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THE ANIMAL BONES FROM SITES EXCAVATED IN THE STONEHENGE ENVIRONS PROJECT, WILTSHIRE

Report to the Historic Buildings and Monuments Commission

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ANIMAL BONES FROM W2 (1980) - CONEYBURY HENGE

1,797 animal bone fragments were recorded from the excavations. These have been divided into four main groups for analysis (Terminal Cutting of Ditch, Southern Cutting of Ditch, Interior Pits, Topsoil). The fragments represented in each of these groups are shown in Table 1.

TABLE 1

Species represented at Coneybury Henge

Species	Terminal Ditch	South Ditch	Pits	Topsoil	Total	1MM
Cattle	167	48	16	6	237	(10)
Sheep/Goat	7	5	-	2	14	(-)
Pig	49	20	7	3	79	(12)
Horse	-	1	-	-	1	(1)
Dog	3	52*	1	-	56	(-)
Red Deer	-	-	1	-	1	(-)
Roe Deer	4	1	-	-	5	(1)
Unid. Large Mammal	634	113	36	7	790	(219)
Sheep-sized Mammal	82	36	9	16	143	(70)
Unid. Mammal	348	55	25	18	446	(333)
Crane	-	13*	-	-	13	(-)
Lapwing	-	-	-	1	1	(-)
Unid. Bird	1	-	-	2	3	(3)
Short-tailed Vole	1	-	-	-	1	(1)
House Mouse	-	1	-	-	1	(1)
Unid. Rodent	-	1	-	-	1	(1)
Frog/Toad	5	-	-	-	5	(5)
TOTAL	1301	346	95	55	1797	(656)

* = articulated bones; 1MM = number of fragments in total from 1mm wet-sieved samples.

656 of the bones were therefore recovered in the 1mm wet-sieved samples. These were obtained mainly from context (1486) in the terminal ditch cutting. The majority of the bones came from the two ditch cuttings, whereas the pits and topsoil produced samples of less than 100 fragments.

The Terminal Ditch Cutting

This cutting produced the majority of the bones from the excavations. The 1,301 fragments included 570 1mm sieved fragments from samples obtained from context (1486). The fragments recovered from each layer are shown in Table 2, together with the number of observations of surface erosion, burning and gnawing on the bones.

TABLE 2

Species represented in Terminal Ditch Cutting

Species	Context 1077	1501	1486	1488	1422	Total	1MM 1486
Cattle	1	80	55	19	12	167	(8)
Sheep/Goat	-	7	-	-	-	-	(-)
Pig	1	28	14	4	2	49	(7)
Dog	-	2	1	-	-	3	(-)
Roe Deer	-	3	-	1	-	4	(-)
Unid. Large Mammal	2	84	502	24	22	634	(206)
Sheep-sized Mammal	1	24	57	-	-	82	(50)
Unid. Mammal	2	30	309	6	1	348	(292)
Short-tailed Vole	-	-	1	-	-	1	(1)
Frog/Toad	-	-	5	-	-	5	(5)
Unid. Bird	-	-	1	-	-	1	(1)
TOTAL	7	258	945	54	37	1301	(570)
Slightly Eroded	-	98	63	9	3	173	(37)
Moderately Eroded	-	53	46	3	-	92	(39)
Severely Eroded	7	46	39	-	-	92	(39)
Charred/Calcined	-	6	562	15	-	583	(294)
Gnawed	-	-	6	4	6	16	(2)

The bone condition data show how surface erosion became less common on fragments in the lower fills of the ditch. They also reveal that (1486) contained a very high proportion of burnt fragments. These consisted principally of small unidentifiable fragments recovered in the sieved samples but burning and scorching marks were found on several identifiable bones as well. 14 of the cattle fagments in (1486) had some evidence of burning on them (3 humeri, 8 radii, 2 ulnae and a tibia). Although none of the identified pig bones were burnt, several sheep-sized mammal fragments did show evidence of burning and in the absence of sheep/goat and roe deer bones in this layer, it is probable that these belonged to pig.

The lowest fills of the ditch produced a greater proportion of gnawed bones but the density of bones from these layers was low compared to (1486) and (1501) in the upper half of the ditch. (1501) has been described as "a midden depsoit" and is possibly of Beaker origin. In the cutting as a whole, cattle bones predominated amongst the identifiable fragments, with pig the only other species commonly represented. The dominance of cattle is supported by the high proportion of large mammal fragments amongst the unidentifiable categories in the assemblage.

The elements represented in the cattle assemblage are shown in Table 3. This shows that the different skeletal elements were not equally represented. The major bones of the upper limbs (humerus, radius, ulna, femur and tibia) were much better

represented than the skull, mandible, vertebrae and bones of the limb extremities, particularly in (1501) and (1486).

