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Ancient Monuments Laboratory
Report 57/86

ANIMAL BONES SCANNED FROM STREET
CONTEXTS IN THE SIX DIALS
EXCAVATIONS (SAXON SOUTHAMPTON).

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Summary

The report discusses animal bone from street contexts on the Saxon excavations at Six Dials, Southampton. There is considerable variety in the assemblages. Many street contexts have very little bone; others have large and chunky fragments; some bones are found to have been incorporated into the gravelled surface of the street itself; and there is also some straight domestic waste which had accumulated in the area. Some findings of the Six Dials Variability Study have been re-assessed, and it is hoped that a recognition of the contextual differences may help in future site formation studies.

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ANIMAL BONES SCANNED FROM STREET CONTEXTS FROM THE SIX DIALS EXCAVATIONS, SOUTHAMPTON

While work was being completed for the first report on scanned features from the Middle Saxon sites at Six Dials, it was learned that new excavations were planned on the line of a major street which led into Hamwic from the North, and it was decided as a matter of priority to look at animal bone from all the street contexts which could be identified from earlier Six Dials excavations. No known street surfaces had been included in the Six Dials Variability Study: it was important to add the bone results from the street in a form that could be used along with the structured data from many context-types of that study, and doubly important to do so in time to give useful information on the animal bone that was expected from the coming site (SOU 258).

The methods followed were the same as those described in the first report on scanned material (Bourdillon 1986).

Two groups of contexts had already been studied in the guise of yard occupation surfaces in the Six Dials Variability Study (Bourdillon 1984 a). One was a series of yard surfaces attached to a house on Site 30, the whole series of layers being referred to collectively as F 2015. The other was a cobbled occupation surface on Site 99 in the South West of the town, a surface which had appeared as so distinctive on excavation that although it was a considerable distance from Six Dials it was included with the Six Dials bone analysis for the sake of contrast and comparison. Many differences had been found between these two groups, and no clear typology was therefore possible for yard occupation as such. In addition, the extension study from further Six Dials contexts had included animal bone found beneath a stretch of road in Site 169 (Bourdillon 1984 b). This was interpreted as being infilling deposited in order to level an uneven area before the laying of the gravels for the road itself. These three groups provide possible equivalents for the present street material and their data are given for comparison at the foot of the tables of the present report, along with the results from the group of pits from the Six Dials Study since these are taken as the standard for domestic rubbish with which the streets as a whole may be compared.

The network of streets formed a grid pattern on the Six Dials sites and may well have been part of a wider network covering much of Hamwic. Archaeologically the streets are of particular interest in that their first laying down can be phased to the early years of Six Dials and most likely to the early years of the settlement as a whole, but the bone found on or near their surfaces is likely to have spanned all phases in the life of the town. The main route, that which is the subject of the coming excavations, lay roughly north to south. Part of its

eastern edge had been located on Site 31. In addition, two east/west streets crossed the various Six Dials sites, and stretches of each of these have been located on either side of the main road. The northern of these two streets is identified as 'I'; east/west II is quite separate from this, roughly parallel to it and some distance the south. On Site 31 there are some contexts from the junction where the main north/south street was crossed by east/west II.

Several questions were asked of the animal bones. First, were they of any importance in the structure of the streets? The group already studied on Site 169 had been seen as foundations for levelling partly on their relationship to the lie of the land but also because they showed a bias towards the larger species and to larger chunkier fragments. The material from Site 99 was seen as likely packing in the cobbled occupation surface, for sharp scratches and quite deep scrapes were found on many of the bones, and found not just on one single surface for each bone which could be the sign of wear and tear from hard occupation, but sometimes on various sides of an individual bone. Animal bone has been suggested for Haithabu as having given a hard surface to a path which ran beside a stream (Reichstein and Tiessen 1974, 15), and one was particularly alert for any signs of the deliberate incorporation of bones into the structure of the Hamwic streets. In addition, the bone waste was studied for signs of possible activities on or near the road itself; with a clear picture of the common composition of domestic bone waste any divergence from this pattern might give useful information to the archaeologist.

RESULTS

The Recovered Fragments

Table 1 shows the results context by context. One interest lies in the great variations in abundance. From the north/south street, a total of eleven contexts gave only seven identified fragments of normal bone waste and four small fragments of worked antler, and many contexts from the Junction gave no bone. Such poor showing is rare indeed for Hamwic. Yet in stretches of both the east/west streets (though only in some stretches) there was bone in plenty.

