

Palaeoecology Research Services

**Assessment of biological remains from
excavations at Newport Road Quarry,
North Cave, East Riding of Yorkshire:
Phase 4 (site code: NCE2002)**

PRS 2004/52

Assessment of biological remains from excavations at Newport Road Quarry, North Cave, East Riding of Yorkshire: Phase 4 (site code: NCE2002)

by

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Summary

Thirteen sediment samples, a very small quantity of hand-collected shell and ten boxes of hand-collected bone, recovered from deposits encountered during excavations at Newport Road Quarry, North Cave, East Riding of Yorkshire (Phase 4, Areas 4 and 5), were submitted for an assessment of their bioarchaeological potential. The excavation located features providing evidence of Romano-British and medieval/post-medieval activity. Three of the sediment samples and one box of the hand-collected bone were recovered from Phase 3 (Area 2) of the excavations at this site but have been included here at the excavator's request.

Three of the samples (from Contexts 1741, 4061 and 4290) gave interpretatively valuable assemblages of plant and invertebrate remains. The biota from Context 1741 included a variety of weedy taxa likely to have grown in or around the pit, but also gave some indications of material from human activity or from structures. The abundant insect remains suggested the presence of herbaceous vegetation and probably grazing land, with some weak hints of human occupation. The samples from the deposits excavated in Area 2 gave assemblages of plant and invertebrate remains rather similar to some of those recovered from other Area 2 deposits. Preservation of both plant and invertebrate remains was rather variable but indications of both arable agriculture and animal grazing were again present. There was a suggestion from the insects recovered from Context 4290 that the pond feature 4292 might be a waterhole.

The very small quantity of hand-collected shell recovered was, where identifiable, primarily of catholic land snail taxa and of no interpretative value.

The vertebrate assemblage resembled those recovered from other areas of the site, particularly Area 2. A similar range of species was identified showing the prevalence of the main domestic mammals, with very little evidence for the exploitation of wild resources. Some animal burials were encountered, together with a number of possible part skeletons, these included the remains of dog, caprovid and cattle and may represent ritual or 'special' deposits. Several deposits of burnt bones, including a human cremation were also present.

It is recommended that any further study of the plant, invertebrate and vertebrate assemblages reported here should be undertaken in conjunction with analyses of the remains recovered from other areas of excavation at Newport Road Quarry.

KEYWORDS: NEWPORT ROAD QUARRY; NORTH CAVE; EAST RIDING OF YORKSHIRE; PHASE 4 EXCAVATION; ASSESSMENT; IRON AGE; ROMANO-BRITISH; MEDIEVAL/POST-MEDIEVAL; PLANT REMAINS; CHARRED PLANT REMAINS; PEAT; CHARRED GRAIN; BURNT TURVES; INVERTEBRATE REMAINS; SNAILS; VERTEBRATE REMAINS; ANIMAL BURIALS; 'SPECIAL' OR RITUAL DEPOSITS; HUMAN BONE; CREMATION

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16 July 2004

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Introduction

An archaeological excavation was carried out by Humber Field Archaeology, at Newport Road Quarry, North Cave, East Riding of Yorkshire (centred on NGR SE 8817 3153), between February and August 2003.

Newport Road Quarry is a large sand and gravel extraction site located to the south-west of the village of North Cave. This excavation was undertaken as part of phased works in advance of an extension of gravel extraction. Within the wider project, this was Phase 4 and the excavation site was in Areas 4 and 5. The excavation located features relating to Iron Age/Romano-British activity including a large stretch of driveway, a series of rectangular plots (almost certainly representing fields or stock enclosures) and at least two hut circles. Some deposits were thought to be of later medieval/post-medieval date.

One hundred and two bulk sediment samples ('GBA'/'BS' *sensu* Dobney *et al.* 1992), a very small quantity of hand-collected shell and nine boxes of hand-collected bone, were submitted to Palaeoecology Research Services Limited (PRS), County Durham, for an assessment of their bioarchaeological potential.

It was decided by the excavator prior to this assessment that the hand-collected bone (one additional box) and three samples from the Area 2 excavations (NCE2001), from deposits with context numbers in the 4000s, would be more appropriately discussed together with those reported here.

