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Ancient Monuments Laboratory
Report 20/87

ANIMAL BONES FROM WRAYSBURY, BERKS.

Jennie P Coy BSc FLS FSA MIFA

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Summary

Excavations at this saxon settlement site 2km across the River Thames from Old Windsor produced both bones from conventional retrieval and an enormous sample of tiny fragments from the intensive sieving programme. There were also a number of whole animal burials probably not contemporary with the settlement.

In addition to the description of the Saxon bones found this report attempts to analyse the usefulness and efficiency of the sieving programme and includes a detailed report on the microfauna retrieved, especially the remains of small fish.

Throughout the account detailed comparisons are made with the mid-Saxon settlement at Southampton. (Hamwic).

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LIST OF CONTENTS

NOTE The supporting Archive Tables are listed on the next page

SUPPORTING ARCHIVE TABLES

ANIMAL BONES FROM WRAYSBURY

INTRODUCTION

Material and Method

The bones were studied using the normal methods of the Faunal Remains Unit (FRU), University of Southampton. Identifications were made as accurately as possible using the extensive modern collections and supporting literature. These results are therefore comparable with those from other sites studied at FRU. Before the Wraysbury excavations began discussions included the possibility of comparing results with those from Saxon Southampton and this was one of the reasons for initiating the intensive sieving programme. Since that time FRU has become more closely involved with the work at Saxon Southampton and close comparisons with recent work there are possible for the future as the methodology of analysis is now broadly the same (Bourdillon in preparation). Since the Wraysbury excavations a Late Saxon collection from Winchester Western Suburbs has also been studied using the same techniques of faunal analysis (Coy n.d.1) and some work has taken place on rural Saxon material (Bourdillon 1983).

The layers from which bones were studied are listed by trench or trench complex in Archive Table A1. Because of the difficulty of dating the material all bone was studied and all except overtly modern contexts are therefore included in the table. But a list of contexts with suspected early medieval or modern contamination, and a list of overburden layers, is also given in Table A1 as the bones were also examined in these associations for some criteria. Bones extracted from their context for specialist study are listed in Table A2.

Table 1 merely shows the contextual derivation and animal groups to which the 43,000 odd computer-coded fragments belong. These figures should not be used to derive percentage representation for the different animal groups or be compared with any site where sieving did not take place. Anyone who wishes to make such comparisons is directed to the detailed species and anatomy tables in the archive and to the computer-based archive where the use of flagged context numbers will allow the separation of sieved and hand-picked material if this is required. Comparisons between the different trench complexes should also not be undertaken in detail using these figures as the trenches were not necessarily treated the same, either in excavation or in the analysis of the sieved material, the latter because of the enormous quantity of sieved material. The sieved material was sub-sampled for computer-coding as described in the

TABLE 1 ANIMAL REMAINS FROM WRAYSBURY CONTEXTS

context	mammal	bird	fish	herp	shell	TOTALS
Trial Trench A	79			1		80
Trial Trench B	7500	832	249	27	8	8616
Trial Trench C	112	2				114
Trench 1*+2+7*+14	7327	303	1021	173	39	8863
Trench 9*+13	2808	86	435	242	22	3593
Trench 3+8*+12*	10546	266	2054	122	75	13063
Trench 6*	3783	74	794	96	15	4762
Trench 4	1899	8	81	16	5	2009
Trench 11	2176	9	88	32	15	2320

* The samples from 1mm sieving in these trenches were not all completely recorded: see text

following section and the remainder, which may have represented as many as another 60,000 bones, was only scanned and weighed.

As the individual quadrats had no individual archaeological significance the animal bone results are mainly discussed in terms of quadrat groups (this also provides larger samples). The order of these goes from South to North.

Sampling and Sieving

The excavation at Wraysbury was an archaeological sampling exercise in its own right to excavate 10 x 8m quadrats representing 20% of the available area. Imposed on this was a strategy devised during the initial trial excavations to dry sieve a 2% sample of the soil in each context through a 4mm sieve and a proportion (25% or 12.5%) of the fill of each negative feature through a 1mm sieve. In practice most of this was wet-sieving. In the extension areas (Trenches 13 and 14) there was no sieving. The complexities of coping with such an extensive sieving programme on a rescue excavation have been discussed by the excavators (Astill & Lobb 1982). The lack of experienced sorters caused delays to the archaeological work as there was a backlog of first sieving and then sorting.

With hindsight it is possible to see that much of this would have been solved by an on-site environmental specialist working with a microscope who could have monitored the type of environmental material coming out of the processing immediately and fed back information promptly so that processing of samples could have been limited in a rational way. In fact FRU staff were only able to make a few brief visits to advise during the excavation and sorting marathon.

An additional handicap was that at this time our skill with freshwater fish bones was not very great and we did not understand the significance of some of the bones that were being picked out nor were able to leave the sorters with a really relevant collection of modern skeletons or visual aids. The sorters are to be congratulated that they did pick out the significant material, including an adequate breadth of freshwater fish pharyngeal bones, in what was for Wessex a pioneering exercise.

At the time the way things were done was the only way available to fulfil the environmental strategy that had been mapped out and it is fortunate that the excavators persisted with their strategy despite the obstacles. A wealth of material became available from which we were then able to sub-sample at the analysis stage and this represented samples from all over the excavated area.

During the faunal analysis it soon became obvious that although it was necessary to be able to compare the results from different areas of the site there was a need to sub-sample because of the enormous quantities of fine material. For this preliminary analysis only material from Trenches 1, 2, 3, 4, and 11 has been totally recorded. It was felt that this provided a spread across the site which would show up differences in the microfauna. Trench 6 was treated half by total recording and half by weighing each sample and pulling out bones identifiable to species. All the studied samples in Trench 11 were also weighed. On the basis of the Trench 6 and 11 results the sieved material from the remaining sieved trenches - part of 6, 7, 8, 9 and 12 - was weighed by context and scanned for fragments identifiable to species. The last were computer-coded but are separable from the rest of the archive.

On the basis of comparison with the Trench 6 and 11 material which was both weighed and fully recorded it is estimated that 55-95% of the fragments from the sieving are likely to have been very small fragments of large ungulates, coded as 'unidentified mammal fragments,' that the mean weight of the individual fragments involved ranged from 0.1 to 1.6g, and that the 5.6 kg of scanned material from Trenches 6,7,8,9 and 12 might represent as much as another 67,680 bones.

The balance between three of the categories mostly retrieved by sieving - 'unidentified mammal', 'unidentified bird,' and the fish bones is a crucial one if we are to understand the relative part the three groups played in the diet (Coy 1982). The sieved material provides a quantification for all the small species, including the edible fraction like fish, and this will be discussed in the later sections. The quantification of the small mammals, amphibians, and reptiles does not have dietary but may have ecological significance and to that extent for every exercise of this kind we should know whether all these bones were picked out too. At Wraysbury they were.

It is as a check on the process of conventional retrieval that the bulk sampling and sieving strategy at Hamwic continues and the sieved results at Wraysbury can be used for such a check.

All these figures are obviously enormously influenced both by the extent to which excavation assistants recovered artifacts conventionally once they knew material was being sieved (Astill and Lobb 1982) and by the tenacity and boredom levels of the sorter. With respect to the first, the bone results suggest that hand-picked recovery did not differ as much from normal as the excavators had feared. With respect to the second it is most important that sorters know whether they are to pick out all bones they can see (even this would vary according to the visual acuity of operatives), only those up to a certain size, or only a representative sample of everything. That everything was picked out in this instance was important as often small elements which looked the same were not always so uniform on closer inspection (inferior pharyngeal bones of freshwater fish is one example). But in the future it would be preferable to make preliminary identifications on site and structure sub-sampling of the sieving residues according to needs of the specialist.

Even the material as yet only scanned may be needed at a later date to answer some environmental questions raised by these preliminary results and all the bone has been retained.

The importance of the sieving programme is reviewed in the conclusion in its Wessex context. There are two main gains - a methodological one in that Wraysbury results can now be compared not only with Hamwic but set a baseline for retrieval for any Saxon settlement analysis, and a zoological one giving us insight into the earliest medieval picture of fish in the river Thames and the small animals living nearby.

Arrangement of Report and Archive

The minimum of data is included with this text. All supporting data in the archive that has been sent to the excavator should however be regarded as part of the report and a list of it is therefore included in the list of contents above. These archival tables plus all primary records and processed records are available at F.R.U. - both in computer-readable and printout form. A list of what these records comprise and some explanatory notes are included in Table A50.

In this particular case where dating is a problem it is much more likely that the information in archive may be needed at a future date and this archive has been assembled with much more attention than usual to retaining information and possible long-term use than immediate results. Some of the possible future significance of these data is discussed in the conclusions.

THE DOMESTIC UNGULATES

Retrieval and Specific Ratios

The common domestic ungulates horse, cattle, sheep, and pig (only one goat bone was found) form the majority of the large bones retrieved. They also form the greatest bulk of the material by weight: it is estimated that from 55% to 95% of the fragmentary material obtained from 1mm sieving is also from the domestic ungulates. They do not, however, form the greatest number of specifically identified bones from any context being in this criterion swamped by microfauna from sieving.

It is therefore difficult initially to know how to attempt a comparison of these results with those from sites that have not been sieved. The only way out of this is to look at the results from Wraysbury in more detail and to use them to work out such a comparative method. This has been begun in this report but further analysis is needed and the Wraysbury results provide an important archive for future work. Generally the results at Wraysbury for bones picked out before the sieving process should be comparable with conventionally retrieved material from other sites, Hamwic for example. As already suggested this seems to be true despite the reservations of Astill and Lobb (1982). Most of the specifically identified ungulate bones come from non-sieved samples but there are just over 4,000 ungulate bones which do come from sieving and these are discussed in more detail below.

But first to discuss the results as tabled. The archive tables which give detailed ungulate results are those for 'Domestic and Larger Wild Mammals' (Tables A4 - A10). These contain all the remains of species likely to have been eaten or otherwise exploited and include a column for very small fragments of mammalian bone retrieved from sieving that are classified as 'unidentified mammal' and are usually regarded as most likely to have come from the common domestic ungulates.

In practice the 'unidentified mammal' fragments were extremely small indeed. Their average weight has been discussed above in the sieving section and they are left out of the further analysis of the domestic ungulates discussed here.

The enormous variations in the specific figures which can be expected using different retrieval methods and techniques of interpretation are summarised for Hamwic, using the proportion of pigs as a baseline, in Coy 1985 (although anyone interested in

Table 2 in that paper should apply to the writer for a copy in which the brackets have been inserted !). For Wraysbury I have used the more conventional, and therefore more comparable, figures for the bones only identifiable to species or to sheep/goat to give specific percentages for the different trench groupings (Table 2). This is equivalent to the 'Pig B' results in Coy (1985).

What Table 2 shows is that the values for pig are high compared with the overall Pig B value for Melbourne Street, Hamwic, of 15% (n=45,455) and for the Hamwic Pit (which was totally sieved) of 13.4%. The results for the three main species are very variable and there are major shifts between the different trench areas. The samples for the common ungulates in some of these are too small to make further analysis worthwhile and the great variability suggests that there may be overriding taphonomic effects connected with bias in deposition and the types of features represented in the different trenches. This is discussed in more detail in the taphonomic section.

Table 3 gives the ratios of large ungulate:small ungulate fragments for the same contextual divisions and the percentage of the ungulate bones that are identifiable to species. Once again there are very large differences between the different trench complexes. The contents of some, on this basis, can be assessed as more residual. Again this is discussed in more detail in the contextual sections.

The material of the common ungulates retrieved from sieving was compared with the overall figures for the site and with that not put through the sieving process. An analysis of the anatomical elements produced by the different retrieval methods was carried out for the common ungulates and the results given in Tables A38 - A42 for overall, hand-picked, 5mm, 1mm, and overburden retrieval. The only really consistent and noticeable change is that 5mm, and even more so 1mm, sieving shows up more loose teeth, especially as tooth fragments. The numbers involved are so small that they do not alter the overall picture. The only horse remains found on the sieves were tooth fragments.

Pig phalanges similarly show some augmentation, mostly because lateral phalanges are the smallest ungulate phalanges likely to occur. For cattle the relative number of 'fragments' compared with 'long bone fragments' was higher in both the 5mm and 1mm sievings. The value for sheep epiphyses generally was slightly higher in the 5mm sieving than for hand-picked bone and the 1mm sieving showed an improvement on all epiphyses but numbers of bones involved are very low.

The most extensive change caused by sieving is on the specific ratio for the common ungulates and for the large ungulate: small ungulate ratio, which is the main reason for discussing it in this section. Sieving produces lower values for cattle and higher values for pig compared with the overall values (totals in Table 2) and lower values of large ungulate compared with the overall values (totals in Table 3).

If the results in Table 2 are ranked in order of increasing percentage of cattle and the sieving results inserted, the results for 1mm sieving are the next most extreme for low cattle after those for Trial Trench B at 18% cattle, 33% sheep and49% pig. The results for 5mm sieving are after those for Trench 4 at 34% cattle, 28% sheep, and 45% pig. Trench 4 does have a large amount of its material from sieves and for this particular trench the proportion of sieved material might be a factor (for the

TABLE 2 SPECIFIC RATIOS FOR THE COMMON UNGULATES

context	cattle no.	cattle %	sheep no.	sheep %	pig no	pig %	total
Trial B	122	12	562	54	351	34	1035
Tr1+2+7+14	130	37	122	34	103	29	355
Tr 9+13	387	51	179	23	196	26	762
Tr 3+8+12	1008	50	373	19	621	31	2002
Tr 6	236	55	59	14	130	31	425
Tr 4	18	32	15	26	24	42	57
Tr 11	36	43	20	24	28	33	84
Totals (recalculated)	1937	41	1330	28	1453	31	4720

TABLE 3 COMMON UNGULATE BONES NOT IDENTIFIABLE TO SPECIES

LAR - large ungulate bones, most probably cattle
SAR - small ungulate bones, most probably sheep and pig

Context	LAR no.	LAR %	SAR no.	SAR %	total ungulate	% unident
Trial B	140	15	798	85	1973	48
Tr 1+2+7+14	255	19	1114	81	1724	79
Tr 9+13	532	36	940	64	2234	66
Tr 3+8+12	1417	33	2882	67	6301	68
Tr 6	236	37	393	63	1054	60
Tr 4	80	23	267	77	404	88
Tr 11	100	25	306	75	490	83
Totals (recalculated)	2760	29	6700	71	14180	67

others it seems unlikely to be very significant). The fact that Trial Trench B is even lower than the 1mm results themselves suggests that the Trial B results really are genuinely low for cattle and large ungulate and that this is not just the result of the extensive sieving in these features.

Both the 1mm and 5mm results for unidentifiable ungulate fragments come after the results for Trial Trench B and are exactly the same. This suggests that for the retrieval of ungulate material 5mm sieving is sufficient and no further information gained by 1mm sieving. This is what we would expect as fragments of ungulate small enough to go through a 5mm sieve would be most likely to be recorded as 'unidentified mammal'. The details of this specific ratio ranking is in Table A43 and of large/small ungulate ratios in Table A44.

To come to grips with these effects of sieving in more detail it would be necessary to analyse the Wraysbury data in more depth and to work out a numerical effect of sieving. On the whole the size of fragment is the cut off which determines whether or not a fragment is picked out although some distinctive fragments such as tooth fragments may be picked out even though they are very small indeed. This is a subjective area and is only therefore susceptible to a limited scientific treatment.

But the overall results for the trench complexes which have been used to produce the figures in Tables 2 and 3 should be regarded as more reliable indicators of the specific ratios than results from hand-picked bones only. The sieving work itself will make comparisons with 'normally' retrieved sites like Old Windsor more productive as it should be possible by what is missing to suggest the level at which specific ratios can be compared. One problem lies in the extent to which sieving influences the results for the three main species equally and quite obviously from the above results it may favour pig with its larger number of teeth and toes.

The high values for pig in some trenches must therefore be treated with caution in comparisons, especially with those from non-sieved sites. The contrast with the totally sieved Hamwic pit though with its 13.4% pig can be regarded as a reliable and highly significant difference.

More detailed intrasite comparisons and comparisons with results from other Saxon settlements would need to take into account the relative results from non-sieved and sieved samples which could be calculated from the archive. This has not been done here because it was considered that the extra information gained would not be worth the time spent as the sample sizes would be reduced too much. The trench complexes show differences which are an amalgam of the extent of sieving and much more important biassing taphonomic factors and it is the latter which will be discussed in the contextual section.

Horse

The remains of horse are few and only a handful of useful measurements were obtained. These are in Table A45. The only withers heights produced by the measurements are in the region of 1.29 - 1.35m (around 13 hands) representing animals of medium pony size. The other bones fit this picture. There is no evidence that the horses were butchered for eating.

The metatarsal of a 1.31m animal from Trial B, Layer 3, has a slightly arthritic joint surface. The Trench 1,2,7,14 Complex also produced only remains of horse extremities, in this case metapodial and loose teeth. All come from mature animals but no stature or accurate ageing data is possible except to say that one molar is heavily worn.

Trench Complex 9+13 produced 14 horse bones, some of which come from the major limb bones. The majority of these have been gnawed by dogs. Ageing information includes 2 teeth in Layer 376 with ages of approximately 20 years and less than 6 years, respectively. This layer has early medieval contamination. Teeth of young horses similar to the last were also found, however, in Layers 372 and 473, and an unerupted molar, probably from a 2 year old, in Layer 84. An unfused distal epiphysis in Layer 144 must have come from an animal less than 2 years old and had a chopping mark on the distal joint surface. This, judging by its position, might have been associated with skinning but is heavier than a knife mark. Horses may have been dismembered for feeding to dogs.

Long bones from Trench Complex 3,8,12 also tended to fit a pony-size model. A metacarpus in Overburden Layer 27 gave a withers height of 1.35m. Tooth evidence in the Overburden Layer 75 suggested an animal of less than 6 years, and unfused vertebrae in Layers 234 and 256 animals of 4-5 years. The presence of fairly young horses does suggest that horse breeding may have taken place on site or nearby as these individuals would have been too young for heavy work but this would be better confirmed by some real evidence of foetal or newborn horse.

Trench 6 with 18 horse bones has the highest proportion of horse bones both if calculated by a comparison with the bones identified to cattle or as a proportion of total ungulate fragments. The latter value is 1.7% of total ungulate compared with 0.7% for the biggest sample of 45 horse bones from the largest trench sample (Trench Complex 3,8,12). These are all very low values for horse and in fact the Trench 6 one is almost entirely the result of the presence of loose teeth. These are from animals of a variety of ages, although none can be used for accurate ageing.

There are no horse bones from Trench 4.

Cattle

Cattle appear to have the edge and were undoubtedly the major meat-producer, although the actual representation in terms of number of individuals is, as explained above, difficult to clarify now that the intensive sieving has shown up how normal retrieval biases in favour of the larger species. The figures in Tables 2 and 3, which include the results from sieving, give only a rough guide to what was going on at Wraysbury.

The large numbers of bones associated with non-Saxon evidence throws doubt that we are looking at a bone assemblage that is totally Saxon. Nevertheless all cattle measurements have been included in the measurement archive (Table 46) except for material excluded for really blatant modern disturbance mentioned by the archaeologist or because the material looked obviously 'modern' (i.e., 19th or 20th Century) to the bone analyst.

The categories in the measurement catalogue, as for the other species, include an 'Early Medieval' category which the excavators have reason to suspect might be such because of contamination by early medieval pottery; a 'Modern' category, for material which comes from contexts with modern contamination but where the bone does not look particularly modern; and the rest, including the overburden, is collated in order to provide the largest 'Saxon' sample possible. The Early Medieval and 'Modern' categories are designed to exclude dubious material from the possible Saxon archive.

The measurement catalogue was examined carefully in connection with all cases of early medieval contamination and apart from the examples detailed in the contextual section there was no obvious pattern of cattle bones from those contexts not fitting the measurement ranges provided by the 'Saxon' sample. The ranges and other criteria are therefore given for what they are worth, with the proviso that it may be necessary to select at a later stage.

The material from the 'Early Medieval' category might be expected to show, if anything, smaller animals than the Saxon Period but this trend does not really show up. Either we really are dealing with Saxon material in both categories or there is no decrease in size at the end of the Saxon Period like there is at Hamwic. The EM material might be worth further investigation as it has an archaeological entity but samples are very small. The 'Modern' sample, because it has a dubious and mixed source, is probably not worth further study for cattle.

All the measurements were compared carefully with the extensive statistics given for Hamwic by Bourdillon (in preparation). Where there are only one or two measurements in the Wraysbury sample they are often very low in the Hamwic main period (Middle Saxon) distribution. Where reasonable samples exist they sometimes give a range almost exactly that of the much larger Hamwic sample, as for distal width tibia:

Wraysbury	48.3 - 67.1	mean 58.0	n=11
Hamwic	48.3 - 68.4	mean 57.0	n=226

Withers heights calculated from metapodia ranged from 0.99m to 1.13m and a tibia gave a withers height of 1.13m. This compares with an overall withers height range from metapodia from Hamwic of 0.99 to 1.38m, mean 1.16m, and a mean for tibia of 1.12m. The fact that these withers heights are rather low in the Hamwic distribution, while it should be noted, may have practical explanations - the survival of whole bones on this site is unusual and the sample of cattle bones is small. Butchery and other processes might have overtaken the whole bones of larger animals on the site (although there is no strong evidence of bone-working) and the distal measurements given above seem to support this.

The Grant tooth wear stage was recorded for all possible mandible fragments and molar teeth (Grant 1982). Numerical value estimates could only be made for 24 of these records and many of them were only ranges. Half were from animals with a tooth wear numerical value of less than 30 (M3 not in wear). Of the 15 ageable records from the supposed Saxon sample, 7 were below stage 30 and 8 between stages 30 and 46. The only jaws with heavier tooth wear than this were from contexts with early medieval or 'Modern' contamination.