There was little material from the unusual species, though there were two bones of roe deer, which is found only rarely at Six Dials. Both presented problems of identification in that they seemed to reflect much more solid a build than is usual for Hamwic, but their markings even to the foramina were a close match for modern material in the Faunal Remains Unit's reference collection. These two bones were both found in Site 169, but from the different east/west streets. Also from the wild, or quite likely so, was an ulna fragment in Site 24: proximal cutting made the identification difficult and domestic fowl is not ruled out, but the shaft breadth (3.9 mm) was below the range for fowl from Hamwic Melbourne Street and the ulna has

been kept out for further study.

In the general balance of their recovered species those street surfaces as a whole seem closest to the contexts from Site 169 studied in the extension to the Variability Study and given in the present comparisons as 'Under Road'. They do not show the great near-total dearth of deer and poultry that came in the cobbled area on Site 99, nor, on the other hand, the high incidence of such fragments from the Yard layers F 2015.

The table also shows a high number of horse bones, many of them from the stretch of east/west street in Site 24 (from five different contexts) and the others mainly from the Junction. This is in marked contrast to all the comparative groups.

Quantification by weight may be more useful than the fragment count for the question of abundance. Table 2 gives the weights for the domestic mammals, emphasising both the dearth of material from the north/south street and the prominence of horse on the east/west street in Site 24. Mean fragment weights are given in Table 3, species by species for the main domestic mammals. They are also given for these mammals overall, a statistic which had not been calculated at the time of the other Six Dials studies since it was assumed to relate more to the changing balance of the species than to changes in bone usage based on size. The cobbled area of Site 99 and the contexts under the road in the earlier study had given high mean fragment weights, species by species, whereas those for the yard surfaces of F 2015 had been close to the Six Dials norm for the domestic bone rubbish that is commonly found in the pits. There was considerable variation along the various stretches of street surfaces in the present study, most markedly on the figures for the different stretches of the second east/west street: in Site 31 they are markedly low, and in Site 169 they are high by species although an unusual balance of the species produces an overall figure not far above the mean. The highest overall figure came from east/west I on Site 26, where the assemblage came predominately from cattle and the cattle figures themselves were very high. The fragments of horse from Site 24 were very heavy.

There was also considerable variation in the incidence of the unidentified material and of its mean fragment weight (Table 4). Since such variations may well be a measure of the differences in site formation processes they are considered in conjunction with factors of erosion, chewing and burning, and with the incidence of loose teeth, all from Table 5. It may be seen that the Junction and the first east/west street in Site 31 both have a high incidence of loose teeth and of erosion; but their minimal incidence of chewing may suggest poor conditions *in situ* rather than a long period of disintegration before burial with the bones exposed to the common predations of dogs. The stretch of second east/west street from Site 169 shows a different formation pattern, with the lowest erosion rating of the street surfaces and the lowest percentage of loose teeth,

but a high rate of chewing and burning. It is interesting that in the present study there is a fairly low rate of charred burning, and that not a single fragment has been calcined.

The Relative Representation of the Main Domestic Species

The relative representation of cattle, sheep and pig again showed strong variations between the different groups of contexts (Tables 6 and 7). The cobbled surface on Site 99 showed a strong predominance of cattle bones and this predominance was carried almost to the ultimate in the first east/west street on Site 26. It was also strongly in evidence from the large assemblage from the same street on Site 24 and from the Junction. In these three places a deliberate selection for cattle bones seems likely; the ratio of sheep to pig came close to the Hamwic standard both there and in the other street groups. Elsewhere in the streets the cattle percentages, too, are close to the usual Hamwic figures. One seems to be building up a picture of an *ad_hoc* selection of bone in some of the street contexts, with other street assemblages containing the common Hamwic rubbish.

The low incidence of poultry in first east/west street on Site 24 (Table 8) adds to the idea of a selection there of bones, and there is no poultry at all from the Junction; the high percentage of poultry from Site 26 comes from one single bone.

Distribution over the Body

The patterns of Distribution over the Body (Tables 9 - 13) would again suggest that in some street stretches there was a deliberate selection of bones. It is interesting that the cobbled occupation surface on Site 99 had shown a very shortage of ribs for cattle, sheep and pig. In Site 26 the bones are overwhelmingly of cattle, and the dearth of ribs is very marked there; from Site 24 there is also a shortage of ribs and a relative richness of limb bones (both long bones and the bones of feet and ankles), and here this is true both for cattle and for sheep. Pig ribs show less variation between the various street groups.