Methods

Sediment samples

The sediment samples were inspected in the laboratory. Ten (plus the three from Area 2) were selected for the assessment and their lithologies were recorded using a standard *pro forma*. Subsamples of the selected samples were processed, following the procedures of Kenward *et al.* (1980; 1986), for the recovery of plant and invertebrate macrofossils.

Plant remains (and the general nature of the washovers, and—in one case—a flot and residue) were recorded briefly by 'scanning', identifiable taxa and other components being listed directly to a PC using *Paradox* software. Notes on the quantity and quality of preservation were made for each fraction examined.

Insects in the flots were recorded using 'assessment recording' *sensu* Kenward (1992), creating a list of the taxa observed during rapid inspection of the flot, with a semi-quantitative estimate of abundance, and a subjective record of the main ecological (e.g. aquatics, grain pests) or indicator (e.g. for stable manure, Kenward and Hall 1997) groups present. A record of the preservational condition of the remains was made using scales given by Kenward and Large (1998).

Artefacts recovered from the samples were returned to the excavator for the consideration of the appropriate specialist(s).

Hand-collected shell

A very small quantity of hand-collected shell was submitted. The remains were identified as

closely as possible and brief notes made on their preservation.

Hand-collected vertebrate remains

Records were made of the hand-collected vertebrate remains concerning the state of preservation, colour of the fragments, and the appearance of broken surfaces ('angularity'). Other information, such as dog gnawing, burning, butchery and fresh breaks, was noted, where applicable.

Fragments were identified to species or species group using the PRS modern comparative reference collection. The bones which could not be identified 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 2 by the category labelled 'Unidentified'.

Results

Sediment samples

The results are presented in context number order by chronological grouping (as yet unphased deposits are given last). 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 number.

IRON AGE TO EARLY ROMANO-BRITISH

Context 2394 [fill of hedgeline 2395]

Sample 85/T (3 kg sieved to 300 microns with washover; approximately 3 litres of unprocessed sediment remain)

Just moist, light grey-brown to mid grey-brown, crumbly to unconsolidated, stony (stones of 2 to 20 mm

were common and larger stones of 20 to 60 mm were present), very slightly clay, silty sand.

The washover was very small (a few ml at most) and consisted of modern seeds and traces of roots. There were some small charred fragments of vegetative material which may have originated in peat or turves.

The small residue (dry weight 685 g) was mostly sand and stones (flint with a little chalk).

MID ROMANO-BRITISH

Context 1013 [fill in ditch 1014]

Sample 17/T (3 kg sieved to 300 microns with washover; approximately 5 litres of unprocessed sediment remain)

Just moist, mid to dark grey-brown to dark grey, crumbly to unconsolidated, sand. Stones (2 to 20 mm), ?charcoal flecks and modern invertebrates (springtails) were present in the sample.

The minute washover, of only a few ml, consisted of small (<5 mm) wood charcoal fragments, with a single charred ?bread/club wheat (*Triticum* cf. *aestivo-compactum*) grain and traces of ?spelt wheat (*T.* cf. *spelta* L.) glume-bases and unidentifiable cereal grains, as well as a trace of charred hazel (*Corylus avellana* L.) nutshell. There were also a few charred remains which may have originated in burnt turves or peat. The few uncharred weed seeds were almost certainly of recent origin.

There was a small residue (dry weight 507 g) of sand, with a few stones (mostly chalk and flint) and a trace of charcoal (to 4mm, <1 g). Twelve small (<15 mm in any dimension) unidentified bone fragments were also recovered from this deposit (2 g in total).

Context 1353 [fill of ring ditch 1354]

Sample 46/T (3 kg sieved to 300 microns with washover; approximately 6 litres of unprocessed sediment remain)

Just moist, light to mid grey-brown (with patches of light to mid orange-brown), unconsolidated fine sand. Stones (2 to 20 mm, including flint) were present. There were no other obvious inclusions apart from a ?modern ?earthworm egg capsule.

There was an extremely small washover comprising a few scraps of modern root and fine (less than 2 mm) wood charcoal plus a few modern uncharred seeds.

