Channel Tunnel Rail Link London and Continental Railways Oxford Wessex Archaeology Joint Venture

Animal bone from Bower Road,

Smeeth, Kent

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CTRL Specialist Report Series 2006

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1 INTRODUCTION

1.1 The site

As part of an extensive programme of archaeological investigation carried out in advance of the construction of the Channel Tunnel Rail Link (CTRL), Oxford Archaeology (formerly Oxford Archaeological Unit) was commissioned to undertake a watching brief between Mersham and Barrowhill in Kent. In the course of the watching brief, a concentration of archaeological features was exposed during construction earthworks, near Bower Road, Smeeth (OS NGR 605946 138812), and subjected to detailed excavation. The excavation was carried out between July 1999 and September 1999, under the project management of Rail Link Engineering, on behalf of Union Railways (South) Limited (a subsidiary of London and Continental Railways).

The features recorded were principally of Roman date. However, a small assemblage of redeposited worked flint, ranging in date from the Mesolithic to early Bronze Age, was also recovered, suggesting some prehistoric activity in the area. Late pre-Roman Iron Age activity was indicated by a small quantity of pottery, recovered from a pond and a series of drainage ditches. Evidence for early Roman activity was limited, comprising part of a field system. By the first half of the 2nd century AD, a rural agricultural settlement seems to have been established, represented by the severely truncated remains of a timber structure, with large postholes and associated slight, ragstone wall footings. There were also ditched enclosures, fence lines, a waterhole and several pits. It is possible that the establishment of this settlement represents a shift from the nearby later prehistoric settlement at Little Stock Farm, which lies only 400m away, to the south-east, and appears to have been continuously occupied from the later Bronze Age until the late Iron Age. Ample evidence of crop processing activity and animal husbandry was found in the 2nd-century features. The ditched enclosure boundaries seem to have fallen into disuse in the late 2nd century AD, to be replaced by a large rectangular enclosure and a substantial 20-post timber building. A cremation burial was identified just outside the enclosure. This agricultural complex seems to have been in use until the late 3rd century, and may have continued into the 4th century, although at a much reduced level. Evidence of occupation continuing into the 4th century AD comprised three pits, including one pit with evidence of ritual deposition, and a small amount of pottery and coins deposited in the upper fills of earlier features.

There was limited evidence of post-Roman agricultural activity, including two field boundary ditches running across the main site, a group of slight, ragstone wallfootings interpreted as animal pens and a field boundary of medieval or post-medieval date. The latter were discovered during stripping to the south-east of the main excavation area.

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1.2 Method

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

1.3 The animal bone

A total of 2597 (1336g) fragments of bone were recovered during the watching brief excavations at Bower Road. A further 418 (285g) fragments were retrieved from environmental samples, sieved through 10mm and 4mm mesh. During analysis a series of fresh breaks were noted and refitted reducing the total to 694 fragments collected by hand. Tables 1 and 2 summarise fragment numbers by phase for hand-collected and sieved material.

	Phase								
Taxon	Late Iron Age	Early Roman C1	Middle Roman Field System C2	Late C2- Mid C3	Building and enclosure C3	Mid C3- C4	Post Roman	Unphased	Total Number of Fragments
Cattle	1	3	42	18		67**	1	14	146
Cattle/Deer						1			1
Sheep/Goat	1	8	10	4	3	9	1	2	38
Sheep						3			3
Pig		2	15	3	1	14		1	36
Equid			10	1		2		4	17
Dog		1	4	19*					24
Red Deer				17		1			18
Roe Deer			1						1
Bird		1	2			1			4
Large Mammal		7	57	33		8		4	109
Medium Mammal	2	5	28	3	1	10	1		50
Unidentified		33	59	13	3	1	5	133	247
Total	4	60	228	111	8	117	8	158	694

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

* All from partial skeleton **At least one partial skeleton

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

	Phase				
Taxon	Middle Roman Field System C2	Late C2- Mid C3	Mid C3- C4	Unphased	Total Number of Fragments
Cattle	1	2			3
Pig	7	5	13		25
Sheep/Goat	5	4			9
Goat		1			1
Red Deer	1				1
Roe Deer	1	2			3

	Phase				
Taxon	Middle Roman Field System C2	Late C2- Mid C3	Mid C3- C4	Unphased	Total Number of Fragments
Amphibian	2	1			3
Mole	1				1
Wood Mouse	1				1
Bird	2		1		3
Fish	1	1			2
Large Mammal	4		1		5
Medium Mammal	12	5	7		24
Micro Mammal	8	6			14
Unidentified	214	59	49	1	323
Total	260	86	71	1	418

