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**Assessment of biological remains from  
excavations at the site of the former Starting  
Gate public house, 40 Tadcaster Road, York  
(site code: YORYM2003.303)**

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by

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**Summary**

*Five sediment samples and six boxes of animal bones, recovered from deposits encountered during excavations at the site of the former Starting Gate public house, 40 Tadcaster Road, York, were submitted to PRS for an assessment of their bioarchaeological potential. Most of the deposits were of Roman date, although a single burial may be prehistoric. A few deposits of post-Roman and medieval date were also revealed. The deposits were truncated in the 20<sup>th</sup> century prior to the construction of the Starting Gate public house.*

*Ancient plant remains were restricted to small amounts of wood charcoal, with (in three samples) traces of what appeared to be charred or uncharred humified peat. There were also a few specimens which certainly or probably originated in cereal crops. A single sample produced a very small assemblage of charred remains comprising a few weed seeds. The plant remains give some indication of the use of fuel at the site in the Roman period, which apparently included wood, coal and probably also peat (or perhaps turves). No further work is justified on the plant material and it is probably not worthwhile to examine any further samples collected from this site (assuming their content of charred remains to be no higher than that recorded in this group). No invertebrate remains were recovered.*

*A moderate assemblage of well preserved animal bone was recovered, a large proportion of which was from Roman deposits. Cattle remains dominated the assemblage, although caprovid remains were also quite numerous and included the part skeletons of three juvenile individuals. The pattern of butchery and carcass reduction for cattle was characteristic of Roman assemblages and included systematic chopping of all major elements and the splitting of most long bones, probably for the extraction of marrow. Cattle scapulae also displayed distinctive damage associated with the production of cured shoulder joints. Part of a whale vertebra, which had clearly been used as a chopping block, was also recovered. Further consideration of the current assemblage is warranted.*

**KEYWORDS:** FORMER STARTING GATE PUBLIC HOUSE; 40 TADCASTER ROAD; YORK; ASSESSMENT; 1<sup>ST</sup> TO 3<sup>RD</sup> CENTURIES AD; ROMAN; POST-ROMAN; MEDIEVAL; MODERN; PLANT REMAINS; CHARRED PLANT REMAINS; HUMIFIED PEAT; ?BURNT TURVES; VERTEBRATE REMAINS; WHALE BONE

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## Assessment of biological remains from excavations at the site of the former Starting Gate public house, 40 Tadcaster Road, York (site code: YORYM2003.303)

### Introduction

An archaeological excavation was carried out by York Archaeological Trust at the site of the former Starting Gate public house, 40 Tadcaster Road, York (NGR SE 5869 4966), between the 22<sup>nd</sup> of September and the 24<sup>th</sup> of October 2003.

The deposits were mainly of Roman date, split into four phases of activity: Phase 1 – late 1<sup>st</sup> to AD 150; Phase 2 – AD 150-200; Phase 3 – AD 200-225; Phase 4 – later Roman. These included part of the Roman road running from York to Tadcaster, together with associated roadside ditches, three burials, the foundations of a large Roman building, traces of smaller buildings and an extensive cobble surface. Additionally, there were a number of features of post-Roman and medieval date, but over most of the site the deposits had been truncated during the 20<sup>th</sup> century prior to the construction of the Starting Gate public house.

Twenty-five sediment samples were recovered from the deposits ('GBA'/'BS' *sensu* Dobney *et al.* 1992). Five of these were submitted to PRS, together with six boxes of hand-collected bone, for an assessment of their bioarchaeological potential.

### Methods

#### *Sediment samples*

The submitted sediment samples were inspected in the laboratory 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 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.

#### *Hand-collected vertebrate remains*

For the hand-collected vertebrate remains, 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, other information, such as fragment size, 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 1 by the category labelled 'Unidentified'.

### 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.

‘NATURAL’ DEPOSITS

**Context 1075** [natural]

Sample 27/T (3 kg sieved to 300 microns with washover; approximately 2 litres of unprocessed sediment remain)

Just moist (to dry in places), light to mid brown to mid to dark grey-brown, crumbly to unconsolidated, slightly clay, ?ashy sand. There were no obvious inclusions.

There was a very small washover of a few ml of charred material: charcoal and cinder-like material with a little coal (all to 5 mm). There was also a single charred grass/cereal culm-node (‘knee’ from the stalk).

The residue was small (dry weight 252 g) and of stones (to 25 mm) and sand. There was also a little ?pot (to 15 mm, approximately 1 g), charcoal (to 10 mm, less than 1 g) and six tiny fragments of bone (all of which were unidentifiable; total weight less than 1 g).