The street pattern of Distribution over the Body for cattle is echoed very strongly in the horse bones from Site 24, where the sample is strongly biased to the longbones, the bones of feet and ankles, and also to the vertebrae, with no skull or teeth at all. The seven fragments of horse from F 4022 on the junction on Site 31 are of skull and loose teeth (here, upper incisors) which are more usual occurrences for Hamwic; and apart from the head of a rib in F 4023, the few other finds of horse are the common finds from head or feet. Distribution over the Body has therefore shown something very special for the street contexts on Site 24, and it is something distinctive to this particular stretch of the street rather than common to the first east/west street as a whole.

Horse bones and site formation

Many of the horse bones from Site 24 had been butchered or trimmed: the vertebrae from F 3026, in particular, had been cut in a way that made them chunky.

Most interesting of all was the group of horse bones from Feature 3037 on this site. Close cooperation between the excavators and the boneworkers at the time of digging (in 1979) had established that all the main bones of a horse's leg, from the distal femur to the first phalanx, had been laid down very neatly in the street, presumably as part of the gravelling since the proximal/distal relationship of the bones had not changed at all over time. These were all right bones, all fused bones, all the same in texture and in colour, and undoubtedly they were all from the same individual. What was special was that the tendons must have been cut before the bones were laid down since at every joint the angle was distorted, and the leg had been neatly folded in a way quite impossible in life or in unbutchered death. Alternate joints were concave and convex - femur and tibia lay side by side, distal femur to proximal tibia, but the metatarsus had been bent sharply back to flank the tibia and the phalanx bent down yet again. The astragalus and calcaneum were found beside the group. All this had been noticed at the time of excavation, and before it was lifted the assemblage had been photographed and planned.

The bones were hard to remove from the ground and it was a pity that the femur and tibia broke into a great many pieces on lifting. The fragments could, however, be placed together in a general reconstruction, and it was then seen that on one surface of the main bones, femur, tibia and metatarsus, there were the sort of scrapes and scratches which the writer has seen elsewhere only on some of the material from the cobbled area in Site 99. When the bones were laid out as they had been drawn in the excavator's diagram, it was found that the marks lay roughly in the same direction, either medio-laterally across the surface of the bone or slightly obliquely. The bones had marks on one side only, on the upper side as exposed in the road which for each bone was the front as found in the body. It must therefore be accepted that these marks did not come from the packing of soft bones into a hard gravel matrix, as had been suggested for the material from the cobbling on Site 99, but more likely from movement across the upper surface of the bones after they had been set in the road. The first phalanx had one or two cuts on its surface which may have been similar in their origin, but this bone was not as much affected as the others; the astragalus and calcaneum each had one sharp surface cut, the astragalus on its lateral side and the calcaneum on its medial, but these marks were like the common signs of sharp butchery and would most likely have come from the separation of the bones at the joints to enable the strange pattern to be laid down. The same context contained a distal fragment of horse humerus, but this lay some way apart and showed no scrapes or scratches. Of

the other bones found in general association, only one (a cattle metacarpus) had any suggestion of such markings: here they were less clear-cut, and could well have come simply from butchery.

Presumably one must now think again about the scratches and scrapes on the material from Site 99. The assumption has to be that these too came from movement across the upper surface of the bones after they had been set in place among the cobbles - though the puzzle remains as to how some bones from this site were marked on more than one side. Back to Six Dials, one wonders why other bones from the street contexts were not affected in this way. Perhaps it had something to do with the rigidity with which the group of horse bones had been set in place? For they must have been packed in securely, to have stayed so neatly and strangely packed despite the movement over their surfaces. They stayed firm, too, despite the close attentions of dogs: there was considerable chewing on the upper surfaces of the femur and tibia, and since it was only on these surfaces it must have taken place after the bones had been put in position. It is all very strange. But when the Hamwic bones tend to be so uniform it is good to find a group that is distinctive.

Other points

The remaining two tables show points of general interest for the street contexts as a whole. It may be seen from Table 14 that there were rather more fragments of young individuals than would be expected from the various contexts of the Six Dials Study. These were found mostly from the assemblages from the two streets on Site 169. There was also slightly more of the smooth and careful butchery which is found from time to time at Hamwic and which forms a contrast with the normal rough chopping which was the almost invariable style (Table 15).

