CHAPTER 7

THE ANIMAL BONE

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INTRODUCTION

Non-human bone and tooth was excavated from Brougham Roman cemetery in 1958, 1966 and 1967. Some of the easily identified (non-cremated) animal bone had previously been removed from the human bone but most was separated from the cremated human bone by McKinley during her analysis. Her initial report, together with comments on certain aspects of the cremation ritual implied by the animal bones, are appended below (p. 331). From the earlier post-excavation work little was known about the contents of the animal bone assemblage other than the fact that some unburnt bone, found on samian dishes, had been provisionally identified, and that horse had been found among the cremated fragments. All but one of the cremation burials containing non-human bone had been excavated on site. The exception (**198**) was excavated by McKinley in the laboratory, providing detailed recordings of the exact location of bone fragments from within the deposit.

Several studies have looked at the phenomenon of cremated animal bone from a taphonomic perspective (Buikstra and Swegle 1989; Nicholson 1993; 1996; Shipman *et al.* 1984), the conclusions of this research will be considered later. J.M. Bond together with J. McKinley initiated British academic recognition of the value of dedicating study to cremated animal bone from funerary contexts with full analysis of the material from the Anglo-Saxon deposits at Spong Hill (Bond 1994) and Sutton Hoo (Bond forthcoming). To the authors' knowledge this is only the second Roman cemetery in Britain from which a large assemblage of cremated animal bone has been analysed in detail. The first was the East London cemetery described in Barber and Bowsher 2000.

METHODOLOGY

Faunal material was extracted from the osteological assemblage by McKinley. Recognised worked bone objects were also removed from the assemblage prior to specialist animal bone identification. Often in economic research question-led analysis, only certain bone elements or a representative sample of the complete faunal assemblage is considered (Davis 1992). In this study every bone is significant, as they relate not only to economic functions but also to ritual actions. This analysis can tell us little about husbandry around Roman Brougham, but it can offer insight into the perceived function of animals in the funerary rite both as a protein source, grave good and possession. For this reason every fragment of animal bone, no matter how small or generic, was included in the analysis.

SPECIES AND ANATOMICAL ELEMENT IDENTIFICATIONS

The bone and tooth fragments were taken in context groups and identified as far as possible to anatomical element and faunal taxon. Identification was based on gross morphological

characteristics and was made to species only when sufficient morphological features precluded any other identification deemed reasonable by the author. 'Sufficient morphological features' was defined as either a characteristic feature of that species precluding all others or the culmination of several less exclusive features. 'Probable' identifications were made on fewer morphological features. Where species identifications were not feasible due to fragmentation, distortion or inter-species uniformity of skeletal element, identification was made to a higher taxonomic level. Thus a rib diaphysis fragment the size of a horse or cow was recorded as 'large ungulate' (this might also include larger deer, e.g. red deer). Similarly a fragment of long bone diaphysis corresponding in size to a pig, sheep or goat would be recorded as 'small ungulate' (which might also include smaller deer e.g. roe). A third category, 'small mammal', was also utilised for those fragments likely to have come from an animal the size of a small dog, fox or hare.

Sheep and goat bones are inherently difficult to distinguish; in cremated assemblages this is even more true. Sheep/goat bones are routinely distinguished to species by features on the teeth and horn core and by reference to metric traits, not available to cremated bone analysis. It has therefore not been possible to distinguish whether any of the ovicaprid bone fragments were actually sheep or goat.

Where identification even to this level was not possible, fragments were recorded as 'indeterminate'. The following methodology for indeterminate fragments is based on that employed for **102**, the deposit with the greatest mass of cremated animal bone. The fragments were sorted by hand and eye into greater than 15mm, greater than 10mm and less than 10mm size classes. Those less than 10mm were again sorted into more than and less than 0.5mm fragments by passing them through a series of sieves. The largest three categories were subdivided into those of mostly cancellous bone, those formed mainly of cortical bone or containing a significant portion and those including epiphyseal joint surfaces (identifiable from its distinctive surface 'crackle' fracture pattern after cremation, see Worley forthcoming). Each class of fragment was weighed rather than counted, as mass combined with size will give a sufficient indication of quantity. Where there were fewer than 20 indeterminate fragments per class they were also counted. It was considered that most of the small-size fragmentation might have occurred following excavation for two reasons. Firstly, the extensive time period during which the fragments were in storage combined with likely mechanical damage associated with movement and sorting, and, secondly, the mode of excavation (see Chapter 2). As previously stated the faunal material was hand collected; it is therefore unlikely that fragments less than 5mm in diameter would be identified in the ground and intentionally collected. These small fragments must be the result of post-excavation damage.

Identifications of generic fragments were also made to the greatest possible accuracy, such that a rib fragment of cortical thickness indicative of an animal the size of a sheep was identified as a *small ungulate rib fragment*.

Secondary data such as Minimum Numbers of Individuals (MNI) was extrapolated from the anatomical element counts. MNI was determined by considering any multiple examples of the same skeletal element in any one context, for example two left sheep/goat astragali indicates a MNI of two, a left and a right would indicate a MNI of one. MNI was also considered in the light of age-at-death information (see below p. 322).

IDENTIFICATION OF BUTCHERY AND PATHOLOGY

The cremation process complicates the identification of butchery. Heat induces fracturing in bone forming linear, curvilinear, radial and complex patterns. These heat fractures often resemble butchery marks, especially green fractures. Any probable butchery marks were therefore thoroughly examined prior to interpretation. Analysis by low-power light microscopy allowed differentiation between genuine butchery marks and heat-induced changes in the bone structure. When identified, butchery was useful as an indicator of bones relating to joints of meat as opposed to complete carcasses, though it must be remembered that even whole animals offered on a pyre may be decapitated or dismembered (Bond 1996).

Pathology was also identified by visual recognition of abnormal bone structures. The location of any osseous change was recorded, mindful of the potential for destruction of the evidence during the cremation process.

SEXING OF SKELETAL MATERIAL

Unfortunately it was not possible to determine the sex of any of the animal remains. Measurement-related sexing methods were precluded as the cremation process shrinks and warps fragments; it is also unlikely that fragments large enough to take any meaningful measurements would survive the cremation process intact. Neither were any grossly sexually dimorphic skeletal elements recovered such as wolf teeth (canines found most frequently in male horses), enlarged pig canines (only in males) or spurs (only occurring in male domestic fowl).

AGE-AT-DEATH DETERMINATION

Age-at-death of the animals was determined using tooth eruption and wear, epiphyseal fusion and qualitative aspects such as the porosity of cortical bone in neonatal specimens. Tooth eruption was aged with reference to Silver (1969), as was epiphyseal fusion. Tooth wear (only of non-cremated teeth, precluded for cremated remains due to heat-induced fracturing) was compared to Grant's 1982 (pigs and cattle) and Payne's 1973 (sheep and goats) wear-pattern tables.

Age-at-death provided information to support MNI calculations. Where a selection of bones from the same species provided ages younger than '*x*' as well as some ages older than '*x*', it was possible to identify an MNI of two or more.

RESULTS

TAPHONOMY AND PRESERVATION

Faunal remains were recovered from the site through hand collection rather than sieving or bulk sampling; this mode of collection tends to lead to a bias toward larger fragments of bone and thus the larger taxa. Cremated bone becomes more brittle than fresh material and it is likely that some further fragmentation of the faunal remains occurred post excavation. The cremation process shrinks, warps and colours skeletal elements, fragmenting them into often unrecognisable pieces. Bearing this in mind, the fragments from Brougham were surprisingly large and the 'identifiable: non-identifiable' ratio was high. As noted by Bond (1994; 1996) and Buikstra and Swegle (1989), bones from the larger species of animal, e.g. horse and cattle, fragment more than the bones from smaller species, i.e. sheep and pigs. This could lead to a bias in identifiability favouring the smaller species. However in even smaller taxa such as birds and microfauna, this bias in identification is potentially reversed due to the reduced likelihood of recognition and therefore excavation and the increased fragility of the skeleton.

