

Palaeoecology Research Services

**Evaluation of biological remains from excavations at
Main Street, Long Riston, East Riding of Yorkshire
(site code: MSR2001)**

by

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PRS 2002/07

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Summary

Twenty-five sediment samples, a very small quantity of hand-collected shell, and four boxes of hand-collected bone were recovered from excavations at Main Street, Long Riston, East Riding of Yorkshire, during November and December 2001. Provisional stratigraphic and ceramic evidence suggested that the deposits were mainly of medieval to post-medieval date. All of the material was submitted for an evaluation of its bioarchaeological potential.

Plant and invertebrate remains were rather sparse in these deposits, though the ditch fills (1062, 1064) yielded moderate concentrations of remains preserved by anoxic 'waterlogging'. Of these, 1062 is worth revisiting using an additional, larger subsample, to reconstruct local environment and to gather records in space and time from this narrowly dated context for future synthesis.

The hand-collected shell assemblage was too small to be of any interpretative value.

The bulk of the vertebrate material was recovered from Phase 2 and Phase 4 deposits. All of the major domesticates, i.e. cattle, caprovid and pig, were identified, and additionally dog, horse, chicken, geese and duck bones were present. Two articulated skeletons, of a pig and a cow, were recovered from the site. Little evidence of butchery was observed on the bones and no obvious cause of death was apparent.

A basic data archive of the current material should be produced for the purposes of regional comparisons. In view of the reasonable preservation and the tight dating framework, additional excavation in the area may produce a moderately large assemblage of bones of use for providing archaeological and zooarchaeological information.

KEYWORDS: MAIN STREET; LONG RISTON; EAST RIDING OF YORKSHIRE; EVALUATION; LATE 12TH CENTURY TO EARLY MODERN; PLANT REMAINS; CHARRED PLANT REMAINS; INVERTEBRATE REMAINS; SHELLFISH; OYSTER (*OSTREA EDULIS* L.); VERTEBRATE REMAINS

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28 March 2002

Evaluation of biological remains from excavations at Main Street, Long Riston, East Riding of Yorkshire (site code: MSR2001)

Introduction

An archaeological evaluation excavation was carried out by Humber Field Archaeology at Main Street, Long Riston, East Riding of Yorkshire (NGR TA 1255 4260), in November and December 2001.

Twenty-five sediment samples ('GBA'/'BS'/'SPOT' *sensu* Dobney *et al.* 1992), representing 15 contexts, a very small quantity of hand-collected shell, and four boxes of hand-collected bone, were recovered from the deposits. All of the material was submitted to PRS for an evaluation of its bioarchaeological potential.

Provisional dating has assigned the deposits to 5 archaeological phases:

Phase 2 – late 12th - early 13th century

Phase 3 – 13th - early 14th century

Phase 4 – 14th - 15th century

Phase 5 – 15th - 16th century

Phase 6 – 19th - 20th century

Methods

All of the submitted sediment samples were inspected in the laboratory and 7 were selected for investigation (3 as 'GBA', 2 as 'BS' and 2 as 'SPOT' samples). The lithologies of the 'GBA' and 'BS' samples were recorded, using a standard *pro forma*, prior to processing, following the procedures of Kenward *et al.* (1980; 1986), for recovery of plant and invertebrate macrofossils.

The flots, washovers, and residues resulting from processing were examined for plant and invertebrate macrofossils. The residues were examined for larger plant macrofossils and other biological and artefactual remains.

Insect preservation was recorded using the scale of Kenward and Large (1998).

Brief notes were made on the preservational condition of the hand-collected 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 (polychaet worms and dog whelks); encrustation by barnacles. Preservation was recorded subjectively on two four-point scales for erosion and fragmentation as: 0 – none; 1 – slight; 2 – moderate; 3 – severe.

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.

Results

Sediment samples

The results are presented in context number order by phase. 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.