The small residue (dry weight 420 g) was mostly sand, with a few stones (flint), a little charcoal (to 10 mm, <1 g) and a single caproid lower third molar (5 g).

Context 1423 [fill of ring gully/?hayrick 1424]
Sample 35/T (3 kg sieved to 300 microns with washover; approximately 4 litres of unprocessed sediment remain)

Just moist, light grey-brown to mid to dark grey (in shades of grey-brown), crumbly to unconsolidated, slightly stony, ?ashy sand. Stones (2 to 60 mm) and some lumps of ?ash were present.

The very small washover (of about 20 ml) consisted of wood charcoal (to 15 mm), with a few other charred remains: traces of barley (*Hordeum*) rachis (ear-stalk), wheat grains and a few weed seeds. Traces of vegetative material perhaps originating in burnt peat or turves were also noted.

The residue was small (dry weight 410 g) and mostly of sand. Stones (including flint) and a little charcoal (to 10 mm, ~1 g) were also noted.

Context 1617 [fill of gully 1618]
Sample 57/T (2.5 kg sieved to 300 microns with washover; no unprocessed sediment remains)

Dry, mid grey-brown (lighter in places), with some light to mid orange-brown patches, indurated, very stony (stones 2 to 6 mm present and 6 to 60 mm common), ashy silt, or ?silty ash. Mortar/plaster and traces of ?charcoal (or perhaps ?ash lumps) were present.

There was a very small washover of about 20 ml of charred debris, mainly 'spicular' wood charcoal (to 5 mm), and some modern roots. On drying, traces of 'silicified' cereal chaff and charred cereal grains (including barley) were noted.

The small residue (dry weight 513 g) was mostly of sand and stones (flint and chalk), with a little charcoal (to 15 mm, ~2 g) and two small unidentified burnt bone fragments.

Context 1659 [fill of gully 1660]
Sample 52/T (8 kg sieved to 300 microns with washover; no unprocessed sediment remains)

Just moist to dry, mottled (on a mm-scale), light orange-brown to light brown to mid grey-brown, crumbly to unconsolidated, ashy, fine sand. Fragments of burnt mammal bone were common.

This subsample produced a very small washover of a few ml of modern roots and wood charcoal (to 10 mm), with a few other charred remains, including vegetative material perhaps from turves or peat.

There was a small residue (dry weight 1.3 kg) of sand, with some stones (flint) and a little charcoal (to 8 mm, ~2 g). This sample produced an assemblage (46 g) of burnt animal remains. Those fragments which could be identified were caproid and included scapula, tibia and metatarsal shaft fragments, carpals, phalanges and pieces of rib and vertebrae. Cranium and mandible fragments were also recorded. It is likely that all of the fragments were from one individual.

Context 1709 [fill of flue of ?cornrdrier 1735]
Sample 58/T (3 kg sieved to 300 microns with washover; approximately 6 litres of unprocessed sediment remain)

Moist, mid to dark grey-brown, with some light to mid orange-brown patches, crumbly to unconsolidated, stony (stones 2 to 20 mm were common), ?slightly clay, sand, with some ?charcoal flecks.

There was a very small washover of a few ml of wood charcoal (to 10 mm) with traces of charred wheat grain and spelt glume-bases, but at very low concentrations.

The small residue (dry weight 422 g) was of sand and stones (mostly chalk and flint), with a little charcoal (to 8 mm, <1 g) and a trace of unidentified snail shell. Seven small fragments of bone were recovered from this sample, including a rather poorly preserved vole tooth.

Context 1984 [fill of cornrdrier 1985]
Sample 62/T (3 kg sieved to 300 microns with washover; approximately 5 litres of unprocessed sediment remain)

Moist (some areas dried out), light to mid grey-brown to mid grey (with some light to mid brown patches), stiff (working plastic), clay. Stones (2 to 20 mm), ?rotted charcoal and modern moss were present.