Two distinct and exclusive levels of burning-induced change were noted on the Brougham fragments. The first was a change to a beige colour with a very brittle texture. The second group of fragments ranged in colour from white through greys to black and was more robust. These differences may represent the effects of differential heating (Buikstra and Swegle 1989; Nicholson 1992; 1993; Shipman *et al.* 1984). This differential heating does not necessarily imply cremation on different pyres or different occasions, it could simply relate to positioning on the pyre. The variation in colour may also have occurred if some bones had been put on the pyre in a fleshed or recently defleshed condition while others were defleshed and dry with much of their organic component missing (Buikstra and Swegle 1989). Positioning on the pyre results in a second factor worthy of note here – fusion of copper alloys and glass onto skeletal elements. This is considered further elsewhere, but it should be stated that several of the animal-bone fragments had copper alloys fused to their surfaces, indicating their proximity

to copper-alloy objects on the pyre and thus perhaps proximity to the human corpse (assuming copper-alloy personal adornments) or horse (if harness decoration). Iron staining was also evident on many fragments; this is likely to be indicative of burial adjacent to ferrous objects from which the colour has leached, rather than cremation adjacent to those objects.

SPECIES REPRESENTED

The species identified from the contexts were all domestic; they included horse, cattle, sheep/goat, pig, dog, domestic fowl and goose. Many fragments could not be identified to species and were recorded as small ungulate, large ungulate and small mammal.

One rabbit cranium and maxilla were found in **174**. They were unburnt and in a good state of preservation. All elements of the cranial skeletal region were present although unfused. No post-cranial skeleton was recovered. Current academic opinion is that rabbits were not reintroduced into Britain after the last glaciation until the Norman period (Yaldon 1999, 158–61). As the excavation records for this particular feature are not adequate to suggest otherwise, it must be concluded that the rabbit remains are intrusive. This context (**174**) is therefore excluded from the rest of this report.

Many of the funerary assemblages contained more than one species of animal; some contained multiple individuals of the same species. TABLE 7.1 lists the frequency of minimum number of species deposited in a single context grouped by phase.

All identified phases of cemetery use involved the inclusion of animal remains. The level appears to remain fairly constant though there is possibly a decrease in the frequency of animal inclusion with time (TABLE 7.2).

Animal remains have also been recovered from deposits in all areas of the excavated cemetery.

TABLE 7.1: NUMBER OF SPECIES IN FUNERARY CONTEXTS (MNI)

No. of taxa in individual features	**Phase 1**	**Phase 2**	**Phase 3**	**Phase 3b**	**Unphased**
1	4	14	7	3	6
2	5	4	1	1	–
3	3	1	1	1	5
4	–	1	–	–	–

TABLE 7.2: RATE OF INCLUSION OF ANIMAL BONE BY PHASE

	Phase 1	**Phase 2**	**Phases 3–3b**
Maximum duration of phase	40 years	30 years	40 years
Number of features in phase	48	85	72
Number of features with animals	12	20	15
Proportion of features with animals	25.00%	23.53%	20.83%

TYPES OF ANIMAL INCLUSION

Animals seem to have been included in the cremation burials in several different ways. There is evidence that in some cases entire carcasses were cremated either on the same or a different pyre to the human and then interred in the grave. These full carcass depositions seem to be generally horses and sheep/goats. The interpretation of a 'full carcass' does not mean that every skeletal element was identified, but rather that anatomical elements from most or all areas of the skeleton were recovered, i.e. front and back limbs and vertebrae/ribs; this was justified by consideration of the taphonomic problems of cremation. This highlights a further analytical problem; because cremated remains are very fragmented and distorted, it is difficult

to ascertain exact anatomical position from element identification when there are normally multiple occurrences of the element in the skeleton: for example, whether a second phalanx is left or right, fore or hind.

Some of the depositions were of partial carcasses/meat joints; usually cattle, horses and sheep/goats. There is an inherent interpretative problem here. For example, is a section of carcass, e.g. a complete forelimb from scapula to terminal phalanx, a generous food offering or a more economical sacrificial representation of that animal?

Smaller meat joints were interpreted from the identification of depositions such as single proximal limb bones or sets of rib fragments, often cattle or sheep/goat. These smaller meat joints were commonly cremated although some were deposited unburnt, often sitting on samian dishes. It is not known if these joints were fleshed at the time of deposition or if their meat was consumed during a funerary feast and only the bones deposited, although there is no evidence of gnawing on the bones and very little evidence of small knife butchery (see p. 323). Several cremation burials were excavated with similar dishes placed 'empty' in the grave. It could be that these had in fact held food offerings, perhaps even filleted meat of which there is no recognised archaeological trace.

Finally there were some contexts with either just one or two small fragments of animal bone of a particular species or in total. Those that were unburnt and severely abraded were interpreted as residual in the soil and an unintentional inclusion. Those which were unburnt but had no evidence of much movement since deposition may be unintentional but may also represent the token inclusion of a meat joint or evidence of a funerary feast. Finally, those that have been cremated most likely result from inclusion through contemporary misidentification. Perhaps those creating the grave deposition thought that they were putting in more animal bone or that they were selecting only the human bone from the pyre remains. These inclusions also raise the possibility of residual bones, from reuse of pyre sites.

As with the human bone, nowhere was there enough bone mass recovered to represent all the bone from a full carcass cremation. The redeposited pyre debris accumulations strengthen this suggestion. If all cremated material was interred in the cremation burial, why do we find these deposits containing any more than fuel debris?

TYPES OF FEATURE

Animal bone was recovered from cremation burials, pyre debris deposits, possible pyre sites, and a non-funerary context as summarised in TABLE 7.3. Some material was also collected from indeterminate features and an unstratified surface collection grid.

The following sections summarise animal inclusions categorised by the feature type excluding those funerary deposits where there is insufficient evidence to categorise them and the unstratified material. In the following tables certain abbreviations apply as follows:

Human remains

AF	adult female
AM	adult male
Ad	adult
D	double
Im	immature
In	infant

Inclusion type

J	meant joint
BJ	burnt meat joint
P	partial carcass
BPO	burnt partial carcass
BW	burnt whole carcass
Un	uncertain

Key to the table columns

1	deposit number	7	sheep/goat
2	phase	8	pig
3	cremated human bone	9	small ungulate
4	cattle	10	dog
5	horse	11	bird
6	large ungulate	12	comments

TABLE 7.3: DISTRIBUTION OF ANIMAL BONE BY RECOGNISED FEATURE TYPE (MNI)

	Cist deposits	**Unurned cremation burial (pit)**	**Urned cremation burial (pit)**	**Possible pyre sites**	**Pyre debris deposits**	**Non-funerary contexts**	**Total**
Phase 1	2	1	6	–	3	–	12
Phase 2	6	1	11	–	2	–	20
Phase 3	1	1	7	–	–	1	10
Phase 3b	2	–	1	–	2	–	5
Unphased	2	2	1	2	4	–	11
Total	13	5	26	2	11	1	58

The cists

Thirteen cists with animal inclusions were found relating to all phases of cemetery use (TABLE 7.4). The types of deposits in them included urned cremation burials (**36**, **77**, **203**, **227**, **303**, **307** and **310**) unurned cremation burials (**194** and **237**), a deposit of pyre debris (**175**), and two deposits of uncertain character (**97** and **289**). The breakdown according to the accompanying human occupant, following the divisions discussed on p. 309, is shown in TABLE 7.5.

TABLE 7.4: ANIMAL BONE INCLUSIONS IN CIST DEPOSITS, FOR KEY TO COLUMN NUMBERS SEE PAGE 315

1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
36	1	D	–	–	–	BP	–	–	–	BP	Both animals possibly meat joints
194	1	–	J	BW	–	–	–	BP	–	–	Horse, includes some large ungulate
49	2	Ad	–	–	–	BJ	–	–	–	–	One rib only
77	2	Af	–	–	BP	–	–	–	–	–	Femur/humeral head, vertebrae and indeterminates
97	2	–	–	BP	–	BP	–	–	–	–	–
175	2	Un	–	–	J	–	–	–	–	–	One cortical fragments only, possible joint
203	2	D	–	–	BJ	–	–	–	–	–	One fragment only, possible joint
227	2	AM	–	–	–	–	J	BJ	–	–	Joint on dish, two vertebral body fragments
303	3	Af	–	BP	–	BP	–	–	–	BP	Horse, includes some large ungulate
307	3b	AM	–	–	BP	BP	–	–	–	BP	Sheep/goat, may be the remains of a whole carcass. Large ungulate, one tooth only
310	3b	AM	–	–	BJ	BJ	–	–	–	–	Sheep/goat, two rib fragments. Large ungulate, one rib head only
237	–	Af	–	BP	–	BW, BJ	–	–	BP	–	Horse, one rib head only. Sheep/goat, includes small mammal
289	–	Un	–	–	BP	BP	BP	–	–	–	Large ungulate, one carpal fragment only

All types of animal deposition were included. Whole carcass cremations consisted of a horse (**194**) and a sheep/goat (**237**). Deposit **237** is considered in more detail below. The only definite inclusion of cattle remains in a cist burial is an unburnt meat joint (right femur, with butchery) from **194**.