Phase 2: late 12th-early 13th century

Context 1023 [fill in slot 1024]

Sample 2/BS (7 kg sieved to 300 microns with washover; no sediment remains from this sample but a further sample from the same context is unprocessed)

Just moist, mid grey-brown to mid orange-brown (mottled on a cm-scale), stiff to crumbly (working more or less plastic), slightly sandy silty clay. Stones (2 to 60 mm) and charcoal were present in the sample.

This large subsample yielded a small washover of about 100 cm³ of roots and a little granular material including small charred legume cotyledons (including ?pea, *Pisum sativum* L.), charcoal (to 15 mm in maximum dimension), and a few charred cereal grains (barley, *Hordeum*, and bread/club wheat, *Triticum 'aestivo-compactum'*), mostly rather poorly preserved. The moderate-sized residue of about 700 cm³ was of sand and gravel (to 45 mm), with traces of bone and ?pot. There was a very small assemblage of bones, of which most (10) were unidentified. Identified fragments included a small mammal scapula and a single burnt fish vertebra.

Context 1062 [fill in large ditch 1065]

Sample 8/T (2 kg sieved to 300 microns with paraffin flotation; 5 litres of sediment remains with a further 3 samples from the same context unprocessed)

Moist, mid to dark slightly purplish grey-brown to mid reddish-brown, crumbly (working soft and slightly sticky), clay silt with fine and coarse herbaceous detritus. Stones (60+ mm, including one large 'cobble') and fragments of rotted wood were present in the sample.

There was a small residue of about 100 cm³, of which about half by volume was sand and concreted silt/clay clasts, with a little gravel, half woody detritus (perhaps mainly very decayed twig fragments) and herbaceous material. The coarser herbaceous detritus seemed mainly to be twig epidermis of willow (*Salix*) but there

were also some fragments which appeared to be twig epidermis of gorse, *Ulex*. There was a modest range of plants represented by mostly quite well preserved fruits and seeds, representing terrestrial (and much less obviously aquatic/waterside) habitats.

The flot was rather large, but contained few insect fragments; most had failed to float and remained in the residue, being picked out during sorting for plant remains. Preservation varied from fairly good to well decayed, and the degree of fragmentation was sometimes considerable (E 2.0-5.0, mode 3.5 weak; F 2.5-5.0, mode 3.5 weak). The remains may have decayed by a route which destroyed their hydrophobic surfaces, so that they did not attract sufficient paraffin to float. As a result, at least some of the smaller insect remains present in the residue may not have been recovered. The beetles included aquatics (e.g. *Hydrobius fuscipes* (Linnaeus), *Ochthebius* sp., *Helophorus* spp. and *Anacaena* sp., though not a rich community, and there was little to suggest aquatic or emergent vegetation. Terrestrial species indicated herbaceous vegetation (from, for example, *Aphrodes* sp., some weevils, and an elaterid), decaying matter (e.g. from three species of *Aphodius* dung beetles and *Cercyon melanocephalus* (Linnaeus)), and dead wood (from a bark beetle). A notable record was of fragments of the pronotum of the ground beetle *Pterostichus madidus* (Fabricius), favoured by human alteration of the environment and common at the present day but, for no obvious reason, rarely found in archaeological deposits. There were also some beetle remains whose identify was not obvious, and which ideally should be investigated further.

Providing it is believed to be contemporaneous with the deposit, and not to contain a substantial redeposited component, it would be useful to record this insect assemblage fully, preferably with the addition of remains from a further subsample (perhaps of 3 kg). A clearer picture of local environment would emerge, together with valuable records of species in space and time for future synthesis.

Context 1064 [primary fill in large ditch 1065]

Sample 17/T (2 kg sieved to 300 microns with paraffin flotation; 5 litres of sediment remains with a further 3 samples from the same context unprocessed)

Moist, mid to dark grey-brown, stiff and slightly sticky to crumbly (working soft), slightly sandy clay silt with some wood/twig fragments.

There was a small residue of about 75 cm³, of which about 30 cm³ was sand, the rest very decayed woody detritus, including a few rather eroded fruits and seeds and abundant *Daphnia* (cladoceran) ephippia. The seeds were mainly from terrestrial habitats, with one

aquatic/waterside taxon; they included a few taxa indicative of disturbance, though there was no component of arable weeds or of plant suggestive of the disposal of waste into the ditch.