Contextual interpretation

Finally, the earlier data have been simplified for Table 16 and the bone assemblages have been re-grouped. From this presentation of the results it is suggested that animal bone played several distinct roles in or near the streets, and indeed that an analysis of the bone may be of use in considering the formation processes of the contexts. Some assemblages of animal bone could well be straight domestic rubbish (in particular those from the features from the two east/west streets on Site 169); other street contexts showed virtually no material on the road surface, not even casual bone waste over the years (in particular the north-south street, both at its edge and in many of the contexts near the Junction); but there was also evidence of the selection, and sometimes of the deliberate trimming, of the larger bones and of the larger species; and there was the careful laying down of a horse leg followed by clear signs of surface wear and tear.

These street contexts have have given new insight into the yard and occupation surfaces which were studied earlier, and at the same time they have provided amongst themselves the greatest variations of assemblages from any single context-type that has yet been studied from Six Dials. This variety would seem to relate to deliberate bone usage rather than to chance, and it is to be hoped that the the present results may be of use for future site formation studies.

It will be of the greatest interest if material from the street contexts on the current excavations at Six Dials (SOU 258, autumn 1986) can be added to the present archive and the archaeological interpretations be made more secure - or be called into question once again.

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SCANNED STREET CONTEXTS FROM SIX DIALS, October 1986.

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SCANNED STREET CONTEXTS FROM SIX DIALS, October 1986.
TABLE 1 - IDENTIFIED FRAGMENTS FROM NORMAL RECOVERY (a) summarised

	COW	SHE	GOA	PIG	HOR	DOG	CAT	FOW	GOO	RED P/C	ROE P/C	ALL ANT	OTHERS	TOTAL
N/S	3	5	1									4		13
E/W I														
SOU 24	606	129	3	67	34			5	2			5	1	852
SOU 26	48	3		2				1						54
SOU 169	167	154	1	92	2			9	10		1			436
E/W II														
SOU 31	119	101		25	1		1	2	4					253
SOU 169	177	151		66				6	5		1			406
JUNCTION	66	22	11	10	10									119
TOTAL	1186	565	16	262	47		1	23	21		2	9	1	2133
CF:														
YARDS 2015	800	495	6	321			2	39	13	4	3	46	3	1640
COBBLES	707	221	6	156	5	2	1	1				1		1657
UNDER ROAD	766	547	4	399	3			31	11		1	2	2	1766

IDENTIFIED FRAGMENTS FROM NORMAL RECOVERY (b) by context

	COW	SHE	GOA	PIG	HOR	DOG	CAT	FOW	GOO	RED P/C	ROE P/C	ALL ANT	OTHERS	TOTAL
SOU 24 E/W I														
F. 3026	127	31	1	18	6			1				2		186
F. 3027	205	18	1	11	14			1	1					251
F. 3030	56	12		10				1				1		80
F. 3034	132	23	1	10	4			2						172
F. 3035	47	24		12	3							1	?WILD BD	88
F. 3036	27	15		5					1			1		49
F. 3037	12	6		1	7									26
F. 3040														-
TOTAL	606	129	3	67	34			5	2			5	1	852
SOU 26 E/W I														
F. 2625	1													1
F. 2626	6	1												7
F. 2627	3													3
F. 2628	14			2				1						17
F. 2629	24	2												26
F. 2630														-
TOTAL	48	3		2				1						54

IDENTIFIED FRAGMENTS FROM NORMAL RECOVERY

	COW	SHE	GOA	PIG	HOR	DOG	CAT	FOW	GOO	RED	ROE	ALL	OTHERS	TOTAL
										P/C	P/C	ANT		

SOU 31 N/S														
F. 1214														-
F. 1216														-
F. 1217												2		2
F. 1218														-
F. 1219														-
F. 1220														-
F. 1221														-
F. 1222	3	5	1									2		11
F. 1223														-
F. 1224														-
F. 1225														-

TOTAL	3	5	1									4		13

SOU 31 E/W II														
F. 4042	40													40
F. 4046														-
F. 4047	11	11						1						23
F. 4048	30	37		11	1			1						80
F. 4057	38	53		14			1		4					110
F. 4177														-
F. 4283														-

TOTAL	119	101		25	1		1	2	4					253

SOU 31 JUNCTION														
F. 4019														-
F. 4022	4				7									11
F. 4023	20	12	8	3	2									45
F. 4024														-
F. 4025														-
F. 4035														-
F. 4036	1	6												7
F. 4059														-
F. 4060														-
F. 4067	22	2	3	6										33
F. 4086	19	2		1	1									23
F. 4123														-
F. 4124														-