TABLE 7.5: FREQUENCY OF ANIMAL TAXA WITH HUMAN OCCUPANTS OF CIST DEPOSITS

	Horse	**Cattle**	**Sheep/ goat**	**Pig**	**Bird**	**Large ungulate**	**Small ungulate**
Adult	–	–	1	–	–	–	–
Adult female	2	–	2	–	2	1	–
Adult male	–	–	2	1	1	2	1
Double	–	–	1	–	1	1	–
Uncertain	–	–	1	–	–	2	–
No human bone	2	1	1	–	–	–	1

Cist **237** was undated and hexagonal containing the cremated remains of an adult female human aged between 30 and 40 years at death. She was accompanied in death by the burnt partial remains of a bird (probably a bantam-size fowl), horse and two sheep/goats. The horse remains consisted of only one rib dorsal articular fragment and it is therefore not clear that this is an intentional deposition (see p. 315). The sheep/goat bone fragments were interpreted as coming from at least two animals. One probable sheep/goat is aged at less than 6 months on the basis of three unfused vertebral fragments (Silver 1969); these could have been included in the deposit as a food offering. The second sheep/goat was aged between 10 and 16 months at death, interpreted from a fused scapula and radius (older than 10 months) and an unfused proximal first phalanx (fuses at 13 to 16 months) (Silver, 1969). A left calcaneum, right femur, right scapula, right radius and unsided humerus represent this second sheep/goat. It is interpreted as a 'whole carcass' as it contains representative bones from at least both hind limbs and a right fore limb. The deposit also included ribs, a right tarsal, left carpal, left distal zygomatic, indeterminate long bone fragments, a horncore bud, iliac fragments and cranial fragments. It is assumed that most of these fragments are from the 10–16-month-old sheep/goat, however the texture of some cranial and iliac fragments suggests that they may originate from the younger animal. It cannot therefore be determined if the younger animal was included as a joint of tender lamb in the form of the vertebral column section possibly with attached rib cage, or was in fact another whole carcass most of which has been lost through taphonomic processes.

Cist **303** was small and adjoined another (**302**). It contained a probable female aged between 21 and 45 years at the time of death. The cist also contained the cremated remains of a horse, small ungulate and bird as well as some large ungulate and indeterminate fragments. The bird was probably a bantam-sized fowl, the small ungulate probably sheep/goat. As no cattle remains were identified, the large ungulate fragments may also be from the horse. With this in mind, the horse in the burial consisted of at least a complete left fore limb, anatomically sided from a fragment of radius/ulna at the point of their fusion. Although cremated and therefore not measurable, a further radius fragment by comparison with specimens of calculated withers height indicated that the animal was over 13 hands and possibly much larger. The 14 large ungulate fragments consisted of long bone diaphysis and articular fragment, flat bone cortical fragments and a first phalanx. These elements could originate from the aforesaid forelimb. The fragments are illustrated in FIG. 7.1.

The small ungulate remains were rib, long bone and cranial fragments; it is therefore not clear whether they were intended as a partial carcass inclusion or if they represent a larger offering.

The unurned cremation burials in pits

There were four cremation burials excavated containing faunal inclusions, for which the funerary material was not deposited in an urn and which was either loose in a pit or contained in some other container that has not survived. Deposit **243**, for which the records are limited may also be considered here. These burials are summarised in TABLE 7.6 with the breakdown according to human occupant shown in TABLE 7.7.

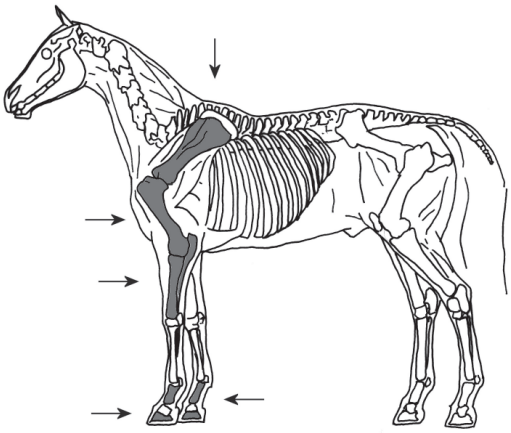

FIG. 7.1 Skeletal elements of horse present in **303**; skeleton after Board 1949. Indeterminate large ungulate fragments not illustrated.

The burials only contained faunal material in the form of cremated meat joints, either of sheep/goat or large ungulate, probably cattle. Unusually, no bird was identified in any of these contexts; this could be a function of their excavation combined with the physical form of the features. All of the burials with a single human occupant also contained only one recognised meat offering; however **243** with dual occupancy (a 25 to 45-year-old female and a juvenile) received both a rack of lamb and clod (humerus) of beef.

TABLE 7.6: ANIMAL INCLUSIONS IN THE UNURNED BURIALS, FOR KEY TO COLUMN NUMBERS SEE PAGE 315

1	**2**	**3**	**4**	**5**	**6**	**7**	**8–11**	**12**
243	1	D	BJ	–	–	BJ	–	–
145	2	AM	–	–	–	BJ	–	–
7	3	Ad	–	–	BJ	–	–	–
252	–	AF	–	–	BJ	–	–	–
280	–	AM	-	–	BJ	–	–	Also unburnt large ungulate tooth fragment

TABLE 7.7: OCCURRENCE OF ANIMAL TAXA WITH HUMAN OCCUPANTS OF UNURNED DEPOSITS

	Cattle	**Sheep/goat**	**Large ungulate**
Adult	–	1	–
Adult female	–	–	1
Adult male	–	1	1
Double	1	1	–

Urned cremation burials in pits

The total of 27 urned cremation burials in pits are by far the most abundant feature type containing faunal remains from the Brougham cemetery and are summarised in TABLE 7.8, with the breakdown according to human occupant in TABLE 7.9. There were only two graves with complete carcass deposition (**102** and **298**) and horse was only found in **102**. The only deposit to contain pig was also **102**. There were also no dog remains but these are less common on the site as a whole. There does not seem to be any clear pattern to the depositions. A range of human remains is associated with animal bones and both burnt meat joints and partial carcass offerings are common. The NISP for these contexts often seems rather small, one or two fragments of any species. This raises questions regarding the intention behind the burial of the cremated remains.

TABLE 7.8: ANIMAL BONE INCLUSIONS IN THE URNED CREMATION BURIALS IN PITS, FOR KEY TO COLUMN NUMBERS SEE PAGE 315

1	2	3	4	5	6	7	8	9	10	11	12
13	1	AF	–	–	–	–	–	–	–	BP	–
21	1	Ad	–	–	BJ	–	–	–	–	–	One rib fragment only
35	1	Ad	–	–	BP	BJ	–	–	–	BP	Recorded as 'probably urned'
76	1	D	–	–	BP	–	–	BP	–	–	Small ungulate, tooth socket only
273	1	AM	–	–	–	–	–	BP	–	–	–
300	1	Ad	P BP	–	–	–	–	BP	–	–	Recorded as having meat joint on dish, not identified
81	2	Ad	–	–	BJ	–	–	–	–	–	–
89	2	Ad	–	–	–	BJ	–	–	–	–	Possibly robbed
102	2	AM	BW J	BW	–	BJ	BP	–	–	–	–
105	2	AF	–	–	–	BP	–	–	–	BP	–
122	2	Ad	–	–	–	–	–	BP	–	–	Small ungulate, tooth socket only
142	2	In	–	–	–	–	–	–	–	BP	–
148	2	Im	–	–	–	–	–	BP	–	–	Small ungulate, one fragment only
218	2	Ad	–	–	P	–	–	–	–	–	Tooth fragments only probably cattle
268	2	AM	–	–	–	–	–	BJ	–	–	–
298	2	AF	P	–	–	–	–	BW	–	BP	Subadult human bone fragment in dish. One cattle tooth only
82	3	AF	–	–	–	–	–	–	–	BP	–
134	3	Im	–	–	–	–	–	BP	–	–	–
135	3	D	–	–	–	BP	–	–	–	–	–
160	3	AM	–	–	–	–	–	BJ	–	–	–
169	3	AF	–	–	J	–	–	BP	–	–	Large ungulate possibly non-intentional
192	3	D	–	–	–	–	–	–	–	P	–
204	3	AM	–	–	–	–	–	–	–	BP	–
126	3b	Ad	–	–	–	–	–	–	–	–	Indeterminate femur/humerus fragments
195	–	AM	–	–	P	–	–	–	–	–	One large ungulate tooth and indeterminate longbone diaphysis fragment only

