GARDINERS CORNER, ALDGATE, LONDON.

THE ANIMAL BONES

Excavations at Gardiners Corner, Aldgate produced a number of animal bones from contexts which have to be considered separately since they are not associated with each other. All fused bones were measured using the method of Jones et al 1976.

Some thirty six contexts from gravel pit fills (dated to the C13/14th centuries) contained 480 animal bones (the total number of bones for each species is itemised in Table 1). The following species were identified; ox (Bos sp), sheep (Ovis sp), pig (Sus sp), horse (Eguus sp), cat (Felis sp), dog (Canis sp), fallow deer (Dama dama), swan (Cygnus sp), goose (Anser sp), domestic fowl (Gallus sp), cod (Gadus morhua), oyster (Ostrea edulis), cockle (Cardium edule), mussel (Mytilis edulis), and whelk (Buccinum undatum). A number of residual human bones were also found in four gravel pit fill contexts as a result of medieval activity over the area of a Roman cemetary.

Before entering any discussion of the bone it is worth remembering that the number of bones from each of these groups is very small, especially when the bones are divided into species/anatomy groups which makes any interpretation rather tentative. Loose teeth have been included in the counts, for example in Table 1 these only account for 13 in ox, 11 in sheep, and 3 in pig.

From the gravel pits ox predominates among the mammals, followed by sheep (no goats were positively identified). Only a few (17) bones of pig were recovered. The bones from these three species were fragmented and butchered, including axially split vertebrae of ox and sheep, many chop marks were present on long bones, and knifecuts were present on one sheep metatarsal. Any preferential selection of certain parts of the anatomy was not evident in these three species. with regard to ageing from the evidence of epiphyseal fusion and tooth eruption the great majority indicated adult animals.

Horse was only found in three contexts, represented by the lower limb (2 metatarsals, and 2 phalanges). One of the metatarsals displayed exostosis around the proximal articulation, there was no evidence of butchery on any horse bones.

Fallow deer is only represented by a fragment of antler tine and since this could have come from a cast antler it cannot be taken as evidence of venison.

Both cat and dog were present in a few contexts. The lower forelimb and hindlimb of possibly one cat was present in context 23, and at least part of 2 dogs in context 38, one of which was estimated to measure 46 cm at the shoulder (Harcourt 1976).

A few bird bones were present, swan, goose and domestic fowl were all eaten, knifecuts were observed on the tibiatarsus of a domestic fowl.

Cod was identified from 2 bones in 2 contexts and may be the residue of dried or salted fish that was so common a part of the diet in the medieval and post-medieval period.

Shellfish also formed an important part of the diet at this time, oyster is the most frequently occuring species.

TABLE 1

OX	SHEEP	PIG	HORSE	F.DEER	CAT	DOG	BIRD	UNIDENT	SHELLFISH
123	88	17	4	1	8	6	7	123	75 oyster 17 cockle 3 mussel 2 whelk 6 fish

TOTAL = 480 (OX = OX + OXSIZED, SHEEP = SHEEP + SHEEP SIZED).

TABLE 1

OX	SHEEP	PIG	HORSE	F.DEER	CAT	DOG	BIRD	UNIDENT	SHELLFISH
Context 23.									
15	20	2	-	-	6	-	2	20	14 COCKLE 10 OYSTER 2 MUSSEL 1 WHELK 1 COD
Context 27									
2	-	-	-	-	-	-	-	3	5 OYSTER
Context 29									
2	2	1	-	-	-	-	-	2	7 OYSTER
Context 32									
1	-	-	-	-	-	-	1	4	6 OYSTER
Context 34									
3	1	1	-	-	-	-	-	7	12 OYSTER
Context 35									
-	2	-	-	-	-	-	-	-	2 OYSTER
Context 36									
4	2	2	-	-	-	-	-	10	2 OYSTER
Context 37									
-	-	-	-	-	-	-	-	1	1 OYSTER
Context 38									
-	1	-	-	-	-	5	-	-	1 WHELK 1 OYSTER
Context 41									
9	3	2	-	-	1	-	-	8	27 OYSTER 3 COCKLE 1 MUSSEL

