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ANIMAL BONES FROM READING LIBRARY EXCAVATIONS 1983
TRENCHES A, B AND C (W60)

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MATERIAL AND METHODS

The material came from excavations by the Trust for Wessex Archaeology on the Reading Library Site in 1983. Material from Reading is important as, until very recently, there has been little investigation of the medieval town although much of it has been destroyed by development.

The excavations were near the medieval Abbey, with some structures in Trench A contemporary with Abbey use. Later structures in A were possible stables of 16th Century date. B and C were small trenches on the edge of Holy Brook.

About 1,600 animal bones were examined from normal excavation. In addition, residues from the sieving of bulk samples in Trench A were scanned - as a check on the efficiency of normal excavation and for additional evidence of fish and microfauna. Standard Faunal Remains Unit methods were used, making results comparable with those from other Wessex sites. Ancient Monuments Laboratory software was used for the preparation of tables and catalogues. The bone analysis was funded by the Historic Buildings and Monuments Commission.

The bones which could be phased are summarised in Table 1, which demonstrates their stratigraphic origin and possible date. All the material is phased as medieval or 16th Century A.D., some securely by pottery and coins, some with more difficulty as shown in Table 1. In the case of the supposed 16th Century material from what are thought to be stables the nature of the bone evidence provides some possible dating suggestions although the use of animal bones for periodisation in this way is still something that is being developed.

RESULTS

Table 1 shows that a reasonable sample of material was only obtained from the supposed stables although another deposit of the same estimated date occurred in revetment 4 of Trench C. Otherwise samples were very small collections most of which started off as food remains from the common domestic ungulates, although in each case their taphonomic history may differ. As any evidence of this history may be of archaeological significance, brief notes on each deposit are given below. The notes are in order of the phasing given in Table 1.

The notes below comparing butchery and measurements with results from Southampton and Winchester refer to the work of Bourdillon (personal communication) and Coy (n.d.), respectively.

TABLE 1

	TRENCH A			TRENCH B		TRENCH C				TOTAL
	pre-building	building 1	building 2	revetment 2	revetment 3	revetment 2	revetment 3	revetment 3	revetment 4	
horse	1	-	-	-	-	-	1	-	-	2
cattle	10	7	225	-	6	4	13	2	52	319
sheep*	6	1	99	1	3	1	3	4	41	159
pig	10	15	57	-	3	3	3	2	20	113
cattle-size	13	14	441	-	11	1	8	-	85	573
sheep-size	21	8	302	-	1	-	2	-	32	366
domestic dog	-	-	2	-	-	-	-	-	-	2
domestic cat	-	-	-	-	-	-	-	-	1	1
domestic fowl	-	-	9	-	1	-	1	-	1	12
domestic goose	-	-	4	1	-	-	-	-	-	5
fallow deer, Dama dama	-	-	2	-	-	-	-	-	4	6
rabbit, Oryctolagus cuniculus	-	-	13	-	-	-	-	-	1	14
brown hare, Lepus capensis	-	-	-	-	-	-	1	-	-	1
black rat, Rattus rattus	-	-	1	-	-	-	-	-	-	1
cormorant, Phalacrocorax carbo	-	-	-	-	-	-	-	-	1	1
snipe, Gallinago gallinago	-	-	1	-	-	-	-	-	-	1
hedge sparrow, Prunella modularis	-	-	-	-	1	-	-	-	-	1
common eel, Anguilla anguilla	1	-	-	-	-	-	-	-	-	1
cod, Gadhus morhua	-	-	-	-	1	-	-	-	-	1
cod family, Gadidae	-	-	-	-	1	-	-	-	-	1
herring, Clupea harengus	1	-	1	-	-	-	-	-	-	2
frog, cf Rana temporaria	-	-	1	-	-	-	-	-	-	1
small mammal	1	-	-	-	-	-	-	-	-	1
unidentified mammal	-	-	1	-	-	-	-	-	-	1
unidentified bird	-	-	2	-	-	-	-	-	1	3
unidentified fish	-	-	1	-	-	-	-	-	-	1
TOTAL	64	45	1162	2	28	9	32	8	239	1589
Date (century A.D.)	10-12	?12-13	??16	late 12	?13-14	late 12	?13-14	?13-14	??16	
layer numbers	37,51	30,33,34,41	10,12,17	509	504,507	811	801,805,806	824	802-4,807,810	

Trench A 10th-12th Century A.D.