TABLE 7.9: FREQUENCY OF ANIMAL TAXA WITH HUMAN OCCUPANTS OF URNED CREMATION BURIALS IN PITS

	Horse	**Cattle**	**Sheep/ goat**	**Pig**	**Bird**	**Large ungulate**	**Small ungulate**
Adult	–	1	2	–	1	4	2
Adult female	–	1	1	–	4	1	2
Adult male	1	1	–	1	1	1	3
Double	–	–	1	–	1	1	1
Infant	–	–	–	–	1	–	–
Immature	–	–	–	–	–	–	2

Deposit **102** contained the largest mass of bone of any one faunal assemblage from the excavation. It was recorded as a square pit containing the cremated remains of an adult male of at least 45 years at the time of death. The remains of a horse, two cattle, a sheep/goat and a neonatal pig accompanied this adult.

The horse is assumed to have been a complete carcass when cremated. It was represented by left and right humeri, left and right femora, left and right metacarpals, four left carpals, a left radius, a left ulna, a right scapula, right metatarsal, unsided distal fibula, unsided first and second phalanges, two unsided sesamoids, cervical and thoracic vertebrae and an occipital process.

The definite bovine bones were mainly from the rear half of the animal; a right pelvis, right femur, unsided metatarsal, unsided first and second phalanges and right temporal. With the exception of the temporal, these bones would be interpreted as a complete right hind limb, however with its inclusion we must consider that the animal may have been a whole carcass at the time of cremation. The second bovid was utilised for a meat joint, again a beef clod. The left humerus and proximal astragalus were unburnt and placed on a samian platter.

The 'large ungulate' bones may have come from either the horse or bovid. Large ungulate bones included indeterminate long bone diaphysis and flat bone fragments, together with fragments of phalanx, vertebrae, ribs, cranium, scapula and radius. The horse and cattle were all young, apparently healthy adults.

Pig bones consisted of only an unfused proximal second phalanx, right calcaneum and two sacral vertebrae fragments. All bones appeared to be neonatal and fusion data concurs giving an age at death of less than twelve months (Silver 1969). With this in mind it is difficult to interpret the form of the cremated offering. It may have been a right rear, quarter-carcass meat joint or it may have been that a proportion of the animal was cremated but deposited elsewhere, destroyed in the process or not recovered during excavation. The sheep/goat was identified through the deposition of vertebra and rib fragments; it was therefore probably a meat offering. A distal ilium and distal longbone articulation may have been from the sheep/goat or pig. A single unburnt sheep/goat mandibular premolar was also recovered. Its significance is unclear.

The possible pyre sites

The only two contexts that might have been pyre sites are **221** and, less probably, **215**, and the animal bone inclusions are summarised in TABLE 7.10.

TABLE 7.10: ANIMAL BONE INCLUSIONS FROM THE POSSIBLE PYRE SITES, FOR KEY TO COLUMN NUMBERS SEE PAGE 315

1	2	3	4	5	6	7	8	9	10	11	12
221	–	Un	–	–	–	BP	–	–	–	–	–
215	–	Ad	–	BW	–	BJ	–	–	BP	–	May be redeposited pyre debris

Deposit **221** is a context that included burnt cobbling and may have been associated with a pyre site, the only cremated animal bone was a few fragments of unidentifiable sheep/goat-size bone, no interpretation can be made except that if this was a pyre site it would suggest that it had been cleared of most recognisable bone fragments.

There are suggestions that **215** is a pyre site although it is equally likely to be a deposit of pyre debris. It is one of the contexts to contain a horse. Positively identified horse bones consist of fragments of burnt metatarsus, scapula, radius and distal phalanges (from both the fore and hind limb of the animal). There were no cattle bone fragments in this deposit but several were only identifiable as large ungulate (tooth, mandible, cranial, tarsal, tarsal/carpal, long bone, vertebrae and indeterminate). If these fragments were to be interpreted as horse it would indicate the cremation of an entire or near entire horse carcass (FIG. 7.2). Some large ungulate tooth enamel fragments were unburnt. There were also sheep/goat-sized burnt rib and indeterminate fragments, these may be from a cremated thoracic meat joint. The only other taxon represented was small mammal, probably a small dog, identified from a burnt radius fragment.

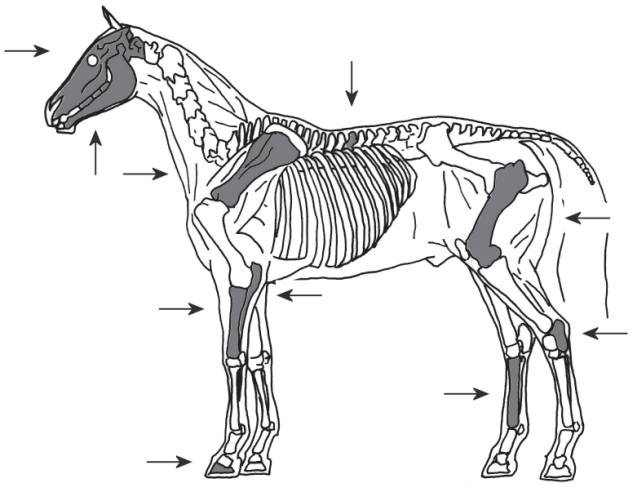

FIG. 7.2 Skeletal elements of horse present in **215**; skeleton after Board 1949. Indeterminate large ungulate fragments not illustrated.

Redeposited pyre debris accumulations in pits

It is not surprising that there are not any complete carcasses of animals or any unburnt meat joints represented in this group of features at Brougham (TABLE 7.11). The features' status as redeposited pyre debris leads to the assumption that the act of interring these deposits was not the primary resultant feature of the cremation, but more likely a functional way of getting rid of material from the burnt pyre that was not intended to form part of the burial. It cannot be ascertained if any of this material (particularly the unburnt remains) even formed part of the act of cremation. These assemblages may include waste material from elsewhere in the funerary rite.

TABLE 7.11: ANIMAL BONE INCLUSIONS IN THE DEPOSITS OF PYRE DEBRIS IN PITS; THE PRECISE STATUS OF DEPOSITS 244, 269 AND 301 IS UNCERTAIN. FOR KEY TO COLUMN NUMBERS SEE PAGE 315

1	2	3	4	5	6	7	8	9	10	11	12
304	1	Un	BP	BP	–	–	–	–	–	–	One horse fragment, may be cattle
269	2	Ad	–	–	BJ	–	–	BJ	–	–	One fragment each. May be non-intentional
299	2	Ad	P	–	–	–	–	BJ	–	–	Cattle, comprises teeth and maxilla only
106	3b	Un	–	–	–	–	–	BJ	–	–	Tibia only
281	3b	Ad	P	–	–	–	–	–	–	–	Tooth only and some unburnt cortical bone
109	–	Ad	–	–	–	–	–	BP	–	–	Phalanx and cortical only
198	–	Ad	–	–	BP	–	–	–	BP	BP	–
217	–	AM	–	?BP	–	–	–	BJ	–	BP	Probable horse, ulna, radius, cranial, ribs, vertebra. Small ungulate ribs only
225	–	Un	–	–	BJ	–	–	–	–	–	One fragment only
244	1	Ad	–	–	BJ	–	–	–	–	–	Forelimb meat joint may be cattle or pig
301	1	Ad	–	BP	–	–	–	BJ, BP	–	BP	Two sheep/goats, one neonate, radius only, one larger ribs only. Horse phalanx, cranial and longbone fragments
269	2	Ad	–	–	BJ	–	–	BJ	–	–	One fragment each. May be non-intentional

In this feature type we cannot be sure if what appears to be characteristic of the remains of a meat joint is actually such. They might in fact represent the remains of a partial or complete carcass that has been perhaps accidentally excluded from the cremated assemblage to be buried with the human remains.