Domestic animals dominate the hand-collected assemblage. Cattle are most frequent, followed by sheep/goat, pig, dog and equid (presumably horse, but mule/donkey is not easily distinguished on fragmentary material). The number of identified cattle and dog fragments includes at least one partially articulated skeleton in each instance. Most sheep/goat fragments are probably from sheep but a goat horncore fragment from the samples (late C2-midC3) shows that goat was also present. Wild species occur in small numbers. Red and roe deer are mainly represented by antler fragments, but other elements also occur suggesting the presence of these animals in the area. The sieved samples include a few representative "micro" species (mole, wood mouse, amphibians, one fish vertebra), which are usually absent from the hand collected assemblage.

Tables 3 and 4 outline the proportions of the major domestic species (based on NIF, number of identified fragments) from the main settlement phases of the site. In the hand-collected assemblage cattle make up at least two-thirds, with pig slightly outnumbering sheep/goat in C2, and vice versa in late C2-mid C3. In the mid C3-C4 phase almost all the animal bone is from one pit deposit [242] including 2 partial skeletons of juvenile cattle and skulls and other elements of sheep and pig: this may not be representative of the whole site. The proportions in the sieved samples suggest that the importance of sheep and pig be considerably underestimated in the hand-collected assemblage due to loss of fragments of smaller/younger animals.

Due to the small size of the assemblage, the comparisons of minimum Number of Individuals (MNI) would provide little useful information for the analysis of this site.

Table 3:	Percentage.	frequency of	of the	main	domestic	species	from	the l	hand	coll	ected
assembla	ige										

Taxon	Middle Roman Field	Late C2- Mid C3	Mid C3- C4
	System C2		
Cattle	63	72	72
Sheep/Goat	15	16	13
Pig	22	12	15
Total NIF	67	25	93

NIF = number of identified fragments

Table 4: Percentage	frequency of	f the main	domestic species	from the sieved	l assemblage
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Taxon	Middle Roman Field	Late C2- Mid C3	Mid C3- C4	
	System C2			
Cattle	8	17	0	
Pig	38	42	100	
Sheep/Goat	54	42	0	
Total NIF	13	12	13	

NIF = number of identified fragments

2 RESULTS

2.1 Preservation and alteration

Condition

The condition of the bone was quite variable, falling generally between grades 3 and 5 on the Lyman criteria (where 1 is pristine, 5 is just recognisable). Many of the bone fragments have been chemically etched through root action, destroying the outer surfaces. The condition of the bone has limited the available evidence for other surface alteration such as butchery or gnawing, and the number of measurements possible. Within the hand-collected assemblage 64% of fragments were identified to species or size category, but only 33% in the sieved sample assemblage.

Distribution

In most phases the majority of the bone was recovered from ditches, not surprisingly as these are the predominant features. There does not appear to be any form of selective deposition. Most species were represented within most feature types. No selective deposition of skeletal elements was noted; however, the small number of fragments limits analysis.

Butchery

Butchery marks were observed on 39 fragments (1%). The majority of the observed butchery occurs on cattle remains. Due to the robust nature of cattle bones, this may be due to preservational bias rather than selective butchery practices. The small number of butchered remains provides little further information; no evidence of selective deposition or skeletal element selection was noted.

Working

Several fragments of partially worked red deer antler and two cattle horncores with cut marks were recovered from the late C2 - mid C3 and mid C3 - C4 phases, indicating that some form of antler and horn working were taking place on site at this time.

Two fragments of worked medium mammal bone were recovered from ditch [180] (middle Roman field system phase). The fragments were sawn into small rectangles and polished, and were possibly used as some form of inlay decoration. No bone working residue has been identified to indicate actual production on site.

Burning

A total of 36 burnt bones were recovered from this site. The distribution of these bones matches with the general distribution ratios of the rest of the bone assemblage.

Gnawing

Gnawing evidence was observed on 36 fragments. The majority of these fragments were cattle limb bones, with carnivore gnaw marks. Limb bones are usually from butchery and food waste, which may suggest carnivore scavenging as part of or after the deposition process.

2.2 Species descriptions

Cattle

Cattle are the dominant species within this assemblage Most skeletal elements are represented, suggesting that the whole carcase was originally present.