As can be seen from Table 1 this collection, from Layers 37 and 51, contained bones of cattle, sheep and pig and the only evidence of horse in Trench A - an upper molar. In addition the sieved samples produced evidence of herring, eel and a small rodent. There is one heavily eroded bone and one gnawed by a dog. A pig femur bears knife marks.

The handful of measurable bones of the common domesticates all fitted within the ranges for Late Saxon Winchester and Southampton although they were high in the range. A distal tibia of an immature pig which was not measurable was large enough to be from a wild boar, Sus scrofa.

Trench B Late 12th Century

There were only two bones identified from Layer 509 - a sheep or goat mandible with heavily worn teeth, and a numerical value for tooth wear in excess of 45 (Grant 1982) and a humerus of domestic goose.

Trench C Late 12th Century

Only 9 bones were identified - all from Layer 811. Of the cattle bones, a metapodial produced the only available withers height from the site - 1.22m. This equals the maximum from Late Saxon Western Suburbs, Winchester but that is a small sample and such a withers height is, like the few other measurements in these 12th Century layers, only in the middle of the ranges for Saxon Southampton (Bourdillon personal communication).

There was also a sheep metatarsal fragment, and a pig unfused ulna and metacarpal, and fused metatarsal. No butchery was noted on any of these bones but it is notable that 6 of them are distal limb bones which might be discarded early on in carcase preparation. They and the pig ulna are all bones which survive well.

Trench A ?12th-13th Century

This collection from the bedding of the floor of Building 1 is, unlike most of the other bone from the site, white and chalky with spots of 'cess'. Adding to the 'miscellaneous' appearance of the material are two cattle bones which have been gnawed by dogs, an eroded fragment and some calcined fragments of pig metapodials.
Fragments were identified from Layers 30,33,34, and 41. There is rather careful and neat, but not especially period-specific, butchery cutting through the midline of a cattle sternum and a proximal tibia.

Trench B ?13th-14th Century

Bones from Layers 504 and 507 demonstrate the presence of cattle, sheep or goat, pig and a half-grown domestic fowl. Sieving produced two gadoid vertebrae - one from a cod of several kilos weight - and a bone of hedge sparrow.

Butchery was noted on 5 of the cattle bones and one of the pig bones. There is evidence for midline splitting in cattle as detailed below for the later contexts. There is other butchery on some cattle bones, none of which showed blademarks. A sheep humerus is dog-gnawed.

This is rather a bizarre collection of bones and they may have originated in a variety of ways and not necessarily all be of the same period.

Trench C ?13th-14th Century

The bones from the Revetment 3 reclamation (Layers 801, 805 and 806) consisted of a toe bone of horse and evidence of the usual common ungulates, domestic fowl and a brown hare humerus.

There was one heavily eroded bone and the butchery was varied, including evidence from seventh thoracic vertebra of pig of paramedian splitting of the pig carcase, slightly off-centre midline splitting of cattle from a lumbar vertebra, and knife and chopper marks on other cattle bones. This is the only evidence for splitting of the pig carcase from this site, unless the split atlas in Layer 12 below is included, but the paramedian method, where the cut goes along at the base of the transverse processes (that is at the side of the vertebral body and not through its centre) has been recorded in Late Saxon and early medieval layers for pig at Winchester Western Suburbs. This mixture of evidence is inconclusive - it could mean the material is of mixed date but it might just mean that all these methods of butchery were in existence at the same time at Reading.

The bones from the Revetment 3 channel (Layer 824) consist of the bones of a sheep elbow and also demonstrate the presence of cattle and pig.

Trench A Possible Stables ??16th Century

Species Present

The assemblage in Layer 12 was the only one in this collection of any size and a detailed breakdown of the parts found for the domestic ungulates is given in Table 2. If only the bones identified to species or ovicaprid are included this gives a species ratio of 58% cattle, 27% sheep or goat and 15% pig. The bones under 'sheep' in Table 2 include also all sheep/goat identifications.