The accumulation of redeposited pyre debris **198** contains the only indisputable evidence for the cremation of dogs at Brougham. Dog is identified here from a single fused proximal 3rd metapodial epiphysis, but several other fragments are also probably from the dog, including a thoracic vertebrae and cranial fragment. There are several fragments of burnt bird bone (small bantam size) and a single fragment of large ungulate articular surface.

Non-funerary deposits

Unburnt cattle mandibular and maxillary tooth fragments were found associated with a cobbled surface, **F28**. These may be the result of carcass processing, butchery waste or an accidental deposition. They do indicate the proximity of skeletalised cattle, but not necessarily within the time frame of Phase 3.

AGE DATA

Age determination was possible for 38 individual animals; six horses, six cattle, seven large ungulates, 15 sheep/goats and probable sheep/goats, three pigs and a dog. The resultant ages for those animals identified to species are shown in TABLE 7.12.

TABLE 7.12: AGE DATA FROM THE ANIMAL BONE

Animal	**Deposit no.**	**Age at death (months)**		
		Older than	*Circa*	*Younger than*
Horse	**102**	–	42	–
	194	36	–	–
	215	36	–	–
	301	9	–	–
	303	36	–	–
Cattle	**243**	12	–	–
	102	18	–	–
	102	–	12–48	–
	299	28	–	–
	309	28	–	–
	194	–	–	42
Sheep/goat (small ungulate, * = probably sheep/goat)	**109**	–	–	16
	***237**	–	–	6
	237	–	10–16	–
	102	21	–	–
	344	–	neonatal	–
	298	–	13–42	–
	***298**	–	–	6
	***277**	–	3–6	–
	106	–	–	18
	289	–	–	36
	***307**	–	–	42
	***300**	–	–	42
Pig	**336**	–	4–6	–
	102	–	–	12
	228	–	–	42
Dog	**198**	3	–	–

The functions of horses and cattle appear to be very different in the funerary contexts (see p. 325). As 'large ungulate' indicates bones that were not distinguishable between horse and cattle, it seemed uninformative to have included this class in TABLE 7.9. However the youngest recorded age-at-death was seven months plus and the oldest up to 60 months. Two individuals were aged at between seven and 48/60 months respectively and one at 15 to 48 months. These do all appear to be immature individuals. The age-at-death of the large ungulates does not significantly aid their taxonomic identification. All the ages are within the prime meat class for beef but also seem comparable to those ages found in the horses from Brougham.

PATHOLOGY

Very little pathology was identifiable on the cremated remains and none on the unburnt elements (as summarised in TABLE 7.13). This suggests that the animals were probably all relatively healthy, or at least had no ailments resulting in modification of the underlying bone. However it is possible that all morphological trace of any pathology present was destroyed during the cremation process. Six examples of possible osseous change were identified; several teeth also showed wear. The osseous changes identified are summarised below.

TABLE 7.13: SUMMARY OF ANIMAL BONE PATHOLOGY

Context	Animal	Skeletal element	Pathology
102	Sheep/goat	Indeterminate fragment	New bone formation on diaphysis – periostitis
298	Sheep/goat	Right astragalus	Active bone on medial face – periostitis
298	Sheep/goat	Indeterminate fragment	Active bone on internal surface –osteomyelitis
289	Pig	Mandible	Notch in base of ascending ramus, possibly bone recession, non-metric, variation or taphonomic
194	Horse	Metapodial	Possible active bone around interior of foramen – osteomyelitis
169	Large ungulate	Indeterminate fragment	Possible active bone on surface – periostitis

BUTCHERY

Butchery was identified on only seven fragments of bone as summarised in TABLE 7.14.

Key to columns used in TABLE 7.14

1 context
2 feature type
3 burnt (yes/no)
4 found on dish (yes/no)
5 animal
6 skeletal element
7 butchery description
8 cut/saw/fracture/chop
9 function

SPECIES UTILISATION

TABLES 7.15 and 7.16 show that although the frequency of inclusion of specific taxa varies between feature types, across the site as a whole the relative abundance of taxa remains surprisingly constant through time.

TABLE 7.14 SUMMARY OF BUTCHERY OBSERVED ON ANIMAL BONES, FOR KEY TO COLUMN NUMBERS SEE PAGE 323

1	2	3	4	5	6	7	8	9
102	Urned	Y	N	Sheep/ goat	Rib	Two cuts on medial dorsal	Cut	Carcass division
298	Urned	Y	N	Sheep/ goat	Mandible	Series of small cuts on posterior margin of ascending ramus	Cut	Unclear; tongue removal, decap-itation, slaughter?
298	Urned	Y	N	Sheep/ goat	Astragalus	Horizontal cuts across the centre of the anterior face	Cut	Possibly dismemberment
237	Cist	Y	N	Sheep/ goat	Rib	Possible transverse cuts	Cut	Carcass division/ meat removal
102	Urned	N	Y	Cattle	Humerus	Cuts diagonally down from front to back across lateral distal diaphysis	Cut	Dismemberment/ carcass division
194	Cist	N	Y	Cattle	Probable femur, cortical fragment	Cuts	Cut	Unclear, possibly dismemberment
102	Urned	Y	N	Large ungulate	Rib	Green break	Fracture	Marrow retrieval

TABLE 7.15: ANIMAL TAXA IN FEATURE TYPES (MNI)

	Cist deposit	**Unurned cremation burial (pit)**	**Urned cremation burial (pit)**	**Possible pyre site**	**Redeposited pyre debris (pit)**
Horse	4	–	1	1	3
Cattle	1	1	5	–	3
Sheep/goat	9	2	5	2	–
Pig	2	–	1	–	–
Dog	–	–	–	1	1
Bird	4	–	8	–	3
Small ungulate	1	–	11	–	7
Large ungulate	6	3	7	–	4

TABLE 7.16: NUMBER OF CONTEXTS WITH EACH TAXON, BY PHASE

	Phase 1	**Phase 2**	**Phase 3**	**Phase 3b**	**Unphased**
Horse	3	2	1	–	3
Cattle	4	3	–	1	–
Sheep/goat and small ungulate	8	13	5	3	6
Pig	–	2	–	–	1
Dog	–	–	–	–	2
Bird	4	3	4	1	3
Large ungulate	4	6	2	2	6

The following tables (TABLES 7.17–7.21) illustrate the skeletal areas (FIG. 7.3) identified from each context categorised by taxon. The numbers indicate minimum number of bones identified (where one bone may be represented by multiple fragments). Bracketed numbers are NISP (number of identified specimens) counts where minimum number of bones is difficult to ascertain. Numbers in bold in the sheep/goat and dog tables indicate securely identified as sheep/goat or dog respectively. In these tables numbers printed in normal font indicate species size element frequencies.