Context 50

-	-	-	-	-	-	-	-	4	-	

Context 51

6	5	-	-	-	-	-	-	4	2	OYSTER
									4	FISH
									1	COD

Context 52

6	7	2	-	-	-	-	-	6	-	

Context 55

4	1	-	-	-	-	-	-	-	-	

Context 57

1	-	-	-	-	-	-	-	-	-	

Context 58

3	1	-	-	-	-	-	-	2	-	

Context 71

-	1	-	1	-	-	-	-	4	-	

Context 73

2	1	-	2	-	-	-	-	-	-	

Context 93

1	-	-	-	-	-	-	-	-	-	

Context 94

6	7	2	-	-	-	-	-	-	-	

Context 117

1	-	-	-	-	-	-	-	-	-	

Context 164

3	2	1	-	-	-	-	-	6	-	

Context 167

21	7	-	-	1	1	-	1	20	22	OYSTER

Context 216										
1	1	-	-	-	-	-	-	1	-	
Context 219										
2	2	-	-	-	-	-	-	4	-	
Context 223										
1	6	-	-	-	-	-	-	7	7	OYSTER
Context 224										
4	1	-	-	-	-	-	1	-	1	OYSTER
Context 225										
1	1	-	-	-	-	-	-	-	2	OYSTER
Context 244										
5	2	-	-	-	-	-	-	3	-	
Context 245										
1	-	-	-	-	-	-	-	1	-	
Context 247										
-	-	-	-	-	-	1	-	2	-	
Context 248										
10	4	2	-	-	-	-	-	4	1	OYSTER
Context 249										
5	7	2	-	-	-	-	2	-	-	
Context 250										
3	1	-	1	-	-	-	-	-	-	
TOTAL										
123	88	17	4	1	8	6	7	123	75	OYSTER
									17	COCKLE
									3	MUSSEL
									2	WHELK
									6	FISH

TOTAL = 480 (OX = OX + OX SIZED, SHEEP = SHEEP + SHEEP SIZED).

The C16th ditch and associated woodlined pit.

Most of the bone (see Table 2) comes from the ditch (220 & 222), and a small amount was found in the fill of the woodlined pit (163 & 229).

With regard to the ditch ox, (Bos sp), sheep (Ovis sp), pig (Sus sp), horse (Equus sp), cat (Felis sp), domestic fowl (Gallus sp), duck (Anas sp), oyster (Ostrea edulis), cockle (Cardium edule), and mussel (Mytilis edulis) were recovered. The number of pig bones is inflated by the presence of three partial skeletons, one of which was aged by the mandibles to newborn/2 weeks (using Getty 1975) and another to approximately 5 months. Eight bones belonged to the former individual and twenty three to the latter, there were also some small fragments that probably belong to these skeletons. Other piglet bones were also present including a humerus, radius and ulna held in articulation by the preservation of keratinous material in highly organic waterlogged conditions. Only two pig bones were mature, a fibula and an astragalus. None of the immature pig bones show any sign of butchery, perhaps these individuals died of natural causes and were considered unfit for human consumption.

The distribution of cattle and sheep is more random, mainly mature animals, skull and jaw fragments are well represented for both species, however only one horn core was present for both cattle and sheep. Skull fragments were very fragmented in contrast to the complete skulls from barrel well 134. Ox mandibles showed signs of chopping under the alveoli, and behind the third molar. There was little evidence for butchery on sheep mandibles, except for one chop across the diastema, although these mandibles were fragmented. Skull fragments appear to be the result of axial chopping, presumably to remove the brain case.