The only tooth evidence of calf with some tooth wear was from Layer 77 in Trench 9. The other calf tooth evidence showed no noticeable tooth wear and the animals probably died at birth. There is a possibility too that they may have been associated with intrusive material as the layers from which they came - Layer 232, Trench 8, and Layer 464, Trench 6, both had some contamination. Further details on calf material are given in the section on whole skeletons.

Butchery on the cattle bones is sometimes noted in more detail in the contextual sections as it is used for dating estimates of some of the material. it is generally true, however, that much of the cattle bone is considerably fragmented, as on other Saxon settlements. Metapodials and tibia are frequently split lengthwise and often further fragmented, although no blademarks can be definitively distinguished.

Sheep

Sheep may well have taken third place in importance at Wraysbury. Almost all the ovicaprid bones which can be taken to species are sheep. For this reason the numbers attributed to 'sheep' in the tables include all bones identified to that species plus all those identified only to 'sheep or goat' and designated as such in the computer archive.

Sheep measurements are given in Table A47. When any reasonable number are present in any sample they are within the Hamwic main period ranges with no outliers. If anything the means are slightly below Hamwic. For example, distal tibia breadth:

Wraysbury	22.9 - 27.6	mean 25.5	n=20
Hamwic	21.8 - 30.0	mean 25.9	n=478

Overall means are probably pretty irrelevant but the samples are too small in the case of Wraysbury to do much with modes.

Withers heights from bones classed as Saxon ranged from 0.53 to 0.64m which fits within the much wider range for the large sample from Hamwic of 0.50 - 0.73m.

Most of the sheep jaws are broken and difficult material for the derivation of numerical values for tooth wear. Of the 43 estimates (many of them highly approximate), the majority of records (28) are for numerical values between 30 and 46.

This is generally accepted to represent a wool-biassed economy and is similar to results from other sites in Wessex (Grant 1976, Coy & Maltby n.d., and Bourdillon personal communication). Yet the mode is probably between stages 30 and 35 and this really does not represent sheep of any age. Stage 30 has the M3 only in very slight wear equivalent to an age of about 2 years today and maybe 2.5 - 3 years in rough unimproved sheep at a guess. Stage 35 has slightly more wear all over and includes wear extending to the third column of M3. Unless we are quite wrong about the age of these sheep and primitive sheep were much more tardy in their tooth wear in Saxon times, it looks more like a meat and wool economy, the meat involved being mutton and not lamb.

Only 12 examples of tooth wear recorded represent jaws with numerical values below 30. Most of this evidence, and some confirmatory lamb remains with no tooth evidence, comes from Trial Trench B, the ditch deposits Layer 3, and will be discussed in more detail in the contextual section.

When the tooth wear patterns for Wraysbury are compared with those given by Grant (1982) it is notable that a large number of them come from her less frequent variants in columns ii and v. Comparative work on the tooth wear patterns of jaws from Wessex is now taking place but it is too early to say whether this result has any significance.

Goat

Although goat bones were assiduously sought only one was noted, a metacarpus in Layer 92, Trench 9, which may be associated with early medieval material. Its measurements are included in the sheep catalogue.

Pig

From tooth measurements there seems little doubt that all the pigs represented are domestic. The importance of pig in the Wraysbury economy has been discussed in the specific ratios section above and it is possible that pig was the second most important food source after cattle. A slight overemphasis may have been caused from the sieved material because of the larger number of teeth and toes in this species. Measurements are given in Table A48.

In comparisons with Hamwic the Wraysbury ranges are often in the lower two thirds of the Hamwic range. Despite the concentration on pigs at Wraysbury the upper part of the range is just not there.

The 60 approximations for numerical value of tooth wear were spread right across the age spectrum but half of them (32) were estimates between stages 25 and 40. This is from the stage where M3 is coming into wear to the stage where the whole tooth is in wear to some extent. The mode for the whole distribution probably lies at about 25-27, thus representing animals at a far younger stage than the cattle and sheep represented. This is usual with the highly edible pig.

There are only 4 estimates older than stage 40. A stage 47 each in Layers 27, Trench 3, and Layer 255, Trench 12, and two in the early 40s in Trial Trench B.

A few tooth remains of piglets were found but those with tooth wear evidence were virtually confined to a layer with early medieval intrusions - Layer 256, Trench 12.

DOG AND CAT

Much of the dog and cat material is from partial skeletons which makes their derivation problematic. The dogs in particular, unlike the food material described for the ungulates, could sometimes be derived from post-Saxon burial of whole bodies.

Trench 2 pits contained a scattering of cat bones, probably of Saxon date by their context, and associated with cess. A pelvis from a medium sized dog came from Layer 199 which contained early medieval contamination. Only two bones from each species come from Trench Complex 9+13.

Trench Complex 3+8+12 produced the largest sample of dog bones - 97. All the individuals represented are large in stature for the Saxon Period, coming near or on the maxima recorded for Saxon dogs (Harcourt 1974). Unfortunately the larger the estimate, the less reliable the provenance. The most reliably Saxon of the contexts involved is Layer 378 in Trench 3 which is associated with hindlimb remains of a dog (Specimen 10 in archive) with an estimated shoulder height of 0.60m.

The greatest number of dog bones is from Layer 256, Trench 12, which has most of the skeleton of a dog with a shoulder height of 0.64m (Specimen 21 in archive) and an odd, even larger radius. This layer has some early medieval contamination. An even larger individual with a shoulder height of 0.68m from a tibia matches the largest Saxon specimen given by Harcourt and could be modern as it is from Layer 261 which is recorded as containing intrusive material and the presence of partial hindlimbs does suggest a burial.

The 11 cat bones in this trench complex are scattered and probably mostly of Saxon origin.

Trench 6 produced only a few dog foot bones but at least two cats are represented in Layer 311 of ditch 474. Most of these bones represent an almost complete skeleton of a cat of less than 1 year old at about the stage when the proximal femur is fusing. There are also some remains of a slightly older animal. The former suggests relatively little disturbance in Layer 311. Layer 464 within the same ditch produced another whole cat (Specimen 13 in archive) again less than a year old with unfused distal and proximal tibia. This layer has other whole burials and is discussed in greater detail in the contextual section.

Trenches 4 and 11 only produced a single dog phalanx.

SPECIES DIVERSITY

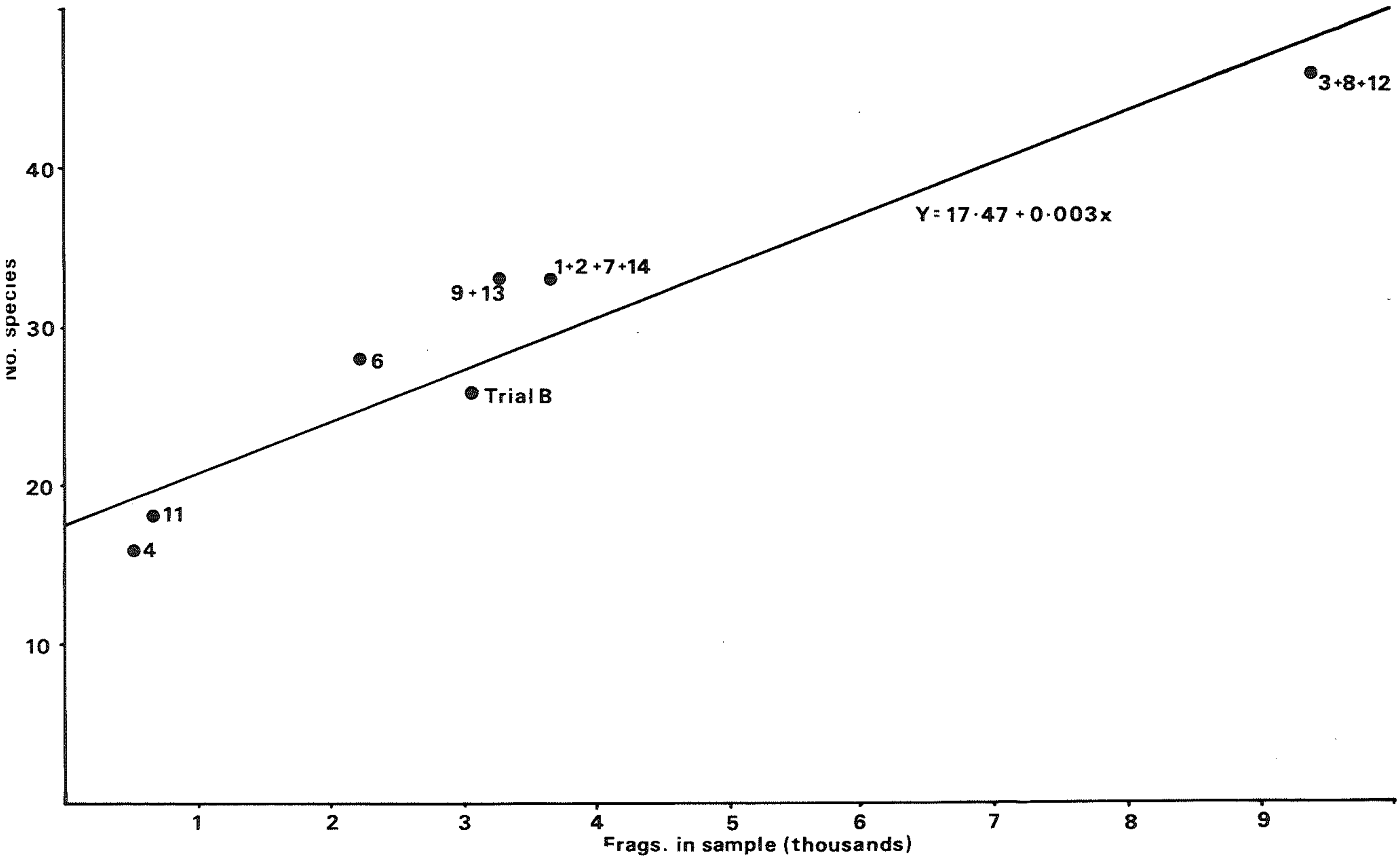
The species diversity for the different trenches is shown in Table 4 set against the total fragment numbers recorded. The species numbers are positively correlated with these totals so that the biggest samples tend to yield the greater number of species.

The correlation is even closer (r=0.93) if species number is plotted against the number of fragments minus the 'unidentified mammal' fraction (Figure 1). Subtraction of this number corrects for the bias that some sieved material was only scanned. Trenches 6, 9+13, and 1+2+7+14 are shown to be especially rich in number of species for their sample size. The taphonomic factors which may be linked with this are discussed in the relevant

TABLE 4 SPECIES DIVERSITY

context	mammal	no. of species bird	microfauna	fish	mollusc	total sp
Tr 3+8+12 (n=13,063)	12	12	12	10	1	47
Tr 1+2+7+14 (n=8863)	8	5	11	8	1	34
Tr 9+13 (n=3593)	11	6	8	8	1	34
Tr 6 (n=4762)	11	5	7	5	1	29
Trial B (n=8619)	6	8	6	6	1	27
Tr 11 (n=2320)	5	1	8	5	1	20
Tr 4 (n=2009)	4	2	5	5	1	17

FIGURE 1


No. species
40
30
20
10
1
2
3
4
5
6
7
8
9
Frags. in sample (thousands)
Y = 17·47 + 0·003x
3+8+12
1+2+7+14
9+13
6
Trial B
11
4

contextual sections.

The highest specific diversity is in Trench 3+8+12. It is not only the overall highest but the highest for all groups - mammal, bird, microfauna, and fish.

WILD MAMMALS

Deer

Not only the native red deer, Cervus elaphus, and roe deer, Capreolus capreolus are represented but the fallow deer, Dama dama, which is usually considered to have been a post-Conquest introduction (Coy in Bourdillon, in prep). The contexts in which the latter were found are therefore dealt with at length in the contextual section. The fallow deer remains might be worth accelerator dating.

Details of the anatomical elements of deer are to be found in the Archive Tables A4-A10 but the remains are generally very sparse and show little apparent pattern.

Rabbit and Hare

The lagomorph remains were also very sparse and once again the contextual origins of the rabbit, Oryctolagus cuniculus, have been examined in detail as this is normally regarded as a post-Conquest introduction. The remains of hare are probably all those of the brown hare, Lepus capensis. Details of anatomical elements are in Archive Tables A4-A10.

Other Wild Mammals

A milk tooth fragment of the beaver, Castor fiber, was found in sieving in Layer 372, Trench 9. That beavers survived into the Saxon Period in the Kennet valley is known (Coy 1980) and it seems likely that the river valleys surrounding Wraysbury could have provided a suitable habitat provided there were enough trees.

A pair of jaws of the red fox, Vulpes vulpes, come from Layer 378 in trench Complex 3+8+12.

All the small mammals are discussed in the microfauna section.

DOMESTIC BIRDS

Most of the bird remains are those of domestic fowl. Details of the anatomical elements present are given with all the other bird remains in Archive Tables A18 - A24. In these tables the fragments in the BIR column (unidentified non-domestic bird) are unlikely to be fowl but cannot be identified to species whereas those in the UNB column are unidentified fragments that, although they show no specifically diagnostic characters, are likely from their size to be from fowl. Many of the anatomical elements less easily identified to species - sternal ribs, toes etc - have been included in the 'fowl' and 'goose' categories if they are a good match for those species. The domestic fowl measurements are given in Archive Table A49.

All the measurements with the exception of an unusually short carpometacarpus (31.9 greatest length from Trial Trench B) are within the range of Hamwic main period. There are measurements as small as the smallest Hamwic examples for some bones and such birds would merit the title 'bantam', but there are no measurements as great as the Hamwic maxima. The tarsometatarsus bones are few but what there are are high up in the Hamwic range suggesting somewhat longer-legged fowl at Wraysbury. Some overlarge fowl were associated with later intrusive material and the measurements on one of these is given in the 'modern' category in the Measurement Archive. Others are mentioned in the whole skeleton section below. Some overall figures for birds are given in Table 5.

The proportion of bird fragments of the total recorded fragments in each trench complex was calculated. This is less than 1% in the small samples from Trenches 4 and 11 and these trenches are therefore omitted from Table 5. Trial Trench B has a uniquely high bird proportion - 10% of all the fragments recorded. The others give a value of 1 to 3%.

In order to exclude bias from small unidentifiable fragments obtained from sieving, the ratio of 'fowl' (chicken + goose) to identified ungulate is given in Table 5. This gives a more accurate guide to the proportion of domestic birds compared with other domestic food species. The whole goose skeleton in Trench 6 and the whole chicken skeleton in Trench 9 are scored as unity for the calculations for Table 5.

The ratios for domestic bird to ungulate bones shown in Table 5 varies enormously from trench to trench. Trial Trench B, as well as being the best part of the site for chicken eating, is especially high for bird bones altogether. It contains two thirds of all the chicken bones retrieved from the site as well as over half the 'unidentified bird' category, which probably mostly also represents chicken. Goose is also represented by 31 bones.

The fact that the trial trench was so completely sieved may have something to do with this and further investigation of these results might throw more light on this phenomenon. If it is a retrieval problem then it is true to say that bird presence as a whole may normally be underestimated on sites. But preliminary perusal of the figures suggests that this is not necessarily so for identified fowl bones. Because all the material retrieved from the trial trenches was sieved it is not possible to work out the effect of sieves within that sample. But for the site as a whole, only 7% of the identified fowl bones were retrieved from the sieves although a third of the unidentifiable fragments came from sieving. Sieving does not therefore seem to have had a significant effect on the retrieval of identifiable fowl bones. As for ungulates the figures used in intrasite comparisons must be fitted to the particular questions being asked.

TABLE 5 SOME BIRD RESULTS BY TRENCH COMPLEX

context	no.bird	% id chicken	% id goose	% wild	% unid	'fowl'/ungulate
Trial B	832	24	4	5	67	1:9
Tr 6	45	20	7	27	44	1:26
Tr 9+13	54	54	15	25	6	1:41
Tr 1+2+7+14	303	6	3	4	87	1:62
Tr 3+8+12	266	15	5	14	66	1:121

The fowl ratios for the other trenches are far lower than those discussed above. The only figure in these which is of particular note is the 32 goose fragments in Trench 6, 29 of them from a whole skeleton in Layer 380. This skeleton, like about a fifth of all the bird bone is from a context with early medieval contamination. The measurements from the early medieval fowl are set separately in the Measurement Archive and they are very sparse. They are generally within the range of the supposed Saxon sample but often in the upper part of the range.

The proportion of the total bird fragments which were in the domestic fowl and goose categories are given in Table 5 for the larger samples. Only three of the trenches had samples of more than 100 bird bones so that little significance can be read into the fluctuations in these figures.

There are two bones of duck omitted from this table which probably came from domestic birds. There is a distal fragment of carpometacarpus in Layer 375, Trench 12, and an ulna in Layer 464, Trench 6. The first of these layers is associated with early medieval contamination and the second may have modern intrusions. There is therefore no Saxon evidence of domestic duck.

The only possible evidence of domestic pigeon is a coracoid classified to rock/stock/domestic pigeon, Columba oenas/livia, in Trial Trench B, Layer 3. All the other pigeon remains fit the wood pigeon, Columba palumbus.

WILD BIRDS

The wild species of bird are detailed alongside the domestic bird results in Archive Tables A18 - A24. The species represented are:

Anas platyrhynchos, mallard
Buteo buteo, buzzard
Accipiter gentilis, goshawk
Perdix perdix, partridge
Scolopax rusticola, woodcock
Pluvialis apricaria, golden plover
Vanellus vanellus, lapwing
Crex crex, corncrake
Columba palumbus, wood pigeon
Columba livia/oenas, rock dove, stockdove, or domestic pigeon
Corvus corone/frugilegus, crow or rook
Erithacus rubecula, robin
Turdus merula, blackbird
Turdus sp, thrushes
Passer domesticus, house sparrow
Troglodytes troglodytes, wren

This is quite an interesting but my no means extraordinary list of birds which might have been found in the area until relatively recently. There is no evidence that the goshawk was an austringer's bird.

The proportion of bird fragments identifiable to wild species is given in Table 5. This shows that the small samples in Trench 6 and Trench Complex 9+13 are one quarter wild bird but in all the other trenches the proportion of bird bones that is from wild birds is much lower. The actual numbers of wild bird bones are greatest in Trench Complex 3+8+12, the one with the highest sample. As expected this also produces the greatest species variety with 9 species of wild bird represented. Trial Trench B is next with 8 species of wild bird, including 23 fragments of woodcock, Scolopax rusticola, probably from at least three individuals. Table 4 shows how the number of bird species fits into the pattern of species diversity generally.

More details of the wild bird finds are given in the contextual sections.

FISH

The details of the fish finds by anatomical element and trench complexes are in Archive Tables A25 - A31. The species involved are:

Anguilla anguilla, common eel
Clupeidae, herring family
Salmo trutta, brown trout
Salmo salar, salmon
Esox lucius, pike
Cyprinidae, freshwater fishes as below:

> A number of Cyprinids are probably represented but these bones are still being studied. Identifications to date include the following, those regarded as tentative are marked accordingly:
>
> Leuciscus cephalus, chub
> cf Leuciscus sp, very small dace or chub ?
> cf Scardinius erythrophthalmus, rudd ? OR
> cf Alburnus alburnus, bleak?
> cf Abramis brama, bream?
> Barbus barbus, barbel
> Gobio gobio, gudgeon

Perca fluviatilis, perch
Pleuronectidae, flatfish

The distribution of the various species and the total numbers of bones are shown in Table 6. It can be seen from this and Table 4 that there is no particular concentration of species in any one trench but that again, as for total species diversity, the trenches with the largest samples have yielded the highest diversity. This is not quite true of species diversity for mammals and birds. Virtually all fish groups are represented in all trenches.

The commonest species represented, forming 82% of the bones identified to species, is the common eel and this could have been caught locally, perhaps on an organised basis with eel traps. Some size estimations were made, stimulated by the work at Haithabu (Lepiksaar, Heinrich & Radtke 1977) but mostly use data collected by Sheila Hamilton-Dyer for Hamwic and from the F.R.U.

TABLE 6 DISTRIBUTION OF FISH SPECIES

* percentages are of the identifiable fraction only

	Trial B		1+2+7+14		9+13		3+8+12		6		4		11		TOTAL(%)	
	frags	%*	frags	%	frags	%	frags	%	frags	%	frags	%	frags	%		
common eel	150	60	741	72	261	60	1587	77	726	91	43	50	42	41	3550	(83)
herring	11	4	68	7	93	21	143	7	27	3	13	15	30	29	385	(9)
trout	-		3	<1	5	1	9	<1	3	<1	1	<1	3	3	24	(0.6)
salmon	-		1	<1	-		-		-		-		-		1	
pike	7	3	4	<1	7	2	22	1	-		3	<1	1	1	44	(1)
barbel	1		-		-		3	<1	-		-		-		4	
gudgeon	-		1	<1	1		-		-		-		-		2	
chub	-		-		1		3	<1	1	<1	1	<1	-		6	
dace/chub	-		6	<1	2	<1	4	<1	1	<1	-		-		13	(5)
rudd/bleak	-		-		-		1	<1	-		-		-		1	
bream	1	<1	1	<1	-		1	<1	-		-		-		3	
cyprinid	15	6	52	5	58	13	57	3	4	<1	6	7	1	1	193	
perch	4	2	3	<1	1	<1	14	<1	2	<1	-		-		24	(0.6)
flatfish	-		-		-		3	<1	-		-		-		3	(<0.1)
cf ling	3	1	-		-		-		-		-		-		3	(<0.1)
TOTAL ID	249		1023		437		2054		794		86		103		4256	

modern collections.