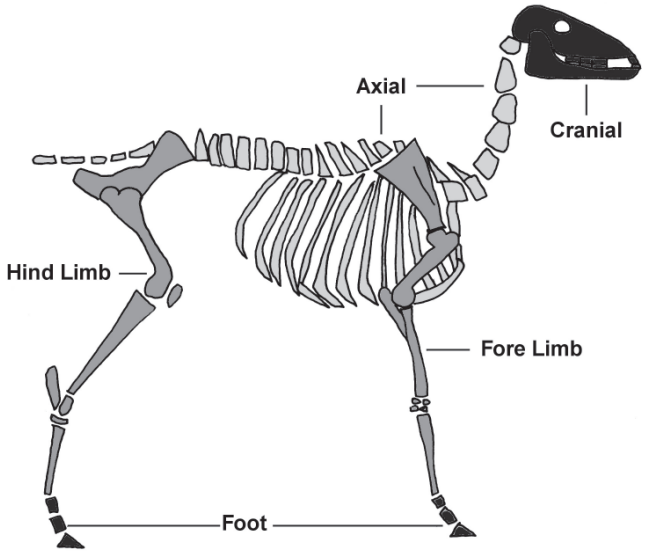

FIG. 7.3 Generalised mammalian skeleton diagram illustrating the skeletal areas used in TABLES 7.17 to 7.21: **Cranial** – Cranium, teeth and mandible; **Axial** – Vertebrae, ribs and sternum; **Fore Limb** – Scapula, humerus, radius, ulna, carpals, metacarpals; **Hind Limb** – Pelvis, femur, patella, tibia, fibula, tarsals, metatarsals; **Foot** –Phalanges and any metapodials and carpal/tarsals not identifiable to fore or hind (Source: authors)

Key to columns used in TABLES 7.17–7.21

1	cranium, mandible	9	shoulder
2	tooth	10	humerus
3	cervical	11	radius, ulna carpals and metacarpals
4	thoracic	12	pelvic girdle
5	ribs and sternum	13	femur and patella
6	lumbar	14	tibia, fibula, tarsals and metatarsals
7	sacral and caudal	15	phalanges, metapodials, carpals and tarsals
8	indeterminate vertebrae		

Horses (TABLE 7.17)

Horse remains were identified in ten different contexts: four cist deposits (**194**, **237**, **286** and **303**), one urned cremation burial (**102**), one possible pyre site (**215**), three deposits of pyre debris (**217**, **301** and **304)** and an unstratified location. They were all cremated. There is evidence that three of the animals (**102**, **215** and **217**) were cremated as complete or near complete carcasses. At the other end of the scale, four contexts contained only one, possibly token, inclusion of cremated horse bone (**237**, **286** and **304**). The remaining contexts (**194**, **301** and **303**) all contained between two and four fragments probably representing only one limb of an animal. No butchery or pathology was found on any skeletal elements; all those which could be aged were adult, with one (**102**) approximately three and a half years old at time of death.

It is interesting to note that no adult humans positively identified as male were interred in cists with horses, as might have been expected considering the location of the cemetery at a fort where cavalry could have been in garrison. Instead, two of the cists were found devoid of human bone and the remaining two contained adult human females (one aged 21–45 years at death and the other 30–40 years). The only urned cremation burial in a pit to contain horse remains was **102**. This deposit contained one adult male (45 years plus). The possible pyre site hosted the cremation of an adult (sex not determined) and the redeposited pyre debris accumulations respectively contained an adult, indeterminate human bone and the remains of an adult male (35–40 years at death). Horses were recovered from contexts dating to Phases 1 to 3 and constituted between 6% and 13% of the animals included in each of those periods. These horses constitute the sum total of horses ever recorded from Roman cremation burials in Britain.

TABLE 7.17: SUMMARY OF THE PRESENCE OF HORSE BONES; FOR KEY TO COLUMN NUMBERS SEE PAGE 325

	Cranial		**Axial**					**Fore limb**			**Hind limb**			**Foot**
	1	**2**	**3**	**4**	**5**	**6–7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
102	1	–	1	1	–	–	–	1	2	5	–	2	2	4
194	–	–	–	–	–	–	–	–	–	–	–	–	1	2
215	–	–	–	–	–	–	–	1	–	1	–	–	1	1
217	1	–	–	–	1	–	1	–	–	2	–	–	–	–
237	–	–	–	–	1	–	–	–	–	–	–	–	–	–
97	–	–	–	–	–	–	–	–	–	1	–	–	–	–
301	–	–	–	–	–	–	–	–	–	1	–	–	–	1
303	–	–	–	–	–	–	–	–	1	2	–	–	–	1
304	–	–	–	–	–	–	–	–	–	–	–	–	–	1

Cattle (TABLE 7.18)

The cattle remains come from eight separate features and, with the exception of **102**, are typified by the inclusion of either meat joints or tooth fragments. Cattle are found in all the dated periods consisting of a relatively steady fraction of all animal remains in each period. Often remains identifiable only to large ungulate were found in the features, where there was no identified bovid or horse. It could be assumed that where these remains indicate a food origin they can be attributed to cattle, this however cannot be confirmed with standard analytical techniques. It would therefore be the case that the frequency of cattle cremation at Brougham was higher than the above data suggest.

Sheep/goat size (TABLE 7.19)

Sheep are known to have been a species commonly included in sacrificial rites by the Romans (White 1970, 311) as well as a meat animal. The frequency of sheep/goat bone inclusion at

TABLE 7.18: SUMMARY OF THE PRESENCE OF CATTLE BONES

	Cranial		**Axial**			**Fore limb**			**Hind limb**			**Foot**
	1	**2**	**3–4**	**5**	**6–8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
102	1	–	–	–	–	–	1	1	1	2	–	–
194	–	–	–	–	–	–	–	–	–	1	–	–
218	–	1	–	–	–	–	–	–	–	–	–	–
243	–	–	–	–	–	–	1	–	–	–	–	–
281	Indeterminate fragments only											
298	Indeterminate fragments only											
299	–	1	–	–	–	–	–	–	–	–	–	–
300	–	1	–	1	–	–	–	–	–	–	–	–
304	–	–	–	–	–	1	–	–	–	–	–	–
309	–	6	–	–	–	–	–	–	–	–	–	–

Brougham is therefore not surprising. They represent between about 36% and 46% of all animal inclusions for each phase, and can be found in every feature type, except stratified non-funerary. A total of 40 features contained sheep/goat or small ungulate (probable sheep/goat) bones; the features are as follows:

Cist deposits (9) – **36, 49, 97, 194, 237** (two individuals), **289, 303, 307, 310**
Loose pit burials (2) – **145, 243**
Urned pit burials (16) – **35, 76, 89, 102, 105, 122, 134, 135, 148, 160, 169, 268, 273, 277, 298, 300**
Pyre sites (2) – **215, 221**
Redeposited pyre debris sites (6) – **106, 109, 217, 269, 299, 301** (two individuals)
Other funerary features (1) – **251**

Fifty per cent of the instances of sheep/goat inclusion contained the cremated remains of partial carcasses, either intended as a food offering or sacrifice (see p. 315). A total of 42.5% of the features contained sheep/goat bones, included probably as a food offering (most often

TABLE 7.19: SUMMARY OF THE PRESENCE OF SHEEP/GOAT BONES, FOR KEY TO COLUMN NUMBERS SEE PAGE 325

	Cranial		**Axial**						**Fore limb**			**Hind limb**			**Foot**
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
35	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–
36	Indeterminate fragments only														
49	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–
76	[2]	–	–	–	–	–	–	–	–	–	–	–	–	–	–
89	Indeterminate fragments only														
97	–	–	–	–	[2]	–	–	–	–	–	–	–	–	–	–
102	–	**1**	–	–	[16]	–	–	[2]	–	–	–	1	–	–	–
105	Indeterminate fragments only														
106	–	–-	–	–	–	–	–	–	–	–	–	–	–	**1**	–
109	–	–	–	–	[2]	–	–	–	–	–	–	–	–	–	**1**
122	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–
134	1	–	–	–	1	–	–	–	–	–	–	–	–	–	–
135	[2]	–	–	–	–	–	–	–	–	–	–	–	–	–	–
145	–	–	–	–	[3]	–	–	–	–	–	–	–	–	–	–
148	Indeterminate fragments only														
160	Indeterminate fragments only														
169	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–
194	Indeterminate fragments only														
198	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–
215	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–
217	–	–	–	–	[2]	–	–	–	–	–	–	–	–	–	–
221	Indeterminate fragments only														
237	[4]	–	–	–	[2]	–	–	1	**2**	**1**	**2**	–	**1**	**2**	**2**
243	–	–	–	–	[11]	–	–	–	–	–	–	–	–	–	–
251	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–
268	–	–	–	–	[2]	–	–	–	–	–	–	–	–	–	–
269	–	–	–	–	1	–	–	–	–	–	1	–	–	–	–
277	–	–	–	–	–	–	–	[2]	–	–	–	–	–	–	–
289	–	–	–	–	1	–	[2]	–	–	–	–	–	–	**2**	–
298	[5]	–	**2**, 1	--	–	--	[4]	[11]	1	1	[3]	1	[6]	**4**,[3]	[4]
299	Indeterminate fragments only														
300	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
301	–	–	–	–	1	–	–	–	–	–	**1**	–	–	–	–
303	4	–	–	–	1	–	–	–	–	–	–	–	–	–	–
307	[3]	–	–	–	1	–	–	–	–	1	–	–	–	–	–
310	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–
349	–	–	–	–	[3]	–	–	1	–	–	–	–	–	–	1

ribs). There were only two complete carcass cremations (**237** and **298**) representing 5% of the total. The remaining instance (2.5% of total) is an unburnt partial carcass identified from a right tibia and left radius, both neonatal. These bones were found unstratified.