The very small washover of a few ml comprised modern roots, wood charcoal (to 5 mm), some well-preserved snails (though there were also rather more unidentified shell fragments), and a very few charred wheat grains. The identifiable snails included *Carychium* sp. (1 individual), *Pupilla muscorum* (Linnaeus) (3 adults and a few ?juveniles), *Vallonia ?costata* (Müller) (2), *V. ?excentrica* Sterki (1) and *Trichia hispida* (Linnaeus) (1). Overall, this assemblage would suggest an area of calcareous short-turfed

grassland but it is rather too small to carry any great interpretative weight.

The small residue (dry weight 429 g) was of sand and stones (mostly chalk and flint), with a little charcoal (to 4 mm, <1 g) and a trace of snail shell (including one ?hydrobiid fragment).

LATE ROMANO-BRITISH

Context 1146 [fill of large pit 1173]

Sample 23/T (3 kg sieved to 300 microns with washover; approximately 2 litres of unprocessed sediment remain)

Moist, light to mid grey-brown to mid to dark grey, crumbly to unconsolidated (working soft), moderately stony (2 to 20 mm stones were common and 20 to 60 mm stones present), clay sand. Small fragments of charcoal were also present.

This subsample yielded a very small washover of about 30 ml, mostly roots (probably ancient), herbaceous detritus, and a few unidentified fragments of snail shell. A small assemblage of moderately well preserved plant remains was observed, a mixture of wetland and weed taxa but with no strong interpretative significance. A few charred remains, in addition to small (less than 5 mm) wood charcoal fragments, were present including wheat grains, glume-bases and spikelet-forks. There was also trace of well-rotted beetle and fly puparial cuticle, of no interpretative significance.

There was a medium-sized residue (dry weight 840 g) of chalk fragments and sand, with a trace of charcoal (to 3 mm, <1 g), a single small fragment of ?cockle (cf. *Cerastoderma edule* (L.)) shell and a small succineid snail (usually indicative of waterside vegetation). This sample also produced six tiny fragments of bone, five of which were identified as amphibian.

Context 1741 [organic tertiary fill of large pit 1744]

Sample 59/T (3 kg sieved to 300 microns with paraffin flotation; approximately 4 litres of unprocessed sediment remain)

Moist, light to mid grey brown to mid to dark grey-brown, slightly brittle to crumbly (working soft), sandy clay silt. Stones (2 to 20 mm, including flint and chalk) and wood (or woody root—rotted and black) were present in the sample.

Overall, the assemblage—which was rather large and contained well or very well preserved fruits and seeds and vegetative remains—was consistent with deposition in a ditch or shallow wet pit with stands of rank weeds nearby. The more abundant remains were nutlets of

water-pepper (*Polygonum hydropiper* L.) and redshank (*P. persicaria* L.) with moderate numbers of fruits or seeds of fat-hen (*Chenopodium album* L.), white horehound (*Marrubium vulgare* L.), water-crowfoot (*Ranunculus* Subgenus *Batrachium*), marsh yellow-cress (*Rorippa palustris* (L.) Besser) and stinging nettle (*Urtica dioica* L.). There was probably also some deposition of plant litter, evidenced by stalk fragments and charred frond fragments of bracken, *Pteridium aquilinum* (L.) Kuhn, for example, and perhaps also the few moss shoots, and there were also some charred remains which may have originated in burnt peat or turves (traces of charred material, in fragments up to 10 mm, which may have been peat were also noted). Other charred material included a trace of barley grains, but the remains of free-threshing wheat rachis were uncharred and might have arrived in debris from cereal straw.

The large flot was rich in well preserved but often very fragmented insect remains (E 2.0-3.0, mode 2.0 weak; F 2.0-4.5, mode 2.5 weak), and there were also abundant Cladocera (ephippia of water fleas: order of 100 each of *Daphnia* sp. and a second characteristic but unidentified species).

Beetles were abundant. There was a strong aquatic component, predominantly *Ochthebius* sp. but also a range of other species which together (and like the cladocerans) suggest reasonably clean still water, though not necessarily permanent. Terrestrial insects were abundant, with components from dung (at least three *Aphodius* species, two individuals of an *Onthophagus*, and a *Geotrupes*), from herbaceous vegetation including nettles (perhaps from meadowland, or from the site itself), from open ground with a little cover (various ground beetles), and from decaying matter (some perhaps from dung, but others probably from plant litter). There was no evidence from the insects that the cut had been used for the disposal of waste; other than forms likely to have come from dung, the decomposer element was fairly small, with no species present in more than small numbers, and there were very few fly puparia. The dung beetles probably originated from the faeces of livestock penned on or grazing near to the site. Another element suggesting grazing land was the chafer *Hoplia philanthus* (Füessly).