Chop marks were evident over many upper limb bones, femur,humerus, os coxae, scapula, and also on the lower limb of ox, radius, ulna and tibia. However ox metapodials are absent except for one split metatarsal. These bones are particularly suitable for bone working and may have been removed for this purpose.

Sheep metapodials are present and do not show signs of butchery except for a hole through the proximal surface of a complete metatarsal.

Horse is only represented by two bones, one of which, a calcaneum, showed slight chopmarks above the area of articulation on the medial surface. One rabbit radius and 15 fragments of cat were also found,the latter representing at at least two individuals in 222. Birds identified include domestic fowl, and duck. Again oyster, cockles and mussels were present in all contexts as well as a Garden snail and one frog bone, these latter two inclusions are probably incidental.

TABLE 2

OX	SHEEP	PIG	HORSE	CAT	BIRD	RABBIT	UNIDENT	SHELLFISH
83	40	44	2	15	10	1	3	25 oyster 3 cockle 13 mussel 1 frog 1 snail

TOTAL = 241

TABLE 2

OX	SHEEP	PIG	HORSE	CAT	BIRD	UNIDENT	SHELLFISH
Context 163							
20 (1 SKULL)	8	-	-	-	-	1 RABBIT	9 OYSTER 1 COCKLE 8 MUSSEL
Context 220							
26	12	24 (2 indiv)	1	-	4 DOM FOWL 1 DUCK 1 BIRD	-	13 OYSTER 2 COCKLE 5 MUSSEL
Context 222							
23	18	19 (3 indiv)	1	15	2 DOM FOWL 2 BIRD	-	1 OYSTER
Context 229							
3	2	1	-	-	-	3	1 OYSTER 1 FROG 1 SNAIL
Context 232							
5	2	-	-	-	-	-	-
Context 233							
1	2	-	-	-	-	-	-
Context 234							
5	1	-	-	-	-	-	1 OYSTER
TOTAL							
83	40	44	2	15	10	4	43

TOTAL 241.

The Barrel Well (134). Late fourteenth to fifteenth century.

Animal bones were found within several layers of this feature. Table 3 indicates the species recovered. The following species were present ox (Bos sp), sheep (Ovis sp), pig (Sus sp), rabbit (Oryctolagus cuniculus), horse (Equus sp), red deer (Cervus elaphus), dog (Canis sp), domestic fowl (Gallus sp), jackdaw (Corvus monedula), oyster (Ostrea edulis), cockle (Cardium edule), and mussel (Mytilis edulis)Differences do show within the layers of this feature. Sheep skulls and mandibles appear most freqently in the top two levels (135 & 136), these skulls sometimes showed signs of butchery, in 135 a naturally polled skull was chopped across the frontals and showed two knife cuts at the basioccipital region , another skull had the horn cores removed and was chopped axially through the frontals, parietals and basioccipitals, while another skull was chopped in a similar fashion, but obliquely across the parietals and one articulation of the basioccipital.

In layer 136 five sheep skulls showed no sign of butchery, all these skulls were mature. Using the method of Hatting (1975) these skulls were sexed by x-raying the horn cores, two castrates were present (see plates A and C), one ?male (plate B), one ?female (plate D) and one definate male (plate E). All skulls showed full tooth eruption and closed sutures. Ageing of ten jaws that probably belong to these skulls (using Grant 1975) indicated mature individuals (all the numerical values were over 44). The skull thought to be female had indentations on the horn core which may suggest a period of malnutrition in this individual. he absence of butchery on these skulls contrasts with three others, one of which had the horn cores removed, and one naturally polled skull was chopped axially through the frontals, horn cores that had been removed from skulls were also present.

Ox skulls were also found, one in 135 had the horn cores chopped off as did two in 136, removing the parietals and occipitals in the process, in 162 two right frontals with the horncores attached were found.

