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**Evaluation of biological remains from excavations at Skellgarths,
Ripon, North Yorkshire (site code: HARGM 10426)**

by

Stephen Rowland, Harry Kenward, Deborah Jaques, Allan Hall and John Carrott

Summary

Eight sediment samples and two boxes of hand-collected bone, from deposits of 12th century to modern date, revealed by excavations at Skellgarths, Ripon, North Yorkshire, were submitted for an evaluation of their bioarchaeological potential.

These deposits have, unusually for sites in Ripon observed in the past few years, produced some modest (in one case rich) assemblages of plant remains and one assemblage with excellent preservation of invertebrates, and there is clearly potential for further study both of the material in hand and any deposits threatened with destruction by development, to elucidate plant use, human activity and local environmental conditions in this area.

A small but well preserved assemblage of animal bone (totalling approximately 40 litres) was recovered. The material came from three separate excavation trenches, with a total of 27 dated bone-bearing contexts. Material in each trench was summarily grouped by period as medieval, post-medieval and modern. A rather limited range of taxa was identified, but there was a high proportion of measurable bones, though these were largely concentrated in one modern context (1009) and appeared to represent specialised butchery waste (probably from an adjacent property which was, until recently, a butcher's shop). It is recommended that the vertebrate remains should be fully recorded and a biometrical archive created.

Any further excavation at this site should employ a systematic programme of sampling with subsequent analysis of plant and animal remains to explore these deposits further.

KEYWORDS: SKELLGARTHS; RIPON; NORTH YORKSHIRE; EVALUATION; 12TH CENTURY TO MODERN; MEDIEVAL; POST-MEDIEVAL; PLANT REMAINS; CHARRED PLANT REMAINS; CEREALS; INVERTEBRATE REMAINS; INSECTS; VERTEBRATE REMAINS

Authors' address:

Palaeoecology Research Services
Environmental Archaeology Unit
Department of Biology
P. O. Box 373
University of York
York YO10 5YW

Prepared for:

York Archaeological Trust
Cromwell House
11 Ogleforth
York YO1 2JG

Telephone: (01904) 433846/434475/434487
Fax: (01904) 433850

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Introduction

An archaeological evaluation excavation was carried out by York Archaeological Trust at Skellgarths, Ripon, North Yorkshire, during the first quarter of 2001.

Eight sediment samples ('GBA'/'BS' *sensu* Dobney *et al.* 1992) and two boxes (each of approximately 20 litres) of hand-collected bone were recovered from the deposits. Spot dating of recovered artefacts gave a date range from the 12th century to modern for 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. Four of the samples were selected for evaluation and their lithologies 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 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.

Preservational condition of the invertebrate remains was recorded using the scheme of Kenward and Large (1998). In summary, preservation is recorded as chemical erosion (E) and fragmentation (F), in each case on a scale from 0.5 (superb) to 5.5 (extremely decayed or fragmented).

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

Hand-collected 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 grouped into categories: large mammal (assumed to be cattle, horse or large cervid), medium-sized mammal (assumed to be caprovid, pig or small cervid), unidentified bird, and completely unidentifiable.

Results

Sediment samples

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

Context 1010 [12th/13th century dump immediately above 'natural']

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

Dry, light to mid grey-brown, crumbly to unconsolidated, very stony (stones 2 to 60+ mm were common), sandy clay silt.

The tiny washover of a few cm³ consisted of modern woody (?tree) roots and a little charcoal (to 10 mm in maximum dimension); there were traces of rather poorly preserved charred cereals (oats, *Avena* sp. and 'bread/club' wheat, *Triticum 'aestivo-compactum'*). The very large residue of about 1700 cm³ comprised gravel (mostly rather rounded clasts, to 75 mm, perhaps largely water-worn) with some sand.

There were approximately sixty (total weight 2.5 g) very small fragments of bone, either fawn or brown in colour. Most of the remains were of mammal bone, but there were five pieces of fish, including a scale and a damaged vertebra of a small gadid.

Context 3011 [17th century, ?horticultural soil]
Sample 3/T (3 kg sieved to 300 microns with washover)

Just moist, mid grey-brown, unconsolidated to crumbly (working soft and somewhat plastic), sandy clay silt. Stones (2 to 20 mm), cinder, charcoal and modern roots were present in the sample.