This species ratio for a food deposit would represent a good diet with its overriding concentration on beef but things are not necessarily what they seem as some of the cattle remains as discussed below may have another origin. The material was well-preserved and had all taken on a similar dark-brown coloration.

In addition to the above there are also in Layer 12 a dozen bones of rabbit, 8 of domestic fowl (two from hens) and 4 of domestic goose. A rat tibia is probably from the black rat and there is a common snipe humerus.

Layer 10 only contained a longbone fragment of a cattle-sized animal and evidence of frog from sieving. Layer 17, which may be contaminated, contained 92 bones, mostly of the common ungulates, the only evidence in this phase of Trench A for fallow deer, and the only evidence for the site of domestic dog and duck - in this case a medium-sized wild duck smaller than the mallard or the domestic duck.

TABLE 2 COMMON UNGULATES FROM SUPPOSED STABLE BUILDING

	cattle	sheep	goat	pig	c-size	s-size	TOTAL
horn core	4	-	1	-	-	-	5
cranium	20	8	-	9	16	1	54
maxilla	-	-	-	1	-	-	1
mandible	-	4	-	4	-	-	8
vertebra	41	7	-	3	48	22	121
rib	11	-	-	-	43	52	106
sternum	1	1	-	-	-	-	2
scapula	13	7	-	3	2	1	26
humerus	10	11	-	4	1	2	28
radius	18	3	-	2	1	-	24
ulna	8	3	-	3	-	-	14
pelvis	5	15	-	1	5	1	27
femur	21	6	-	6	6	-	39
tibia	8	12	-	2	5	-	27
fibula	-	-	-	1	-	-	1
carpal/tarsal	14	5	-	-	1	-	20
metapodial	8	6	-	6	-	-	20
phalanx	15	1	-	1	-	-	17
loose teeth	8	4	-	6	-	-	18
l.b.fragments	-	-	-	-	43	35	78
fragments	-	-	-	-	243	161	404
TOTAL	205	93	1	52	414	275	1040

The comments below mostly apply to results for Layer 12, although the butchery and ageing results from Layer 17 are in agreement. There is no particular bone evidence from Layer 17 which can be used to prove contamination.

Animal Size

Most of the measurements taken for the library site were on bones from Layer 12 or from the possible 16th Century layers in Site C discussed below. These were too few to be worth much discussion here but were compared with contemporary measurements from Southampton and from earlier medieval samples from Southampton and from Western Suburbs, Winchester. The cattle measurements were sometimes quite large and in a few cases exceeded those for the Southampton and Winchester samples available but this is not surprising as 16th Century measurements from the Medieval Period are normally somewhat smaller (Bourdillon 1980) so providing some evidence in support of the 16th Century dating. The samples we have for the 16th Century from Wessex are also so far very limited.

In the same way there were one or two of the very few measurements of sheep which were larger than comparable material from 16th Century Southampton and from medieval Winchester. However, sheep from the medieval period in Wessex tend to be of a wide size range and the way in which Reading fits into this pattern will only be possible to see when a wider sample has been studied.

Some of the very few fowl measurements were of a good size but again comparisons were limited. The fallow deer in Layer 17 was by contrast very small indeed and the handful of measurement obtained were almost all the smallest yet obtained for Wessex even though a large range of measurements from archaeological sites of all periods have been accumulated. Anatomically these were all an excellent match for this species.

There are no remains at all of horse.

Butchery Evidence

This was very interesting. Midline axial division of the cattle carcase had been carried out on 24 (59%) of the 41 vertebral fragments identified to cattle and on another 5 of the 48 cattle-sized vertebral fragments. This practice is already common in 12-13th Century Winchester . Here it seems to be the normal practice. The splitting is not, however, as efficient as that seen in the later post-medieval periods and modern material. It is off-centre and very similar to that seen on the Mary Rose material except that the latter tends to be central on the earlier vertebrae (cervicals and thoracics) and to go off-centre in the lumbar and sacral regions, possibly because the carcase was hung from a single hook. The Reading butchery is likely to be central or off-centre in any region of the vertebral column and this inconsistency would be understandable in small-scale butchery concerns.

