	6	4
3rd-4thC	10	7	5
4thC	35	14	14
Iron Age/Roman	-	-	-
broadly dated Roman	14	5	-
No information	9	2	-