The small washover of about 75 cm³ consisted of modern woody roots and charcoal (to 15 mm, including oak, *Quercus*), with a little coal (to 5 mm) and cinders (to 10 mm); there were also a few scraps of extremely poorly preserved seed fragments of no interpretative value. The large residue of about 500 cm³ was sand and (mostly rather angular/shaly) gravel (to 35 mm), with bone (to 30 mm) and three small fragments of shell (including mussel *Mytilus edulis* L.).

The recovered bone weighed 10.7 g and comprised about 100 unidentified mammal fragments, three pieces of large mammal, and seven bits of unidentified fish. Five fragments were charred and another four calcined. The rest of the bones were well preserved and generally fawn in colour.

Context 3039 [12th/13th century backfill of linear cut]
Sample 7/T (3 kg sieved to 300 microns with paraffin flotation and washover)

Moist, mid grey-brown (mottled lighter and darker on a mm-scale), brittle to crumbly (working soft and slightly sticky), sandy clay silt. Stones (2 to 60 mm), rotted ?mortar, charcoal and modern roots were present in the sample.

The small flot yielded a few charred cereals and poorly preserved weed seeds, whilst the washover of about 70 cm³ consisted of modern roots with some bone (to 30 mm), wood and charcoal (both to 10 mm)

with further cereals: oats, bread/club wheat and barley (*Hordeum*). Some of the oat grains appeared to be partly charred and retained patches of brown rather than black tissue. Two other 'useful' plants, both represented by a single seed, were field bean (*Vicia faba* L. var. *minor*) and fig (*Ficus carica* L.). The large residue of about 550 cm³ was of sand and gravel (to 55 mm). There was also a single fragment of pottery (to 30 mm).

Context 3043 [13th century waterlogged deposit]
Sample 6/T (3 kg sieved to 300 microns with paraffin flotation)

Moist, light to mid brown to mid to dark brown, brittle to crumbly (working soft), humic, slightly clay sandy silt with some ?fine herbaceous detritus and patches of light to mid brown sand. Stones (6 to 20 mm rounded pebbles) and twigs were present in the sample.

The small flot contained many well preserved stinging nettle (*Urtica dioica* L.) and other weed seeds along with numerous well-preserved insects, ostracods and cladocerans. The large residue of about 600 cm³ included about 350 cm³ of 'waterlogged' organic detritus—mainly small wood fragments (including chips, to 10 mm) and twig fragments (probably mostly willow, *Salix*). Seeds and fruits were abundant and well preserved and included many more nettle seeds, as well as nutlets of common mallow (*Malva sylvestris* L.). Other taxa were mostly other weeds of various kinds, including some typical of cereal fields (perhaps from straw?). A single fragment of capsule of flax (*Linum usitatissimum* L.) and a charred bread/club wheat grain represented the only cultivated plants in the assemblage. Aquatic taxa were limited to horned pondweed (*Zannichellia palustris* L.).

The flot was rich in invertebrate remains, particularly fragments of immature insects of various kinds. Preservation was good (E 1.5-2.5, mode 2, weak; F 1.5-3.0, mode 2.0, weak). Aquatics were abundant, with at least 100 *Daphnia* ephippia (water flea resting eggs) and numerous resting eggs of another cladoceran, and quite large numbers of ostracods. Many of the fragmentary immatures were probably of aquatic forms, too. However, there was no well-developed aquatic beetle and bug fauna; although several taxa were present it was usually as single individuals. There were two pondskaters, *Gerris* sp., indicating open water, but the aquatic invertebrates as a whole can probably best be seen as representing temporary water, or pools among emergent or overhanging vegetation. Waterside taxa were present in small numbers, and suggested damp litter or moss.

Terrestrial taxa could be divided into those which might have lived in an area of weed vegetation (e.g. the plant feeders *Psylliodes*, *Chaetocnema*, *Apion* and *Sitona* spp., the ground beetles *Loricera pilicornis* (Fabricius) and *Calathus* sp.), species often found in litter below plants (such as *Tachinus* and *Tachyporus* spp.), and species typically associated with human habitations or other structures. In the latter category, the spider beetles *Tipnus unicolor* (Piller and Mitterpacher) and *Ptinus* sp., and the mould-feeding *Mycetaea hirta* (Marshall), were rather abundant. There was not, however, a large fauna indicative of waste disposal; there was no community typical of house floors or stable manure, for example, and little to suggest foul matter. The woodworm, *Anobium punctatum* (Degeer), was quite common, and may have originated with the spider beetles and *Mycetaea*, or have emerged from fencing or dead branches of trees nearby. The few dung beetles probably represent 'background fauna'; their numbers certainly do not suggest adjacent grazing land.