Pigs (TABLE 7.20)

Pig remains were identified in two cists (**227** and **289**), an urned cremation burial in a pit (**102**) and also in an unstratified location. Deposits **102** and **227** were both dated to Phase 2, while **289** was unphased. In **227** pig was included as an unburnt meat joint on a BB1 dish. In **102** it was probably also a food offering, this time a suckling pig, either a complete carcass or gammon joint. Deposit **289** and the unstratified material contained only cranial skeletal elements and teeth. Deposit **289** contained a fragment of cremated mandible. It is not clear why only this element might have been burnt, and, since it has associated edible elements it could have been a meat offering. It may also have been included for symbolic meaning. The unstratified assemblage was unburnt and included a right mandible and right and left maxillary teeth. These jaws were not associated with any funerary feature and may have been waste from carcass modification. There is one further possible example of pig cremation from Brougham cemetery; an ulna fragment identified as 'large ungulate' in **244** could be either cattle or pig. It is most likely the remains of a meat joint.

What is surprising about the pigs from Brougham is their scarcity. It was expected to find pig remains primarily as the result of food offerings; pork is often thought to have been far more important than lamb in Roman diet (White 1970, 311). What the food offerings from Brougham might indicate is that a specialised diet was implemented in funerary rites, the dead were honoured with higher status foods rather than a meal from a typical everyday diet.

TABLE 7.20: SUMMARY OF THE PRESENCE OF PIG BONES, FOR KEY TO COLUMN NUMBERS SEE PAGE 325

	Cranial		**Axial**			**Fore limb**			**Hind limb**			**Foot**
	1	**2**	**3–6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
102	–	–	–	2	–	–	–	–	–	–	1	1
227	–	–	–	–	–	–	1	–	–	–	–	–
289	1	–	–	–	–	–	–	–	–	–	–	–

Dogs (TABLE 7.21)

Only two dogs were identified in the assemblage, one amongst redeposited pyre debris (**198**) and one in a possible pyre site (**215**), both cremated. They were small individuals, approximately the size of a modern fox. It is difficult to suggest the function of their inclusion. Evidence for the individual in **198** comprised a fragment of third metapodial securely identified as dog together with small ungulate-sized cranial and cortical fragments and small mammal-sized cranial, cortical and carpal/tarsal fragments, all of which could conceivably be dog. As there was no definite small mammal or small ungulate bone fragments it seems reasonable to suggest that all were from the small dog, therefore included as at least the frontal portion of the carcass, and probably the whole animal.

Evidence in **215** comprised only a cremated radius diaphysis fragment. This could possibly indicate a meat joint, however this would not fit with a perceived inclusion of the animals as companions. No further conclusions can be drawn from such a small data set.

TABLE 7.21: SUMMARY OF THE PRESENCE OF DOG BONES, FOR KEY TO COLUMN NUMBERS SEE PAGE 325

	Cranial		**Axial**			**Fore limb**			**Hind limb**	**Foot**
	1	**2**	**3**	**4**	**5–8**	**9**	**10**	**11**	**12–14**	**15**
198	1	–	–	1	–	–	–	–	–	**1**
215	–	–	–	–	–	–	–	1	–	–

Birds (TABLE 7.22)

The vast majority of bird remains were of limb bones, with no cranial and no vertebral elements found. This is not surprising bearing in mind the problems of taphonomy of cremation and excavation. The birds were either included as sacrifices or food offerings but it is not known whether they were decapitated, plucked and cooked before inclusion on the pyre. Bird bones were from very small domestic fowl (with the exception of a large individual in **237**) and geese. These identifications were made considering the problems of precise identification of bird bone (O'Connor 2000) and the exaggeration of those problems by the cremation process.

Birds were found in 15 features covering all the phases. The birds were identified from cist deposits (**36**, **237**, **303** and **307**), urned pit burials (**13**, **35**, **82**, **105**, **142**, **192**, **204** and **298**), redeposited pyre debris contexts (**198**, **217** and **301**) and an unstratified location. This profile may also be a result of taphonomic pressure rather than differential inclusion.

Birds do not seem to be associated with any particular sex or age of human cremation. They were associated with five adult females, three adult males, two identified only as adults, one cremation with an adult female and adult male, one with an adult female and subadult, one with an adult and child, one single infant burial and one cremation with only indeterminate human bone. The remaining bird bone deposits were found unstratified and with no associated human bone.

TABLE 7.22: SUMMARY OF THE PRESENCE OF BIRD BONES (DC=DOMESTIC CHICKEN, G=GOOSE)

Context	Taxon	Comments
13	?	Indeterminate long bone fragment only
15	?	Indeterminate long bone fragment only
35	?	Indeterminate long bone fragment only
36	DC	Indeterminate long bone fragment only
82	?	Indeterminate long bone fragment only
105	?	Indeterminate and indeterminate long bone fragments only
142	DC	One axial bone: coracoid/furcula/sternum/ribs/scapula; one wing bone: humerus; leg bones: one femur, four tibia/tibiotarsus/tarsometatarsus
192	?	Indeterminate long bone fragment only
198	DC	Indeterminate long bone, ribs and pelvic fragments
204	?	Indeterminate and indeterminate long bone fragments only
217	DC	One leg bone: tibia/tibiotarsus/tarsometatarsus
237	DC	One axial bone: pelvis/pygostyle
298	G	One axial bone: coracoid/furcula/sternum/ribs/scapula
301	?	Indeterminate fragments only
303	?	Indeterminate long bone fragment only
307	G	One leg bone: femur
349	DC	One leg bone: femur

Small mammals

The only definite small mammal bones were that of the rabbit (**174**), interpreted as intrusive.

Large ungulates

Where large ungulate bones were identified together with either horse or cattle they have been assumed to be part of that same animal. There are several features where large ungulate bones were not associated with any identified species and so no further conclusions can be drawn. In these cases it is usually only a small number of fragments and thus probably bones from a meat joint, as discussed on p. 315.

THE ASSOCIATIONS OF HUMAN AND ANIMAL

TABLES 7.5, 7.7 and 7.9 summarise the associations of animals with humans for specific deposit types. From them it can be seen that the inclusion of animal bones with younger people is

TABLE 7.23: HUMAN OCCUPANTS AND ANIMAL INCLUSIONS IN ALL DEPOSITS WITH CREMATED HUMAN BONE

	Horse	**Cattle**	**Sheep/ goat**	**Pig**	**Dog**	**Bird**	**Large ungulate**	**Small ungulate**
Adult	2	2	5	–	1	3	7	7
Adult female	2	1	3	–	–	4	3	2
Adult male	2	1	3	2	–	3	5	4
Double	–	1	3	–	–	2	2	1
Infant	–	–	–	–	–	1	–	–
Immature	–	–	–	–	–	–	–	2
Uncertain	1	2	2	–	–	–	3	2

TABLE 7.24: PRESENCE OF ANIMAL INCLUSIONS AS A PROPORTION OF ALL AGED HUMAN BONE

	Total with cremated human remains	**Total with animal bone**	**Percentage with animal bone**
Adult	72	18	25.0%
Adult female	27	13	48.1%
Adult male	25	11	44.0%
Double	10	6	60.0%
Infant	15	1	6.7%
Immature	23	2	8.9%

rare. This becomes very apparent if the associations are tabulated irrespective of deposit type and date (TABLE 7.23). If the proportion of deposits with animal bone is compared to all deposits which contain cremated bone (TABLE 7.24) this bias toward adults is even more marked. The evidence seems to suggest that generally animal offerings were appropriate for adults, and that young people rarely received them when they were cremated on their own.