The relationship between cleithrum chord length and eel total length for the modern material seems to be positively correlated, with a correlation coefficient of 0.95. A linear regression line drawn for this is illustrated in Figure 2 and on this basis the eels from Wraysbury would have ranged from 200 to 600mm in total length with the vast majority of them (50 of the 60 estimates) between 200 and 350mm. Eel was not necessarily eaten fresh in all seasons and it is possible that it could have been preserved, for example by smoking.

The herring remains, being found this far from the sea at this period, are very likely to have come from preserved fish. Again these are widely distributed across the site.

The freshwater species in total provide almost as many fragments as the herrings and might in fact have been more important in the diet. Some anatomical elements of herring do seem to preserve comparatively well. The cyprinids were in numbers the largest freshwater element in the diet, although some of the fish represented were extremely small. Some bones identified to chub, however, and the dorsal spines of barbel, represented fish of a respectable size. Pike and perch, occasionally quite large individuals, provide the next most common freshwater finds. The remains of these species were also found at the rural Saxon settlement of West Stow and the fact that sieving did not take place there may have contributed to the apparent importance of these compared with cyprinids.

Salmonid bones too small for the freshwater stage of salmon have been presumed to be brown trout although one large vertebra in Trench 7 could have been salmon.

This tentative freshwater species list for the Saxon Thames is still under review and as many of the specific identifications rest on inferior pharyngeal elements which are broken, further work is needed.

The flatfish vertebrae from Trench 3 could conceivably be from flounder which does go quite a way up tidal rivers. the ling bones are three quite small cleithra which are highly distinctive and match ling better than any other modern material in the collections. Further work may reveal this as a misidentification and it does seem strange in the absence of any other gadoid remains from the site.

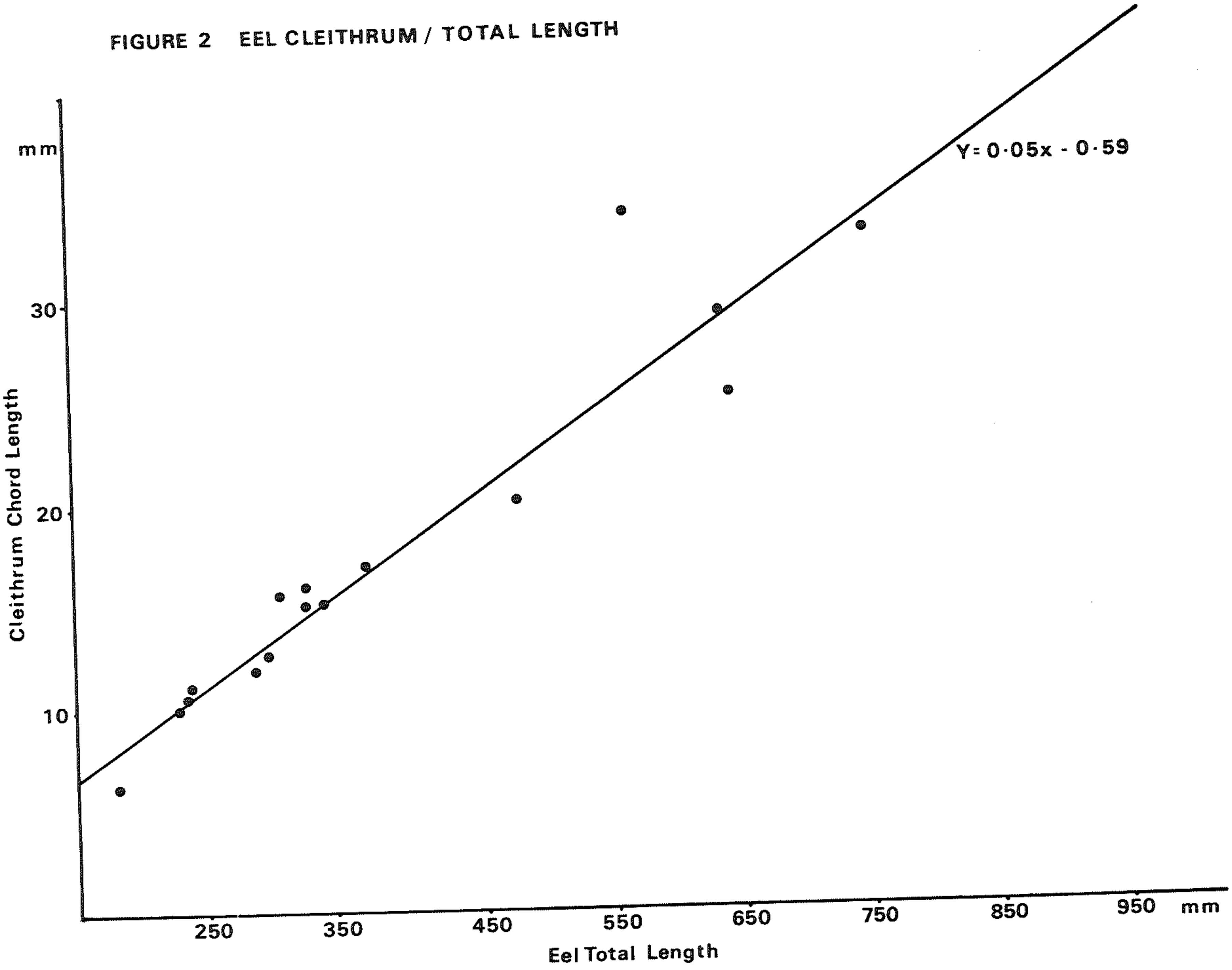
If human faeces were incorporated in muck spread on the fields then the wide distribution of small fish bones might be partly as a result of this, although the presence of herring bones, especially those with signs of crushing, might be a good indicator of primary deposits of cess if taken in conjunction with the contextual and other evidence. This is discussed further in the contextual sections.

Occasional finds of the common oyster, Ostrea edulis, are detailed in the contextual section.

MICROFAUNA

These species have been tabled and discussed separately as it is considered that they are unlikely to have been exploited by the inhabitants, although some of them may have exploited the settlement to a large degree. The full details of the species and anatomical elements identified are in the Archive Tables A11 - A17.

FIGURE 2 EEL CLEITHRUM / TOTAL LENGTH



Small Mammals

The species represented are :

Talpa europaea, mole
Sorex araneus, common shrew
Microtus agrestis, field vole
Arvicola terrestris, water vole
Apodemus sp, mouse
Micromys minutus, harvest mouse
Mus musculus, house mouse
Rattus rattus, black rat
Rattus norvegicus, brown rat

There seems to be no particular bias of small mammals in any of the trenches and certain species are ubiquitous. Small mammals are very likely to fall into deep features and only *Apodemus* can jump a good height to get out. This may account for the relatively few remains of *Apodemus* and the high figures for the relatively non-acrobatic voles, the so-called 'water vole', *Arvicola* , and the short-tailed or field vole, *Microtus agrestis*. Some of these species, including the house mouse, would also be pests of stored products.

The only find of brown rat is probably not of Saxon date as it is from a context in Trench 8 which has other evidence of intrusion and will be discussed in more detail in the contextual section.

Amphibians

Frogs and toads, like the small mammals, would fall into open features. Frogs would be more likely to leap out and this may explain the overall greater frequency of toad bones in the deposits. Although specific work on frogs and toads is only in its very early stages in Britain these bones are a good match with the two commonest species around today - *Rana temporaria*, the common frog, and *Bufo bufo*, the common toad.

Reptiles

A number of reptilian vertebrae were found from sieving in all trench complexes. These are still under study but it is not certain that it will be possible to identify them to species. They are a good match for snake and it is a possibility that snakes hibernated in dung heaps. The movement of dung heaps might again explain the degree to which these species are scattered all over the site.

CONTEXTUAL DISCUSSIONS

The divisions discussed below are in area of the site. Within these the vertical divisions and the different feature types are obviously also of prime importance and the difference in some of the results have already been discussed in connection with putative Saxon, early medieval, and modern material. The early medieval contamination has been defined by the excavator from ceramic evidence and the relevant layers are listed in Archive Table A1. The layers listed as 'post-medieval (including modern)' in Table A1 are those suspected of being contaminated with even later material on the basis of other finds, stratigraphic evidence of intrusion, and the bones themselves. All these three categories are discussed trench by trench below.

Bone from the overburden are included in this analysis as it appears that much of it is probably of Saxon date. During excavation it was noted that these bones were somewhat sparse and many of them eroded and heavily gnawed by dogs. No statistical assessment has been carried out at this stage on the relative occurrence of these characteristics on the 2254 overburden bones. The 593 of them which can be identified to ungulate are detailed in Archive Table A42. This, and the position of the overburden statistics in Tables A43, and A44, suggest that the overburden material is biassed towards large species and the bones from these layers would produce a most unrepresentative sample for the calculation of specific ratios. This is compatible with the suggestion of post-Saxon agricultural use of this land as the larger specimens would be more likely to survive. There are bones from overburden contexts in Trenches 3, 8, 9, and 12.

In addition to the bone recorded from the layers listed in Table A1, and discussed in the contextual sections below, there were many bones assessed which had been retrieved from intrusive layers, some of them looked so modern that they were not computer recorded but they are discussed briefly in the whole skeleton section.

Trial Trenches

Trial Trench A

There are only 80 fragments recorded from two bulk samples which were sieved from this trench and 75 of them are indistinguishable fragments of unidentified mammal bone. Pig was recognised from two teeth fragments and there was a frog scapula.

Trial Trench B

This produced most of the trial trench bone, 8,616 fragments, most of it from Trial Trench B, Context 3/4 ditch, from 5 and 2mm sieving. The bone from this is very well-preserved and is detailed in Tables A4, A11, A18, and A25 in the archive.

The bone collection from this ditch is quite unlike the other material from the site in several characteristics. The proportion of cattle bones is the lowest on the site at 12% and that of sheep highest at 54% (Table A43). This is unlikely to be due to any differences in sieving strategy between the trial and main excavations as the figures are calculated only from bones identifiable to species, which tend to be larger fragments. The bones identified only to ungulate also show up this lack of large ungulate remains showing the lowest percentage of large to small ungulate fragments (15% large: 85% small, Table A44). This figure is even lower for large ungulate than the figures calculated for 5mm and 1mm sieving for the whole site.

More detailed testing could be carried out to show to what extent this is a ditch phenomenon, by comparison with other ditch material from the site and contrasting it with that from pits. The contextual origin may be at least partly responsible for these results. Something that this material has in common with all the overburden contexts from the sites is the relatively low percentage of ungulate bones that are unidentifiable to species - 48 % compared with 58%. The other trenches have much higher values for this statistic. Again this is unlikely to be brought about by differences in retrieval method as we are not dealing here with the minute fragments of material produced in fine sieving of the other trenches but with the larger fragments of the common species and the extent to which they are identifiable.

This material is, therefore, like the overburden material, relatively deficient in small unidentifiable fragments but probably for different reasons - perhaps those connected with type of disposal rather than the weathering and useage connected with the overburden but a closer analysis of the detailed results would be needed to analyse the exact factors involved.

The ageing evidence for sheep shows evidence of both lamb and young sheep; all but one individual having a tooth wear stage of 30 or less. This is again unusual as the rest of the site as discussed above has sheep with wear stages of more than 30. There is also some evidence of piglet, foetal pig, and calf. Some tooth wear evidence for pig is from young individuals although Trench Complex 3+8+12 also has some evidence like this.

The butchery of the common domesticates is quite interesting as in some ways it matches quite closely results for Hamwic mid-Saxon material as quite a lot of heavy handed chopping with few blademarks has occurred. Sheep axis has been cut through posteriorly, both sheep and cattle metapodials have been split lengthwise. There are few knife cuts. In another way the material is unlike Hamwic and more like Late Saxon material from Winchester Western Suburbs as some sheep and pig vertebrae bear paramedian axial chopping on the vertebrae. This technique is replaced at Winchester and many other Wessex sites by midline splitting of the carcase in early medieval times (Coy n.d.1).

The parts of the body for the ungulate bones represented in the ditch were not subjected to detailed comparison with results from the rest of the site, largely because of a lack of good comparable samples of a decent size, but head and foot fragments were particularly well-represented, although all parts of the body were usually there. This and the presence of the very young animals could indicate at least an element of use of the ditch for disposal of material not taken into the kitchen.

The sample from Trench B shows the third highest number of fragments from the site and it is therefore not surprising that the species diversity is high, this is especially true for birds. Other mammals represented in Trench B are the roe deer and rabbit. The few finds of the latter species would normally be regarded as post-Conquest contamination on a Saxon site. There are no dog or cat remains although many of the large bones show dog gnawing.

Trench B has the largest sample of bird by a large margin and, as explained in the domestic fowl section, a very high proportion of the measureable and identifiable chicken and goose bones come from this context. The large number of woodcock bones has already been mentioned as has the possibility of a domestic or stock dove. Mallard, wood pigeon, partridge, crow or rook, robin, and house sparrow are also represented.

A wide range of both fish and microfauna came from the ditch context but the number of fragments from these groups is far below the proportion from the other trenches with large samples (Table 1). We do not know where exactly this material lay in the ditch but in the absence of particular comment assume it was spread throughout the ditch contents.

Of the fish bones, 60% of those identified are eel bones, mostly vertebrae. Two measurable dentaries suggest eels of about 350mm in length. There are a few bones of herring, pike, and perch. Most interesting is a range of freshwater cyprinid vertebrae and the serrated dorsal ray spine of a barbel. This spine is a little more sturdy than one from a 400mm fish. One inferior pharyngeal bone which matched a moderate sized bream was retrieved. These remains are likely to be from food. From the nature of the species found and the fact that two fragments showed traces of chewing it is possible that the smaller bones may have originated from human excrement.

There was no trace of the very fine fish material with minute inferior pharyngeals of very small individuals as was found by sieving of the main trench complexes. It is possible that these were not recognised during the trial excavations. Alternatively, if their origin were from periodic flooding of the site rather than from muck spreading this feature may have been too deep at the time to have been affected.

The microfauna represented are mole, shrew, the vole Microtus, house mouse, toad, and possible snake.

Apart from the ditch material the only other finds of note in Trench B are 8 valves of the common oyster from the overburden, Layer TB6. The measurements of this species are given in the computer archive.

Trial Trench C

Only 114 bones are recorded from this trench and , apart from two bird fragments it is all unidentifiable mammal fragments.

Trench Complex 1,2,7,14

This produced a sample of bones similar in fragment numbers to that from Trench B, again most of the fragments were from sieving, in this case from Trenches 1, 2, and 7. A total of 8,872 bones were computer coded and details of species and anatomical elements are given in Tables A5, A12, A19, and A26. In addition 1.1kg of microscopic material from the 1mm sieving from Trench 7 was all scanned and identifiable fragments only were retrieved and recorded. The context numbers and weight of this sorted and scanned material is given in Table A32.

A number of layers produced bone with cess attached to it. These were mostly pit layers in Trench 2 (Layers 213, 215, 216, 314, 315 & 496) but also part of the beam slot layer with medieval finds (Layer 212) and Layer 196 from a pit in Trench 7. Most of the bones came from the collection of pits in Trench 2 and the layers of the ditch going across Trenches 1 and 7. The pits in Trench 7 and all the other features produced very little material.

The subsoil Layers 35 and 44 produced bone which was computer coded although this material was probably at least contaminated with post medieval material. The first contained some distinctive post-medieval sheep bones and the latter a pig lower canine from an adult male with a large wear surface of 37mm. It would be good but probably unwise to claim this as Saxon. Much other material looked Saxon, such as typical longitudinal splitting of the cattle femur in Layer 44.

For the trench complex as a whole, the relative amounts of small and large ungulate categories are very similar to that in the similar-sized sample from Trench B - 19% large ungulate: 81% small ungulate (Table 3). But a much larger proportion of the ungulate bones is unidentifiable to species (79% compared with 48%). This figure should not be much affected by sieving techniques. There are therefore more small fragments identifiable to ungulate in this trench complex than in Trench B.

The specific ratios for the identified fraction is also somewhat different, with an order of importance: cattle, sheep, pig, and roughly equal ranking. This is more in line with results from Trench 11 and not far off those from Trench 4 and, although both those samples are very small, this could be evidence for some factor connected with useage, dumping, or both, with a peripheral distribution (Table 2).

With respect to the anatomical patterning of the common ungulates there were bones of all parts of the body present as for Trench B and not a big enough sample to allow detailed analysis.

Other mammalian species represented are dog, cat, roe deer, and a number of small mammals dealt with in more detail below. Birds represented are chicken, goose, corncrake, thrush, and sparrow. There are numerous fish remains from sieving described in more detail below and the remains of 26 valves of common oyster from a variety of layers.

In an attempt to deduce what disposal practices went on a comparison between pit and ditch microfauna finds was attempted. To a large extent the results for the two types of feature are very similar and both the Trench 2 pits and the Trench 1+7 ditch produced bones of mole, common shrew, short-tailed vole, water vole, toad, eel, herring (with evidence for chewing in both types of context), pike, salmonid, and cyprinids. In both cases the overwhelming majority of bones found were vertebrae of eel. There is little point in giving accurate figures for relative abundance of finds because of all the methodological variables discussed earlier in this report. The next commonest finds in both cases though are bones of herring, short-tailed vole, and cyprinid fish.

The Trench 2 pit complex also produced cat, house mouse, harvest mouse, frog, and perch. Unlike the ditch remains they produced inferior pharyngeals of small cyprininds - the ditch, like Trench B, produced cyprinid vertebrae. The ditch produced remains of piglet, the mouse Apodemus, less water vole, & snake. Cess was present on bones in some of the pits but a chewed herring vertebra was also recovered from the ditch and most of the fish remains are likely dietary remains as for the ditch in Trench B.

The sizes of the eels represented are very diverse but a premaxillary from a pit matched a modern 475mm specimen which is large by Wraysbury standards. Some of the head bones from eels in the pits are very well preserved and these and the cyprinid inferior pharyngeals seem to survive here but not in the ditch. It was suggested above that they may not have been retrieved from the ditch in Trench B because they were not recognised but the lack in both these ditches does merit another explanation. Very small interpharyngeal bones do not seem to survive in ditches whereas small fish vertebrae do. But it is difficult to know whether, if this is so, it is due to the intrinsic nature of the bones themselves or to differences in processing.

Assuming both pit and ditch vertebrae went through the body and survived in cess, perhaps heads, containing interpharyngeals, were not eaten and in some way this made them less likely to survive. Other explanations may need to be sought if the flooding hypothesis is considered likely. Some of inferior pharyngeals, important because they may give specific identifications more easily than the vertebrae, were from very small fish probably 100mm or less in length at a guess and may not have been human food at all.

Regarding several other features of interest: the scoop Feature 217 produced a chewed herring vertebra and some eel vertebrae. Again this is highly suggestive of cess. Pit 455, which it was suggested might have been used for unpleasant organic waste in the Saxon Period showed no particular evidence for this from the anatomical elements present, but some bones showed traces of the usual cess. It also contained a single example of midline splitting of sheep in Layer 196, which is usually a post-Saxon phenomenon. A similar piece of butchery on pig was found in Layer 314.

Trench Complex 9,13

The 3,567 bones fully recorded are detailed in Tables A6, A13, A20, and A27. Trench 13 was not sieved but an additional 1.7kg of microscopic material from 1mm sieving in Trench 9 was scanned and identifiable fragments only were retrieved and recorded. Table A33 gives context numbers and weights for this hand-sorted material.

There is evidence from the bones of burning in Overburden Context 13 and pit Contexts 399 and 400. Overburden layers in general produced no microfauna. Most of the remains of small mammals, amphibians, and small fish were from sieving of features. They turn up in both pit layers (32, 33, 210, 33, 79, 158, 201, 399, 372, 400, and 376) and ditch layers (92, 93, and 310). Of these, Layers 79, 92, and 376 contain medieval contamination. In addition to that, overburden 13 and pit layer 399 contained remains of rabbit which is probably post-Conquest. Other evidence of later contamination from the ungulate remains is mentioned below.

The results for the common ungulates from this trench are quite different from those already discussed and more like those to follow (Tables 2 and 3). In all three of the more central trench complexes cattle bones provide about half the identifiable ungulate fragments (although samples are not very big except in the complex discussed next) with pig in second place, and sheep the most scarce. The ungulate remains not identifiable to species support this picture as large ungulate fragments are higher than for the other trenches, providing about a third of the unidentifiable ungulate remains. The percentage of ungulate bones which are not identifiable are also consistent between the three trenches. For Trench Complex 9+13 discussed here cattle therefore provides 51%, pig 26%, and sheep 23%. The large ungulate fraction is 36% of the unidentified ungulate fragments and 66% of the ungulate total was unidentifiable. The last value sits roughly between that for Trench B and Trench Complex 1+2+7+14 and is also nearest to the values for the other central trench complexes.

The anatomical elements of the ungulates represented do not immediately show any bias with all parts of the skeleton being represented.

Of the 6 ageable cattle jaws, 5 represent animals younger than Wear Stage 30. But sheep and pig evidence from jaws shows animals which are virtually all at Stage 30 or more but with none of the oldest individuals for the site.

There is a very precisely chopped cattle vertebra in Layer 372 which looks almost like modern butchery. Elsewhere there are good examples of Saxon types of butchery such as distal diagonal chopping of the cattle humerus, paramedian axial cutting of the cattle sacrum, and splitting of metapodials, including the overburden material. A few calf bones were found and there is also some possibly modern calf bone in Layers 472 and 473, in the continuation of the ditch into Trench 13. An overlarge os coxa in Layer 12 overburden could be modern.