A single fragment of a puparium of the sheep ked, *Melophagus ovinus* (Linnaeus), may have originated from livestock living adjacent to the cut, but in view of the rarity of dung beetles is perhaps more likely originally to have been deposited during wool-cleaning.

A notable record was a bug scutellum, almost certainly of the nettlebug *Heterogaster urticae* (Fabricius), a species whose archaeological records indicate temperatures well above present day in medieval Yorkshire. Some nymphs of psyllid bugs were present and would, if identified, give indications of local vegetation from organisms unlikely to have travelled far unless transported by humans.

The biological evidence thus indicates deposition in water, perhaps near willow trees, with some limited input from occupation in an area bearing indications of vegetation disturbance by human activity.

Hand-collected vertebrate remains

Summary data for the hand-collected vertebrate remains from the medieval and post-medieval periods are presented in Tables 2 and 3 respectively.

Trench 1

Medieval

Bone from four contexts ranging in date from the 12th to the 15th centuries was examined, a total of 51 fragments. Preservation was consistently recorded as 'good', frequently verging on 'excellent', and, with the exception of Context 1006, angularity was described as 'spiky'. Colour was noted as fawn in each context. Fragmentation tended to be high, with no bones above 20 cm in maximum dimension, and in most contexts, more than 50 % of the fragments were less than 5 cm across the longest axis. Fragmentation was somewhat less extreme in the material from Context 1004, with approximately half of the bones ranging between 5 and 20 cm. Dog gnawing, burning, and butchery marks, while present, were not observed in significant amounts. Fresh breakages, affecting between 20% and 50% were most prevalent in Context 1006.

From the total of 51 fragments, 20 were identified to species, the majority being of cattle, and caprovid, with a few pig bones, and a single goose carpometacarpus from Context 1004. Amounts of bone categorised as large mammal, medium mammal and bird roughly mirrored the proportions of identified taxa. Four of the identified bones were measurable, and there were two mandibles, both caprovid, to which ages could be assigned.

Modern

One context (1009) gave 193 fragments of animal bone (a few of which were more rounded and possibly redeposited as this context also contained 13th century pottery). The vast majority of bones were identified as cow or large mammal, with at least four or five individuals represented. There were also a few fragments of pig, including parts of the skull, and a single radius of an adult goat. Of particular note was the high proportion of lower limb bones of cattle, particularly astragali, calcanea and distal tibiae. Metapodials and phalanges were present but under-represented in comparison. Similarly, there were no cow head elements, but butchered atlas and axis fragments were well represented. Meat bearing elements included several fragments of humerus, and a high proportion of radii, as well as ribs and vertebrae identified as large mammal. Summary information for the vertebrate remains from this context is given in Table 4.

Trench 2

Early Modern

There was a single horse phalanx from Context 2013, dating to the 18th/19th century.

Trench 3

Medieval

Fourteen contexts dating to between the 12th and 15th centuries yielded 77 bones, the largest group, from Context 3010, contained only 21 fragments. Preservation and angularity were consistently recorded as 'good' and 'spiky' respectively. Colour tended to be variable between contexts, generally either brown or fawn, tinged with brown patches. Overall fragmentation was somewhat lower than in Trench 1, with the majority of bones falling between 5 cm and 20 cm, and none above 20 cm in maximum dimension. Dog gnawing, butchery, burning, and fresh breakages were not observed with significant frequency. Thirty-five bones were identified to species, cow and caprovid being the most commonly occurring taxa, followed by pig. There were fourteen measurable fragments.

Post-medieval

Ninety-six bones were recovered from seven contexts ranging in date from the 15th/16th to the 17th centuries. Context 3011 contained 55 fragments, the remainder of the deposits mostly yielding less than eight bones. Preservation and angularity were uniformly 'good' and 'spiky' respectively, but colour, while generally fawn, tended to vary within contexts. Fragmentation and proportions of dog gnawing and burning were similar to those observed from the Trench 3 medieval group, but amounts of butchery and fresh breakages were greater. There were 38 bones identified to species, of which caprovid was dominant, followed by cattle. A single chicken bone from Context 3022 and a very rounded dog metacarpal from Context 3011 were also noted. Fourteen bones, mainly caprovid, were measurable, and there was a single cow mandible.