ROMAN (PHASE 1) – LATE 1<sup>ST</sup> TO AD 150

**Context 1039** [primary fill of ditch 1045]

Sample 26/T (3 kg sieved to 300 microns with washover; approximately 4 litres of unprocessed sediment remain)

Moist, light to mid grey-brown to light to mid grey (with occasional orange-brown patches of ?recently rotted organic material), crumbly and slightly sticky (working soft and slightly sticky), clay sand, to sandy clay. Stones (over 60 mm) were present.

The washover comprised about 10 ml of charred material (charcoal and cinder-like fragments to 5 mm in maximum dimension), amongst which were traces of uncharred ?peat fragments (also to 5 mm). Some traces of woody debris might be from modern roots. A single poorly preserved charred barley (*Hordeum*) grain fragment was also noted.

The small residue (dry weight 312 g) was of stones (to 15 mm) and sand, with a little slag (less than 1 g), ?brick/tile (to 10 mm, about 1 g) and charcoal (to 10 mm, about 1 g). Eleven fragments of bone (total weight 2 g), three of which were burnt, were also recovered from this sample. None of these fragments were identifiable to species.

ROMAN (PHASE 3) – EARLY 3<sup>RD</sup> CENTURY

**Context 2028** [backfill of ditch 2029, possibly an eaves-drip gully for a Roman building]

Sample 1/T (3 kg sieved to 300 microns with washover; approximately 4 litres of unprocessed sediment remain)

Just moist, light yellow-brown to mid grey-brown (with shades of grey-brown between), unconsolidated to crumbly (working soft where more clay was present), slightly clay sand (larger proportion of clay in places). Stones (20 to 60 mm) and ?rotted charcoal were present.

The small washover of about 30 ml consisted of (modern) woody roots with a little charcoal (to 5 mm) and coal (to 3 mm) with small (less than 3 mm) fragments of charred and uncharred ?peat. There were also a few very distorted charred cereal grains, probably all barley.

There was a small residue (dry weight 202 g) of stones (to 25 mm) and sand, with a little pot (to 15 mm, 2 g) and charcoal (to 10 mm, approximately 1 g). Bone recovered from the sample amounted to 17 fragments (total weight of 2 g), all of which were less than 25 mm in maximum dimension. Over half showed fresh breakage damage and none could be identified.

**Context 2054** [build-up associated with use of a hearth]

Sample 6/T (3 kg sieved to 300 microns with washover; approximately 4 litres of unprocessed sediment remain)

Just moist, mid to dark grey-brown to black, unconsolidated to crumbly, ashy, clay silt, with fragments of ?brick and tile, ?coal, ?slag and ?charcoal.

This sample yielded a small (though for this group of samples comparatively large) washover of about 100 ml of charred material, mainly coal cinders (to 30 mm), and some unburnt coal (to 10 mm). With these were a modest number of small, rather poorly preserved charred seeds, probably all from weeds—they included stinking mayweed (*Anthemis cotula* L.) and some small legume seeds which may have been clovers or medicks (*Trifolium* or *Medicago*). There was also a single fragment of an oat (*Avena*) grain and a single uncharred seed of raspberry (*Rubus idaeus* L.) which may be modern.

The fairly large residue (dry weight 825 g) was of coal and cinder (both to 40 mm), with some stones (to 15 mm), sand, a little brick/tile (to 35 mm, 17 g) and slag (38 g).

**Context 2082** [backfill of ditch 2095]

Sample 18/T (3 kg sieved to 300 microns with washover; approximately 2 litres of unprocessed sediment remain)

Moist, light to mid grey-brown to light to mid grey, crumbly to unconsolidated (working soft), sandy clay to clay sand. Some small (to 10 mm) clay lumps and stones (6 to 60 mm) were present.

The washover was made up of a trace (probably less than 1 ml) of coal, cinder-like material and charcoal (to 5 mm), with one or two fragments of material which may be uncharred peat (also to 5 mm).

The small residue (dry weight 184 g) was of sand and some stones (to 15 mm). There was also an occasional charcoal fragment (to 3 mm, much less than 1 g) and a single fragment of unidentified burnt bone (to 8 mm, less than 1 g).

*Hand-collected vertebrate remains*

In total, nine boxes (each box approximately 20 litres) of hand-collected vertebrate remains were recovered from the excavations, of which six [boxes], amounting to 1493 fragments, from 60 deposits, were submitted for assessment. A large proportion of the remains (1119 fragments) were from deposits of Roman date, representing all four of the phases of activity assigned to this period. Additional material came from several deposits of post-Roman and medieval date, whilst the modern deposits associated with the building of the Starting Gate public house produced a further 82 fragments. Some vertebrate remains (150 fragments) were examined from deposits described as 'disturbed natural sand' but these have been excluded from Table 1 because of the uncertainty of their date. However, it is worth noting that material from Context 2020 showed the distinctive features of Roman carcass preparation, in the form of longitudinally split large mammal shaft fragments and chopped 'chunks' of proximal and distal epiphyses.