A moderate-sized residue of about 500 ml was generated by this subsample, about 100 ml comprising chalk gravel (to 15 mm) and sand, the remainder being woody and herbaceous detritus, including moderate amounts of rather soft woody root fragments (up to 70 mm in one case). These roots are thought to be of post-depositional origin but are perhaps ancient.

NOT YET PHASED

The following three samples were recovered during the excavation of Area 2 (NCE2001).

Context 4061 [lower peaty/clay fill of ditch 4011]
Sample 40/T (1 kg sieved to 300 microns with washover; approximately 2 litres of unprocessed sediment remain)

Moist, mid grey-brown, crumbly (working soft), clay silt, with some fine herbaceous detritus. Stones (mostly chalk with some flint) of 2 to 20 mm were common and of 20 to 60 mm were present.

This sample yielded a very small washover of about 15 ml of woody plant debris with abundant seeds of toad rush (*Juncus bufonius* L.) and some duckweed (*Lemna*) seeds. Indeed, the assemblage mainly comprised aquatic and waterside taxa with some arable weeds. All the remains were rather decayed. Charred material was restricted to one very damaged wheat grain and a little heather (cf. *Calluna vulgaris* (L.) Hull) root/twig. Moderate numbers of invertebrate remains were recovered during botanical analysis, suggesting the need to paraffin-float a larger subsample for insect analysis. The remains were ecologically varied, and rather decayed in some cases.

The very small residue (dry weight 230 g) was of sand and fragments of chalk, with a little flint.

Context 4152 [basal fill of ditch 4208]
Sample 56/T (3 kg sieved to 300 microns with washover; approximately 6 litres of unprocessed sediment remain)

Moist, light to mid brown to dark grey-brown (and shades of grey-brown between), brittle to crumbly (working soft), stony (chalk and flint of 2 to 20 mm common and 20 to 60 mm present), humic clay sand.

There was a small washover of about 30 ml of woody (bark) and herbaceous detritus and charcoal. Preservation was rather variable, ranging from excellent to 'rather battered'. The assemblage was essentially annual weeds. There were some mor-humus like clasts which might simply be inwashed soil, perhaps also suggested by the presence of earthworm egg capsules and soil nematode (*Heterodera*) cysts. Small numbers of insect remains were extracted during botanical analysis; they were rather decayed and there is probably little potential for further analysis of this sample.

The medium-sized residue (dry weight 730 g) was of sand, with some chalk and flint fragments.

Context 4290 [primary fill of pond 4292]
Sample 52/T (3 kg sieved to 300 microns with paraffin flotation and washover; approximately 4 litres of unprocessed sediment remain)

Moist, mid grey-brown, crumbly (working soft), clay silt, with patches of fine sand and fine herbaceous detritus. Stones (chalk and flint, 2 to 60 mm) were common and ?pot was present in the sample.

The small washover of about 70 ml consisted of plant debris, very largely seeds, the more abundant of which were indicators of water—duckweed and water crowfoot (*Ranunculus* Subg. *Batrachium*) though with a variety of other habitats indicated—disturbed and cultivated land, grassland, and probably also scrub. There was little or no indication of any human activity other than through the presence of some of the annual weeds.

The flot was rather small and consisted mainly of invertebrate remains, with some filmy plant debris. The invertebrates were variably preserved and in some cases highly fragmented (E 1.5-3.5, mode 2.5 weak; F 2.0-5.0, mode 2.5 weak). There was distinct impression that these fossils had been comminuted in antiquity, though whether by drying/wetting cycles or by biological activity may prove hard to determine. There were large numbers (hundreds) of ephippia of a cladoceran (distinctive, and surely identifiable given appropriate illustrations or reference material), over a hundred *Daphnia* ephippia, and a range of water beetles, so an origin in water seems certain and (along with the evidence from plant remains) entirely consistent with the excavator's interpretation. There were at least three species of *Aphodius* dung beetles (including the very common *A. prodromus* (Brahm) and *A. sphaelatus* (Panzer)).