TABLE 3

Fragments of Cattle Represented in Terminal Ditch Cutting

Cattle	Context 1077	1501	1486	1488	1422	Total	MNI
Skull frags.	-	-	2	6	2	10	1
Mandible	-	2	-	1	1	4	1
Loose teeth	-	10	3	-	1	14	2
Scapula	-	3	1	-	-	4	2
Humerus	-	14	8	1	1	24	8
Radius	-	12	12	2	1	27	7
Ulna	-	7	7	2	1	17	5
Os Coxae	-	2	5	-	1	8	4
Femur	-	6	5	4	-	15	4
Tibia	1	4	8	2	-	15	7
Carpals	-	2	-	-	-	2	1
Calcaneus	-	1	-	-	-	1	1
Metacarpal	-	1	-	-	-	1	1
Metatarsal	-	4	1	-	-	5	4
Metapodial	-	1	-	-	-	1	1
1st Phalanx	-	1	1	-	-	2	2
2nd Phalanx	-	1	-	-	-	1	1
Ribs	-	-	-	-	2	2	1
Cervical verts.	-	3	1	-	1	5	2
Thoracic verts.	-	3	-	1	-	4	1
Lumbar verts.	-	1	1	-	1	3	2
Sacrum	-	2	-	-	-	2	1
TOTAL	1	80	55	19	12	167	

MNI = Minimum number of individuals represented.

The minimium number of animals represented by each skeletal element is also given in Table 3. Calculations to obtain these figures took into account the side of the body, fragmentation and ageing data. No account was made of the contexts in which they were found and it was assumed for these purposes that bones from different contexts could have belonged to the same animal. The results confirmed the bias towards upper limb bones with the highest counts obtained for the humerus, radius and tibia. In contrast, only one animal was represented by the mandible, which is usually one of the most common elements represented in cattle samples from archaeological excavations. The bias therefore cannot be attributed to differential preservation of the bones. This area of the ditch seems to have been preferred for the dumping of upper limb bones. These are relatively good meat bones and the limb bones of poorer meat quality were only rarely represented in this cutting. Those may have been removed during primary butchery and deposited elsewhere. The cattle bones in the terminal cutting, therefore, may mainly represent waste from a later stage in carcase processing. It is possible that some form of dressing of the carcases or cooking activities took place in the vicinity. The occurrence of a large number of burnt

bones in (1486) indicates that the bones had been in close proximity to fires, which may in turn have been associated with cooking activities. Several of the cattle bones bore only slight traces of scorching and it is possible that such marks were made during the roasting of the meat on the bone. Although traces of burning were relatively rare in other layers, the composition of the cattle assemblages was similar. Unless the fills were formed over a relatively short period, this implies that there was some sort of continuity or tradition in the dumping of such cattle bones in this area of the ditch over a cosiderable timespan.

Table 4 gives the fragmentation data for the major upper limb bones of cattle recovered from the terminal ditch cutting:-

TABLE 4

Bone Element	100%	75%	50%	25%	<25%
Humerus	-	3	11	6	4
Radius	-	1	7	5	14
Ulna	-	1	2	4	10
Femur	-	-	1	5	9
Tibia	-	1	3	6	5

Fragmentation of these bones was due to a combination of factors. A few bones had been partially destroyed by gnawing and several had breaks in the shafts probably made during marrow processing. The relatively high number of small radius and ulna fragments in the sample partly reflects the occurrence of several small completely charred fragments in (1486). Several of these brittle fragments may have belonged to the same bones. The sturdier bones (particularly the humerus and tibia) tended to survive in a more complete condition.

Surprisingly few knife cuts or chop marks were observed on these bones. Although surface erosion hindered such observations on some bones, many survived in a relatively good state of preservation in which, had butchery marks been made, they would have been noticed. Only a tibia from (1501) bore knife cuts on the anterior of its shaft, possibly made during removal of meat from the bone. The only other observation of butchery marks on cattle bones from the excavations was made on a fragment of rib in (1422) which appeared to have been chopped superficially near its articulation with the vertebra. Such marks can be made during the disarticulation of the flanks of the animal from the vertebral column. The lack of butchery marks near the distal articulation of the humerus and the proximal articulation of the radius may suggest that these bones were not disarticulated at this point and thus formed part of one joint.

The relatively low number of ribs and vertebrae amongst the cattle (and indeed the unidentifiable large mammal assemblage - Table 6) is perhaps surprising since they can also be associated with good meat joints. However this depends largely on how the carcases were butchered and there are methods in which the vertebrae in particular are deposited as waste during the early stages of carcase processing. In addition, it is possible that

these bones may have been more susceptible to destruction than the limb bones due to the scavenging of dogs or other destructive processes.