TOTAL	66	22	11	10	10									119

SOU 169 E/W I														
F 11995	50	19	1	15				1						86
F 12370	52	58		29	1			4	3		1			148
F 12388	65	77		48	1			4	7					202

TOTAL	167	154	1	92	2			9	10		1			436

IDENTIFIED FRAGMENTS FROM NORMAL RECOVERY

	COW	SHE	GOA	PIG	HOR	DOG	CAT	FOW	GOO	RED P/C	ROE P/C	ALL ANT	OTHERS	TOTAL
SOU 169 E/W II														
F. 10254	8	5		4							1			18
F. 10360														-
F. 10361	97	56		38				3	4					198
F. 10362	11	36		4										51
F. 10363				6										6
F. 10530	43	22		8				1						74
F. 10531														1
F. 11132	5	12		1										18
F. 11133														-
F. 11135	5	6												11
F. 11138	6	11		4					1					22
F. 11154	2	3		1				2						8
TOTAL	177	151		66				6	5		1			406

TABLE 2 - WEIGHTS FROM THE MAIN SPECIES
(by normal recovery, in g)

	COW	SHEEP	GOAT	PIG	HORSE	TOTAL
N/S	75	30	20			125
E/W I						
SOU 24	13610	1160	165	750	2965	18650
SOU 26	1580	25		20		1625
SOU 169	3970	1115	65	1110	20	6280
E/W II						
SOU 31	1890	650		205		2745
SOU 169	5290	2125		1185		8600
JUNCTION	1485	195	180	205	205	2270
TOTAL	27900	5300	430	3475	3190	40295
CF:						
YARDS 2015	15470	3035	130	3845		23580
COBBLES	26050	3075	540	3670	375	33710
UNDER ROAD	22470	5310	320	5345	615	34060

TABLE 3 - MEAN FRAGMENT WEIGHTS in g
(in brackets where n < 5)

	COW	SHEEP	GOAT	PIG	HORSE	MAMMALS OVERALL
N/S	(25.0)	6.0	(20.0)			13.9
E/W I						
SOU 24	22.5	15.0	(55.0)	11.2	87.2	22.2
SOU 26	32.9	(8.3)		(10.0)		30.7
SOU 169	23.8	7.2	(65.0)	12.1	(10.0)	15.1
E/W II						
SOU 31	15.9	6.4		8.2		11.2
SOU 169	29.9	14.1		18.0		21.8
JUNCTION	22.5	8.9	16.4	20.5	20.5	19.1
OVERALL	23.5	9.4	26.9	13.3	67.9	19.4
CF:						
YARDS 2015	22.1	6.1	21.7	12.0		13.3
COBBLES	36.8	13.9	90.0	23.5	75.0	30.6
UNDER ROAD	29.3	9.7	(80.0)	13.4	(205.0)	19.3
HVS PITS	18.9	6.0	34.6	11.3	43.3	13.2

TABLE 4 - INCIDENCE AND WEIGHT OF UNIDENTIFIED MATERIAL

	FRAGMENTS		WEIGHT		MEAN FRAGT WEIGHT in g
	n	%	g	%	
N/S	15	53.6	35	18.9	2.3
E/W I					
SOU 24	721	45.8	2075	10.0	2.9
SOU 26	81	60.0	155	8.7	1.9
SOU 169	130	23.0	590	8.6	4.5
E/W II					
SOU 31	143	36.1	405	14.3	2.8
SOU 169	78	16.1	295	3.3	3.8
JUNCTION	161	57.5	840	27.0	5.2
TOTAL	1329	38.4	4395	9.4	3.3
CF:					
YARDS 2015	724	30.0	2414	9.7	3.3
COBBLES	142	11.4	935	2.7	6.6
UNDER ROAD	689	28.0	2495	7.1	3.7
HVS PITS	3901	33.7	10435	9.2	2.7

TABLE 5 - THE CONDITION OF THE MATERIAL,
percentaged by total identified fragments