There is some metapodial splitting in sheep bones and in Overburden Layer 18 some very rough median splitting in a sheep cervical vertebra which may indicate medial splitting of the skeleton usually associated with medieval material. There is a scattering of lamb bones including at least one which might be foetal.

Overburden Layer 18 produced good evidence for paramedian axial splitting of the pig vertebral column with blademarks very like butchery found in Late Saxon Winchester Western Suburbs. There is a scattering of piglet bones in both pit and ditch deposits and yet mature pigs are present including boar in the pits with wear surfaces on the lower canine of 23 and 35mm.

The other larger mammalian species represented are dog, cat, red deer, roe deer of about 2 and 7 years, rabbit (in Layers 13, 84, and 399), and beaver.

Domestic fowl fragment totals are swelled by a whole skeleton (which may be modern and comes from the overburden Layer 12) and goose, mallard, buzzard, and a rock/stock/or domestic pigeon bone from Context 12 which might be modern. A duck bone recorded from Layer 399 appears to be a good match for the tufted *Aythya fuligula* which is such a common sight on the Thames in more recent times. If this is of Saxon date it is therefore an interesting record but some of the other evidence already mentioned for this layer make this doubtful.

There is a wide range of fish from the sieving in Trench 9. Eel is again most numerous, with herring in second place, and a large number of fragments from a variety of cyprinids. Again the eels ranged widely in size but one cleithrum represented an individual of over 550mm length. Bones which compared with a 500g chub and a 400mm gudgeon came from the pits and there were inferior pharyngeals of small cyprininds which may have been dace. Salmonid, perch, and pike were also present. The pike pterygoid in pit Layer 32 made a modern one from an 8kg pike look small. Again, with the exception of the absence of small inferior pharyngeals of cyprinids, the ditch and pit fish remains were similar.

The other microfauna from sieving showed a slightly narrower range than for the previous trench complex with no shrew or harvest mouse. There was good evidence of house mouse, *Apodemus*, frog, toad, and snake in the pits but these species were not found in the ditch apart from a few toad bones. There was also a much lower frequency of *Microtus* in the ditch. The extent to which this is due to comparative sample size has not been investigated. It could be this or it could be poorer preservation, only detailed analysis of volumes might solve it.

Twenty valves of the common oyster were found in a variety of deposits.

Trench Complex 3,8,12

Altogether 13,058 bones were computer coded making this complex the most productive sample at Wraysbury. The details of these bones are in Tables A7, A14, A21, and A28. Only the Trench 3 material was selected for complete recording of faunal remains and the contexts and weights for the results of scanning for 1mm samples from Trench 8 which produced another 0.9 Kg of microscopic material are given in Table A34, and for Trench 12, which produced another 0.8kg, in Table A35.

The characteristics of the ungulate fraction as stated above are similar in many ways to the results from the previous complex and the one to follow. Of the identifiable ungulates, 50% is cattle, 31% pig, and 19% sheep. Large ungulates account for exactly a third of the ungulate fragments unidentifiable to species. The latter represent 68% of all ungulate fragments.

This being the largest sample it produced the widest species diversity in all groups (Table 4). The larger mammals represented are dog, cat, all three species of deer(including possible post-Conquest fallow in Layer 406), rabbit (again possible post-Conquest and in Layers 7 and 60), hare, and fox. Layers 406 and 375 produced early medieval finds and Layer 7 is an overburden layer with possible modern contamination.

Birds represented are domestic fowl, goose, a possible domestic duck (in Layer 375), mallard, goshawk, woodcock, golden plover, lapwing, wood pigeon, thrushes, and a number of bones from small passerines, probably mostly sparrows and warblers.

The nature of the domestic animal bone sample was compared with those from the other trench complexes to see whether there are any notable differences which could denote a difference in useage.

Just under half the cattle bones are from meat-bearing parts. This is similar to the other trench complexes. Bones from all areas of the body are represented. Cattle ageing evidence is sparse and jaws are mostly above Wear Stage 34. There is also a large amount of calf evidence. Calf bones were recorded from Layers 7, 27, and 232 (the bones of a very young calf with slight enamel wear on the third deciduous premolar in this layer may relate to the unrecorded, intrusive burials in Layer 74 above it). Such virtually whole skeletons are discussed in more detail in the whole skeleton section below. The partial calf skeletons in overburden layers 7 and 27 were recorded, as these skeletons matched medieval material quite well, but the other skeletons are presumably more modern.

There are three examples of what might be interpreted as post-Saxon cattle butchery - possible median axial splitting of vertebrae in Layers 263 and 277, and in Layer 255 a distinctive chopping of the proximal radius which has been noted in post-medieval contexts in Wessex, such as at Wickham Glebe (Coy n.d.2). This is confirmation of suspected post-Saxon disturbance for all these layers. A humerus fragment in Layer 386 though also looks modern.

The sheep bones are equally distributed between meat bearing and non-meat bearing regions of the body. There is very little ageing evidence, just a few jaws between Wear Stages 24 and 40. Lamb bones are from pit Layer 256, ditch Layer 264, overburden Layer 7, and an intrusive context Layer 14. All these layers have either medieval or more modern contamination. The sheep butchery evidence can mostly be fitted into a Saxon framework and includes midline splitting of a skull in Layer 234, and of metapodials in overburden Layer 27. The only example of midline axial splitting of a vertebra is from cleaning Layer 378 and is very off-centre. A large radius in Layer 7 is probably post-medieval or modern.

The proportion of pig in this Trench Complex, as noted above, is almost as high as that from Trench B. All parts of the body are represented and about 50% of the fragments (excluding loose teeth) come from meat-bearing parts of the body. This is similar to the values for other parts of the site, only Trench B is significantly higher. At least partly because of the large sample of pig, there is more ageing evidence from this complex than for the rest of the site as a whole. Ages range over the whole spectrum discussed in the pig section earlier in this report. Layer 256 has a bias towards jaw fragments with ageable mandibles representing very young pigs and maxillary evidence of some with erupted molars.

There were piglet bones which may be from the same partial skeleton in cleaning Layer 232. It is possible that a burial might have disturbed this layer and led to the brown rat bones mentioned below. A rather large pig phalanx in the same layer confirms the likelihood of contamination. Piglet remains are also recorded from Layers 60, 256, 437, and 464. These animals were very small and generally not associated with ageing evidence. There are other bones from immature animals which compare in size with modern pigs of a few weeks of age scattered through the deposits.

At the opposite end of the scale there is plenty of evidence of adult boars with lower canine wear surfaces ranging from 11 to 23mm. These are in potentially disturbed layers however - Layers 7, 75, and 263. As explained in the pig section there is no evidence here for wild boar.

There are two fragments of vertebral column which show axial splitting in overburden Layer 27, which would normally be regarded as post-Saxon evidence.

The high species diversity for the larger mammals and birds extended to the fish and microfauna from the numerous sieved samples. There was no microfauna in the overburden layers, although there was a flatfish vertebra in Layer 75.

The subsequent cleaning layers, some of which contained a large quantity of bone, produced a brown rat skull in Layer 232, usually regarded as a post-medieval species, and a mole bone in Layer 234, the only fox bones on the site were in Layer 378.

Most of the sieved material, was from the features, which in this complex consisted mostly of ditches. An attempt was made again to compare ditch and pit material but the only reasonable pit samples were Pit 30, Layer 29, which produced a few bones of shrew, house mouse, Microtus, toad, eel, herring, and salmonid; and the quite rich finds from Pit 576, Layer 256.

Layer 256 has some early medieval contamination and has been mentioned earlier in connection with finds of cat and dog. Sieving of the layer produced a very large number of eel bones, including a number of well-preserved head bones and cleithra. These, along with a few others from the rest of the Trench Complex, give 31 length estimates for eel, ranging from 200 to 400mm. Microtus, toad, small pike and salmonid, cyprinid vertebrae and pharyngeals, a flatfish vertebra, and piglet bones are all preserved from this layer.

The ditch layers produced a much larger amount of microfaunal bone from sieving and a much greater species diversity but the sample was much bigger. Ditch layers with the greatest amount of bone are Layers 275, 276, 401, 437, and 469 (the last 3 have some possible early medieval contamination). Layers with a notable amount of bone but not so much are 258, 277, 430, 431, 461, 468, 543, and 544. Of these 258, 277, and 431 may be contaminated with later material. The results for microfauna and fish found in the ditch layers known to have early medieval contamination were analysed separately in order to see whether any of the finds might be medieval contamination. The layers making up ditch sectors 574 and 582 contained most of the contaminated layers which produced bone.

The contents of the contaminated and supposed Saxon contexts are not especially different in the range of species represented but the relative amounts are strikingly different. The contaminated layers produced traces of mole, shrew, house mouse, Microtus, Arvicola, frog, toad, snake, pike, perch, salmonid, cyprinid, and a great deal of eel and herring. The supposed Saxon contexts have most of the small mammal and freshwater fish remains, as well as large quantities of eel and herring. They also have remains of Apodemus, a mandible of black rat in Layer 275, and harvest mouse bones in Layers 275 and 276. The black rat is not normally found in Wessex until the early Medieval Period, so Layer 275 itself may also be later.

It is difficult to know what all this means except that either the majority of these small bones could be of Saxon origin or similar processes were going on in post-Saxon times. Certainly there is no particular evidence for anything different in the contaminated layers except that most of the bones are from eel and herring rather than the wider range of small mammals and freshwater fish. Eel and herring vertebrae are common finds in medieval cesspits in Wessex as well as Saxon deposits.

A few of the eel and herring vertebrae in both types of layer have been chewed and might therefore be from cess. Some of the differences of emphasis in the contaminated layers might be due to a relative lack of disturbance in some of the layers. It is not usual to find such a breadth of species in ditch layers including delicate material like harvest mouse and cyprinid pharyngeal bones. The pit remains, however, stand alone in their preservation of delicate head bones of eel.

More unusual finds in the ditches include dorsal fin spines of the barbel in Layers 275, 395, and 40, and another flatfish vertebra in Layer 543. Other feature types to yield microfauna were gulley 385 with Microtus, toad, herring, and eel; and slot 434 with Arvicola, snake, and eel.

A variety of layers produced a few valves of the common oyster, making a total for the Trench Complex of 68 valves.

As in other parts of the site there is canid gnawing on many of the bones of the domestic ungulates. Burnt bone comes from Layers 27, 58, 75, 234, 258, 275, 276, 378, 401, 437, 458, 461, 468, 469, 521, 544.

Trench 6

Half the samples from Trench 6 were fully recorded and produced 4,936 bones detailed in Tables A8, A15, A22, and A29. The contexts and weights for both the scanned half, which produced another kg of microscopic material, are in Table A36. The fully-recorded half is also included here as Trench 6 was selected as a basis for estimates of fragment size of sieved material.

The Trench 6 figures for ungulate remains are similar to the two previously discussed trench complexes. Cattle represents 55%, pig 31%, and sheep 14% of the identifiable ungulate bones. This is the lowest value for sheep on the site, and the pig result matches that of the previous trench complex. Again the large ungulate fraction is around a third (37%) of the unidentifiable ungulate total which is itself 60% of the ungulate total.

Like the last trench complex discussed, there is an emphasis on ditch features and intrusive whole burials. Ditch sections 541 and 555 in particular have early medieval pottery. The account below therefore concentrates on dating possibilities from the bones. Reasonable samples of bone fragments from the larger animals come from Layers 70, 206, 380, and 464, all 4 of which have early medieval pottery.

The cattle bones represent a slightly higher emphasis than usual on meat-bearing bones for cattle, but the reverse for pig, although the very high result for phalanges may bias this and be due to the large amount of sievings analysed. Ageing results for the domesticates is sparse. There are calf bones in Layer 380 and a partial skeleton of a calf (Specimen 13 in archive) in Layer 464. The latter is associated with a partial skeleton of a piglet, a pig vertebra probably butchered axially, and a rabbit bones. The calf jaws were at Wear Stage 15 and from its size and the associated bones was at least of medieval date.

Longitudinal splitting of the cattle metapodial showed in Layers 392 and 412; paramedian butchery with blademarks in 380; and possible midline butchery on an axis in 392. Paramedian butchery is usually associated with at least a late Saxon date and the the last, if it involves the whole length of the column with a post-Saxon date (Coy n.d.1).

The only lamb bone is from Layer 464. Piglet bones are widespread and occur in 61, 63, 272, 274, 412, and 456. The last includes a whole foot from sieving. These are in addition to the material from Layer 464. Bones of quite young pigs come from Layers 65, 70, and 274. The lower canine of a mature boar in Layer 65 has a wear surface of 12mm and a mature sow upper canine in Layer 62 is heavily worn.

As mentioned above there is a possible example of midline splitting of the vertebral column in Layer 464, one bone in Layer 380 is a possible paramedian example but evidence from these fragments is not good.

In addition to the domestic ungulates, Trench 6 has a high number of other mammals represented. Dog remains are sparse but ditch Layer 311, in particular, produced whole cats, already discussed in the cat section. Red, fallow, and roe are represented by one fragment each, the fallow being a phalanx in Layer 70 and linked with early medieval pottery. Rabbit from Layers 206, 392, and 464 carries no butchery marks. The bones from Layer 392 are immature and the two other layers contain possible early medieval material. On several counts therefore this rabbit bone is likely to be post-Saxon.

Fowl and goose are represented, the latter by a whole skeleton in Layer 380 already mentioned (Specimen 14 in archive). There is a possible domestic duck ulna from Layer 464, already suspected of containing medieval material. Mallard, woodcock, and a small passerine are also recorded.

The number of wild bird, small mammal, and fish species is not so high as for some trenches of a similar size, although a great deal of material was sieved. Microfauna were retrieved from Layers 61, 62, 63, 65, 70, 267, 274, 316, 392, 412, 456, 463, and 500. The best results came from 65 and 70, with 412 and 456 being particularly rich in fish. The microfauna represented are snake, frog , toad, mole, shrew, house mouse (in Layers 65 and 500), and Arvicola. The fish remains are very largely eel vertebrae, although a few cleithra give length estimates of 250 to 400mm. Layer 456 has quantities of eel vertebrae in cess and Layer 500 some which are from cess and broken. These could have been through the body.

Other fish species recorded are salmonid, perch, and one or two large cyprinid bones - probably representing chub and dace. There were not the large quantities of small cyprinid material noted from other trenches. There were 11 valves of the common oyster.

Trench 4

The bones retrieved from this trench were fully recorded and the details of the 2,021 fragments are given in Tables A9, A16, A23, and A30. All bones, including those from 1mm sieving, were recorded in order to provide a fully-recorded transect across the site (Trenches 1,2,3,and 4).

The results for the very few bones of common ungulates are unusual in that they provide the only trench sample where the order of importance of the ungulates is pig, cattle, and sheep (Table 2). The relative importance of large and small ungulate fragments is similar to that from the final collection - Trench 11 - with about a quarter being from large ungulates. This value is intermediate between the figure for the main samples and those for Trenches B and 1+2+7+14 (Table 3). In both these small samples the level of unidentifiability of ungulate remains is over 80%, worse than for Trench 1+2+7+14.

Both the Trench 4 and Trench 11 samples are peripheral to the trenches with the major samples. Not surprisingly, they show a narrower species range. Trench 4 has a wide range of feature types but not the large ditches of the previous trenches. The only samples of a reasonable size came from gulley Layers 15 and 55; and ditch Layers 16, 85, and 253. With the exception of Layer 85 all these layers contain some early medieval material.

The species represented include rabbit, domestic fowl, sparrow, mole, shrew, Arvicola, frog, snake, eel, herring, a chewed salmonid vertebra in Layer 308, small pike, a good sized chub from Layer 16, and some small cyprinids. There were traces of common oyster in 55, 85, and 253. Burning was noted on bones from Layers 15, 17, 54, 55, 71, 85, 205, 226, 253, 268, and 308.

Trench 11

These results were also fully computer-coded as this was the trench furthest from the church. Details of the 2,330 bones are in Tables A10, A17, A24, and A31. The 1mm sieved material was also weighed as a basis for the estimates in the scanning work and these details are given in Table A37. All material contained early medieval pottery.

Although there were several pits in this trench, only pit Layers 282, 286, 294, 297, 298 had a reasonable quantity of bone. The ungulate results were intermediate between those from Trench 4 and the major trench complexes but again the sample was minute. The figures for the unidentifiable ungulate fragments were comparable with those for Trench 4 above. The other species represented are dog, mole, shrew, Microtus, Arvicola, Apodemus, house mouse, toad, snake, eel, herring, trout, pike, and cyprinid. There were no bird bones identifiable to species, although some fragments belonged to small passerines. There were 15 valves of the common oyster. Of the bones which might be expected to be associated with human habitation and activity, the house mouse remains are from pit Layers 294 and 297 and the eel and herring vertebrae, which might indicate cess, from a variety of pit layers, especially 286.

An immature pig bone and some roughly sawn bone in cleaning Layer 91 was possibly modern. Calf was present in gully Layer 284.

THE WHOLE SKELETONS

Groups of associated bones remarkable enough to be classed as 'partial skeletons' have been mentioned in the contextual section above, where relevant. By 'whole skeletons' I mean situations where most of the bones of an animal are present suggesting primary deposition of the whole animal. In some cases these were in possible Saxon or medieval contexts and the skeletons were therefore computer recorded. These have all been mentioned in the previous section but will be summarised again below, along with whole skeletons of more dubious origin. Some are reckoned by their appearance to be of post-medieval or modern origin. These were not computer recorded but have been saved for possible future study as their date is uncertain. Other burials of obviously modern date were excluded by the excavators during excavation.

In fact only the area of the site covered by the Trench Complexes 9+13, and 3+8+12 produced intrusive burials that were not fully-recorded, and Trench 3, in particular, contained obviously modern material not mentioned here. This area must have been the site of relatively modern husbandry but as the animals are mostly immature it is difficult to be certain of the date of some of them from archaeozoological evidence.

Trench 6

The whole skeletons in this trench were all computer coded and have already been mentioned in text. There is no archaeozoological evidence for the date of any of these being other than Saxon or early medieval. They comprised three cats, a calf, and a piglet in ditch Context 474 and a goose in ditch Context 466. The calf was not newborn but had reached Tooth Wear Stage 15.

Trench 9

Unlike the whole skeletons from Trench 6, those from this trench may all be at least of post-medieval date, if not quite modern origin. All soft tissue had disappeared and the bones looked 'archaeological' but their contexts or appearance did not suggest a Saxon or early medieval association.

The large fowl in Overburden Layer 12 was however measured and recorded and has been discussed in the text. Two very well preserved complete sheep in Layer 236 may be at least post-medieval and were not recorded. They were regarded as possibly intrusive by the excavator. They are slender sheep with a withers height of 0.54-0.59m so that it is not impossible that they are earlier and the skeletons have been saved. From the bones themselves it is not possible to say that the sheep are post-medieval.

Trench Complex 3+8+12

Trench 3 produced the most material. As well as partial skeletons of dogs already described, a quantity of unwashed material was visually checked and is judged to come from modern calf burials. This includes a minimum of three calves from Overburden Layers 14, 27, and 307. Calf remains in Layer 7, however, did not look especially modern and could be just post-medieval.

Trench 8 contained more intrusive calf burials in Layer 74 and some calf bones in Layer 232 are discussed above as perhaps coming from this source. Layer 232 also contained a piglet burial which may be intrusive and is mentioned in the contextual section.

Trench 12 produced the large dog from pit Layer 256 already discussed.

CONCLUSIONS

The animal bones from all trenches included material from food remains and indicators of occupation. Not all the small material from sieving, however, was from food remains. The small mammals and amphibians probably succumbed to the pitfall trap effect of open features. Snakes may have done likewise or may have died in hibernation. Some of the small freshwater fish might have been left stranded after periodic flooding. Yet the distribution of these non food remains can provide important archaeological information related to the formation processes of deposits.

For the common ungulates Wraysbury shows a much higher overall representation of pig when compared with Saxon Southampton (Hamwic) and some other Saxon settlements in Wessex, although some pits in Late Saxon Winchester Western Suburbs reach 30% pig compared with cattle and sheep (Coy n.d.1.). Trenches nearer the church show a different balance of common ungulate species from the more peripheral trenches. These results have been discussed in some detail in the report and it is pointed out that the balance of species eaten (or at least discarded) in the ditch in Trial Trench B is different from other parts of the site as it shows a concentration on sheep, pig, and domestic fowl. But the ungulate samples involved in the other peripheral trenches are very small indeed and specific ratios could therefore be very misleading.

A wide range of other species was recovered and some of these, such as black rat, rabbit, and fallow deer are more usually found in post-Saxon contexts (Bourdillon and Coy 1980). This and butchery evidence for the common ungulates has been used to suggest examples of layers with post-Saxon contamination. Other results in archive, such as the measurement and ageing data for the common domesticates, are useful additions to the Wessex archive which is now beginning to show up major trends in size changes and animal types for the region.

One of the main functions of this analysis has been to set standards for the retrieval of rural Saxon material. Some space has therefore been devoted in the report both to the relevance of the use of both sizes of sieve and the results for small species.

There now exists for Hamwic and Wraysbury a sufficient archive as a result of the sieving exercise of the Hamwic Pit, the Variability Study (Bourdillon in preparation), and the Wraysbury sieving for a detailed analysis of exactly what evidence can be expected to be retrieved from different types of treatment. This could be used both to lay down guidelines for future retrieval and interpretation of Saxon faunal material and to assess the type of retrieval that has taken place in past excavations so that the whole basis for comparison can be evaluated, as has been suggested already for Iron Age settlements (Maltby 1985). In this way future analyses would be able to assess the extent to which the results from non-sieved sites could be brought into intersite comparisons.