Preservation of the vertebrate remains was generally good, with material from only three deposits (Contexts 2038, 2063 and 2125) being described as of poor preservation. Variability of angularity and colour was noted within the material from Contexts 2016, 2048, 2063 and 2074, whilst the remains recovered from Context 2020 showed variable preservation and included some rather eroded fragments and several with rounded edges. These attributes suggest the presence of redeposited or residual material. Moreover, human remains, identified from Contexts 2048, 2063 and 2076, indicate the likelihood of these deposits containing material of mixed origins and (possibly) date.

Heavy fragmentation of the vertebrate remains was widespread and characteristic of much of the vertebrate assemblage. For the material from some contexts (Contexts 1016, 2018, 2028, 2063, 2105 and 2106 in particular) this could be attributed partly to fresh breakage during excavation and/or post-excavation processes. However, it was apparent that some fragmentation had occurred in the past. Much of this damage was the result of the extensive chopping and splitting of cattle long bones, specifically radii, tibiae, femora and metapodials (Contexts 1005, 2061, 2071, 2072, 2074, 2106, 2107, 2108 and 2121). Distal humeri were also occasionally subjected to similar treatment (Context 2071). This type of systematic carcass processing has been recorded from many vertebrate assemblages of Roman date, particularly those recovered from urban deposits. The extraction of marrow may be one explanation for this intensive butchery. Another distinctive feature was the treatment of cattle scapulae. Ten deposits (Contexts 1005, 1016, 1038, 1039, 1040, 1053, 2048, 2091, 2106, and 2121) produced these bones which showed specific damage, including possible 'hook' damage, evidence for the removal (or partial removal) of the spine and small nicks or shaving marks on the margo thoracalis. Additionally, some specimens had been trimmed around the glenoid cavity. It has been suggested (O'Connor 1988; Dobney *et al.* 1996) that these scapulae represent the remains of cured shoulder joints, possibly brined or smoked.

Some evidence of the possible use of horn was indicated by the presence of several cattle horncores within a number of deposits (Contexts 1007, 1035, 2062, 2063, 2072, 2105, 2108 and 2121), some of which had been deliberately removed from the rest of the skull. A single goat horncore was recovered from Context 2068.

Some fragments, including a metacarpal and several radii (Contexts 2026, 2028 and 2063) showed areas of scorching. Heating or burning bone renders it more brittle, thus facilitating the breaking of bones into pieces, in this instance, perhaps, for retrieval of marrow.

A fairly restricted suite of species was identified, which was dominated by the major domesticates, cattle and caprovids in particular (Table 1). Horse and pig remains were also present, but were much less numerous. Counts for caprovids were exaggerated by the presence of a number of incomplete sheep/goat skeletons (amounting to 68 fragments) from Context 2072. At least three individuals were represented by a range of elements that included all the major limb bones, a single mandible, and some cranial, rib and vertebra fragments. None of the bones were fused indicating that these animals were less than 10 months old when they

died. Another part skeleton (44 fragments), this time of a dog, was recovered from Context 2040. Skeletal elements representing both the fore and hind legs of an adult medium- to large-sized dog were recorded. Birds were represented by a few chicken bones, mainly from Roman deposits (Phases 2 and 3), although a single femur fragment may be of late prehistoric date. This bone may be a contaminant from later 2<sup>nd</sup> century deposits, however.

Wild mammals were scarce. One calcaneum fragment was tentatively identified as cervid (Context 1005), whilst a large fragment of a whale vertebra was recovered from Context 1052. This last had clearly been used as a chopping block and much of the surface of the bone had been destroyed. Whale bone is not commonly recorded from deposits of Roman date.

One of the cattle cranium fragments exhibited a small perforation in the nuchal region of the occipital portion of the skull. The aetiology of this condition is unknown but has been discussed at length by Brothwell *et al.* (1996). Although it could not be clearly established, they suggest the cause could either be congenital or the result of the pressure applied by a yoke. This phenomenon has been noted from a number of sites ranging in date from Roman (Dobney *et al.* 1996) to post-medieval (Carrott *et al.* 1997).

In total, 72 fragments were measurable and there were 21 mandibles with teeth *in situ* of use for providing biometrical and age-at-death data.

## Discussion and statement of potential

Plant remains were examined from the washovers from five samples, all from Roman deposits (except for one sample from the 'natural'). In all but one case, ancient remains were restricted to very small amounts of wood charcoal, although three also contained small amounts of material which appeared to be charred or uncharred humified peat and in three samples some cinder-like material may have originated in a source of organic material other than coal. There were also a few specimens which certainly or probably originated in cereal crops. In the fifth sample, there was a very small assemblage of charred remains comprising a few weed seeds, associated with a modest concentration of coal and coal cinder.