Some sheep limb bones showed evidence of butchery, in 157 a split humerus shaft, two metacarpals had the edges of the distal condyles chopped off, and an ox os coxae was chopped across the acetabulum. Some metapodials were broken across the shaft, and vertebrae were split axially in 135 & 157.

Regarding the size of the sheep, only two shoulder heights could be calculated, 59 and 61 cms (Teichart 1975), comparison with measurements on the fragmented bone suggested that all the sheep were of a similar size. There were no very large individuals measuring 71-81 cms at the shoulder as were found at Aldgate (Armitage in press) and West Ham, Rainham (Armitage and Locker in prep). These are thought by Armitage to be of the Lincoln and Leicester long wool variety.

Little butchery was observed on ox metapodials, but chopmarks were present on some of the major meat bearing limb bones and vertebrae were all chopped axially. The estimated shoulder height of ox was 102-114 cms (n = 10) using Fock 1966.

With regard to the pig, four articulating cervical vertebrae were obliquely axially chopped, in 136 chopmarks were observed on a number of limb bones, no pig skull remains were found in this feature.

Ageing; both ox and sheep were nearly all fully mature in both tooth eruption and epiphyseal fusion, except for a fragment of calf skull with a horn bud from 157, a sheep distally unfused metacarpal and metatarsal, a maxilla and mandible where the third molars are just erupting from 161, these latter two bones could belong to the same sheep and based on estimates from Getty (1975) would be around two years old.

Pig showed a higher precentage of immature bone than ox and sheep as is usual, although there were no very young piglets present.

Other species identified included two horse bones from 136 & 157 (not butchered). The humerus gave an estimated withers height of 141 cms (Kieswalter 19) a pony of 13.8 hands high. A rabbit humerus from 135 and a dog phalanx and a red deer antler tine from 160. Birds were restricted to the upper level 135, domestic fowl and jackdaw were identified. Shell fish were only found in the lower levels 157, 160, 161 and 169 these were all edible.

This feature seems to represent a variety of debris, non food waste in the form of horse, dog, red deer and jackdaw. Primary butchery waste from skull fragments and lower limb extremities and secondary butchery waste from ox, sheep and pig as remains from joints.

In conclusion the animal bone from this site is a mixture of industrial debris in the form of cattle horns (see Armitage this volume) and household food refuse which in the post medieval phase come from features which although unrelated to each seem to typify the industrial activity taking place on the edge of the City of London at this period and compare well with material found nearby at Cutler Street (unpublished) excavated by the Department of Urban Archaeology.

TABLE 3

OX	SHEEP	PIG	RABBIT	HORSE	R.DEER	DOG	BIRD	UNIDENT	SHELLFISH
106	92	76	1	2	1	1	23	25	40 snail 11 mussel 22 oyster 2 cockle

TOTAL = 402

Alison Locker 25/11/83

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TABLE 3

OX	SHEEP	PIG	RABBIT	HORSE	R.DEER	DOG	UNIDENT	BIRD	SHELLFISH
Context 135									
38	37	18	1	-	-	-	20	1 JACKDAW 5 DOM FOWL 3 BIRD	-
Context 136									
7	21	53	-	1	-	-	-	-	-
CONTEXT 157									
31	14	2	-	1	-	-	-	-	35 SNAIL 2 MUSSEL 1 COCKLE 14 OYSTER
Context 160									
14	11	1	-	-	1	1	5	-	8 MUSSEL 4 SNAIL 6 OYSTER 1 COCKLE
Context 161									
9	8	2	-	-	-	-	-	12	1 MUSSEL 1 OYSTER
Context 169									
7	1	-	-	-	-	-	-	2	1 SNAIL 1 OYSTER
TOTAL									
106	92	76	1	2	1	1	25	23	40 SNAIL 11 MUSSEL 22 OYSTER 2 COCKLE

