Channel Tunnel Rail Link

London and Continental Railways

Oxford Wessex Archaeology Joint Venture

Animal bone from Whitehill Road Barrow (CTRL Project Area 330, Zones 1 and 2) Southfleet, Longfield and New Barn, Kent

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TABLE OF CONTENTS

LIST OF TABLES

1 INTRODUCTION

1.1 The site

The Museum of London Archaeology Service (MoLAS) was commissioned by Union Railways (South) Limited (a subsidiary of London and Continental Railways) to undertake a watching brief and detailed excavation between Fawkham Junction to Dale Road (Archaeological Zone 1) and from Dale Road to west of Hazells Farm (Archaeological Zone 2), southwest and south of Gravesend, Kent. This work formed part of an extensive programme of archaeological investigation carried out in response to the construction of the Channel Tunnel Rail Link (CTRL).

Earliest dated activity within the area may have taken place as early as *c* 4,000 BC with exploitation of spring lines at the valley floor east of Springhead. A barrow monument was set up to the west, at Whitehill Road: the original ditch around the barrow had partially filled in before the insertion of an inhumation burial. An amber necklace found with the body, while unusual in the Kent early Bronze Age tradition, dates to latter part of the early Bronze Age. Human bone fragments from the burial gave a radiocarbon result of 3273±30BP (NZA-22740). When calibrated (1620-1440 cal BC) this indicates that the burial is post-Beaker. The construction of a second, outer concentric ditch around the barrow was also a secondary event, probably contemporary with the burial.

At Springhead, later Bronze Age colluvium sealed earlier features and was cut into by late Bronze Age pits and ditches. Apart from small amounts of late Iron Age material, there was no evidence for further activity until the 1st century AD when Roman field systems are laid out at Fawkham Junction and New Barn Road, and an enclosure constructed at South of Station Road. The Roman land use and activity was apparently short-lived and passed into disuse AD 100–150.

Later medieval and post-medieval activity within the landscape remained agricultural in character until the construction of the Gravesend West Railway in the mid 19th Century.

1.2 Method

Details of the animal bone recording method can be found in the CTRL Section 1 Post-excavation Project Design, Volume 2, Contractor's Method Statements (ADS 2006).

2 RESULTS

2.1 The animal bone

A total of 367 (4386g) fragments of bone were recovered by hand from the watching brief excavations Zones 1 and 2. A further 138 (74g) fragments were recovered from the sieved bulk samples (CTRL Project Area 330, Zones 1 and 2; Event codes ARC 330 98A, ARC SSR 99)

Species present and quantification

Tables 1 and 2 summarise fragment numbers by phase for hand-collected and sieved material.

Table 1: Number of fragments of each taxon from the hand collected material, summarised by phase

Taxon	**Early Roman**	**Unphased**	**Total**
Cattle	57	5	62
Sheep/Goat	28	1	29
Sheep	1		1
Pig	26		26
Equid	8	2	10
Dog	1		1
Large Mammal	90	6	96
Medium Mammal	35	6	41
Small Mammal	1		1
Unidentified	94	6	100
Total	**341**	**26**	**367**

Table 2: *Number of fragments of each taxon from the sieved material, summarised by phase*

Taxon	Early Roman	Unphased	Total
Cattle	2	1	3
Sheep/Goat		1	1
Pig	1		1
Shrew		1	1
Medium Mammal	12	1	13
Small Mammal	1		1
Unidentified	91	27	118
Total	**107**	**31**	**138**

The only phased animal bone was from the early Roman phase of the site. Cattle predominate followed by almost equal amounts of sheep/goat and pig. Eight fragments of equid bones and a single fragment of dog bone were also found. A shrew mandible was recovered from the unphased sieved sample assemblage.

2.2 Preservation and alteration

Condition

The condition of the bone within the hand collected assemblage is good to moderate (Table 3), mainly grades 2 and 3 on the Lyman criteria (where 1 is pristine, 5 is just recognisable). The bone from the sieved assemblage is in poorer condition, mainly grades 3 and 4.

Burning

There were 9 fragments of burnt bone in the hand-collected assemblage (3%), and 33 in the sieved assemblage (30%) of which 15 were from unphased contexts and 18 from the early Roman phase. The majority of the burnt fragments came from ditch [799]and the rest from ditch [86]. The burnt bone in ditch [799] included a cattle mandible and medium-mammal sized humerus, ribs and long bones. The remaining assemblage was unidentified.

Table 3: Condition of the hand collected and sieved bone assemblages

Condition grade (Lyman 1996)	Percentage of Hand collected assemblage	Percentage of sieved assemblage
1	2%	0%
2	40%	7%
3	49%	42%
4	8%	51%
5	1%	0%

Butchery

Butchery marks were recorded on 12 fragments, 9 from ditch [799] including a cattle scapula with meat removal cut marks; all of the butchery marks were consistent with disarticulation and meat removal. An equid first phalanx displaying cut marks that may indicate disarticulation or skinning and a cattle scapula with meat removal cut marks were recovered from ditch [885]. A large mammal rib with meat removal cut marks came from ditch [86].