Early Modern

Bones from two contexts dating to the 19th century were scanned for interesting features. Context 3000 yielded a damaged piece of worked cervid metapodial, probably a large fallow deer metatarsal. The bone had been split medio-laterally, with the

ventral part having been shaped and smoothed into a long narrow scoop 17 mm wide and surviving to a length of 97 mm. Bones from Context 3001 included the scapula of a hare (*Lepus* sp.), a complete humerus of a robust sheep, a cow second mandibular molar and a (very) large mammal long bone fragment with saw-marks.

Discussion and statement of potential

These deposits have, unusually for sites in Ripon observed in the past few years, produced some modest (in one case rich) assemblages of plant remains and one assemblage with excellent preservation of invertebrates, and there is clearly potential for further study both of the material in hand and any deposits threatened with destruction by development, to elucidate plant use, human activity and local environmental conditions in this area.

Insufficient fragments of bone were recovered from each date group for any meaningful conclusions to be drawn but the general composition suggests domestic waste. The overall absence of wild species, and low proportion of even domesticated birds, might imply that the medieval and post-medieval occupants were of fairly lowly status.

The modern assemblage from Context 1009 is worthy of note. The overall appearance of the material from this context is that of a deposit of secondary butchery waste; probably from the adjacent property which was until relatively recently a butcher's shop. While it is possible that whole carcasses could have been disarticulated on the site, the hides (with the limb extremities still attached) being taken to the tanners, the absence of heads implies that primary butchery was carried out elsewhere. As the vertebrae were whole rather than split, it is possible that otherwise complete carcasses (rather than sides of beef) arrived at the site, still requiring further processing. The bias of the skeletal element representation away

from those associated with prime cuts of meat is consistent with the production of foodstuffs such as pies.

Although too small to be of interpretative value in isolation, the tightly dated vertebrate assemblage from Skellgarths would provide some additional data in combination with other, similarly dated (medieval and post-medieval), material from Ripon and the wider area.

Recommendations

The plant and invertebrate remains recovered from Context 3043 (Sample 6) should be recorded in detail, preferably together with remains from an additional subsample. They would provide a more detailed picture of local ecology, including vegetation and the effects of human activity, but remains with climatic significance should also be sought in view of the ?*Heterogaster* fragment recorded.

No additional work is recommended on the current vertebrate material. If further excavation reveals greater concentrations of well dated remains then the current assemblages should be considered in conjunction with them. Similarly, in the event of a synthetic study of vertebrate remains of the represented periods being undertaken the biometrical data available from the present assemblages should be recorded.

Any further excavation at this site should employ a systematic programme of sampling with subsequent analysis of plant and animal remains to explore these deposits further.

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. *Skellgarths, Ripon: list of processed sediment samples with notes on their treatment.*

Context	Sample	Notes
1010	5	5 kg sieved to 300 microns with washover
3011	3	3 kg sieved to 300 microns with washover
3039	7	3 kg sieved to 300 microns with paraffin flotation and washover
3043	6	3 kg sieved to 300 microns with paraffin flotation

Table 2. *Skellgarths, Ripon: summary information for the medieval hand-collected vertebrate remains.*

Taxon	Measurable	Unfused	Mandibles	Total fragments
<i>Sus</i> f. domestic pig	4	5		10
<i>Bos</i> f. domestic cow	2	1		23
<i>Ovis</i> f. domestic sheep	4	1		4
Caprovid	7	1	2	17
<i>Anser</i> sp. goose	1			1
Subtotal	18	8	2	55
Bird				2
Large mammal				42
Medium mammal				29
Subtotal				73
Grand total	18	8	2	128

Table 3. *Skellgarths, Ripon: summary information for the post-medieval hand-collected vertebrate remains.*

Taxon	Measurable	Unfused	Mandibles	Total fragments
<i>Canis</i> f. domestic dog				1
<i>Bos</i> f. domestic cow	2	2	1	15
<i>Ovis</i> f. domestic sheep	1			1
Caprovid	10			20
<i>Gallus</i> f. domestic fowl	1			1
Subtotal	14	2	1	38
Bird				2
Large mammal				20
Medium mammal				35
unidentified				1
Subtotal				58
Grand total	14	2	1	96

Table 4. *Skellgarths, Ripon: summary information for the hand-collected vertebrate remains from Context 1009.*

Taxon	Measurable	Unfused	Total fragments
<i>Sus</i> f. domestic pig		1	6
<i>Bos</i> f. domestic cow	22	6	46
<i>Capra</i> f. domestic goat	1		1
<i>Ovis</i> f. domestic sheep	1		1
Caprovid			1
Subtotal	24	7	55
Large mammal			97
Medium mammal			24
unidentified			17
Subtotal			138
Grand total	24	7	193