49 fragments of pig were recovered from the terminal cutting, mainly from the upper fills (Table 5).

TABLE 5

Fragments of Pig Represented in Terminal Ditch Cutting

Pig	Context 1077	1501	1486	1488	1422	Total	MNI
Skull frags.	-	1	4	-	-	5	2
Mandible	-	4	1	-	-	5	1
Loose teeth	-	-	4	-	-	4	1
Scapula	-	1	-	1	1	3	2
Humerus	-	5	-	-	-	5	4
Os Coxae	-	1	-	2	-	3	1
Femur	-	4	2	-	-	6	3
Tibia	-	7	1	1	-	9	4
Calcaneus	-	-	-	-	1	1	1
Metacarpal	1	-	-	-	-	1	1
Metatarsal	-	1	1	-	-	2	1
Lat. Metapodial	-	2	-	-	-	2	1
Metapodial	-	2	-	-	-	2	1
Ribs	-	-	1	-	-	1	1
TOTAL	1	28	14	4	2	49	

The figures obtained for the minimum number of individuals were again highest for some of the upper limb bones (humerus, femur and tibia). This again suggests that there was a bias in the assemblage towards good meat bones. However the pig sample is small and such conclusions are tentative. No butchery marks were observed on any of the bones, although most of the limb bones seem to have been broken open for marrow extraction.

All seven sheep/goat fragments came from (1501). The absence of such bones in the lower fills suggests that sheep may have been exploited at most ony rarely during the earlier period of the henge's development. The bones represented consisted of two fragments of mandible, a loose tooth and a single fragment each of radius, femur, tibia and cervical vertebra.

Dog was represented by three fragments in the terminal cutting. (1501) produced a fragment of scapula and an acetabulum. (1486) contained a fragment of ilium. Four roe deer fragments were recovered: (1501) included a scapula and two humeri and (1488) produced a femur fragment. The two humeri fragments may have belonged to the same bone. The sievings produced a tooth of short-tailed vole and five bones of frog or toad in (1486). A tibiotarsus fragment of an unidentifiable passerine was also recovered from the sieved samples.

The number of fragments represented in the unidentifiable large mammal and sheep-sized mammal categories in each layer of the cutting are shown in Table 6. Most of the sheep-sized mammal fragments were small fragments recovered from the sieved samples. The large mammal assemblage was also dominated by small unidentifiable fragments, often burnt, from the sieved samples. Apart from these the relative number of longbone fragments is higher than usually encountered in archaeological samples and lends support to the dominance of limb bones amongst the cattle assemblage.

TABLE 6

Fragments of Large Mammal and Sheep-sized Mammal Represented in Terminal Ditch Cutting

Unid. Large Mammal	Context 1077	1501	1486	1488	1422	Total	1MM
Skull and mandible	-	1	-	7	1	9	(-)
Ribs	1	15	13	-	8	37	(5)
Vertebrae	-	4	9	2	9	24	(8)
Longbone fragments	1	22	119	7	2	151	(29)
Unid. fragments	-	42	361	8	2	433	(164)
Total	2	84	502	24	22	634	(206)

Sheep-sizedMammal	Context 1077	1501	1486	1488	1422	Total	1MM
Skull and mandible	-	-	1	-	-	1	(1)
Ribs	-	1	4	-	-	5	(4)
Longbone fragments	1	14	18	-	-	33	(10)
Unid. fragments	-	9	34	-	-	43	(35)
Total	1	24	57	-	-	82	(50)

Southern Ditch Cutting

The number and density of animal bones was significantly smaller in this cutting than in the terminal cutting. Only 346 bones were recorded, of which 65 belonged to partial skeletons of dog and crane. Table 7 lists the identifications made in the various fills of the ditch. For the purposes of this analysis the contexts were grouped as follows:-

(1065) + (1421);
(938) + (1444) - stonefree grassland soil;
(941) + (1063) - upper ditch fills;
(1062) + (1487) - upper colluvial ditch fills;
(1072) + (1472) + (2238) - lower colluvial ditch fills;
(1420) - cemented chalk wash below (1472);
(1445) - primary chalk rubble;
(1446) + (2306) - chalk wash and primary ditch fill below (1445).

Table 7 also summarises the observations of bone condition from each of these groups. In general, the assemblage was much more severely eroded than in the terminal ditch cutting. Only a few fragments were burnt. Only four observations of gnawing were made but the severity of the erosion may have destoyed such marks in many cases. Once again the severity of the erosion on the bones tended to decrease in the lower fills and the few bones from the primary fills were well preserved. The high proportion of unidentifiable fragments is also indicative of the relatively poor preservation of much of this sample.