Further analysis of this unusual invertebrate assemblage is desirable, to try to determine the taphonomic history of the remains, to investigate the possibility that the deposit represents a watering hole, and to reconstruct conditions in the immediate surroundings. There were no typical or strong synanthropes to suggest adjacent occupation or waste disposal. Useful information about local land-use should be obtained from this assemblage if combined with remains from another, larger, subsample.

There was a small residue (dry weight 550 g) of sand, chalk and flint.

Hand-collected shell

A very small quantity of shell was recovered by hand-collection from 11 contexts. Contexts 5048, 5056 and 5114 each gave a small number of fragments (3, 7 and 5 respectively) of unidentified (though probably marine) shell. All of the other shell-bearing deposits gave *Cepaea/Arianta* sp. land snail remains, usually in small numbers but Context 1009 contained nine individuals (3 of which apparently juveniles) and Context 1450 at least 32 individuals (approximately one-third of which were ?juveniles) and many unquantified fragments. Preservation of the remains was variable but many of the land snail shells seem most likely to be of modern origin.

These remains are summarised in Table 1.

Hand-collected vertebrate remains

A total of 1511 bones, representing 223 deposits, were recovered during excavations in Areas 4 and 5 at Newport Road Quarry, North Cave. Information provided by the excavator assigned the deposits to four phases ranging in date from the late Iron Age/early Romano-British period (Phase 1) through to the medieval/post-medieval period (Phase 4). This fragment total is exclusive of part or complete skeletons and remains from unphased deposits. Table 2 shows the number of fragments by date group, from which it can be seen that most of the material was recovered from deposits dated to Phase 2 (mid Romano-British). The group composed of material for which there was no dating information, amounted to 136 fragments; most of these fragments were from contexts numbered in the 4000s (Area 2 excavations).

Preservation of the material was very similar to the animal bone assemblage recovered from excavations in Area 2 of this site. Material from 60 of the deposits was recorded as poor or very poor, with bones from a further eleven described as variable. Those fragments described as of 'fair' preservation were generally battered in appearance, with some showing extensive surface erosion. Most bones were rather brittle and easily broken, and typically, the surface of these bones had split into layers. A high degree of fragmentation was noted throughout, accounting for the presence of large numbers of unidentified fragments. Fresh breakage during excavation and/or post-excavation processes was extensive, but the fragility of the bones had obviously contributed to this. Burnt and scorched fragments were also fairly frequently encountered. Butchery marks and dog gnawing were observed but were minimal in extent.

The species identified from these deposits were largely restricted to the main domesticates—cattle, caprovids,

horses and pigs. Horses were represented by a range of skeletal elements including several fragments with knife and chop marks. A Phase 1 pit fill produced a complete horse skull, together with a metacarpal; no other bones were recovered from this pit. Dog bones were also present; their remains scattered throughout a number of deposits. Additionally, the part skeleton of a dog (minus skull and mandibles) was recovered from Context 1056 (Phase 2). These bones represented a small, rather squat individual who possibly had rather bandy front legs. Other species were rather sparsely represented. A single cat radius was recorded from Context 405, and a chicken bone (a tarsometatarsus) was recovered from Context 1951, whilst a tibia shaft from Context 1254 was tentatively identified as roe deer (*Capreolus capreolus* (L.)).

Material recovered from contexts in the 4000 series, showed similar characteristics both in its condition and in its composition. However, one deposit, 4290, produced the back half of the skull of a female red deer (*Cervus elaphus* L.); chop marks were noted on the occipital condyles and the frontal bone. In addition, juvenile raven (*Corvus corax* L.) bones (humerus and ulna fragments) were identified from Context 4203/4268 (unfortunately labelled 'spoil').