In addition to butchered bone, a sheep/goat metatarsal from ditch [799] had been polished and had a piece of iron inserted through the top of the bone and down the shaft. The bone was possibly in the process of being made into a tool handle.

Gnawing

A total of seven fragments of bone were recovered with evidence of gnawing, by carnivores where identifiable. Five were from ditch [885] and 2 from ditch [799]. The presence of gnawed bones suggests that some butchery/ food waste was left accessible to scavengers for a time.

2.3 Distribution

The majority of the phased assemblage was recovered from early Roman ditch [799], [885] and [86]. Pit [869] contained a large mammal vertebra and several unidentified fragments. Cremation pit [803] contained a fragment of unburnt cattle bone. The remaining fragments were recovered from two unphased pits [1067] and [885] and unphased ditch groups [512], [516] and [772].

2.4 Species descriptions

Cattle

Cattle was the most abundant taxon. Most skeletal elements are represented, suggesting that the entire carcass was present on site for utilisation. Two cattle scapulae with meat removal cut marks was recovered from ditches [885]. A cattle humerus and first phalanx from ditch group [885] displayed cut marks consistent with disarticulation and meat removal, and the humerus appears to have also have been smashed for marrow extraction.

There are not sufficient data to construct age at death profiles. The majority of the bone fragments are from skeletally mature individuals. A single cattle mandible from an animal aged between 18-30 months was recovered from ditch [799]. A cattle scapula also from ditch [799] was from an individual aged below 7 months. Even though the assemblage is small, the presence of juvenile to older individuals would suggest that animals were bred and utilised on site.

Sheep/goat

Sheep/goat are less abundant than cattle. A single fragment of skull from ditch [799] was positively identified as sheep. No differentiation could be made for the remaining fragments. Most skeletal elements were present indicating that the whole carcass was butchered and disposed of on site. A sheep/goat metacarpal from ditch [799] displayed evidence of disarticulation cut marks. A metatarsal from the same feature has been partially made into a tool handle.

There is not enough data to provide a formal age at death profile. A mandible from an animal aged 3-10 months was recovered from ditch [799]. Two mandibles from animals aged 10-20 months were recovered from ditch [799] and [885]. Two unfused metacarpals from ditches [799] and [885] were from animals aged below 18 months, but the majority of the skeletal elements, where evidence exists, appear to be from skeletally mature individuals.

Pig

Pig remains are almost as abundant as sheep/goat. A range of skeletal elements is present, which may suggest the entire carcass was present on site. No evidence of butchery was noted on any of the identified pig remains.

A juvenile mandible was recovered from ditch [885] and an adult mandible was recovered from ditch [799]. A femur from an animal aged below 42 months and a tibia from an individual aged below 24 months were recovered from ditch [799]. Also a femur from ditch [885] was from individual aged below 42 months. There is a higher proportion of juvenile than adult bones, a pattern that is not observed for any other species within the assemblage. The presence of both juvenile and adult bones suggests the rearing of pigs for meat with a few adults retained for breeding.

Equid

A total of 10 fragments of equid bones were recovered from the assemblage. No differentiation has been made between horse, donkey and mule. An equid metatarsal and a tooth from an animal aged 6-7.5 years were recovered from unphased pit [1067]. A fragment of equid tibia was recovered from early Roman ditch [86].

From early Roman ditch [799] left equid radius, ulna and metapodial were recovered. From early Roman ditch [885] an equid axis, two first phalanx and a right metacarpal were recovered. The measurement of the metacarpal gives a withers height of approximately 121cm high, pony sized.

Dog

A single fragment of dog ulna was recovered from the early Roman ditch [885].

Micro Mammals and Amphibians

A shrew mandible was recovered from the sieved samples from unphased ditch [512]. There were no other micro mammal or amphibian bones.

3 DISCUSSION

The assemblage is limited to the early Roman phase, coming mainly from ditches [799] and [885]. These bones reflect disposal of waste from butchery and meat consumption, evidenced by the butchery marks, occasional burning maybe evidence of cooking and disposal. The remaining assemblage is from unphased features. The unphased assemblage reflects the general patterns observed in the phased assemblages.

The limited assemblage is typical of mixed agriculture with the animal component based on cattle, sheep and pig. Each domestic species has various roles within a mixed farming economy besides providing meat (and other edible parts, bone marrow and fats). Carcase products such as hide, horn and bone are raw materials for manufacture, evidenced by the sheep metapodial handle. All three species provide manure, essential to continuing soil fertility, and in so far as they are feeding on uncultivated land may be seen as importing nutrients to the cultivated area. Each could also be fed on residues of harvested crops or crop processing, thus recycling nutrients. Cattle are important for traction, for both ploughing and transport, and dairy products, and could use wetter/ richer pastures and/or open woodland. They were certainly eaten here, and the presence of young cattle may indicate dairying and exploitation for meat. Sheep are important for wool and also dairy, and could use drier or less fertile pastures. The evidence for young animals may indicate dairying and exploitation for meat as well as wool. Pigs can act as scavengers, grub for roots and make use of woodland products (e.g. beech mast or acorns) that may not be reliable from year to year, and are a convenient way of storing meat "on the hoof". The equids were probably important for transport. Dogs were present and acting as scavengers on food remains.

4 BIBLIOGRAPHY

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