Butchery marks (chops and cuts) were seen on several skeletal elements consistent with the processes of carcass division and meat removal. A horncore from ditch [171] (late C2 - mid C3 phase), was sawn through the base, and a horncore from pit [242] (middle C3 - C4 phase) had been sawn at the base, presumably to remove the horn sheath for horn working. There was not enough ageable material to produce a formal age profile, but individuals that had died over a range of ages from foetal to old adult were present. This suggests that Bower Road was a producer site, where cattle were raised as well as utilised.

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Pig

Pig was mainly represented by mandibles and teeth. The majority of the remains belong to young individuals, either sub-adult or below one year of age. Butchery marks were seen on two bones, consistent with dismembering and meat removal.

The predominance of teeth within the assemblage is probably due to preservation bias (also suggested by the high proportion of pig in sieved relative to hand-collected material). Teeth are robust, identifiable and withstand decay better than bone. In the case of the pigs within the assemblage, the juvenile bones are more delicate and less likely to survive in a post-depositional context. As pigs are kept for meat, breeding regularly and in fairly large numbers and then are slaughtered at a fairly young age, the presence of mainly young individuals is unsurprising.

Sheep/Goat

The sheep/goat remains are quite limited and fragmentary. Most "sheep/goat" fragments are probably sheep. A male sheep skull from the late Roman pit [242] and a single goat horncore fragment recovered from the sieved samples from late C2 - mid C3 phase ditch [171] show that both species were present. The few age scorable remains display a range of ages from juvenile to older adults between five and eight years old. The limited amount of age data makes the determination of husbandry strategies difficult for this assemblage. The presence of a range of ages would suggest, as with the cattle, that the site is a producer site breeding and utilising the animals. The utilisation of sheep for wool, milk and meat would probably be common practice on a small producer site. No evidence of butchery was noted on the sheep/goat remains.

Dog

The dog remains from the middle Roman (2nd century) phase comprised an atlas and a single metacarpal (III) from pit [123] and two loose teeth from ditch [172]. From the late C2 - Mid C3 phase, a partially articulated adult dog skeleton was recovered from the clay-lined pit [554] located outside the posthole building. The animal was skeletally mature with well-worn teeth. The skeleton was most likely complete when deposited. Shoulder height was estimated as 30-35cm making the dog small to medium sized. According to the studies of Harcourt (1974), small dogs do not appear within the archaeological record until the Romano-British period, and some may be pet or lap dogs.

Equid

Several equid bones were recovered from the two main ditches of the middle Roman (2nd century) phase [172] and [169]. Ditch [169] contained some skull fragments and a tooth. Ditch [172] contained an ulna and radius and a proximal phalanx from a skeletally mature

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animal. Additionally a single femur of an animal aged <3 years was recovered from the contemporary waterhole [372]. Within the late Roman phase (mid 3rd-4th century) an equid calcaneus fragment and a distal humerus (>3-3.5 years) were amongst the assemblage for pit [242]. These remains are too fragmentary and scattered to support interpretation. There was no evidence for butchery.

Wild Species

Small numbers of fragments of red and roe deer came from most of the main Roman phases of the site. The external enclosure ditch [171] (late C2 - mid C3 phase) contained 16 fragments of red deer. Thirteen of these were antler, some of which had been heavily fragmented post deposition. Several showed signs of working, having been sawn through and/or had the outer surfaces trimmed away. One or two of the antler tines show signs of burning or charring. There were also a red deer mandible, a distal radius and a single loose tooth. In the building enclosure ditch [181] a single red deer metacarpal was recovered. Within ditch [178] a single roe deer mandible fragment was recovered. Within the sieved remains two fragments of roe deer antler were recovered from the C2 phase waterhole [372] and from ditch [171] (late C2 - mid C3 phase). Also from the late C2 - mid C3 phase sieved remains a fragment of roe deer metatarsal was recovered from pit [554].

If only antler had been found this could have derived solely from material imported for working, but the presence of other skeletal elements suggests that both deer species occurred in the locality.

Birds

A small number of bird bones were recovered in spite of probable preservation and recovery biases. Four bird bones were recovered from the middle Roman (2nd century) phase, two from ditch [169] including a carpo-metacarpus from a blackbird-sized bird, and two from the waterhole [372]. A domestic fowl tarso-metatarsus and a single rib were the only bird remains recovered from the late Roman pit [242] (mid C3 -C4 phase).

Micro Mammals and Amphibians

Micro mammals and amphibians came from the sieved samples only. Such small bones are rarely retrieved in hand collected assemblages. A total of 19 micro mammal/ amphibian bones came from the middle Roman (2nd century and late 2nd-mid-3rd century) phases, occurring in ditches [171] and [181] and waterhole [372]. They are not likely to be a result of deliberate human activity. Three amphibian bones, a wood mouse mandible and a mole scapula were identified, consistent with a semi-rural environment.