Several animal skeletons or part skeletons were noted; these may be of ritual significance but equally may represent casualties of illness or accident. Few were complete and, in some cases, it could not always be determined whether the fragments were all from the same individual. More detailed information regarding the features from which they were recovered and their association with other artefacts would be required for further interpretation to be made. These remains were primarily recovered from pit fills, although a number of associated cattle rib and vertebrae fragments were recovered from ditch fill 5140.

From Phase 1, Context 1472 (posthole fill) produced the remains of two caprovids; both were missing pelvises, femora and tibiae. Some of the smaller fragments, such as phalanges, carpals and tarsals were also absent. Young calves were represented in two deposits; skull and mandible fragments were recorded from Context 1815 (Phase 1), whilst a number of cranial fragments, isolated teeth, ulna and radius fragments were identified from Context 2145 (Phase 2). Additionally, a part skeleton of sheep/goat was recovered from Context 1312 (Phase 3) and Context 2376 (unphased). Pig remains from Context 2260 were of a rather different appearance to other bones from the site, and are possibly of modern origin. Several deposits produced assemblages of burnt remains that may represent single individuals, whilst burnt remains from Context 5212 included both pig and caprovid fragments. A human cremation, including cranium,

shaft and phalange fragments was identified from Context 2302.

As a consequence of the extremely fragmentary nature of the material, mandibles with teeth *in situ* and measurable bones were not particularly numerous. The phased material produced 54 measurable fragments, 32 mandibles and 33 isolated teeth of use for providing age-at-death and biometrical data.

Discussion and statement of potential

Most of the samples examined yielded only very small amounts of ancient charred plant material, including a few remains of charred cereal grains and chaff, and a few vegetative remains thought likely to have originated in the burning of peat or turves. Only one of the Phase 4 excavation (Areas 4 and 5, NCE2002) deposits yielded a large assemblage of remains—the pit fill 1741 in 1744. The biota included a variety of weedy taxa likely to have grown in or around the pit, but also gave some indications of material from human activity or from structures. The abundant insect remains suggested the presence of herbaceous vegetation and probably grazing land, with some weak hints of human occupation.

The samples from the deposits excavated in Area 2 (NCE2001, contexts numbered in the 4000s) gave assemblages of plant and invertebrate remains rather similar to some of those recovered from other Area 2 deposits (Hall *et al.* 2004). Preservation of both plant and invertebrate remains was rather variable but two of the deposits (Contexts 4061 and 4290) would certainly reward further study. Indications of both arable agriculture and animal grazing were again present and there was a suggestion from the insects recovered from Context 4290 that the pond feature 4292 might be a waterhole.

The hand-collected shell was dominated by land snail remains of *Cepaea/Arianta* sp. many, if not all, of which were most likely of modern origin. Even if ancient, the remains are of no interpretative value being either unidentifiable fragments or of catholic taxa.

The vertebrate assemblage resembled those recovered from other areas of the site, particularly Area 2. A similar range of species was identified showing the prevalence of the main domestic mammals, with very little evidence for the exploitation of wild resources. Some animal burials were encountered, together with a number of possible part skeletons, these included the remains of dog, caprovid and cattle. Several deposits of burnt bones, including a human cremation (Context 2302) were also present.

Preservation was rather poor and fresh breakage damage extensive. The high degree of fragmentation reduced the number of identifiable fragments and those of use for providing biometrical data. Mandibles with teeth *in situ* were also rare. As with the assemblage from Area 2, further analysis of this assemblage is limited as a result of these factors. However, this assemblage, in conjunction with the other vertebrate material recovered from the site, will provide a valuable dataset from a rural site with evidence for occupation from the Iron Age and throughout the Roman period. A detailed study of aspects of this material may aid our understanding of the development of the settlement at North Cave, in terms of agricultural and husbandry practises.

Additionally, a more detailed examination of the animal burials, part skeletons, skulls and burnt deposits, which form a significant part of this assemblage, is warranted. Examples of similar deposits have been recorded from the assemblage from Area 2 and from other sites (of the same date) in the region e.g. Hayton (Jaques *et al.* 2000), Shiptonthorpe (Mainland 1988) and Goodmanham (Hall *et al.* 2003). As previously discussed for Area 2 of this site (Hall *et al.* 2004), these deposits may represent so-called ‘special deposits’ (see Grant 1984 and Wilson 1992) and further study may help to illuminate the ritual activities being undertaken during this period.