TOTAL = 402

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PLATE A

PLATE B

PLATE C

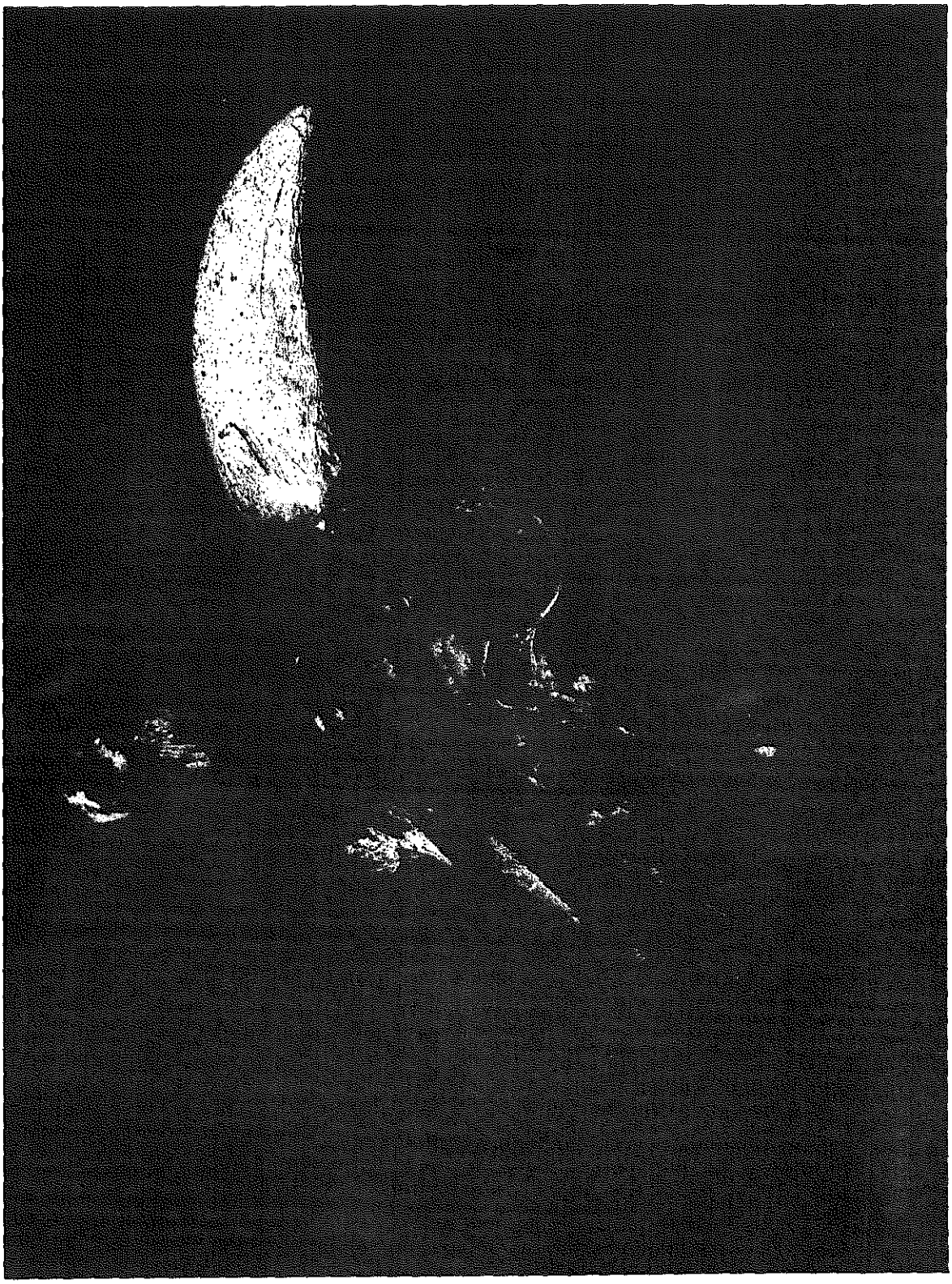

PLATE D

PLATE E