	LOOSE TEETH	ERODED	CHEWED	BURNT BLACK	BURNT WHITE	n
N/S	-	30.8	-	15.5	-	13
E/W I						
SOU 24	5.8	43.4	8.6	1.2	-	852
SOU 26	9.3	85.2	-	-	-	54
SOU 169	4.4	14.7	14.4	3.9	-	436
E/W II						
SOU 31	4.7	15.4	5.1	0.4	-	253
SOU 169	2.2	12.8	20.0	6.2	-	406
JUNCTION	14.3	67.2	1.7	1.7	-	119
TOTAL	5.3	31.7	9.9	2.6	-	2133
CF:						
YARDS 2015	4.8	1.1	3.6	2.1	0.9	1698
COBBLES	6.0	7.8	5.5	1.4	-	1100
UNDER ROAD	5.8	3.4	5.2	0.1	0.1	1766
HVS PITS	4.2	1.5	4.3	0.4	0.2	8046

TABLE 6 - RELATIVE REPRESENTATION OF CATTLE, SHEEP AND PIG
BY FRAGMENTS

	COW	SHEEP	PIG	COW : SHE	COW : PIG	SHE : PIG
N/S	37.5	62.5	-	0.6 : 1	-	-
E/W I						
SOU 24	75.6	16.1	8.3	4.7 : 1	9.1 : 1	2.0 : 1
SOU 26	90.6	5.6	3.8	16.0 : 1	24.0 : 1	1.5 : 1
SOU 169	40.4	37.3	22.3	1.1 : 1	1.8 : 1	1.7 : 1
E/W II						
SOU 31	48.6	41.2	10.2	1.2 : 1	4.7 : 1	4.0 : 1
SOU 169	44.9	38.3	16.8	1.2 : 1	2.7 : 1	2.3 : 1
JUNCTION	67.3	22.5	10.2	3.0 : 1	6.6 : 1	2.2 : 1
TOTAL	58.9	28.1	13.0	2.1 : 1	4.5 : 1	2.2 : 1
CF:						
YARDS 2015	49.5	30.6	19.9	1.6 : 1	2.3 : 1	1.5 : 1
COBBLES	65.2	20.4	14.4	3.2 : 1	4.5 : 1	1.4 : 1
UNDER ROAD	41.7	32.0	26.3	1.3 : 1	1.9 : 1	1.2 : 1
HVS PITS	49.1	36.1	14.8	1.4 : 1	3.3 : 1	2.4 : 1

TABLE 7 - RELATIVE REPRESENTATION OF CATTLE, SHEEP AND PIG
BY WEIGHT

	COW	SHEEP	PIG	COW : SHE	COW : PIG	SHE : PIG
N/S	71.4	28.6	-	2.5 : 1	-	-
E/W I						
SOU 24	87.7	7.5	4.8	11.7 : 1	18.1 : 1	1.5 : 1
SOU 26	97.3	1.5	1.2	63.0 : 1	79.0 : 1	1.3 : 1
SOU 169	64.0	18.0	18.0	3.6 : 1	3.6 : 1	1.0 : 1
E/W II						
SOU 31	68.9	23.7	7.4	2.9 : 1	9.2 : 1	3.2 : 1
SOU 169	61.9	24.9	13.2	2.5 : 1	4.7 : 1	1.9 : 1
JUNCTION	78.8	10.3	10.9	7.6 : 1	7.2 : 1	0.9 : 1
TOTAL	76.1	14.5	9.4	5.3 : 1	8.0 : 1	1.5 : 1
CF:						
YARDS 2015	69.2	13.6	17.2	5.1 : 1	4.0 : 1	0.8 : 1
COBBLES	79.4	9.4	11.2	8.4 : 1	7.1 : 1	0.8 : 1
UNDER ROAD	67.9	16.0	16.1	4.2 : 1	4.2 : 1	1.0 : 1
HVS PITS	70.8	16.5	12.7	4.3 : 1	5.6 : 1	1.3 : 1

TABLE 8 - INCIDENCE of POULTRY,
percentaged on all identified fragments

	poultry	%	n
N/S	-	-	13
E/W I			
SOU 24	7	0.8	852
SOU 26	1	1.9	54
SOU 169	19	4.4	436
E/W II			
SOU 31	6	2.4	253
SOU 169	11	2.7	406
JUNCTION	-	-	119
TOTAL	44	2.1	2133
CF:			
YARDS 2015	52	3.1	1698
COBBLES	1	0.1	1100
UNDER ROAD	42	2.4	1766
HVS PITS	173	2.2	8046