In addition at least 70 (34%) of the cattle bones were extensively butchered with a sharp and heavy implement and in a few cases possibly a saw. Blade marks were visible along the whole cut surface in 41 of these fragments (59% of the extensively butchered and 20% of all cattle bones).

About 8% of all cattle bones (and another 7 fragments classified as 'cattle-sized') were from young calf, one metapodial with the two sides not fused together could be from a foetus or neonate. But this may be from nearby cattle breeding

rather than high living as there are no signs of butchery on any of the calf bones. With such a small sample it is likely that as few as two calves are represented.

The sheep butchery evidence is somewhat similar as midline splitting of the carcase is going on as well as extensive use of sharp blades on the rest of the skeleton. The pig bones were not obviously butchered apart from an atlas vertebra with a midline splitting mark. This lack of butchery and the remains of a foetus or neonate again suggests breeding.

Both the size evidence from the cattle bones and the butchery of cattle and sheep is consistent with a 16th century date although further work on Wessex butchery may turn up new evidence.

Other Ageing Evidence

With so little material there is no tooth wear evidence. The fusion evidence for cattle shows that as well as the high representation of calf already mentioned above there are also some older animals, including those with proximal tibia or distal radius fused. This compares with a modern age of at least 4 years. The only unfused bone of sheep is an unfused phalanx (representing an animal of a year or less by modern standards). Otherwise all sheep and goat bones are fused, including one or two examples of late-fusing bones where epiphyses join at 3-4 years. There is no evidence of young sheep. The very small amount of pig bone shows pig of a variety of ages including the foetal or neonatal evidence already mentioned.

The cattle evidence therefore shows both evidence of cattle breeding and of butchered meat, pig shows some evidence of breeding but there is no evidence from the bones that food remains are represented. Sheep shows butchery similar to that found for the cattle but there is no parallel evidence of breeding. What all this means is difficult to interpret but it might suggest that the cattle bones at least are of dual origin.

Pathology

An arthritic sacro-lumbar joint (butchered) and 3 phalanges with somewhat extended articular facets (probably from the same animal) suggest that some of the cattle may have been used for traction but still eventually eaten.

Trench C ??16th Century

Bones were identified from Layers 802-4, 807 and 810. Like the collection described in some detail above they are from all parts of the body of the common ungulates. They form the only other collection of more than 100 bones from the site.

Domestic cat and fowl are also represented and there is one bone of rabbit and 4 of fallow deer - again the measurements obtained (from a tibia and radius) smaller than anything else obtained to date from archaeological sites in Wessex. An unidentifiable bird radius has been kept for specialist identification.

Blademark butchery and again an off-centre midline splitting of cattle vertebrae was noted but percentages were not calculated for such a small sample. There was one accurrence of midline splitting on a sheep atlas and butchery on a pig radius. Several sheep bones in Layer 804 came from joints. There was some calf.

An unfused distal pig femur was large enough to be from wild boar, Sus scrofa.

CONCLUSIONS

The bones from the possible stables do not bear out this useage but this may merely mean that they represent another period of use. The evidence is of common domestic species - cattle, sheep, goat, pig, dog, goose and fowl - and popular food items introduced in Norman times (fallow deer and rabbit). It is possible that at least cattle and pigs may have been bred in the vicinity. The butchery and size evidence is not in disagreement with a 16th Century date. The slightly goatlike appearance of some of the sheep bones may also be a 16th century characteristic and has been noticed on other Wessex sites.

The very small size of the fallow deer in the supposed 16th Century layers is very interesting. It is conceivable that these bones might all come from the same individual. Presumably fallow at this period would have come from a nearby emparkment.

The possible wild boar must be treated as speculative unless there can be more security in the dating as later post-medieval contamination by larger domestic examples cannot be ruled out.

Apart from the large sample in Layer 12, Trench A, these bones can do little more than wet the appetite for a larger sample from Reading, especially in the light of the detailed comparisons of size and of butchery methods which should now be possible and enable contrasts to be made between developments in Reading and those elsewhere in Wessex.

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