To some extent, considering their enormous difference in size, it might be acceptable to use the mammal results minus all 'unidentified mammal' fragments from sieving (which are generally too small to be put into either the large or small ungulate categories), and set these against all the bird results and all the fish results in order to arrive at the relative importance of the three groups. Another technique would be to compare only those bones which can be identified to species or group and work out comparative representations of the different orders from these. Methods of comparing the relative representation of mammals, birds, and fish in the diet have been discussed in more detail elsewhere (Coy 1982). These methodological arguments can only be ongoing.

The essential thing is to ensure that we know exactly both the criteria set up for any sampling and sieving strategy (especially the relative volumes of soil which were sieved of the total available) and the method used by the sorters and the faunal analysts. If a criterion like the cut off suggested above (between large and small ungulate and 'unidentified mammal') is used then it is essential that the material is kept so that the work of different analysts can be compared in the future. Such a cut-off is very difficult to define in quantitative terms and would differ according to the skill of the individual worker.

Methodological work on the existing archive would also be useful to make contrasts in detail between the overburden and material from the features, some differences in preservation noted by Maltby during excavation have not yet been followed up in detail. The detailed taphonomic analysis necessary did not seem worthwhile for this analysis in view of the rather small sample of large fragments of the common ungulates eventually retrieved but this sample might be worthy of more detailed analysis as a comparative sample at a future date to be of value in assessing the bias from a much larger collection of the common ungulates - e.g. that from the nearby site of Old Windsor.

The differences in retrieval between the 5mm and 1mm samples sieved was investigated in order to see whether fine sieves produced more faunal information. More detailed analysis of the results would be needed to decide whether 5mm sieving actually produced a higher value for calf and piglet and other bones of the larger species. Certainly the presence of all the smaller species would not have been deduced from trowelling although mole, water vole, rabbit, fowl, goose, all but the smallest species of bird, and larger fish bones (including some elements of eel and herring) were retrieved from unsieved material. The additional species in the 5mm results were shrew, house mouse, rat, short-tailed vole, toad, frog, a wider range of eel and herring bones, and cyprinids. The 1mm sieves produced an enormous amount of unidentifiable fragments of bone from larger species, probably mostly classified as 'unidentifiable mammal fragments' but from the common ungulates; and more burnt fragments.

As might be expected, whereas 5mm sieves may increase detailed knowledge of the common species, 1mm sieving does not particularly benefit them, as discussed in some detail in the ungulate section.

The 1mm sieves do however produce evidence not found elsewhere - kitten, Apodemus, young Apodemus, harvest mouse, rat, beaver, snake; and the small individuals and small elements of eel, herring, pike, perch, and cyprinid, including all three specifically identifiable cyprinid dorsal fin spines. The 1mm sieving showed up a number of cyprinid species and dace, chub, tench, gudgeon, and barbel were tentatively identified. Further work on this material might be productive and it is of interest for the picture it gives of the upper Thames at this time.

In addition to the extra species and elements from 1mm sieves there was probably a wider representation of small birds, frog, and toad. Some of these differences may be fortuitous but some are, by the size of the element retrieved, quite obviously due to the use of the finer sieve. It is possible on the basis of these results to assess the sort of extra evidence for fauna which can be retrieved with such fine sieving. The detailed comparisons possible now with other sites have made this worthwhile for Wraysbury. A number of these species, especially the freshwater fish, were not found at Hamwic and, as both sites have been intensively sieved, it seems fair to say that this is a true and understandable difference in exploitation (Coy in Bourdillon, in prep).

There did not seem to be a remarkable difference between results for contexts with early medieval contamination and without, even in the fairly detailed microfaunal analyses carried out for Trench Complex 3+8+12. The analysis of this complex included an attempt to analyse any differences between microfaunal preservation for ditches and pits and some differences in emphasis between the species and anatomical elements preserved were noted rather than in the list of species preserved. This may be due to a combination of depositional and preservational factors which it would need further study to work out.

The processes which brought in some of the microfauna may be quite complicated. One factor suggested for eel, herring, and at least the larger freshwater fish remains is that they came from human faeces which were either deposited in situ or redeposited in their own right or with the spread of dung generally. The possibility that eel as well as herring came from preserved fish cannot be ruled out. Some of the very small bones of pike, perch, and cyprinids may have come from fish stranded in periodic flooding. These may or may not have been eaten. Snake vertebrae also suggest dungheaps.

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SUPPORTING ARCHIVE TABLES

TABLE A1 LAYERS WITH BONE STUDIED IN DIFFERENT TRENCHES

Trial Trench A	9996612,9997712
Trial Trench B	99213,99214,996623,996723,9996623,9996626,9997723,9997726,9998823,9998826
Trial Trench C	9996633,9997733
Trench 1+2+7+14	34,35,42,44,56,159,160,162,164,165,166,168,169,170,171,172,173,174,179,180,183,185,196,197,198,199,200,202,203,212,213,214,215,216,217,219,220,221,246,247,270,271,280,314,315,333,435,496,514,518,519,6635,6642,6644,88159,88160,88161,88163,88164,88166,88168,88169,88170,88171,88172,88173,88174,88178,88179,88180,88181,88185,88186,88187,88194,88196,88197,88198,88199,88200,88203,88204,88212,88213,88214,88215,88216,88217,88219,88220,88221,88225,88230,88237,88238,88246,88247,88279,88280,88312,88314,88329,88333
Trench 3+8+12	7,14,27,29,43,74,75,232,233,234,255,256,258,260,261,263,264,275,276,277,374,375,378,384,385,386,401,402,403,404,405,406,430,431,432,434,437,438,458,461,468,469,470,471,475,476,521,522,523,544,546,667,6627,6658,6660,6674,6675,8829,66378,88255,88256,88258,88264,88275,88276,88277,88374,88375,88384,88385,88395,88401,88402,88403,88404,88405,88406,88430,88431,88434,88437,88438,88461,88464,88468,88469,88470,88471,88475,88476,88484,88521,88523,88543,88544
Trench 4	55,85,253,8815,8816,8817,8819,8820,8847,8848,8851,8852,8854,8855,8871,8885,88205,88226,88239,88252,88253,88268,88308
Trench 6	2,61,62,65,68,69,70,152,153,154,155,156,157,188,190,206,267,272,273,274,311,316,336,380,392,394,412,427,428,456,457,460,463,464,500,8861,8862,8863,8864,8865,8870,88267,88272,88274,88311,88316,88380,88381,88392,88412,88427,88456,88463,88500
Trench 9+13	12,13,18,32,33,36,41,77,78,79,82,83,84,92,93,94,95,125,127,128,138,141,158,201,210,228,236,310,335,372,373,376,399,400,426,429,436,439,465,472,473,485,487,6613,6618,6684,8832,8833,8836,8879,8882,8892,8893,88158,88201,88210,88310,88372,88376,88399,88400,88426,88429,88436,88487

continued

TABLE A1 continued

Trench 11 91,282,283,284,285,286,289,290,291,292,293,294,295,297,298,299, 302,303,306,309,320,362,367,88282,88284,88286,88287,88293,88294, 88295,88296,88297,88298,88299,88301,88303,88304,88306,88309, 88320,88321,88366,88367,88368,88382,88506

<u>Layers with Post-Medieval (Including Modern) Contamination</u>

2,9,14,34,35,42,44,61,62,68,69,82,95,125,127,128,152,153,154,155,156,157,188, 190,236,260,261,263,273,283,285,302,335,336, 485,6627,6642,8829,8861,8882, 88214,9996612,9996626,9996633,9997733

<u>Layers with Early Medieval Contamination</u>

29,55,70,79,92,169,197,198,199,200,206,212,253,255,256,258,264,267,272,277, 282,283,284,285,286,289,290,291,292,293,294,295,297,298,299,302,303,306,309, 320,336,362,367,374,375,376,380,401,402,403,404,405,406,412,431,437,463,469, 475,521,8829,8848,8851,8855,8865,8870,9979,8892,88169,88197,88198,88199,88200, 88212,88253,88255,88256,88258,88264,88267,88272,88274,88277,88282,88284,88286, 88287,88293,88294,88295,88296,88297,88298,88299,99301,88303,88304,88306,88309, 88320,88321,88366,88367,88368,88374,88375,88376,88380,88382,88401,88402,88403, 88404,88405,88406,88412,88431,88437,88463,88469,88475,88506,88521

<u>Overburden</u>

7,12,13,18,27,43,74,75,6613,6618

<u>Key to Prefixes</u>
These are sometimes used together with the following order of priority:

99 - trial trenches
9 - bulk sample
(trial bulk samples therefore preceded by 999)
66 - processed through 5mm sieve
77 - " " 2mm "
88 - " " 1 or 0.6mm sieve
1 - Trial trench A
2 - Trial trench B
3 - Trial trench C

TABLE A2 BONES KEPT OUT FOR FURTHER STUDY

Specimen no. in archive	Description and Context		Location
1	Path sheep maxilla for photo	9923	FRU
2	Wader ulna to Tring	996723	FRU
4	Path fowl radius for photo trench 2		FRU
6	Corncrake femur to Tring	198	FRU
7	Wren for checking	88469	FRU
8	Harvest mouse for checking	88275	FRU
9	Dorsal spine barbel BM	88401	FRU
	" " " "	88275	FRU
11	Tib-tar goshawk to Tring	461	FRU
12	Poor red deer antler,photo	65	FRU
15	Blademark butch for photo	380	FRU
16	Paramedian butch for photo	18	FRU
18	Tufted duck ? c/m to Tring	399	FRU
20	Buzzard ? scap to Tring	473	FRU
22	Worked roe metatarsus	375	TWA
23	Snake ? vert various locations		BM reptile
24	Gadoid cleithrum to BM	996623	FRU
25	Collection freshwater fish Tr	12	FRU
26	Very lge pike pterygoid	32	FRU
27	Weberian cf gudgeon BM	372	FRU
28	Collection fw fish Tr 9 imm sieving		FRU
29	" " " to BM	88276	FRU
30	" " " " " Tr 7		FRU
31	Fish vertebra to BM	8855	FRU
32	" " " " Tr 6 1mm		FRU
33	Freshwater fish bones	8871	FRU
34	Fish vertebrae to BM Trench 7		FRU
35	Collection of fish to BM	88384	FRU
36	Freshwater fish to BM	8829	FRU
37	Fish bones to BM	88476	FRU
38	Pharyngeal bones to BM	88544	FRU
39	Fish vert to BM	88469	FRU
40	Dorsal spine barbel BM	88395	FRU

TABLE A3 SPECIES ABBREVIATIONS USED IN TABLES

Domesticated and Larger Wild Mammals

HOR	domestic horse
COW	domestic cattle
SHE	domestic sheep or identified to 'ovicaprid'
GOA	domestic goat
PIG	domestic pig
LAR	large ungulate
SAR	small ungulate
UNM	unidentified mammal fragment (probably mostly LAR/SAR)
DOG	domestic dog
CAT	domestic cat
RED	*Cervus elaphus*, red deer
FAL	*Dama dama*, fallow deer
ROE	*Capreolus capreolus*, roe deer
RAB	*Oryctolagus cuniculus*, rabbit
HAR	*Lepus* sp, hare
BEA	*Castor fiber*, beaver
FOX	*Vulpes vulpes*, fox

Microfauna - Small Mammals, Amphibians, and Reptiles

TAL	*Talpa europaea*, mole
SOR	*Sorex araneus*, common shrew
MIC	*Microtus agrestis*, field vole
ARV	*Arvicola terrestris*, water vole
APO	*Apodemus* sp, mouse
MIM	*Micromys minutus*, harvest mouse
MUS	*Mus musculus*, house mouse
RAT	*Rattus* sp, rat
ROD	rodent
SMM	small mammals
RAN	*Rana* sp, frog
BUF	*Bufo* sp, toad
AMP	amphibian
OPH	*Ophidia*, snakes

Birds

FOW	domestic fowl
GOO	domestic goose
DUC	domestic duck ?
ANA	*Anas platyrhynchos*, mallard
BUT	*Buteo buteo*, buzzard
ACC	*Accipiter gentilis*, goshawk
SCO	*Scolopax rusticola*, woodcock
PLU	*Pluvialis apricaria*, golden plover
VAN	*Vanellus vanellus*, lapwing
CRE	*Crex crex*, corncrake
COL	*Columba* , pigeons
TUR	*Turdus* sp, thrushes
PAS	*Passer domesticus*, house sparrow
TRO	*Troglodytes troglodytes*, wren
BIR	unidentified non-domestic bird
UNB	unidentified bird fragment (probably mostly FOW)

continued

continued

Fish

ANG	Anguilla anguilla, common eel
CLU	Clupeidae, herring family
SAL	Salmo sp, salmon or trout
ESO	Esox lucius, pike
CYP	Cyprinidae, freshwater fishes
PER	Perca fluviatilis, perch
PLE	Pleuronectidae, flatfish
FIS	unidentified fish fragment
MOL	mollusc remains, mostly Ostrea edulis, oyster

TABLE A4 DOMESTIC AND LARGER WILD MAMMALS TRIAL TRENCH B

	hor	cow	she	goa	pig	lar	sar	unm	dog	cat	red	fal	roe	rab	har	bea	fox	TOTAL
antler/hc	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7
skull	-	16	24	-	62	-	53	-	-	-	-	-	-	-	-	-	-	155
hyoid	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
maxilla	-	7	6	-	11	-	-	-	-	-	-	-	-	1	-	-	-	25
mandible	-	5	37	-	35	-	-	-	-	-	-	-	-	-	-	-	-	77
vertebra	-	12	39	-	26	6	6	1	-	-	-	-	-	3	-	-	-	93
rib	-	19	197	-	17	18	192	1	-	-	-	-	-	2	-	-	-	446
sternum	-	-	3	-	2	-	-	-	-	-	-	-	-	-	-	-	-	5
scapula	-	8	17	-	14	-	-	-	-	-	-	-	-	-	-	-	-	39
humerus	-	1	-	-	10	-	-	-	-	-	-	-	-	1	-	-	-	12
radius	-	3	10	-	4	2	-	-	-	-	-	-	-	-	-	-	-	19
ulna	-	3	10	-	6	-	-	-	-	-	-	-	-	-	-	-	-	19
pelvis	-	5	9	-	7	-	-	-	-	-	-	-	-	2	-	-	-	23
femur	-	2	5	-	2	-	1	-	-	-	-	-	-	1	-	-	-	11
patella	-	1	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	3
tibia	-	3	8	-	8	-	-	-	-	-	-	-	-	-	-	-	-	19
fibula	-	-	-	-	7	-	-	-	-	-	-	-	-	-	-	-	-	7
carpal/tarsal	-	3	10	-	14	1	-	-	-	-	-	-	-	1	-	-	-	29
metapodial	1	8	30	-	21	-	-	-	-	-	-	-	1	-	-	-	-	61
phalanx	-	5	10	-	24	-	-	-	-	-	-	-	-	-	-	-	-	39
loose teeth	-	18	82	-	80	-	-	-	-	-	-	-	4	1	-	-	-	185
l.b.fragment	-	-	-	-	-	36	454	-	-	-	-	-	-	-	-	-	-	490
fragment	-	-	-	-	-	77	92	5538	-	-	-	-	-	-	-	-	-	5707
TOTALS	1	122	504	0	351	140	798	5540	0	0	0	0	5	12	0	0	0	7473

TABLE A5 DOMESTIC AND LARGER WILD MAMMALS TRENCH 1+2+7+14

	hor	cow	she	goa	pig	lar	sar	unm	dog	cat	red	fal	roe	rab	har	bea	fox	TOTAL
antler/hc	-	3	1	-	-	-	-	-	-	-	2	-	1	-	-	-	-	7
skull	-	6	7	-	3	1	1	-	-	-	-	-	-	-	-	-	-	18
hyoid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
maxilla	-	2	2	-	8	-	-	-	-	-	-	-	-	-	-	-	-	12
mandible	-	10	8	-	8	-	-	-	-	-	-	-	-	-	-	-	-	26
vertebra	-	16	7	-	6	9	12	-	-	2	-	-	-	-	-	-	-	52
rib	-	3	2	-	3	16	27	-	-	-	-	-	-	-	-	-	-	51
sternum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
scapula	-	6	5	-	5	-	-	1	-	-	-	-	1	-	-	-	-	18
humerus	-	12	3	-	10	1	-	-	-	2	-	-	-	-	-	-	-	28
radius	-	4	5	-	5	-	-	-	-	-	-	-	-	-	-	-	-	14
ulna	-	2	-	-	2	-	-	-	-	1	-	-	-	-	-	-	-	5
pelvis	-	5	8	-	2	1	-	-	1	-	-	-	-	-	-	-	-	17
femur	-	3	3	-	1	1	-	1	-	-	-	-	-	-	-	-	-	9
patella	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
tibia	-	-	9	-	4	-	-	1	-	2	-	-	-	-	-	-	-	16
fibula	-	-	1	-	3	-	-	-	-	-	-	-	-	-	-	-	-	4
carpal/tarsal	-	6	3	-	4	-	1	-	-	1	-	-	-	-	-	-	-	15
metapodial	1	7	16	-	5	-	-	-	-	2	-	-	-	-	-	-	-	31
phalanx	-	8	3	-	7	-	-	-	-	-	-	-	-	-	-	-	-	18
loose teeth	3	37	38	-	27	2	-	-	-	1	1	-	-	-	-	-	-	109
l.b.fragment	-	-	-	-	-	95	622	-	-	-	-	-	-	-	-	-	-	717
fragment	-	-	-	-	-	129	451	5203	-	-	-	-	-	-	-	-	-	5783
TOTALS	4	130	122	0	103	255	1114	5206	1	11	3	0	2	0	0	0	0	6951

TABLE A6 DOMESTIC AND LARGER WILD MAMMALS TRENCH 9+13

	hor	cow	she	goa	pig	lar	sar	unm	dog	cat	red	fal	roe	rab	har	bea	fox	TOTAL
antler/hc	-	4	1	-	-	-	-	-	-	-	2	-	1	-	-	-	-	8
skull	-	16	7	-	18	10	2	-	-	-	-	-	-	1	-	-	-	54
hyoid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
maxilla	-	6	4	-	13	-	-	-	1	-	-	-	-	-	-	-	-	24
mandible	-	28	22	-	15	-	-	-	-	-	-	-	1	-	-	-	-	66
vertebra	1	39	18	-	22	19	10	-	-	-	-	-	-	2	-	-	-	111
rib	-	68	8	-	3	40	82	-	-	-	-	-	-	-	-	-	-	201
sternum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
scapula	-	22	7	-	9	2	1	-	-	-	-	-	-	-	-	-	-	41
humerus	-	11	11	-	10	2	-	-	-	-	-	-	-	-	-	-	-	34
radius	-	16	12	-	3	-	-	-	-	-	-	-	-	-	-	-	-	31
ulna	2	5	4	-	5	-	-	-	-	-	-	-	-	-	-	-	-	16
pelvis	-	22	7	-	13	2	2	-	-	-	-	-	-	-	-	-	-	46
femur	1	10	6	-	9	2	-	-	-	1	-	-	-	-	-	-	-	29
patella	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	2
tibia	2	11	14	-	6	3	1	-	-	1	1	-	-	-	-	-	-	39
fibula	-	-	-	-	7	-	-	-	-	-	-	-	-	-	-	-	-	7
carpal/tarsal	1	23	11	-	6	-	-	-	-	-	-	-	-	-	-	-	-	41
metapodial	2	18	6	1	10	-	-	-	1	-	-	-	4	1	-	-	-	43
phalanx	-	12	9	-	8	-	1	-	-	-	-	-	-	-	-	-	-	30
loose teeth	5	55	31	-	38	-	-	-	-	-	-	-	-	1	-	1	-	131
l.b.fragment	-	20	-	-	-	298	570	-	-	-	-	-	-	-	-	-	-	888
fragment	-	-	-	-	-	154	271	265	-	-	-	-	-	-	-	-	-	690
TOTALS	14	387	178	1	196	532	940	265	2	2	3	0	6	5	0	1	0	2532

TABLE A7 DOMESTIC AND LARGER WILD MAMMALS TRENCH 3+8+12

	hor	cow	she	goa	pig	lar	sar	unm	dog	cat	red	fal	roe	rab	har	bea	fox	TOTAL
antler/hc	-	7	3	-	-	-	-	-	-	-	-	-	3	-	-	-	-	13
skull	-	58	17	-	40	19	-	-	1	-	-	-	-	-	-	-	-	135
hyoid	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
maxilla	-	7	2	-	26	-	-	-	2	-	-	-	1	-	-	-	-	38
mandible	4	51	30	-	50	1	-	-	9	-	-	-	3	-	-	-	2	150
vertebra	6	119	14	-	26	29	20	-	18	1	-	-	-	1	-	-	-	234
rib	2	122	12	-	16	94	172	-	18	-	-	-	-	-	-	-	-	436
sternum	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
scapula	2	55	13	-	45	1	4	-	3	-	-	-	1	-	-	-	-	124
humerus	1	34	18	-	33	2	-	1	1	2	-	1	4	-	1	-	-	98
radius	1	38	18	-	16	1	-	-	3	2	1	-	6	-	-	-	-	86
ulna	2	29	4	-	14	-	-	-	3	-	-	-	-	-	-	-	-	52
pelvis	2	46	12	-	14	6	-	-	4	1	1	-	-	1	-	-	-	87
femur	1	34	13	-	17	16	1	-	4	-	-	-	-	-	-	-	-	86
patella	-	4	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
tibia	2	41	33	-	20	2	-	1	2	-	3	-	4	1	-	-	-	109
fibula	-	-	1	-	5	-	-	-	1	-	-	-	-	-	-	-	-	7
carpal/tarsal	3	79	16	-	7	2	-	-	-	-	-	-	-	-	-	-	-	107
metapodial	5	88	33	-	31	-	-	-	16	4	-	-	11	-	-	-	-	188
phalanx	4	55	7	-	26	-	-	1	10	1	1	-	-	-	-	-	-	105
loose teeth	10	126	116	-	230	-	-	1	2	-	1	-	7	-	-	-	-	493
l.b.fragment	-	4	9	-	5	824	1970	-	-	-	-	-	-	-	-	-	-	2812
fragment	-	8	1	-	-	420	715	3655	-	-	-	-	-	-	-	-	-	4799
TOTALS	45	1008	373	0	621	1417	2882	3659	97	11	7	1	40	3	1	0	2	10167