TABLE 9 - CATTLE DISTRIBUTION OVER THE BODY: PERCENTAGED BY FRAGMENTS

	HEAD	LOOSE TEETH	LONG BONES	FEET/ ANKLES	VERT.	SCAP.	PELVIS	RIBS ETC.	n
N/S			+						3
E/W I									
SOU 24	16.5	5.8	18.8	17.0	21.6	4.8	2.5	13.0	606
SOU 26	10.4	8.3	27.1	22.9	14.6	8.3	6.3	2.1	48
SOU 169	9.6	3.0	15.7	14.4	15.0	3.0	6.0	33.3	167
E/W II									
SOU 31	44.6	8.4	9.2	10.9	6.7	2.5	4.2	13.5	119
SOU 169	14.7	2.3	13.6	15.8	15.3	1.1	2.2	35.0	177
JUNCTION	25.7	15.2	16.7	18.2	13.6	3.0	-	7.6	66
TOTAL	18.3	5.7	17.1	16.2	17.5	3.8	3.1	18.3	1186
CF:									
YARDS 2015	16.5	5.4	9.3	13.6	16.8	5.3	3.8	29.3	800
COBBLES	24.2	6.2	15.6	13.2	17.8	5.0	5.1	12.9	707
UNDER ROAD	12.0	5.5	17.6	15.7	17.9	3.1	3.0	25.3	766
HVS PITS	12.2	5.2	13.6	13.8	17.9	4.5	3.4	29.5	3833

TABLE 10 - SHEEP DISTRIBUTION OVER THE BODY: PERCENTAGED BY FRAGMENTS

	HEAD	LOOSE TEETH	LONG BONES	FEET/ ANKLES	VERT.	SCAP.	PELVIS	RIBS ETC.	n
N/S		+	+					+	5
E/W I									
SOU 24	13.2	7.0	23.2	7.8	22.4	4.7	5.4	16.3	129
SOU 26			+				+		3
SOU 169	15.6	2.6	16.9	9.1	5.8	6.5	1.9	41.6	154
E/W II									
SOU 31	9.9	2.0	17.8	8.9	22.8	5.9	5.0	27.7	101
SOU 169	14.6	2.6	20.5	11.9	7.3	5.3	11.3	26.5	151
JUNCTION	13.7	-	22.7	4.5	9.1	4.5	13.7	31.8	22
TOTAL	13.5	3.7	20.2	9.2	13.1	5.5	6.4	28.4	565
CF:									
YARDS 2015	13.1	5.1	10.5	3.8	15.4	2.0	4.0	46.1	495
COBBLES	14.5	4.5	30.4	16.7	11.3	6.3	2.7	13.6	221
UNDER ROAD	8.6	2.4	17.2	8.2	9.1	3.0	3.1	48.4	547
HVS PITS	8.7	2.7	14.7	8.1	14.9	3.1	3.0	44.8	2821

TABLE 11 - PIG DISTRIBUTION OVER THE BODY: PERCENTAGED BY FRAGMENTS

	HEAD	LOOSE TEETH	LONG BONES	FEET/ ANKLES	VERT.	SCAP.	PELVIS	RIBS ETC.	n
N/S									-
E/W I									
SOU 24	19.4	7.5	16.4	14.9	22.4	1.5	6.0	11.9	67
SOU 26		+							2
SOU 169	22.8	10.9	22.8	18.5	7.6	5.4	1.1	10.9	92
E/W II									
SOU 31	40.0	-	16.0	4.0	12.0	4.0	8.0	16.0	25
SOU 169	33.3	1.5	31.8	10.6	6.1	4.6	3.0	9.1	66
JUNCTION	+	+	+	+	+				10
TOTAL	25.9	6.5	24.4	13.7	11.5	3.8	3.1	11.1	262
CF:									
YARDS 2015	26.8	3.4	14.0	21.8	19.3	4.7	4.4	5.6	321
COBBLES	29.5	7.7	35.3	7.1	5.1	6.4	8.3	0.1	156
UNDER ROAD	25.7	13.0	15.2	16.8	13.3	3.7	3.8	8.5	399
HVS PITS	17.6	5.5	25.7	16.1	21.0	4.2	3.4	6.5	1158