Recommendations

Overall the plant remains provided little further evidence beyond that seen in the group of samples from Area 2 of this site (NCE2001) and are probably not worthy of further work unless there are specific archaeological questions to be asked of particular contexts or features for which samples are available.

The fauna recovered from Subsample 59/T (Context 1741) is probably large enough for a reconstruction of the surroundings, though greater resolution would be obtained using a larger quantity of sediment. Processing a new subsample would allow the remains to be extracted with great care, desirable since it is possible that much of the fragmentation seen in the fossils occurred during extraction. Examining a greater quantity of material would also allow species with climatic significance to be sought: earlier excavations at North Cave have produced useful material in this respect (see, for example, Kenward 2004). A proper record of the plant remains from this deposit should be made to provide corroboration of the results from the insects, and to explore further the small quantities of material thought to originate in occupation. Similarly, full records should be made of the plant and invertebrate assemblages from Contexts 4061 and 4290 and further study undertaken in conjunction with that of other areas of this site. Data from these analyses would be useful both for site interpretation and in a planned synthesis of landscape evolution along the fringes of the Yorkshire Wolds.

No further study of the hand-collected shell is warranted.

Further detailed analysis of the vertebrate remains should be undertaken, including the collection of biometrical and age-at-death data and a more comprehensive examination of the possible 'special deposits'. This would only be of value if more detailed dating/phasing were available for the more broadly dated and undated deposits.

It is recommended that any further study of the plant, invertebrate and vertebrate assemblages reported here should be undertaken in conjunction with analyses of the remains recovered from other areas of excavation at Newport Road Quarry, North Cave (most notably Area 2).

Retention and disposal

The unprocessed sediment from Contexts 1741, 4061, 4152 and 4290, and any samples from similar deposits not thus far examined, should be retained, together with the biological remains recovered from the processed subsamples. The sediment samples from assessed contexts not listed above may be discarded.

The hand-collected bone should be retained but the hand-collected shell may be discarded.

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 Sophie Tibbles, Trevor Brigham and Jim Fraser, of Humber Field Archaeology, for providing the material and the archaeological information.

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Table 1. Hand-collected shell from deposits from excavations at Newport Road Quarry, North Cave, East Riding of Yorkshire (Phase 4 excavations). MNI = minimum number of individuals.

Context	Phase	Context type	<i>Cepaea/Arianta</i> sp. MNI	Other shell
1009	2	associated with human skeleton 1687	9	
1083	3	clean up layer over pit	1	
1133	4	cleaning layer above ditches 1006 and 1008	2	
1238	2	fill of curvi-linear ditch 1239	1	
1450	3	secondary fill of ditch 1451	32	
1774	2	fill of enclosure ditch 1775	1	
1933	2	fill of boundary ditch 1934	1	
1980	2	fill of ditch 1981	2	
5048	2	secondary fill of ditch 5040		3 fragments (?marine)
5056	2	secondary fill of ditch 5041		7 fragments (?marine)
5114	1	fill of hedgeline 5115		5 fragments (?marine)
			49	

Table 2. Hand-collected vertebrate remains from excavations at Newport Road Quarry, North Cave, East Riding of Yorkshire (Phase 4 excavations) by phase (excluding unphased material and fragments representing part or complete animal skeletons).

Species	1	2	3	4	Total
Canid	-	-	2	-	2
<i>Canis</i> f. domestic	-	35	5	-	40
<i>Felis</i> f. domestic	-	1	-	-	1
<i>Equus</i> f. domestic	7	43	23	-	63
<i>Sus</i> f. domestic	8	21	2	-	31
cf. <i>Capreolus capreolus</i> (L.)	-	-	1	-	1
<i>Bos</i> f. domestic	32	73	51	3	157
Caprovid	42	95	17	-	124
<i>Gallus</i> f. domestic	-	1	-	-	1
Unidentified	361	565	219	2	1091
Total	450	834	320	5	1511
Number of contexts examined	45	121	53	4	223