The plant remains give some indication of the use of fuel at the site in the Roman period, which apparently included wood, coal and probably also peat (or perhaps turves)—the last of these adding to a growing body of evidence for exploitation of this natural resource in the York area at this time.

No invertebrate remains were recovered from the deposits.

This site has yielded a moderate-sized assemblage of bone which is tightly dated and mostly well preserved, although both the fresh breakage damage and the fragmentation resulting from the Roman butchery techniques have reduced the number of fragments of use for providing biometrical data.

The remains are dominated by cattle bones and large mammal fragments (assumed to be mainly cattle); other domesticates also being present in smaller numbers. The pattern of butchery and carcass reduction is characteristic of Roman assemblages and has been recorded from many sites elsewhere, regionally and nationally. For example, in York, similar damage was noted on scapulae from 1<sup>st</sup> and 2<sup>nd</sup> century deposits at Tanner Row (O'Connor 1988) and at the York Minster Library site (Jaques 1999) and from 4<sup>th</sup> century deposits at Wellington Row (Carrott *et al.* 1995). Similarly, the systematic chopping of all major elements and the splitting of most long bones for the extraction of marrow is also a phenomenon recorded from many sites in this region (O'Connor 1988; Hamshaw-Thomas and Jaques 2000), elsewhere in Britain (Dobney *et al.* 1996; Mainland and Stallibrass 1990) and on the Continent (van Mensch 1974; Lauwerier 1988). These butchery practices suggest a centrally organised system for the processing and reduction of cattle carcasses and the bones recovered from this site are probably butchery refuse of a commercial nature. Some domestic waste is indicated, however, by the presence of bird remains and the bones of the smaller mammals – dog, pig and caprovid.

Well preserved vertebrate remains are rarely recovered in any quantity from this area of York and, although not a large assemblage, the data collected could be used to provide a valuable contribution to any synthetic studies of the city's past. Although animal bones have been recovered from Roman deposits within and without the city walls, the material from the site at Tanner Row is the only published example. Our knowledge, therefore, of the provisioning of different areas of York during the Roman period, at a crucial time of change and innovation, is somewhat limited.

## Recommendations

No further work is justified on the plant material in these samples and it is probably not worthwhile to examine any further samples collected from this site (assuming their content of charred remains to be no higher than that recorded in this group). The prospect for further useful archaeobotanical results from other deposits at the site seems limited and any further excavation should be accompanied by a programme of sampling targeted at deposits where it is considered that concentrations of plant remains may be present.

Further consideration of the current vertebrate remains is recommended. Detailed recording, which should include butchery, biometrical and age-at-death data, should be undertaken of all of the tightly dated Roman material. These remains also show the potential of the deposits in this area for preserving bone and this should be borne in mind if further excavation is undertaken.

## Retention and disposal

Unless they are to be processed for the recovery of material other than biological remains, any remaining sediment samples from this site may be discarded.

The hand-collected bone assemblage should be retained pending further study.

## 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.

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Table 1. Former Starting Gate public house, 40 Tadcaster Road, York: Hand-collected vertebrate remains by period group. Key: Pre = prehistoric; R1 = Roman Phase 1 (late 1<sup>st</sup> to early 2<sup>nd</sup> century); R2 = Roman Phase 2 (AD 120-150); R3 = Roman Phase 3 (AD 200-225); R4 = Roman Phase 4 (Later Roman); PostR/Med = post Roman/medieval; Med = Medieval; Mod = modern (20<sup>th</sup> century).

Species		Pre	R1	R2	R3	R4	PostR/Med	Med	Mod	Total
Cetacean		-	-	-	1	-	-	-	-	1
<i>Canis f. domestic</i>	dog	-	-	48	3	-	-	2	1	54
<i>Equus f. domestic</i>	horse	-	3	4	9	-	-	-	2	18
<i>Sus f. domestic</i>	pig	-	2	5	15	1	1	1	3	28
?Cervidae	?deer	-	1	-	-	-	-	-	-	1
<i>Bos f. domestic</i>	cattle	-	20	50	100	-	14	3	9	196
Caprovid	sheep/goat	-	4	90	16	2	7	2	5	126
<i>Gallus f. domestic</i>	chicken	1	-	3	4	-	-	-	1	9
cf. <i>Gallus f. domestic</i>	?chicken	-	-	1	-	-	-	-	-	1
<i>Sub-total</i>		1	30	201	148	3	22	8	21	434
Unidentified		-	92	199	445	1	72	24	61	894
<b>Total</b>		<b>1</b>	<b>122</b>	<b>400</b>	<b>593</b>	<b>4</b>	<b>94</b>	<b>32</b>	<b>82</b>	<b>1328</b>