The small flot yielded modest numbers of insect and other invertebrate remains whose preservational condition ranged from fairly good to poor (E 2.5-4.5, mode 2.5 weak; F 2.5-5.0, mode 3.5, weak). Many remains were distinctly pale. A proportion of the large insect fossils had failed to float, probably as a result of surface changes during decay. The material clearly represented aquatic deposition, for there were large numbers (of the order of 1000) of *Daphnia* ephippia (resting eggs), and well as numerous ostracods, several ephippia of a second kind of *Daphnia*, and among the beetles, *Agabus bipustulatus* (Linnaeus) and several *Helophorus*, probably representing more than one species. Terrestrial insects were rare. This material probably does not contain enough insect remains to justify further investigation, this assessment providing most of the information which would result from full analysis.

Phase 3: 13th-early 14th century

Context 2047 [primary fill of large boundary ditch/pond/pit 2048]

Sample 19/T (3 kg sieved to 300 microns with washover; 2 litres of sediment remains)

Moist, mid grey-brown to mid orange-brown (mottled on a cm-scale, ?oxidation), sticky (working soft), slightly sandy clay silt. Stones (2 to 6 mm) and ?very rotted organic material were present in the sample.

The moderate-sized residue of about 150 cm³ was of sand and gravel (to 40 mm), including some coarse flint and igneous rock fragments, concreted sediment (some perhaps burnt) and ?iron pan. The small flot included a few small fragments of woody and herbaceous detritus and a few moderately well preserved seeds of no particular interpretative significance.

The small washover included few invertebrate remains, although they gave a clear indication of aquatic deposition. The few terrestrial forms suggested herbaceous vegetation. Preservation was poor, some of the remains showing bright orange or yellow-brown colouration suggestive of oxidation (there were too few fossils for a meaningful record of preservation to be made using the scale of Kenward and Large 1998). Bearing in mind that this was a subsample of 3 kg, further analysis is unlikely to yield enough remains to serve as a basis for detailed interpretation.

Phase 4: 14th-15th century

Context 1011 [burnt layer]

Sample 3/SPT (burnt material ?from hearth: 0.84 kg; examined as SPOT sample)

This sample consisted of just moist, dark brown to blackish crumbly silt with clasts of indurated sandy silt, perhaps burnt earth and some modern rootlets. On gentle disaggregation and sieving to 0.3 mm, it left a large residue of about 400 cm³, most of which was somewhat platy clasts of dark grey or greyish-brown sandy silt which appeared to be baked soil with something of the texture of very poor quality pottery. There was a trace of charcoal and perhaps one cereal chaff fragment, but otherwise there was no evidence for plant or animal remains.

Context 1101 [fill of posthole 1102]

Sample 23/BS (8 kg sieved to 300 microns with washover; no sediment remains)

Just moist, mid grey-brown (oxidised to orange-brown in places), crumbly (working soft and sticky when wetted), clay silt to silty clay. Stones (2 to 60+ mm), ?charcoal, and modern rootlets, were present in the sample.

There was a small washover of about 150 cm³, mainly coarse and fine woody and herbaceous roots (presumably all modern), amongst which was a moderate amount of charred plant material (assumed to be ancient): cotyledons of pea, bean (*Vicia faba* L.), barley, wheat, and oats (*Avena* sp.). The moderate-sized residue of about 600 cm³ consisted of sand and gravel (to 50 mm). Also recorded were a few snails, mostly the burrowing species *Cecilioides acicula* (Müller) but also a single unidentified other land snail, and traces of material which may have been burnt soil and burnt peat.

Fifty-one small (all <10 mm) and very fragmented bones were also recovered from this sample. Those which could be identified (19) represented the remains of small mammals (including bank vole (*Clethrionomys glareolus* (Schreber)), amphibian, and eel (*Anguilla anguilla* (L.)).