TABLE A8 DOMESTIC AND LARGER WILD MAMMALS TRENCH 6

	hor	cow	she	goa	pig	lar	sar	unm	dog	cat	red	fal	roe	rab	har	bea	fox	TOTAL
antler/hc	-	4	8	-	-	-	-	-	-	-	1	-	-	-	-	-	-	13
skull	-	16	2	-	4	5	1	-	-	2	-	-	-	1	-	-	-	31
hyoid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
maxilla	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	2
mandible	1	13	5	-	1	-	-	-	-	3	-	-	-	1	1	-	-	25
vertebra	-	46	3	-	10	3	4	-	-	13	-	-	-	1	1	-	-	81
rib	-	35	-	-	-	12	31	-	-	22	-	-	-	-	-	-	-	100
sternum	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1
scapula	-	14	1	-	7	3	-	-	-	3	-	-	-	-	-	-	-	28
humerus	-	15	3	-	7	-	-	-	-	4	-	-	-	1	-	-	-	30
radius	1	8	2	-	4	-	-	-	-	2	-	-	-	-	-	-	-	17
ulna	-	5	-	-	3	-	-	-	-	3	-	-	-	-	-	-	-	11
pelvis	1	6	-	-	2	-	1	-	-	5	-	-	-	1	-	-	-	16
femur	-	18	-	-	4	1	-	-	-	3	-	-	-	1	-	-	-	27
patella	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
tibia	-	5	4	-	4	1	-	-	-	2	-	-	-	2	-	-	-	18
fibula	-	-	2	-	4	-	-	-	-	1	-	-	-	-	-	-	-	7
carpal/tarsal	-	10	1	-	6	-	1	-	-	1	-	-	-	-	-	-	-	19
metapodial	-	16	7	-	7	-	-	-	1	-	-	-	-	1	2	-	-	34
phalanx	-	9	2	-	31	-	-	-	-	22	-	1	-	-	-	-	-	65
loose teeth	15	13	19	-	32	-	-	-	3	-	-	-	1	-	-	-	-	83
l.b.fragment	-	-	-	-	-	129	317	-	-	-	-	-	-	-	-	-	-	446
fragment	-	-	-	-	3	82	37	2511	-	-	-	-	-	-	-	-	-	2633
TOTALS	18	236	59	0	130	236	393	2511	4	86	1	1	1	9	4	0	0	3689

TABLE A9 DOMESTIC AND LARGER WILD MAMMALS TRENCH 4

	hor	cow	she	goa	pig	lar	sar	unm	dog	cat	red	fal	roe	rab	har	bea	fox	TOTAL
antler/hc	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
skull	-	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
hyoid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
maxilla	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
mandible	-	2	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	3
vertebra	-	1	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
rib	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1
sternum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
scapula	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	2
humerus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
radius	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
ulna	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
pelvis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
femur	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
patella	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
tibia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
fibula	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	2
carpal/tarsal	-	2	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	3
metapodial	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	2
phalanx	-	1	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	3
loose teeth	-	5	6	-	18	-	-	-	-	-	-	-	-	1	-	-	-	30
l.b.fragment	-	-	-	-	-	34	210	-	-	-	-	-	-	-	-	-	-	244
fragment	-	-	-	-	-	44	57	1448	-	-	-	-	-	-	-	-	-	1549
TOTALS	0	18	15	0	24	80	267	1448	0	0	0	0	0	1	0	0	0	1853

TABLE A10 DOMESTIC AND LARGER WILD MAMMALS TRENCH 11

	hor	cow	she	goa	pig	lar	sar	unm	dog	cat	red	fal	roe	rab	har	bea	fox	TOTAL
antler/hc	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
skull	-	5	1	-	3	-	1	-	-	-	-	-	-	-	-	-	-	10
hyoid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
maxilla	-	2	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	3
mandible	-	5	1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	8
vertebra	-	3	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	5
rib	-	1	-	-	1	3	13	-	-	-	-	-	-	-	-	-	-	18
sternum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
scapula	-	-	1	-	3	-	-	-	-	-	-	-	-	-	-	-	-	4
humerus	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
radius	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
ulna	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
pelvis	-	2	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	3
femur	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
patella	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
tibia	-	-	1	-	2	1	-	-	-	-	-	-	-	-	-	-	-	4
fibula	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
carpal/tarsal	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
metapodial	2	2	4	-	1	-	-	-	-	-	-	-	-	-	-	-	-	9
phalanx	-	1	1	-	3	-	-	-	1	-	-	-	-	-	-	-	-	6
loose teeth	-	7	9	-	-	-	9	-	-	-	-	-	-	-	-	-	-	25
l.b.fragment	-	-	-	-	11	36	154	-	-	-	-	-	-	-	-	-	-	201
fragment	-	5	-	-	-	59	128	1632	-	-	-	-	-	-	-	-	-	1824
TOTALS	2	36	20	0	28	100	306	1632	1	0	0	0	0	0	0	0	0	2125

TABLE A11 MICROFAUNA - SMALL MAMMALS, AMPHIBIA, REPTILES TRIAL TRENCH B

	tal	sor	mic	arv	apo	mim	mus	rat	rod	smm	ran	buf	amp	oph	TOTAL
skull	-	-	-	-	-	-	-	-	2	-	-	-	-	-	2
hyoid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
maxilla	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
mandible	-	1	-	-	-	-	2	-	-	-	-	-	-	-	3
vertebra	-	-	-	-	-	-	-	-	-	1	-	-	5	11	17
rib	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
sternum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
scapula	-	-	-	-	-	-	-	-	-	-	-	2	1	-	3
humerus	-	1	-	-	-	-	-	-	1	-	-	3	1	-	6
radius	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
ulna	2	-	-	-	-	-	-	-	-	-	-	-	-	-	2
pelvis	-	-	-	-	-	-	-	-	1	-	-	1	1	-	3
femur	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
patella	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
tibia	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1
fibula	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
carpal/tarsal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
metapodial	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
phalanx	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
loose teeth	-	-	1	-	-	-	-	-	2	-	-	-	-	-	3
l.b.fragment	-	-	-	-	-	-	-	-	3	-	-	-	-	-	3
fragment	-	-	-	-	-	-	-	-	-	10	-	-	1	-	11
TOTALS	2	2	1	0	0	0	2	0	9	11	0	7	9	11	54

TABLE A12 MICROFAUNA - SMALL MAMMALS, AMPHIBIA, REPTILES TRENCH 1+2+7+14

	tal	sor	mic	arv	apo	mim	mus	rat	rod	smm	ran	buf	amp	oph	TOTAL
skull	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1
hyoid	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1
maxilla	-	1	-	-	2	1	5	-	-	-	-	-	-	-	9
mandible	1	5	2	-	1	1	3	-	2	1	-	-	-	-	16
vertebra	-	-	-	-	-	-	-	-	1	13	-	-	-	4	18
rib	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
sternum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
scapula	-	-	-	-	-	-	-	-	-	-	1	-	1	-	2
humerus	1	4	-	1	-	-	-	1	-	2	-	3	1	-	13
radius	3	-	-	-	-	-	-	-	-	-	-	-	-	-	3
ulna	2	-	-	-	-	-	-	-	-	1	-	-	-	-	3
pelvis	2	-	-	-	-	-	-	-	1	-	-	1	1	-	5
femur	-	-	-	-	-	-	-	-	2	1	-	-	-	-	3
patella	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
tibia	-	-	-	1	-	-	-	-	-	-	-	2	-	-	3
fibula	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
carpal/tarsal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
metapodial	-	-	-	-	-	-	-	-	-	2	-	-	6	-	8
phalanx	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1
loose teeth	-	-	48	19	-	-	3	1	18	-	-	-	-	-	89
l.b.fragment	-	-	-	-	-	-	-	-	31	32	-	2	110*	-	175
fragment	-	-	-	-	-	-	-	-	83	75	-	-	41	-	199
TOTALS	10	10	50	21	3	2	11	2	139	128	1	8	160	4	549

* includes 5 skeletons, 2 *Bufo*, 2 *Rana*, 1 immature

TABLE A13 MICROFAUNA - SMALL MAMMALS, AMPHIBIA, REPTILES TRENCH 9+13

	tal	sor	mic	arv	apo	mim	mus	rat	rod	smm	ran	buf	amp	oph	TOTAL
skull	-	-	-	9	-	-	-	-	-	-	-	-	-	-	9
hyoid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
maxilla	-	-	-	1	2	-	6	-	-	-	-	-	-	-	9
mandible	-	-	7	3	3	-	6	-	-	-	-	-	-	-	19
vertebra	-	-	-	-	-	-	-	-	15	2	-	-	1	4	22
rib	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
sternum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
scapula	2	-	-	-	-	-	-	-	-	-	-	-	-	-	2
humerus	4	-	-	5	-	-	-	-	-	-	-	2	-	-	11
radius	4	-	-	-	-	-	-	-	-	-	-	-	-	-	4
ulna	-	-	-	2	-	-	-	-	-	-	-	-	-	-	2
pelvis	-	-	-	2	-	-	-	-	-	-	2	3	-	-	7
femur	-	-	-	2	-	-	-	-	-	-	2	2	-	-	6
patella	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
tibia	1	-	-	2	-	-	-	-	-	-	4	4	-	-	11
fibula	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
carpal/tarsal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
metapodial	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
phalanx	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
loose teeth	-	-	7	40	-	-	-	-	14	-	-	-	-	-	61
l.b.fragment	-	-	-	-	-	-	-	-	7	-	-	14	54	-	75
fragment	-	-	-	-	-	-	-	-	97	33	-	-	150	-	280
TOTALS	11	0	14	66	5	0	12	0	133	35	8	25	205	4	518

TABLE A14 MICROFAUNA - SMALL MAMMALS, AMPHIBIA, REPTILES TRENCH 3+8+12

	tal	sor	mic	arv	apo	mim	mus	rat	rod	smm	ran	buf	amp	oph	TOTAL
skull	1	-	1	-	-	-	-	1*	-	-	-	-	-	-	3
hyoid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
maxilla	-	1	1	-	1	-	1	-	-	-	-	-	-	-	4
mandible	3	10	2	1	1	2	3	1+	1	-	-	-	-	-	24
vertebra	-	-	-	-	-	-	-	-	1	1	1	-	-	17	20
rib	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
sternum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
scapula	-	-	-	-	-	-	-	-	-	-	-	-	2	-	2
humerus	2	3	-	1	-	-	-	-	3	-	-	1	1	-	11
radius	2	-	-	-	-	-	-	-	-	-	-	-	-	-	2
ulna	2	-	-	2	-	-	-	-	-	-	-	-	-	-	4
pelvis	1	-	-	-	-	-	-	-	-	-	1	7	-	-	9
femur	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
patella	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
tibia	2	-	-	1	-	-	-	-	-	-	2	3	-	-	8
fibula	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
carpal/tarsal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
metapodial	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
phalanx	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
loose teeth	-	-	27	19	-	-	-	-	21	-	-	-	-	-	67
l.b.fragment	-	-	-	-	-	-	-	-	48	66	-	-	50	-	164
fragment	-	-	-	-	-	-	-	-	88	58	-	-	35	1	182
TOTALS	13	14	31	24	2	2	4	2	162	125	4	11	89	18	501

* norvegicus
+ rattus

TABLE A15 MICROFAUNA - SMALL MAMMALS, AMPHIBIA, REPTILES TRENCH 6

	tal	sor	mic	arv	apo	mim	mus	rat	rod	smm	ran	buf	amp	oph	TOTAL
skull	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
hyoid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
maxilla	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1
mandible	-	4	-	2	-	-	2	-	1	-	-	-	-	-	9
vertebra	-	-	-	-	-	-	-	-	-	-	-	-	1	2	3
rib	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
sternum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
scapula	-	-	-	-	-	-	-	-	-	-	-	2	-	-	2
humerus	2	-	-	-	-	-	-	-	1	-	-	1	-	-	4
radius	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
ulna	2	-	-	1	-	-	-	-	-	-	-	-	-	-	3
pelvis	-	-	-	-	-	-	-	-	-	-	1	3	-	-	4
femur	1	-	-	1	-	-	-	-	-	-	-	-	-	-	2
patella	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
tibia	-	-	-	-	-	-	-	-	-	-	-	2	-	-	2
fibula	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
carpal/tarsal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
metapodial	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
phalanx	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
loose teeth	1	-	-	3	-	-	-	-	10	-	-	-	-	-	14
l.b.fragment	-	-	-	-	-	-	-	-	25	3	3	4	55	-	90
fragment	-	-	-	-	-	-	-	-	17	17	-	-	22	-	56
TOTALS	6	5	0	7	0	0	2	0	54	20	4	12	78	2	190

TABLE A16 MICROFAUNA - SMALL MAMMALS, AMPHIBIA, REPTILES TRENCH 4

	tal	sor	mic	arv	apo	mim	mus	rat	rod	smm	ran	buf	amp	oph	TOTAL
skull	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
hyoid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
maxilla	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
mandible	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
vertebra	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
rib	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
sternum	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
scapula	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
humerus	1	2	-	-	-	-	-	-	-	-	-	-	-	-	3
radius	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
ulna	1	-	-	-	-	-	-	-	1	-	-	-	-	-	2
pelvis	1	-	-	-	-	-	-	-	-	-	1	-	-	-	2
femur	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
patella	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
tibia	-	-	-	-	-	-	-	-	-	-	2	-	-	-	2
fibula	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
carpal/tarsal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
metapodial	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
phalanx	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
loose teeth	-	-	-	2	-	-	-	-	4	2	-	-	-	-	8
l.b.fragment	-	-	-	-	-	-	-	-	-	4	-	-	8	-	12
fragment	-	-	-	-	-	-	-	-	3	25	-	-	3	-	31
TOTALS	3	2	0	2	0	0	0	0	8	31	3	0	12	1	62

TABLE A17 MICROFAUNA - SMALL MAMMALS, AMPHIBIA, REPTILES TRENCH 11

	tal	sor	mic	arv	apo	mim	mus	rat	rod	smm	ran	buf	amp	oph	TOTAL
skull	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
hyoid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
maxilla	-	-	-	-	1	-	1	-	-	-	-	-	-	-	2
mandible	-	4	2	1	-	-	1	-	1	-	-	-	-	-	9
vertebra	-	-	-	-	-	-	-	-	-	1	-	-	2	1	4
rib	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
sternum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
scapula	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
humerus	1	-	-	-	-	-	-	-	3	-	-	3	-	-	7
radius	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1
ulna	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
pelvis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
femur	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
patella	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
tibia	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1
fibula	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
carpal/tarsal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
metapodial	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
phalanx	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
loose teeth	-	-	2	2	-	-	-	-	5	-	-	-	-	-	9
l.b.fragment	-	-	-	-	-	-	-	-	-	-	-	-	7	-	7
fragment	-	-	-	-	-	-	-	-	12	12	-	-	19	-	43
TOTALS	2	4	4	3	1	0	2	0	22	13	0	3	28	1	83

TABLE A18 BIRD BONES TRIAL TRENCH B

	fow	goo	duc	ana	but	acc	sco	plu	van	cre	col	tur	pas	tro	bir	unb	TOTAL
skull	1	2	-	-	-	-	-	-	-	-	-	-	-	-	1	-	4
jaw	-	3	-	-	-	-	1	-	-	-	-	-	-	-	1	4	9
vertebra	15	4	-	-	-	-	-	-	-	-	-	-	-	-	-	5	24
sternum	13	2	-	-	-	-	4	-	-	-	-	-	-	-	3	-	22
ribs	14	2	-	-	-	-	-	-	-	-	-	-	-	-	-	2	18
furcula	9	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	11
scapula	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7
coracoid	9	-	-	-	-	-	5	-	-	-	1*	-	-	-	-	-	15
humerus	18	2	-	-	-	-	1	-	-	-	1	-	-	-	-	-	22
radius	13	4	-	-	-	-	2	-	-	-	1	-	-	-	1	-	21
ulna	21	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	23
pelvis	15	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16
synsacrum	11	1	-	-	-	-	-	-	-	-	-	-	-	-	1	1	14
femur	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11
tib-tar	15	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	16
fibula	6	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	8
carp-met	6	6	-	1	-	-	4	-	-	-	-	-	-	-	-	-	17
tar-met	10	-	-	-	-	-	4	-	-	-	-	-	1	-	3	-	18
phalanx	1	3	-	-	-	-	-	-	-	-	-	-	-	-	-	69	73
other	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	8
l.b.frag	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	30	31
fragment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	444	444
TOTALS	196	31	0	1	0	0	23	0	0	0	3	0	2	0	14	562	832

* possible domestic

TABLE A19 BIRD BONES TRENCH 1+2+7+14

	fow	goo	duc	ana	but	acc	sco	plu	van	cre	col	tur	pas	tro	bir	unb	TOTAL
skull	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
jaw	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
vertebra	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3
sternum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
ribs	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2
furcula	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
scapula	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
coracoid	2	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	4
humerus	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
radius	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
ulna	1	2	-	-	-	-	-	-	-	-	-	1	-	-	-	-	4
pelvis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
synsacrum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
femur	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	3
tib-tar	5	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	7
fibula	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
carp-met	2	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	3
tar-met	2	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	3
phalanx	1	1	-	-	-	-	-	-	-	-	-	-	-	-	6	-	8
other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
l.b.frag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	6
fragment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	252	252
TOTALS	19	9	0	0	0	0	0	0	0	1	0	1	2	0	8	263	303

TABLE A20 BIRD BONES TRENCH 9+13

	fow	goo	duc	ana	but	acc	sco	plu	van	cre	col	tur	pas	tro	bir	unb	TOTAL
skull	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
jaw	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
vertebra	10	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	11
sternum	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
ribs	8	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	9
furcula	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
scapula	3	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-	6
coracoid	5	1	-	-	-	-	-	-	-	-	-	-	-	-	2	-	8
humerus	3	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	4
radius	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
ulna	5	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6
pelvis	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
synsacrum	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
femur	7	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	8
tib-tar	8	1	-	-	-	-	-	-	-	-	-	-	-	-	1	1	11
fibula	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
carp-met	1	-	-	1	-	-	-	-	-	-	1	-	-	-	-	-	3
tar-met	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
phalanx	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
l.b.frag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
fragment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	3
TOTALS	61*	8	0	4	1	0	0	0	0	0	1	0	0	0	8	3	86

* includes 32 bones from whole skeleton.