DISCUSSION

The species included in the cremations are all domestic indicating a practical rather than totemic function of inclusion. Many can be explained as food offerings but there is also some evidence for companion animals/valued possessions. The food offerings do not resemble the expected pattern from known Roman diet.

Pig is a common meat in the Roman diet, although its occurrence in cremation burials diminishes from the mid first century A.D. to be overtaken by sheep/goat (Philpott 1991,196); this pattern is supported by the Brougham material. The limited data available to Philpott's 1991 study also suggested that in later cremation burials (first century onwards) the number of species per burial was limited to one or two and in only two late third-century groups did he record a wider range of species (*ibid*, 200). The new data from Brougham would indicate that these two groups of burials are in fact likely to be more typical of the period than expected, with seven of the 48 dated features including animal remains of at least three different taxa. The most surprising animal inclusions at Brougham are the horses, an animal that has never before been identified in Roman cremation graves in Britain.

With the limited research to date, there remain several unanswered theoretical questions. These include the function of partial carcass cremation, the level of taphonomic loss (mainly affecting the smaller taxa), and the intentionality of inclusion within a burial. We can say with certainty that the animal remains were intentionally burnt on the pyre but we cannot

say what proportion was intended for interment in the grave. It appears obvious from the mass of recovered bone and the contents of redeposited pyre debris accumulations that not all that was burnt was intended to be interred in the grave. We cannot determine the level of accuracy with which burned skeletal material was selected; did they confuse human and animal bone? Did they intend to select animal bone in any quantity or was it thought that just human bone had been selected? Finally there is the question of the function of cremating animals at all. It is becoming increasingly obvious that in antiquity many objects were routinely 'broken' before being interred in the grave. This can be seen in some ceramic finds from Brougham where the pots were scorched before being used as funerary vessels (see p. 358). It is possible that by burning the animals, the Romans were taking them out of extant use and dedicating them solely for the deceased. These questions cannot be resolved without extensive further study.

CONCLUSIONS

This study has resulted in the successful identification and interpretation of a large assemblage of cremated animal bone from Brougham Roman cemetery. It suggests that faunal remains were included in the cremation funerary rite throughout the active life of the cemetery, and for the death of men and women, but more rarely for children. The animals were most likely included in the rite as both sacrifices and food offerings, to be eaten at a funerary feast and interred for the dead. The animal offerings represent a huge economic expense with the inclusion of some, especially the horses, as big a gift as many articles of jewellery or ceramic vessels; indeed some of these animals (e.g. the horses) may have been included as the possessions of the deceased.

At present the data from this assemblage stands alone in the archaeological record. With further analysis of similar sites we can ascertain if Brougham represents the norm for third-century Roman cemeteries in Britain, or if the assemblage has been influenced by local traditions of either the native inhabitants or the Roman military.

ASPECTS OF THE CREMATION RITUAL AS EVIDENCED BY THE ANIMAL BONES

By Jacqueline I. McKinley

Fragments of cremated animal bone were distinguished in 68 deposits (23%) during analysis of the human bone (see Bond and Worley above for species). As with the artefactual material, most was recovered from urned burials (31% of urned burials irrespective of deposit type), with 54% of unurned burials containing animal bone, 19% of pyre debris deposits and none from the cenotaph deposits. These figures appear in contrast with the distribution noted for worked bone, and lends further support to the idea that artefacts were being 'selected' for deposition with pyre debris rather than the burial. There was some variation between the early and late phases, 35% of urned burials and 28% of redeposited pyre debris from the former containing cremated animal bone compared with 20% and 22% respectively from the latter. This may signify a slight shift in the popularity or applicability of this part of the rite in the later phase. A higher proportion of the identified females (61%) compared with males (50%) had animal bone with them, though these figures should be viewed with caution given the high percentage of unsexed adults. As has been noted elsewhere, both within the Romano-British period and beyond (e.g. McKinley 1991; 1992; 1994a), a higher proportion of adults (40%) compared with immature individuals (14%) were accompanied by animal remains. Welwyn (Wells 1981) provides a rare exception to the trait, 80% of immature compared with only 29% of adult burials containing animal bone.

The inclusion of cremated animal remains in Romano-British burials is relatively common, although there is a wide range in the number of burials with animal bone at different cemeteries, for example, 3.5% from Westhampnett (McKinley and Smith 1997), 13% from

Baldock Area 15 (McKinley 1991), 29% of deposits from Derby racecourse (Harman 1985; though these may not all have been 'burials', see p. 305), 36% from Puckeridge (Wells 1981) and 47% from the St Stephen's cemeteries in St Albans (McKinley 1992). The percentage of burials with animal remains from similarly located cemeteries to Brougham appears consistently low in comparison, with 9% from Caerleon (Evans and Maynard 1997) and Low Borrowbridge (McKinley 1996), one of seven burials from Brough under Stainmore (Hodgson 1977; Wells 1977), and one of 16 deposits from Petty Knowes (Charlton and Mitcheson 1984). Philpott's (1991, 199) observation (made prior to the examination of many of the examples cited here) that animal remains were most common in the 'richer' cremation cemeteries of the South-East may be valid, but the evidence is no longer conclusive, and the apparently consistently low percentages from the 'military' cemeteries may be significant, particularly in view of the otherwise 'rich' array of artefactual offerings. Alternatively, since the vast majority of the non-military burials and cemeteries cited are of early to mid Romano-British date whilst most of the military ones are mid to late, the apparent shift could simply be a temporal one.

Cremated animal remains, in deposits from any period, invariably represent (food) offerings, or in some specific instances, companions to the dead (Brønstead 1965, 301–5; Toynbee 1971, 50; Bond 1996; McKinley 2000d). In the Romano-British period the quantities of bone included are generally relatively low and the variety of species limited, pig and domestic fowl being the most popular (e.g. Rielly 2000, table 26, 76; Harman 1985). The species observed are reflected across much of the Roman world, for example across northern France (Meniel 1993) and at the mid-Roman military cemetery of Kesteren in the Netherlands (Hessing 1993) pig predominated, with lesser amounts of cattle and sheep/goat, dog and chicken. The choice of species may, however, also have carried ritual significance; the cock is the bird of Mercury, messenger to the underworld and escort of the dead (Black 1986), and itself a symbol of the new day (Wheeler 1985), and there is reference to Roman graves not '… really becoming graves until the proper rites are performed and a pig is slain' (Cicero *De Legibus* II 22, from Toynbee 1971).

In common with those found elsewhere in this period in Britain, the animal remains in the Brougham deposits comprised small quantities (82% with <10g) representing a relatively small proportion (up to 5%) of the total weight of bone in the burial. In a small number of deposits, the proportion was higher at up to 25% (e.g. unurned burial **194** and urned burial **243**) and in two instances a substantial proportion of the deposits comprised animal bone, 40% in **215**, most probably a deposit of pyre debris, and 51% in the redeposited pyre debris associated with burial **307**. In the latter, 839.7g of animal bone was identified, in two other instances, burials **194** and **268**, in excess of 100g of animal bone was found. The recovery of such large quantities of animal bone from other cremation burials of this date in Britain is currently unknown, and the species commonly present in these large deposits – horse – is very rare. Small quantities of unburnt horse bone have been recovered from some cremation burials (Philpott 1991, tables 37, 38; Rielly 2000, 75), as they have from inhumation burials (e.g. Derby Racecourse, Harman 1985), with the species predominating in the Corbridge cremation deposits (Casey and Hoffmann 1995). However, cremated horse bone in the quantities seen here are currently only replicated in Britain in burials of early Saxon date (Bond 1994; 1996). At Spong Hill, Norfolk, for instance, several deposits of a similar nature to **307** and **102** were recovered and donated as 'animal accessory burials' (McKinley 1994a, 93). The horse may have represented a symbol of 'status' or a personal possession of the deceased, but, as with the other species, there may have been some other ritual significance. The horse was associated with the Celtic goddess Epona, amongst other deities (Black 1986), the popularity of the horse-goddess being greatest in eastern Gaul and along the German frontiers (Green 1994, 54). Todd (1987) also notes that a practice of horse sacrifice existed within the Roman Iron Age in parts of Europe, which he suggests had spread westwards from its origins amongst the nomads of the Russian steppes.