Context 2005 [primary fill of pit containing cow burial 2006, ?Phase 4]

Sample 25/SPT (spot find of 'leather/skin' from under cow burial; examined as SPOT sample)

The sample comprised several small lumps of greyish-brown silty clay within which were clasts of somewhat indurated, compressed herbaceous detritus, black within the clasts, oxidising brown; plant fragments were seen to comprise flattened monocotyledonous stem/leaf up to about 5 mm. This material seems most likely to be

herbivore gut contents or dung, perhaps connected with the buried beast. The sample could be washed gently to check for seeds to confirm this, but the total amount is very small (perhaps only a few tens of grammes of plant material).

Hand-collected shell

Very small quantities of hand-collected shell were recovered from 7 contexts (of which 2 were of 19th-20th century date). Most of the remains were of land snails (*Helix* sp.) of no interpretative value. Two contexts (one 19th-20th century and one 14th-16th century) each gave single fragments of oyster (*Ostrea edulis* L.) shell. Summary information for the hand-collected shell is presented as Table 1.

Hand-collected vertebrate remains

The hand-collected animal bone assemblage amounted to 291 fragments representing 39 deposits. Most of the remains (245) were recovered from contexts assigned to Phases 2 and 4, however, few of the deposits (8) produced more than 10 fragments. Additionally, two part skeletons were recorded from Contexts 1144 and 2006; they may be of 14th-15th century date or from the later post-medieval period. Table 2 shows the number of fragments by species and by phase, excluding the part skeletons.

Preservation of the bones was quite varied between contexts, but, on the whole, appeared to be fairly good. Fragments that seemed battered in appearance were noted from Contexts 1006, 1008, 1017 and 1068, whilst material from several deposits (Contexts 1025, 2006, 2028 and 2043) was described as being rather fragile and brittle. Fresh breakage damage was quite extensive, and in some cases (e.g. Context 2006), the delicate nature of the bones may have contributed to this. A moderate degree of fragmentation was noted for the material from Contexts 1017 and 2035, but this appears to have occurred in antiquity rather than more recently. Evidence of dog gnawing was present but minimal.

Domestic mammals, including the remains of cattle, caprovid, pig, horse and dog were identified. Birds remains were fairly uncommon, fifteen of the 19 fragments recovered representing the leg of a young goose, *Anser* sp. (Context 1087). An ulna from Context 1050 was tentatively identified as curlew (cf. *Numenius arquata* (L.)).

The largest component of the assemblage was an articulated cow skeleton from Context 2006. Although the bones looked in good condition, they were extremely fragile and had been quite badly damaged by fresh breakage. The skeleton included skull and

mandible fragments, parts of both the left and right scapulae, femora and pelvis and most of the right hind leg. A number of vertebrae, including the axis and atlas were also recorded, along with rib and cranium fragments. All the elements present indicated a mature individual. How or why the animal died was not clear; only the tibia showed evidence of butchery. Bones from Context 2035 may also represent a part cow skeleton. In this case, more fore limb elements were present. Dog gnawing was more evident on these bones than those from other deposits. Epiphysial fusion data suggested that this individual was between 2 and 3 years old when it died.

The third skeleton recovered from the site was that of a pig. This was almost complete, with only the small terminal limb elements, such as the third phalanges, being absent. It is likely that these were missed during hand-collection. Preservation was good, but fresh breakage damage was quite extensive. The canines indicated that the individual represented was a male and dental attrition and fusion data suggested that death occurred during its second year.

In total, 20 measurable fragments and seven mandibles with teeth *in situ*, of use for providing biometrical and age-at-death data, were recorded.

Discussion and statement of potential

Plant and invertebrate remains were rather sparse in these deposits, though the ditch fills (1062, 1064) yielded moderate concentrations of remains preserved by anoxic 'waterlogging'. Of these, 1062 is worth revisiting using an additional, larger subsample, to reconstruct local environment and to gather records in space and time from this narrowly dated context for future synthesis.

The very small quantities of hand-collected shell were of no interpretative value.