TABLE A21 BIRD BONES TRENCH 3+8+12

	fow	goo	duc	ana	but	acc	sco	plu	van	cre	col	tur	pas	tro	bir	unb	TOTAL
skull	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
jaw	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
vertebra	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	8	9
sternum	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3
ribs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
furcula	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
scapula	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
coracoid	4	1	-	2	-	-	2	-	-	-	-	-	-	-	2	-	11
humerus	3	1	-	-	-	-	-	-	1	-	-	1	1	-	-	-	7
radius	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6
ulna	7	5	-	-	-	-	-	-	-	-	-	-	-	-	1	-	13
pelvis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
synsacrum	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
femur	6	-	-	-	-	-	-	-	-	-	2	-	-	1	1	-	10
tib-tar	3	1	-	-	-	1	-	-	-	-	-	-	-	1	3	-	9
fibula	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
carp-met	1	-	1	1	-	-	-	1	-	-	-	1	5	-	2	-	12
tar-met	4	-	-	-	-	-	-	-	-	-	1	-	3	-	1	-	9
phalanx	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	5
other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
l.b.frag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26	26
fragment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	138	138
TOTALS	39	13	1	3	0	1	2	1	1	0	3	2	9	2	12	177	266

TABLE A22 BIRD BONES TRENCH 6

	fow	goo	duc	ana	but	acc	sco	plu	van	cre	col	tur	pas	tro	bir	unb	TOTAL
skull	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
jaw	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
vertebra	-	2	-	-	-	-	-	-	-	-	-	-	-	-	3	-	5
sternum	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
ribs	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
furcula	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
scapula	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
coracoid	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
humerus	1	4	-	-	-	-	1	-	-	-	-	-	-	-	-	-	6
radius	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
ulna	2	2	1	1	-	-	-	-	-	-	-	-	-	-	-	-	6
pelvis	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
synsacrum	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
femur	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
tib-tar	2	2	-	-	-	-	-	-	-	-	-	-	-	-	2	-	6
fibula	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
carp-met	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
tar-met	1	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	3
phalanx	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	6	11
other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	8
l.b.frag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	4
fragment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	6
TOTALS	9	32*	1	1	0	0	1	0	0	0	0	0	0	0	10	20	74

* includes partial skeleton

TABLE A23 BIRD BONES TRENCH 4

	fow	goo	duc	ana	but	acc	sco	plu	van	cre	col	tur	pas	tro	bir	unb	TOTAL
skull	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
jaw	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
vertebra	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
sternum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
ribs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
furcula	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
scapula	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
coracoid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
humerus	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
radius	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
ulna	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
pelvis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
synsacrum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
femur	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
tib-tar	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
fibula	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
carp-met	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	2
tar-met	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
phalanx	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
l.b.frag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
fragment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
TOTALS	1	0	0	0	0	0	0	0	0	0	0	0	1	0	3	3	8

TABLE A24 BIRD BONES TRENCH 11

	fow	goo	duc	ana	but	acc	sco	plu	van	cre	col	tur	pas	tro	bir	unb	TOTAL
skull	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
jaw	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
vertebra	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
sternum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
ribs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
furcula	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
scapula	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
coracoid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
humerus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
radius	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
ulna	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
pelvis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
synsacrum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
femur	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
tib-tar	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
fibula	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
carp-met	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
tar-met	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
phalanx	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
l.b.frag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
fragment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
TOTALS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	4	9

TABLE A25 FISH BONES AND MOLLUSCS TRIAL TRENCH B

	ang	clu	sal	eso	cyp	per	ple	fis	mol	TOTAL
scale/dent	-	-	-	-	-	1	-	-	-	1
tooth	-	-	-	-	-	-	-	-	-	0
skull	-	-	-	-	-	-	-	-	-	0
vomer	-	-	-	-	-	-	-	-	-	0
premaxillary	-	-	-	-	-	-	-	-	-	0
maxillary	-	-	-	-	-	-	-	1	-	1
dentary	2	-	-	1	-	-	-	-	-	3
articular	-	-	-	-	-	-	-	-	-	0
palatine	-	-	-	-	-	-	-	-	-	0
quadrate	-	-	-	-	-	-	-	1	-	1
hyomandibular	-	-	-	-	-	-	-	-	-	0
opercular	-	-	-	-	-	-	-	-	-	0
hyale	-	-	-	-	-	-	-	-	-	0
ceratohyal	1	-	-	-	-	-	-	-	-	1
inf pharyngeal	-	-	-	-	1	-	-	-	-	1
post temporal	-	1	-	-	-	-	-	-	-	1
face bone	-	-	-	-	-	-	-	1	-	1
cleithrum	1	-	-	-	-	-	-	3	-	4
weberian vert	-	-	-	-	-	-	-	-	-	0
thor vert	-	-	-	-	-	-	-	-	-	0
precaudal vert	-	1	-	-	-	-	-	-	-	1
caudal vert	-	1	-	-	-	-	-	-	-	1
vertebra	146	8	-	6	15	3	-	10	-	188
fragment	-	-	-	-	1	-	-	44	8	53
TOTAL	150	11	0	7	17	4	0	60	8	257

TABLE A26 FISH BONES AND MOLLUSCS TRENCH 1+2+7+14

	ang	clu	sal	eso	cyp	per	ple	fis	mol	TOTAL
scale/dent	-	-	-	-	-	1	-	-	-	1
tooth	-	-	-	-	-	-	-	-	-	0
skull	-	-	-	-	-	-	-	-	-	0
vomer	3	-	-	-	-	-	-	-	-	3
premaxillary	1	-	-	-	-	-	-	-	-	1
maxillary	-	-	-	-	-	-	-	-	-	0
dentary	10	-	-	1	-	-	-	-	-	11
articular	-	-	-	-	-	-	-	-	-	0
palatine	-	-	-	-	-	-	-	-	-	0
quadrate	-	1	-	-	-	-	-	-	-	1
hyomandibular	-	-	-	-	-	-	-	-	-	0
opercular	-	-	-	-	-	-	-	-	-	0
hyale	-	-	-	-	-	-	-	1	-	1
ceratohyal	7	-	-	-	-	-	-	-	-	7
inf pharyngeal	-	-	-	-	9	-	-	-	-	9
post temporal	-	-	-	-	-	-	-	2	-	2
face bone	-	-	-	-	-	-	-	-	-	0
cleithrum	16	-	-	-	-	-	-	-	-	16
weberian vert	-	-	-	-	14	1	-	-	-	15
thor vert	-	-	-	-	-	1	-	-	-	1
precaudal vert	6	1	1	-	-	-	-	-	-	8
caudal vert	3	-	1	-	3	-	-	-	-	7
vertebra	695	66	2	3	35	1	-	24	-	826
fragment	-	-	-	-	-	-	-	113	39	152
TOTAL	741	68	4	4	61	4	0	140	39	1061

TABLE A27 FISH BONES AND MOLLUSCS TRENCH 9+13

	ang	clu	sal	eso	cyp	per	ple	fis	mol	TOTAL
scale/dent	-	-	-	-	-	-	-	1	-	1
tooth	-	-	-	-	-	-	-	-	-	0
skull	-	-	-	-	-	-	-	-	-	0
vomer	4	-	-	-	-	-	-	-	-	4
premaxillary	-	-	-	-	-	-	-	-	-	0
maxillary	-	-	-	-	-	-	-	-	-	0
dentary	5	-	-	-	-	-	-	-	-	5
articular	2	-	-	-	-	-	-	-	-	2
palatine	-	-	-	-	-	-	-	-	-	0
quadrate	-	-	-	-	-	-	-	-	-	0
hyomandibular	-	-	-	-	-	-	-	-	-	0
opercular	1	1	-	-	-	-	-	-	-	2
hyale	-	-	-	-	-	-	-	-	-	0
ceratohyal	-	-	-	-	-	-	-	-	-	0
inf pharyngeal	-	-	-	-	11	-	-	-	-	11
post temporal	3	1	-	-	-	-	-	1	-	5
face bone	-	-	-	-	-	-	-	1	-	1
cleithrum	2	-	-	-	-	-	-	-	-	2
weberian vert	-	-	-	-	19	-	-	-	-	19
thor vert	-	-	1	1	-	-	-	-	-	2
precaudal vert	4	32	1	5	-	-	-	-	-	42
caudal vert	-	-	-	-	-	-	-	-	-	0
vertebra	240	59	3	1	32	1	-	1	-	337
fragment	-	-	-	1	-	-	-	3	20	24
TOTAL	261	93	5	8	62	1	0	7	20	457

TABLE A28 FISH BONES AND MOLLUSCS TRENCH 3+8+12

	ang	clu	sal	eso	cyp	per	ple	fis	mol	TOTAL
scale/dent	-	-	-	-	-	-	-	-	-	0
tooth	-	-	-	1	-	-	-	-	-	1
skull	-	-	-	-	-	-	-	-	-	0
vomer	3	-	-	-	-	-	-	-	-	3
premaxillary	-	-	-	-	-	-	-	-	-	0
maxillary	-	-	-	-	1	-	-	-	-	1
dentary	4	-	-	-	-	-	-	-	-	4
articular	-	-	-	-	-	-	-	-	-	0
palatine	-	-	-	3	-	-	-	-	-	3
quadrate	-	-	-	-	-	-	-	-	-	0
hyomandibular	3	-	-	-	-	-	-	-	-	3
opercular	-	-	-	-	-	-	-	-	-	0
hyale	3	-	-	-	-	-	-	-	-	3
ceratohyal	5	-	-	-	-	-	-	-	-	5
inf pharyngeal	-	-	-	-	21	-	-	-	-	21
post temporal	-	-	-	-	-	-	-	-	-	0
face bone	-	-	-	-	-	-	-	7	-	7
cleithrum	33	-	-	-	1	-	-	-	-	34
weberian vert	-	-	-	-	10	-	-	-	-	10
thor vert	1	1	-	-	-	-	-	-	-	2
precaudal vert	60	20	-	1	-	-	2	-	-	83
caudal vert	67	5	-	-	-	1	1	-	-	74
vertebra	1408	117	9	17	32	13	-	75	-	1671
fragment	-	-	-	-	4	-	-	125	75	204
TOTAL	1587	143	9	22	69	14	3	207	75	2129

TABLE A29 FISH BONES AND MOLLUSCS TRENCH 6

	ang	clu	sal	eso	cyp	per	ple	fis	mol	TOTAL
scale/dent	-	-	-	-	-	-	-	-	-	0
tooth	-	-	-	-	-	-	-	-	-	0
skull	-	-	-	-	1	-	-	-	-	1
vomer	9	-	-	-	-	-	-	-	-	9
premaxillary	-	-	-	-	-	-	-	-	-	0
maxillary	-	-	-	-	-	-	-	-	-	0
dentary	14	1	-	-	1	-	-	-	-	16
articular	-	-	-	-	-	-	-	-	-	0
palatine	-	-	-	-	-	-	-	-	-	0
quadrate	2	-	-	-	-	-	-	-	-	2
hyomandibular	-	-	-	-	-	-	-	-	-	0
opercular	-	-	-	-	-	-	-	-	-	0
hyale	-	-	-	-	-	-	-	-	-	0
ceratohyal	-	-	-	-	-	-	-	-	-	0
inf pharyngeal	-	-	-	-	2	-	-	-	-	2
post temporal	-	-	-	-	-	1	-	-	-	1
face bone	-	-	-	-	-	-	-	-	-	0
cleithrum	15	-	-	-	-	-	-	-	-	15
weberian vert	-	-	-	-	-	-	-	-	-	0
thor vert	-	-	-	-	-	1	-	-	-	1
precaudal vert	71	4	-	-	-	-	-	-	-	75
caudal vert	118	18	2	-	-	-	-	19	-	157
vertebra	497	4	1	-	2	-	-	6	-	510
fragment	-	-	-	-	-	-	-	5	15	20
TOTAL	726	27	3	0	6	2	0	30	15	809

TABLE A30 FISH BONES AND MOLLUSCS TRENCH 4

	ang	clu	sal	eso	cyp	per	ple	fis	mol	TOTAL
scale/dent	-	-	-	-	-	-	-	-	-	0
tooth	-	-	-	-	-	-	-	-	-	0
skull	-	-	-	-	1	-	-	-	-	1
vomer	2	-	-	-	-	-	-	-	-	2
premaxillary	-	-	-	-	-	-	-	-	-	0
maxillary	-	-	-	-	-	-	-	-	-	0
dentary	1	-	-	-	-	-	-	-	-	1
articular	-	-	-	-	-	-	-	-	-	0
palatine	-	-	-	-	-	-	-	-	-	0
quadrate	-	-	-	-	-	-	-	-	-	0
hyomandibular	-	-	-	-	-	-	-	-	-	0
opercular	-	-	-	-	-	-	-	-	-	0
hyale	-	-	-	-	-	-	-	-	-	0
ceratohyal	3	-	-	-	-	-	-	-	-	3
inf pharyngeal	-	-	-	-	1	-	-	-	-	1
post temporal	-	-	-	-	-	-	-	-	-	0
face bone	-	-	-	-	-	-	-	-	-	0
cleithrum	4	-	-	-	-	-	-	-	-	4
weberian vert	-	-	-	-	1	-	-	-	-	1
thor vert	-	-	-	1	-	-	-	-	-	1
precaudal vert	20	3	-	-	-	-	-	-	-	23
caudal vert	4	5	-	1	-	-	-	-	-	10
vertebra	9	5	1	1	4	-	-	2	-	22
fragment	-	-	-	-	-	-	-	12	5	17
TOTAL	43	13	1	3	7	0	0	14	5	86

TABLE A31 FISH BONES AND MOLLUSCS TRENCH 11

	ang	clu	sal	eso	cyp	per	ple	fis	mol	TOTAL
scale/dent	-	-	-	-	-	-	-	1	-	1
tooth	-	-	-	-	-	-	-	-	-	0
skull	-	-	-	-	-	-	-	-	-	0
vomer	1	-	-	-	-	-	-	-	-	1
premaxillary	-	-	-	-	-	-	-	-	-	0
maxillary	-	-	-	-	-	-	-	-	-	0
dentary	-	-	-	-	-	-	-	-	-	0
articular	-	-	-	-	-	-	-	-	-	0
palatine	-	-	-	-	-	-	-	-	-	0
quadrate	-	-	-	-	-	-	-	-	-	0
hyomandibular	-	-	-	-	-	-	-	-	-	0
opercular	-	-	-	-	-	-	-	-	-	0
hyale	-	-	-	-	-	-	-	-	-	0
ceratohyal	-	-	-	-	-	-	-	-	-	0
inf pharyngeal	-	-	-	-	1	-	-	-	-	1
post temporal	-	-	-	-	-	-	-	-	-	0
face bone	-	-	-	-	-	-	-	-	-	0
cleithrum	2	-	-	-	-	-	-	-	-	2
weberian vert	-	-	-	-	-	-	-	-	-	0
thor vert	-	-	-	-	-	-	-	-	-	0
precaudal vert	-	-	-	-	-	-	-	-	-	0
caudal vert	-	-	-	-	-	-	-	-	-	0
vertebra	39	30	3	1	-	-	-	3	-	76
fragment	-	-	-	-	-	-	-	7	15	22
TOTAL	42	30	3	1	1	0	0	11	15	103

TABLE A32 CONTEXT NUMBERS AND WEIGHTS TRENCH 7 1MM SCAN

context no.	grams
159	3
160	7
162	4
163	2
164	5
165	1
166	2
168	10
169	17
170	65
171	3
172	6
173	30
174	24
176	1
177	1
194	2
196	97
197	307
198	448
203	4
204	2
229	2
230	1
231	1
237	1
279	9
280	38

Total weight scanned samples Tr 7 = 1,106 g

All identifiable bones recorded in archive tables except UNM fragments.

TABLE A33 CONTEXT NUMBERS AND WEIGHTS TRENCH 9 1MM SCAN

context no.	grams
31	4
32	225
33	5
36	39
77	223
79	265
82	71
83	4
92	185
93	49
96	6
158	37
201	38
210	79
310	60
372	237
376	92
399	60
400	18
426	30
429	12
436	7
487	4

Total weight scanned samples Tr 9 = 1,742 g

All identifiable bones recorded in archive tables except UNM fragments.

TABLE A34 CONTEXT NUMBERS AND WEIGHTS TRENCH 8 1MM SCAN

context no.	grams
264	103
277	113
402	88
403	240
404	66
405	23
406	172
471	11
475	76
484	46

Total weight scanned samples Tr 8 = 938 g

All identifiable bones recorded in archive tables except UNM fragments.

TABLE A35 CONTEXT NUMBERS AND WEIGHTS TRENCH 12 1MM SCAN

context no.	grams
255	75
256	327
374	161
375	116
434	36
438	71

Total weight scanned samples Tr 12 = 786 g

All identifiable bones recorded in archive tables except UNM fragments.

TABLE A36 CONTEXT NUMBERS AND WEIGHTS TRENCH 6 1MM ALL SAMPLES

Contexts which were only scanned marked *

context no.	grams	sieved frags	'UNM'	% UNM	normal frags
61	12	140	130	93%	1
62	25	4	-		37
63	45	28	-		-
64	2	1	1		-
65	190	921	820	89%	63
70	380	1770	1560	88%	208
267	40	* 11	identifiable pulled out		42
272	167	* 12	do		27
274	35	* 18	do		14
311	25	* 19	do		83
316	267	* 22	do		34
380	175	* 20	do		112
381	2	* 6	do		-
392	27	* 21	do		29
412	50	*171	do		21
427	130	* 10	do		17
456	37	*448	do		21
463	25	* 54	do		13
464	64	-	no identifiables		166
500	24	* 42	identifiable pulled out		7

Total weight scanned samples Tr 6 = 1,068 g

All bones recorded in archive tables for early samples, for those marked * only identifiable bones recorded from sieving scan.

TABLE A37 CONTEXT NUMBERS AND WEIGHTS TRENCH 11 1MM ALL SAMPLES

All contexts were fully recorded

context no.	grams	sieved frags	'UNM'	% UNM	normal frags
281	4	-	-		-
282	40	334	270	81	6
284	6	67	44	66	4
286	29	217	160	74	5
287	6	20	14	70	-
293	50	174	130	75	14
294	45	265	200	75	9
295	2	14	12	86	3
296	2	20	15	75	-
297	42	189	120	63	13
298	30	190	162	85	23
299	22	57	45	79	8
301	2	-	-		-
303	12	58	40	69	21
304	40	81	60	74	-
306	15	121	115	95	9
309	11	68	60	88	4
320	19	76	42	55	7
321	2	22	17	77	-
366	2	23	20	87	-
367	28	99	60	61	16
368	4	34	30	88	-
382	2	21	20	95	-
506	10	51	40	78	-

Total weight scanned samples Tr 11 = 425 g

All bones recorded in archive tables.

TABLE A38 PERCENTAGE FOR DIFFERENT ANATOMICAL AREAS - W1 OVERALL

	horse	cattle	sheep	pig	LAR	SAR
Head	5%	13	15	21	1	1
Axial	10	22	24	8	9	8
Forelimb	10	23	11	15	1	0.1
Hindlimb	8	10	10	10	1	0.1
Carpal/tarsal	4	6	3	3	0.1	
Metapodial	11	6	3	5		
Phalanx	4	4	2	6	0.3	0.1
Loose Teeth	35	12	23	30	0.1	13
L.B.fragments		1	1	0.3	53	64
Fragments		0.6	8	0.2	35	26
Epiphyses	2	2	2	2	0.3	0.4
N=14,454	94	2150	1277	1459	2767	6707

TABLE A39 PERCENTAGE FOR DIFFERENT ANATOMICAL AREAS - W1 NON-SIEVED

	horse	cattle	sheep	pig	LAR	SAR
Head	6%	12	18	21	2	0.2
Axial	10	23	10	10	11	11
Forelimb	9	25	16	20	0.6	0.2
Hindlimb	8	10	17	13	2	0.1
Carpal/tarsal	3	6	4	3		
Metapodial	21	6	8	5		
Phalanx	5	4	3	3		0.04
Loose Teeth	35	10	21	24	0.1	0.4
L.B.fragments		1	2		61	64
Fragments		0.7			22	22
Epiphyses	2	2	0.7	5	0.4	0.04
N= 7,676	86	1869	588	832	1795	2506

TABLE A40 PERCENTAGE FOR DIFFERENT ANATOMICAL AREAS - W1 5MM SIEVING

	horse	cattle	sheep	pig	LAR	SAR
Head		15	3	2		
Axial		25	6	4	3	4
Forelimb		12	9	11		
Hindlimb		7	12	7		
Carpal/tarsal		10	6		1	0.1
Metapodial		3	12	4		
Phalanx		3		7		
Loose Teeth	100	22	44	62		
L.B.fragments					46	61
Fragments					50	35
Epiphyses		3	9	2		
N= 985	1	40	34	45	154	711

TABLE A41 PERCENTAGE FOR DIFFERENT ANATOMICAL AREAS - W1 1MM SIEVING

	horse	cattle	sheep	pig	LAR	SAR
Head		20%	9	5		
Axial		9	6	1	3	2
Forelimb		1	6	3	0.1	
Hindlimb		1	4	2		
Carpal/tarsal		7	6	1		1
Metapodial		6	6	2		
Phalanx		4	4	18		
Loose Teeth	100	47	56	58		
L.B.fragments				4	27	63
Fragments			0.8		69	35
Epiphyses		4	3	5	0.1	0.4
N= 3,245	2	70	126	191	512	2344

TABLE A42 PERCENTAGE FOR DIFFERENT ANATOMICAL AREAS - OVERBURDEN

	horse	cattle	sheep	pig	LAR	SAR
Head	17%	10	21	23	3	
Axial	11	25	7	8	14	11
Forelimb	6	18	14	22	0.2	
Hindlimb	22	12	27	16	1	0.3
Carpal/tarsal	6	7	6	3		
Metapodial	11	9	6	6		
Phalanx	6	4	2	2		
Loose Teeth	17	11	17	24		
L.B.fragments					65	65
Fragments					16	23
Epiphyses		4	1	0.5		2
N= 808	18	488	101	219	519	593

TABLE A43 SPECIFIC RATIOS RANKED ACCORDING TO % CATTLE

context	cattle %	sheep %	pig %	total frags
Trial B	12	54	34	1035
All 1mm	18	33	49	387
Tr 4	32	26	42	57
All 5mm	34	28	38	119
Tr1+2+7+14	37	34	29	355
Overall	41	28	31	4886
Tr 11	43	24	33	84
Tr 3+8+12	50	19	31	2002
Tr 9+13	51	23	26	762
Tr 6	55	14	31	425
Non-sieved	57	18	25	3289
Overburden	60	13	27	808

TABLE A44 BONES IDENTIFIED TO 'UNGULATE' RANKED TO LAR

LAR - large ungulate bones, most probably cattle
SAR - small ungulate bones, most probably sheep and pig

Context	LAR no.	LAR %	SAR no.	SAR %	total ungulate	% unident
Trial B	140	15	798	85	1973	48
Sieving 5mm	154	18	711	82	985	88
Sieving 1mm	512	18	2344	82	3245	88
Tr 1+2+7+14	255	19	1114	81	1724	79
Tr 4	80	23	267	77	404	88
Tr 11	100	25	306	75	490	83
Overall	2767	29	6707	71	14454	67
Tr 3+8+12	1417	33	2882	67	6301	68
Tr 9+13	532	36	940	64	2234	66
Tr 6	236	37	393	63	1054	60
Non-sieved	1795	42	2506	58	7676	44
Overburden	519	47	593	53	1938	58

KEY TO MEASUREMENTS

Measurements are given in millimetres and were taken with a vernier calliper to the nearest 0.1 mm. They are based on the measurements taken by von den Driesch (v.d. Driesch 1976) and her abbreviations are largely used here.

Withers height estimates are included where possible and given in metres. Those from cattle metapodials were calculated using the mean values of Fock (Boessneck and v.d.Driesch 1974) otherwise methods were those recommended in that paper. The use of Matolsci's indices for the calculation of cattle withers heights from the other major limb bones is given for interest only so that comparisons can be made with other sites where these values were calculated. There are probably serious discrepancies between these and the Fock values (Prummel 1983, 173).

All total lengths and important measurements are given but other measurements are only included in the summary if at least 5 examples are available in a grouping. The exception is for fowl where some very small samples are given for interest.

For groups of n=10 or more, standard deviations and coefficients of variation are calculated.