Fish

A single fish vertebra was recovered from the sieved samples from the middle Roman 2nd century) phase waterhole [372]. The vertebra has not been identified further.

Pit [242] (Late Roman, mid 3rd -4th century)

The entire animal bone assemblage within this phase is found within a single pit [242], except for a single cattle scapula fragment from pit [229].

Pit [242] contained:

A partial articulated skeleton of a calf aged <7-10 months old, and several long bones and vertebra from a foetal calf possibly complete when originally deposited. There were also several fragments of adult cattle (metatarsal, calcaneus and a butcherymarked humerus) and a horncore from a juvenile/sub-adult animal that had been sawn at the base, possibly a product of horn working.

A male sheep skull and mandibles aged 3-4 years, a mandible of a similar aged animal and a fragmented sheep/goat skull were within the pit along with a tibia fragment and a second phalanx.

A fragmented pig skull and mandible fragments from a young male of approximately 1 year of age, with several loose teeth possibly all belonging to the same animal. In addition a humerus and a distal radius were also recovered. Within the sieved deposits for the pit an unfused humerus (<1 year), and several unfused articulating phalanges (<1 year) were also found, suggesting a semi-articulated young pig carcass was deposited within the pit. Only the pig mandible displayed any signs of butchery.

An equid calcaneus fragment and a distal humerus (>3-3.5 years) were also amongst the assemblage.

A red deer maxilla, with the permanent 2nd premolar in occlusion that would suggest the animal was older than 27 months old.

A domestic fowl tarso-metatarsus and a single rib were the only bird remains recovered from the pit assemblage; this may be due to inadequate preservation conditions.

No micro mammals or amphibians were recovered from the sieved samples. This may be due to poor preservation, or it could suggest that the pit was rapidly covered or filled. The nature of the deposit in this pit is enigmatic. The range of species and mix of skeletal elements suggest large-scale disposal. Some fragments had butchery marks, but none from the partially articulated remains. Some aspects of this assemblage (whole or partial skeletons and skulls) suggest "ritual" deposition, but these might also be explained by for instance rapid disposal of

diseased animals. Similarly, the scatter of butchered and other fragments could represent a background of domestic rubbish deposition or a deliberate deposit e.g. of the remains of a special meal or feast. Further investigation into the remaining contents of the pit such as pottery, should give a more complete impression of domestic or ritual status.

3 DISCUSSION

The main period of activity at this site is within the Roman periods. The late Iron Age and post-Roman phases are only represented by very small assemblages, which provide very little information on animal utilisation. In the most active phases in the terms of the animal bone the pattern of species representation remains relatively constant. Cattle dominate the assemblages for each phase, followed by pig and sheep/goat. The presence of the main domesticates within the assemblage suggests a mixed farming strategy. The animals were bred and utilised on site. The major importance of domestic animals within such a system is to maintain soil fertility, as well as the use of cattle for traction. Milk from cattle and/or sheep, wool from sheep, and meat, hides, horn and other carcase products are also important. The limited ageing evidence suggests that traction was important for cattle management and wool for sheep; in contrast, pigs were managed primarily for meat. Butchery evidence shows that cattle considerably to the meat diet, and also that horn was removed for working. Horse and dog were present possibly as working animals, although in the case of the dog, possible pets.

Wild animals (red and roe deer) make up <10% of the identified bone, mainly as antler-working waste, though the presence of a few skull and limb bones suggest that other parts of the animal were utilised on site also. The presence of deer indicates some uncultivated areas within range of the site. Within the building and associated enclosure phase there is definite evidence of antler- and horn-working on the site. The worked bone from the middle Roman field system phase may be a further indication of bone-working on site.

The small number of bird remains does not provide any real additional information to the dietary or environmental evidence for this site, save their presence (including domestic fowl).

Similarly the small mammal and fish remains give little information beyond their presence on the site. Amphibian and wood mouse remains are to be expected on any semirural site with open refuse or waterlogged features. The small numbers may indicate that features did not remain open for any length of time or be due to collection and preservation bias.

Within the late Roman phase the pit [242] is of particular interest. The assemblage is certainly unusual with collection of both juvenile animals and skulls. The assemblage has

aspects that could be considered either ritual or domestic, further interpretation must rely on the accompanying artefacts.

4 **BIBLIOGRAPHY**

ADS, 2006 CTRL Digital Archive, Archaeology Data Service, http://ads.ahds.ac.uk/catalogue/projArch/ctrl