The bone assemblage was rather too small to draw any firm conclusions. Apart from the part skeletons, the overall appearance of the assemblage was of a mixture of refuse, with material from Phase 2 perhaps representing primary butchery refuse. During the later period, Phase 4 onwards, the area was obviously an acceptable place for the disposal of complete carcasses, which may suggest that

there was little habitation in close proximity. The absence of dog gnawing on the cow (Context 2006) and pig (Context 1144) skeletons indicates that these individuals were probably quickly buried. For such a small assemblage, the number of measurable fragments is relatively high and, in the event of further excavation, a larger assemblage from this site might provide useful biometrical data.

Recommendations

Additional sediment from Context 1062 (at least an extra 3 kg) should be processed to recover plant and invertebrate macrofossils for further study. Further excavation may reveal deposits with similar organic preservation and so, in this event, a systematic sampling strategy should be adopted.

No further work is recommended on the hand-collected shell.

A basic archive, including biometrical data, should be produced for the current vertebrate remains from well-dated deposits. These data are of limited use on their own, but could provide valuable information for regional studies and comparisons. In view of the reasonable preservation and the tight dating framework, additional excavation in the area may produce a moderately large assemblage of bones of use for providing archaeological and zooarchaeological information.

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.

Acknowledgements

The authors are grateful to Ken Steedman, Trevor Brigham and Sophie Tibbles of Humber Field Archaeology for providing the material and the archaeological information.

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Table 1. Summary information for the hand-collected shell from excavations at Main Street, Long Riston, East Riding of Yorkshire, by context. A '?' before numbers indicates possible numbers (e.g. '3(?4) = definitely 3, possibly 4). **Key:** 'Con' = Context number; Date (Ph) = Date (Phase); 'left' = number of left (or lower) valves; 'right' = number of right (or upper) valves; 'ind' = number of valves of indeterminate side; 'meas' = estimated number of valves intact enough to be measured; 'e' = average erosion score for valves; 'f' = average fragmentation score for valves; 'knife' = 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; 'fresh' = number of valves showing fresh breakage; 'Helix' = minimum number of Helix sp.; 'wt' = total weight of shell in grammes (though this may include concreted sediment within shells).

Con	Date (Ph)	Oyster valves											Helix	wt	
		left	right	ind	meas	e	f	knife	worm	barn	dog	fresh			
1002	19-20 th (6)	0	1	0	0	1	3	0	0	0	0	0	0	0	6
1006	14-15 th (4)	0	0	0	-	-	-	-	-	-	-	-	-	1	1
1008	14-15 th (4)	0	0	0	-	-	-	-	-	-	-	-	-	1	3
1041 = 1038	19-20 th (6)	0	0	0	-	-	-	-	-	-	-	-	-	2	11
1105	L12-E13 th (2)	0	0	0	-	-	-	-	-	-	-	-	-	2	3
2021	13-E14 th (3)	0	0	0	-	-	-	-	-	-	-	-	-	5	1
2043	14-15 th (4) or 15-16 th (5)	1	0	0	0	1	3	?1	0	0	0	?1	0	7	

Table 2. Hand-collected vertebrate remains by phase (excluding the part skeletons from Contexts 1144 and 2006) from Main Street, Long Riston, East Riding of Yorkshire.

Species		Phase 2	Phase 2/3	Phase 3	Phase 3/4	Phase 4	Phase 4/5	Phase 5	Total
<i>Canis</i> f. domestic	dog	3	-	-	-	1	-	1	5
<i>Equus</i> f. domestic	horse	3	-	1	-	1	-	-	5
<i>Sus</i> f. domestic	pig	-	-	1	-	2	-	-	3
<i>Bos</i> f. domestic	cattle	5	1	1	1	28	-	2	38
Caprovid	sheep/goat	13	-	-	1	9	-	1	24
<i>Anser</i> sp.	goose	16	-	-	-	-	-	-	16
cf. <i>Anser</i> sp.	?goose	1	-	-	-	-	-	-	1
<i>Anas</i> sp.	duck	-	-	-	-	1	-	-	1
cf. <i>Numenius arquata</i> (L.)	?curlew	1	-	-	-	-	-	-	1
Unidentified		69	-	3	10	92	12	11	197
Total		111	1	6	12	134	12	15	291