TABLE 12 - HORSE DISTRIBUTION OVER THE BODY, fragment count

	SOU 24					SOU 31				SOU 169	
	E/W I FEATURES					E/W II				JUNCTION	
	3026	3027	3034	3035	3037	4048	4022	4023	4086	12370	12388
head							1	1			
loose tooth							6				
humerus	3	1	1		1						
radius											
ulna											
femur					1						
tibia		3	1		1						
astragalus		1			1						
calcaneum		2		1	1						
carpal/tarsal		1								1	
metacarpal											
metapodial											
metatarsal		1			1						
phalanx		1	1		1				1		1
vertebra	3	3	1	1							
scapula		1									
pelvis				1		1					
rib,etc								1			
TOTAL	6	14	4	3	7	1	7	2	1	1	1

TABLE 13 - HORSE DISTRIBUTION OVER THE BODY: PERCENTAGED BY FRAGMENTS

	HEAD	LOOSE TEETH	LONG BONES	FEET/ ANKLES	VERT.	SCAP.	PELVIS	RIBS ETC.	n
N/S									-
E/W I									
SOU 24	-	-	35.3	35.3	23.6	2.9	2.9	-	34
SOU 26									-
SOU 169				+					2
E/W II									
SOU 31							+		1
SOU 169									-
JUNCTION	+	+		+				+	10
TOTAL	4.3	12.8	25.5	31.9	17.0	2.1	4.3	2.1	47
CF:									
YARDS 2015									-
COBBLES			+	+		+	+	+	5
UNDER ROAD			+	+					3
HVS PITS	+		+	+			+		6

TABLE 14 - INCIDENCE OF YOUNG MATERIAL,
percentaged by species identified fragments

	CATTLE			SHEEP			PIC		
	HH%*	HHH%*	n	HH%	HHH%	n	HH%	HHH%	n
N/S	-	(33.3)	3	-	-	5			-
E/W I									
SOU 24	0.3	0.7	606	-	-	129	-	-	67
SOU 26	-	-	48	-	-	3	-	-	2
SOU 169	1.2	-	167	2.6	-	154	3.3	-	92
E/W II									
SOU 31	-	-	119	-	-	101	-	-	25
SOU 169	1.1	0.6	177	-	0.7	151	-	1.5	66
JUNCTION	-	-	66	-	-	22	-	-	10
TOTAL	0.5	0.5	1186	0.7	0.2	565	1.1	0.4	262
CF:									
YARDS 2015	-	-	800	-	-	495	-	-	321
COBBLES	0.1	-	707	-	-	221	-	-	156
UNDER ROAD	0.3	-	766	0.2	-	547	0.5	0.3	399
HVS PITS	0.3	-	3833	0.1	-	2821	1.0	-	1158

* these relate to the Ancient Monuments Laboratory coding (#09):

HH = very porous material, probably from an individual
only a few weeks old

HHH = material that is very porous indeed, quite likely
neonatal or even foetal

TABLE 15 - INCIDENCE of SMOOTH BUTCHERY
(percentaged on all identified fragments)

	smooth	%	n
N/S	-	-	13
E/W I			
SOU 24	3	0.4	852
SOU 26	-	-	54
SOU 169	8	1.8	436
E/W II			
SOU 31	6	2.4	253
SOU 169	3	0.7	406
JUNCTION	1	0.8	119
TOTAL	21	1.0	2133
CF:			
YARDS 2015	-	-	1698
COBBLES	8	0.7	1100
UNDER ROAD	5	0.3	1766
HVS PITS	32	0.4	8046

TABLE 16 - THE CONTEXTS REGROUPED

	ABUNDANCE	DEER P/C	POULTRY	HORSE	REL.FREQ. COW/SHEEP/PIG	HEAD	COW FRACS L/B	RIB
N/S	V. LOW							
JUNCTION	LOW	-	-	MUCH	UP COW	UP		DOWN
SOU 24 E/WI	GOOD	-	LOW	MUCH	UP COW	*	*	DOWN
SOU 26 E/WI	LOW	-	LOW	-	UP COW	*	UP	DOWN
COBBLES	GOOD	-	LOW	*	UP COW	UP	*	DOWN
UNDER ROAD	GOOD	ROE	*	*	UP PIG	*	*	*
SOU 31 E/WII	GOOD	-	*	*	*	UP	*	DOWN
SOU 169 E/WI	GOOD	ROE	MUCH	-	*	*	*	UP
SOU 169 E/WII	GOOD	ROE	*	-	*	*	*	UP
YARDS 2015	GOOD	RED/ROE	*	-	*	*	*	UP
HVS PITS	GOOD	ROE	*	*	*	*	*	UP

- not present

* present to a fair Hamwic standard