Presumed Saxon material is entered by Trench or Trench Complex or as 'All' to signify more than of these is involved. This includes overburden material. Suspected Early Medieval material is coded 'EM', suspected modern contexts 'Mod'

Abbreviations used in the measurement summary are:

	n	no. of specimens measured
	$\bar{X}$	mean (mm)
*	s	standard deviation (mm)
	v	coefficient of variation $(s/\bar{X})\times100$ (%)

A few of the measurements taken are not actually in v.d.Driesch's manual but are standard measurements for other bones so that her abbreviations are used. In other cases titles are reckoned to be self-explanatory, or a diagram is given.

Measurements for the commoner species only are included here. Where results are too few to warrant inclusion these can be referred to in the measurement printout.

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* In line with AML printouts and earlier work in Southampton the formula for standard deviation of the samples uses the denominator (n - 1).

TABLE A45 MEASUREMENTS OF HORSE BONES

TRENCH	n	range	$\bar{X}$	s	CV
SCAPULA					
Minimum Length at Neck SLC					
8	1	63.5			
Length of Glenoid LG					
8	1	57.7			
Breadth of Glenoid BG					
8	1	44.3			
HUMERUS					
Smallest Breadth Diaphysis SD					
3/8/12	1	37.6			
Distal Breadth Bd					
3/8/12	1	80.1			
Breadth of Trochlea BT					
3/8/12	1	75.1			
Distal Depth (Medial) Dd					
3/8/12					
ULNA					
Depth Processus Anconaeus DPA					
All	3	60.6, 61.5, 66.5			
EM	1	65.8			
Breadth Coronoid Process BPC					
All	2	41.1, 42.9			
EM	1	43.5			
TIBIA					
Distal Breadth Bd					
EM	1	64			

TRENCH	n	range	$\bar{X}$	s	CV

Distal Depth — Dd

EM	1	42.1

CALCANEUM

Greatest Breadth — GB

All	2	52.9, 53

ASTRAGALUS

Length Lateral Trochlea — LlT

3/8/12	1	54.4

Length Between 2 halves Trochlea — LbT

3/8/12	1	36.7

Length Medial Trochlea — LmT

3/8/12	1	56.7

Greatest Breadth — GB

3/8/12	1	57.2

Breadth Facies Distalis — BFd

3/8/12	1	49.2

Greatest Height — GH

3/8/12	1	55.9

METACARPUS

Greatest Length — GL

T3	1	220
T11	1	211

Lateral Length — Ll

T3	1	210	wither height (Kiesewalter) 1.35m
T11	1	201	" " " 1.29m

Proximal Breadth — Bp

T3	1	46.7
T11	1	45.4

TRENCH	n	range	$\bar{X}$	s	CV
Proximal Depth		Dp			
T3	1	32			
T11	1	31.9			
Smallest Breadth Diaphysis		SD			
T11	1	29.5			
Greatest Distal Breadth		Bd			
T3	1	47.9			
EM	1	43.8			

METATARSUS

TRENCH	n	range	
Greatest Length		GL	
Trial	1	255	
Lateral Length		Ll	
Trial	1	245	withers height (Kiesewalter) 1.31m
Proximal Breadth		Bp	
T9	1	53.2	
Trial	1	49.2	
Proximal Depth		Dp	
T9	1	45.8	
Trial	1	43.5	
Smallest Breadth Diaphysis		SD	
T9	1	32.1	
Trial	1	31.4	
Distal Breadth		Bd	
Trial	1	50.9	

TABLE A46 MEASUREMENTS OF CATTLE BONES

TRENCH	n	range	$\overline{X}$	s	CV
SCAPULA					
Minimum Length at Neck		SLC			
All	10	37.2 - 48.4	43.1	3.3	7.7
EM	2	44.1, 47.7			
Mod	2	46.4, 47.1			
Breadth of Glenoid		BG			
All	7	38.3 - 50.4	43.6		
Mod	2	43.4, 47.2			
HUMERUS					
Distal Breadth		Bd			
T9/13	1	77.9			
EM	2	78.3, 79.5			
Breadth of Trochlea		BT			
All	2	61.6, 67.8			
EM	3	69.6, 70.6, 74.1			
Distal Depth (Medial)		Dd			
All	1	74.7			
EM	2	77.4, 77.5			
RADIUS					
Proximal Breadth		Bp			
All	11	63.6 - 87.3	76.6	7.9	10.3
EM	2	71.9, 72.7			
Breadth Proximal Facet		BFp			
All	11	60.2 - 78.4	69.9	6.3	9.0
EM	2	64.8, 66.7			
Proximal Depth		Dp			
All	9	30.4 - 47	38.4	5.3	13.9
EM	2	35.4, 35.6			

TRENCH	n	range	$\bar{X}$	s	CV
Breadth Distal Facet		BFd			
All	5	33.9 - 58.1	45.2		
EM	1	34.8			
ULNA					
Breadth Coronoid Process		BPC			
All	5	37.3 - 49.5	44.2		
TIBIA					
Greatest Length		GL			
3/8/12	1	328 withers height 1.13m			
Smallest Breadth Diaphysis		SD			
All	7	28.9 - 39.8	34.6		
EM	3	29.8,35.3,37.2			
Mod	1	41.1			
Distal Breadth		Bd			
All	7	48.3 - 67.1	56.9		
EM	3	54.3,56.5,62.5			
Mod	1	65.3			
Distal Depth		Dd			
All	5	39.4 - 50.9			
EM	4	37.9 - 45.3			
Mod	1	48.2			
CALCANEUM					
Greatest Length		GL			
All	4	115 - 123			
Greatest Breadth		GB			
All	9	32.9 - 42.8	39.2	2.8	7.1
EM	1	42.4			
Mod	1	43.7			
Diagonal Length of Distal Process					
All	10	40.6 - 47.9	44.1	2.9	6.5
EM	2	42.9, 50.3			
Mod	1	45.7			

TRENCH	n	range	$\bar{X}$	s	CV
ASTRAGALUS					
Greatest Length Lateral		GLl			
All	11	52.6 - 66	61.6	3.6	5.8
EM	7	58.7 - 67.5	62.8		
Length in Middle		LM			
All	13	41.8 - 53	48.2	2.9	6.0
EM	8	45.3 - 59.5	50		
Greatest Length Medial		GLm			
All	14	49.3 - 61	56.5	3.0	5.3
EM	8	39.1 - 61.6	52		
Mod	1	58.5			
Proximal Breadth		Bp			
All	15	31.7 - 46.1	40.3	3.2	8.0
EM	6	35.4 - 47.7	40.9		
Distal Breadth		Bd			
All	13	32.3 - 43.7	39.5	2.8	7.1
EM	8	32.5 - 43.7	38.5		
Mod	1	39.5			
Lateral Depth		Dl			
All	15	29.3 - 35.9	34.1	1.8	5.3
EM	6	31.1 - 37.8	34		
Mod	1	35.9			
METACARPUS					
Greatest Length		GL			
All	4	174 - 187 withers heights			1.04-1.12m
EM	2	165,200 " :			0.99-1.20m
Proximal Breadth		Bp			
All	8	45.1 - 58.3	50.8		
EM	4	46.1 - 58.7			
Proximal Depth		Dp			
All	6	29.8 - 37.1	33.2		
EM	3	30,36.1,37.8			

TRENCH	n	range	$\bar{X}$	s	CV
Smallest Breadth Diaphysis SD					
All	7	25.4 - 31.5	28.5		
EM	3	24.2,25.4,26.1			
Greatest Distal Breadth Bd					
All	4	50.2 - 59.3			
EM	1	47.8			
Maximum Distal Depth		(usually max medial depth distal condyle)			
All	4	27.9 - 31.3			
EM	2	25.8, 34.2			
Maximum Breadth Distal Diaphysis DFB					
All	4	45.1 - 55.4			
EM	1	42.6			
Bd/DFB (above)		(an index of distal splaying)			
All	4	1.06 - 1.19			
EM	1	1.13			

METATARSUS

TRENCH	n	range	$\bar{X}$	s	CV
Greatest Length GL					
T3	1	212 withers height 1.13m			
EM	1	193 " " 1.03m			
Proximal Breadth Bp					
All	3	41.9, 43.4, 47.3			
EM	2	39.2, 46.1			
Proximal Depth Dp					
All	4	38.2 - 44.2			
EM	3	35.6, 37.6, 43.5			
Smallest Breadth Diaphysis SD					
All	4	22.9 - 26.1			
EM	2	20.2, 21.7			
Distal Breadth Bd					
All	4	44.9 - 53.6			
EM	2	44.3, 57.6			

TABLE A47 MEASUREMENTS OF SHEEP AND GOAT BONES

TRENCH	n	range	$\bar{X}$	s	CV
SHEEP SCAPULA					
Minimum Length at Neck SLC					
All	7	18.1 - 22.4	20		
EM	3	16.8,17.8,20			
Greatest Length Articulation GLP					
All	4	28 - 32.5			
EM	2	28.3,30			
Length of Glenoid LG					
All	6	23.9 - 26	25		
EM	2	21.6,23.5			
Breadth of Glenoid BG					
All	5	16.1 - 22	19.7		
EM	2	17.3, 17.7			
SHEEP HUMERUS					
Greatest Length from Caput GLC					
EM	1	120			
Smallest Breadth Diaphysis SD					
All	7	11.9 - 17.3	13.9		
EM	2	12, 14.2			
Distal Breadth Bd					
All	9	26 - 30.9	28.2		
EM	3	27.4,29.4,29.6			
Mod	1	29.3			
Greatest Breadth Trochlea BT					
All	7	24.1 - 29.1	26.3		
EM	3	25.5,27.6,28			
Mod	1	27.5			
Distal Depth (medially) Dd					
All	4	21.5 - 26.4			
EM	4	23.6 - 24.6			
Mod	1	23.9			

TRENCH	n	range	$\bar{X}$	s	CV

SHEEP RADIUS

Proximal Breadth		Bp			
All	4	26.8 - 29.2			
EM	2	27.3, 30.3			

Breadth Proximal Facet		BFp			
All	3	25.8,27.3,27.4			
EM	1	24.9			

Proximal Depth		Dp			
All	4	13.9 - 15.4			
EM	2	14.9,15			

SHEEP/GOAT TIBIA

Smallest Breadth Diaphysis		SD			
All	9	12.6 - 16	14.5	1.1	7.6
EM	5	13 - 16	14		

Distal Breadth		Bd			
All	14	24.6 - 27.6	25.8	1.0	3.7
EM	6	22.9 - 26.2	24.7		

Distal Depth		Dd			
All	14	17.9 - 21.4	19.9	0.9	4.5
EM	6	17.8 - 19.5	18.8		

SHEEP/GOAT CALCANEUM

Greatest Length		GL		
All	4	46.9 - 56.4	Withers height	0.53-0.64m
Mod	1	59.6	" "	0.68m

Greatest Breadth		GB
All	4	15.4 - 18.3
Mod	1	19.1

Diagonal Length of Distal Process			
All	5	16.8 - 20.3	18.7
EM	1	19.1	
Mod	1	20.1	

TRENCH	n	range	$\bar{x}$	s	CV
SHEEP/GOAT ASTRAGALUS					
Greatest Length Lateral		GL1			
All	6	25.8 - 27.6	27.0		
EM	4	23.7 - 27.1			
Length in Middle		LM			
All	5	20.6 - 22.4	21.8		
EM	5	19.3 - 22.2	20.9		
Greatest Length Medial		GLm			
All	4	24.3 - 26.6			
EM	5	22.5 - 27.7	25.0		
SHEEP METACARPUS					
Proximal Breadth		Bp			
All	8	19.5 - 23.2	21.0		
Proximal Depth		Dp			
All	8	14.4 - 16.8	15.5		
SHEEP METATARSUS					
Greatest Length		GL			
All	3	121,124,132	WH 0.55,0.56,0.6m		
Proximal Breadth		Bp			
All	5	18.7 - 19.1	18.9		
EM	2	19.5, 20.1			
Proximal Depth		Dp			
All	5	18.8 - 19.6	19.3		
EM	1	19			

TABLE A48 MEASUREMENTS OF PIG BONES

TABLE	n	range	$\overline{X}$	s	CV
MAXILLA					
Molar Row (28)					
EM	1	61.6			
Length M3 (30)					
All	5	27.4 - 28.4			
EM	1	32.9			
MANDIBLE					
Length M3 (10)					
All	3	30.6,30.9(2)			
EM	1	28.9			
SCAPULA					
Minimum Length at Neck SLC					
All	13	19.8 - 25.5	22.6	1.6	7.0
EM	8	20.6 - 22.1	21.3		
Greatest Length Articulation GLC					
All	5	32 - 36.2	34.3		
EM	1	31.3			
Breadth of Glenoid BG					
All	8	21.9 - 26	24.0		
HUMERUS					
Smallest Breadth Diaphysis SD					
All	9	14.0 - 17.1	15.4	1.0	6.5
Mod	2	13.6,14			
Distal breadth Bd					
All	6	33.8 - 40.6	36.5		
EM	1	43.9			
Mod	1	37.3			

TABLE	n	range	$\bar{X}$	s	CV
Breadth of Trochlea		BT			
All	4	27.1 - 28.5			
Mod	1	29.2			
Distal Depth (medially)		Dd			
All	3	34.5,35,37.2			
Mod	1	36			
RADIUS					
Proximal Breadth		Bp			
All	11	24.5 - 30.8			
EM	4	27.2 - 30.9			
ULNA					
Depth Processus Anconaeus		DPA			
All	9	29.2 - 36.9	33	2.5	7.6
Breadth Coronoid Process		BPC (mature but not nec. fused)			
All	12	18.0 - 23.3	20	1.6	8.2
OS COXA					
Smallest Breadth Shaft Ilium		SB			
All	7	11.1 - 13.5	12		
Smallest Height Shaft Ilium		SH			
All	7	19.4 - 24.3	21.3		
Maximum Length Acetabulum on Rim					
All	5	30.1 - 33.9	31.6		
Breadth Acetabulum on Rim		(at Rt Angles to above)			
All	6	27.3 - 32.9	29.4		
EM	1	23.3			
Smallest Breadth Ischium		SBI			
All	5	7.9 - 9.6	8.6		
EM	1	6.1			

TABLE	n	range	$\bar{X}$	s	CV
Smallest Height Ischium SHI					
All	6	21.9 - 30.9	25.9		
EM	1	18			

TIBIA

	n	range	$\bar{X}$	s	CV
Smallest Breadth Diaphysis SD					
All	7	18.0 - 20.4	19.3		
EM	1	18.4			
Distal Breadth Bd					
All	7	26.5 - 31.4	28.5		
EM	1	27.4			
Distal Depth Dd					
All	8	22.6 - 26.1	24.2		
EM	1	24.5			

TABLE A49 MEASUREMENTS OF DOMESTIC FOWL BONES

Trench	n	range	$\bar{X}$	s	CV
CORACOID					
Greatest Length		GL			
All	3	47.2,47.3,47.7			
Mod	2	64.9, 67.1			
Medial Length		LM			
All	3	44.1,45.6,45.7			
Mod	2	62.3,64.1			
Basal Breadth		Bb			
All	3	12.2,12.6,14.8			
Mod	1	17.4			
Breadth Basal Articular Facies BF					
All	5	10.5 - 12.2	11.2		
Mod	2	14.1, 15.9			
SCAPULA					
Diagonal Breadth Cranial DiC					
All	10	9.7 - 12.8	11.5	1.1	9.6
EM	2	11,13			
Mod	2	15.5,15.6			
HUMERUS					
Greatest Length		GL			
All	5	61.2 - 73.7	67.4		
Mod	1	82.7			
Proximal Breadth		Bp			
All	6	16.8 - 20.3	18.3		
Mod	1	23.2			
Smallest Breadth Corpus SC					
All	8	6.1 - 7.4	6.8	0.4	6.6
EM	3	5.4,6.4,6.6			
Mod	1	8.6			

Trench	n	range	$\bar{X}$	s	CV
Distal Breadth		Bd			
All	10	12.6 - 15.7	14.3	1.1	7.8
EM	3	13.1,13.4,14.4			
Mod	1	17.2			
RADIUS					
Greatest Length		GL			
All	2	57,66.1			
Mod	1	76			
Minimum Breadth Corpus		SC			
All	6	2.5 - 3.5	3.0		
Mod	1	3.6			
Distal Breadth		Bd			
All	10	6.0 - 7.5	6.6	0.6	8.4
EM	1	6.3			
Mod	1	8.2			
ULNA					
Greatest Length		GL			
All	14	58.7 - 73	66.7	5.1	7.7
Mod	2	82.8,83			
Proximal Breadth		Bp			
All	15	7.5 - 9.2	8.3	0.6	7.5
Mod	3	9.8,11,11.5			
Minimum Breadth Corpus		SC			
All	17	3.8 - 4.4	4.2	0.3	7.2
Mod	3	5.2,5.3,5.4			
Distal Diagonal		Did			
All	20	8.2 - 10.8	9.3	0.8	8.5
Mod	2	11.4,11.5			
FEMUR					
Greatest Length		GL			
All	5	67.2 - 79.1	72.9		

Trench	n	range	$\bar{X}$	s	CV
Medial Length		LM			
All	5	62.9 - 74.6	68.9		
Proximal Breadth		Bp			
All	10	13 - 16.8	15.2	1.5	9.8
EM	1	16.9			
Mod	2	20.5,20.7			
Proximal Depth		Dp			
All	10	8.2 - 11.6	9.9	1.2	12.5
EM	1	10.7			
Mod	2	13.8, 13.9			
Smallest Breadth Corpus		SC			
All	8	5.5 - 7.2	6.2	0.6	10.0
EM	1	6.6			
Mod	1	9.1			
Distal Breadth		Bd			
All	11	12.8 - 16.5	14.8	1.4	9.2
Mod	1	17.4			
Distal Depth		Dd			
All	9	10.5 - 14.5	12.5	1.4	11.0
Mod	1	14.4			

TIBIOTARSUS

Trench	n	range	$\bar{X}$	s	CV
Greatest Length		GL			
All	1	94.2			
EM	1	118			
Mod	2	133, 135			
Axial Length		LA			
All	1	90.9			
EM	1	113			
Mod	1	131			
Proximal Diagonal		Dip			
All	6	17.1 - 20.8	18.3		
EM	1	21			
Mod	1	26.5			

Trench	n		range	$\bar{X}$	s	CV
Proximal Breadth			(Bacher 1967)			
All	6		11 - 13	11.7		
EM	1		13.5			
Mod	1		17.3			
Smallest Breadth Corpus			SC			
All	8		5 - 6.4	5.6	0.5	9.2
EM	1		6.7			
Mod	4		8 - 9.3	8.4		
Distal Breadth			Bd			
All	10		9.7 - 11.3	10.7	0.7	6.6
EM	2		9.6,11.9			
Mod	4		14.7 - 15.3	15.1		
Distal Depth			Dd			
All	7		9.7 - 12	11	0.9	8.2
EM	3		10.5,12.1,12.7			
Mod	4		16.1 - 16.7	16.3		

CARPOMETACARPUS

Greatest Length			GL			
All	2		31.9,37			
EM	2		33.6,37.9			
Mod	1		44.8			

TARSOMETATARSUS (sex assessments on basis of spur)

Greatest Length			GL			
All	4	hen	63.1 - 71.1	67.3		
All	1	cock	76.1			
Mod	1	hen	88.6			
Proximal Breadth			Bp			
All	4	hen	11.1 - 12	11.5		
All	2	cock	13.1,13.2			
All	2	?	11.5,13.9			
Mod	1	hen	17.4			
Smallest Breadth Corpus			SC			
All	4	hen	5.2 - 6.1	5.7		
All	2	cock	6.3,6.9			
All	2	?	5.3, 5.5			
Mod	1	hen	9.9			

Trench	n	range	$\bar{X}$	s	CV
Spur Length (cocks only) measured on posterior surface					
All	1	15.5			
Distal Breadth		Bd			
All	4 hen	10.8 - 12.8	11.9		
All	1 cock	12.7			
All	2 ?	11.3, 12			
Mod	1 hen	18.4			

TABLE A50 ARCHIVAL MATERIAL AND ITS LOCATION

Key to locations:

TWA - Trust for Wessex Archaeology
FRU - Faunal Remains Unit
JPC - Stored by the writer

Printout Available

Full listing by species	FRU
Full listing by context	FRU
CONMET catalogue whole site	FRU & TWA
CONLIS " "	FRU & TWA
TABLE 1 " "	FRU & TWA
SPLIST " "	FRU & TWA
All above by trench, date, and retrieval type	FRU
MET catalogue whole site	FRU

Computer Files

		Convention
Original data files *	FRU & JPC	1W1.JPC, 2W1.JPC ETC
Total computerised data	FRU, TWA, JPC	W1ALL.SPE, W1ALL.CON
Context lists	FRU, TWA, JPC	W1T1283.LIS (Trenches in decreasing order)

Paper Archive

All correspondence, notebooks, analysis notes, rough drafts FRU
Some of the seived material was only manually recorded.

* Context Numbers

These are complicated by two facts: The trial trenches were alphabetically named and have been changed to numbers, and the products of several different types of sampling and sieving needed to be separable in analysis. The prefixes used, which may be additive, are as follows and in this order of priority:

99 - trial trenches
9 - bulk sample
(trial bulk samples therefore preceded by 999)
66 - processed through 5mm sieve
77 - " " 2mm "
88 - " " 1 or 0.6mm sieve
1 - Trial trench A
2 - Trial trench B
3 - Trial trench C

e.g. 99213 - Trial trench B layer 13
77125 - layer 125 results from 2mm sieving
9966114 - Trial trench A, layer 14, results from 0.6mm sieving