TABLE 7

Species represented in Southern Ditch Cutting

	Contexts:								
Species	1065/ 1421	938/ 1444	941/ 1063	1062/ 1487	1072/ 1472/ 2238	1420	1445	1446/ 2306	Total
Cattle	3	8	3	20	9	3	-	2	48
Sheep/Goat	-	-	2	3	-	-	-	-	5
Pig	-	-	-	7	13	-	-	-	20
Horse	-	1	-	-	-	-	-	-	1
Dog	-	-	-	-	-	15	-	37	52
Roe Deer	-	1	-	-	-	-	-	-	1
Large Mammal	3	18	6	65	11	5	1	4	113
Sheep-sized M.	-	9	6	6	11	-	4	-	36
Unid. Mammal	6	14	3	16	13	1	-	2	55
House Mouse	-	1	-	-	-	-	-	-	1
Unid. Rodent	-	1	-	-	-	-	-	-	1
Crane	-	-	-	-	-	-	10	3	13
TOTAL	12	53	20	117	57	24	15	48	346
Slight. Erod.	-	6	-	4	23	6	-	1	40
Mod. Eroded	-	12	3	23	12	-	-	2	52
Severe. Erod.	9	30	15	80	13	-	4	-	151
Charred/Calc.	-	6	-	2	-	-	1	1	10
Gnawed	-	-	-	1	2	1	-	-	4

Cattle fragments were the most commonly identified (excluding articulated bones), although nearly all of them were found in the colluvial and other upper fills of the cutting. The skeletal elements represented of all the principal mammals are given in Table 8. In the cattle sample, although fragments of the upper limb bones were more common than those from other parts of the skeleton, the bias towards such bones was by no means as marked as in the terminal ditch cutting. The sample was too small to draw further conclusions. No butchery marks were observed on any of the cattle (or other) bones from this cutting.

All 20 of the pig fragments were found in the colluvial fills. They outnumbered cattle fragments in the lower colluvial

fills but the sample was too small to draw any conclusions from this. Loose teeth formed a high proportion of the pig assemblage indicating the poor preservation of their bones (Table 8).

The five sheep/goat fragments were found in the upper fills of the cutting. Once again they were absent from the primary fills and may not have been exploited at that period. A fragment of horse third metacarpal was found in (938) but the date of the formation of this fill was probably substantially later than the lower ditch fills. Both the house mouse maxilla and the unidentified rodent incisor in (1444) could have been quite modern intrusions into the fills. A roe deer tooth was found in the same context.

TABLE 8

Fragments of Major Species Represented in Southern Ditch Cutting

	Cattle	Sheep/G	Pig	Dog	LM	SM	UM
Skull frags.	2	-	2	-	2	1	1
Mandible	2	1	3	-	-	-	-
Loose teeth	9	3	9	-	-	-	-
Scapula	4	-	1	1	-	-	-
Humerus	4	-	-	-	-	1	-
Radius	2	1	-	-	-	-	-
Os Coxae	1	-	2	1	-	-	-
Femur	4	-	1	2	1	2	-
Patella	-	-	-	1	-	-	-
Tibia	4	-	2	2	-	2	-
Fibula	-	-	-	2	-	-	-
Carpals	-	-	-	5	-	-	-
Calcaneus	-	-	-	1	1	-	-
Astragalus	-	-	-	1	-	-	-
Other tarsals	-	-	-	-	-	-	-
Metacarpal	2	-	-	5	-	-	-
Metatarsal	3	-	-	1	-	-	-
Metapodial	1	-	-	-	-	-	-
1st Phalanx	-	-	-	5	-	-	-
2nd Phalanx	1	-	-	4	-	-	-
3rd Phalanx	-	-	-	4	-	-	-
Sesamoids	-	-	-	2	-	-	-
Ribs	-	-	-	2	4	-	-
Cervical verts.	3	-	-	-	-	-	-
Thoracic verts.	2	-	-	-	-	-	-
Lumbar verts.	-	-	-	7	-	-	-
Sacrum	1	-	-	1	-	-	-
Caudal verts.	-	-	-	4	-	-	-
Unid. verts.	-	-	-	-	15	1	-
Baculum	-	-	-	1	-	-	-
Longbone frag.	-	-	-	-	25	22	1
Unid. frag.	-	-	-	-	65	7	53
TOTAL	48	5	20	52	113	36	55

LM = Unid. Large Mammal; SM = Sheep-sized Mammal;
UM = Unidentified Mammal.

The 52 dog bones consisted of a series of articulated sets of bones from (1420) and (2306). These all appear to have belonged to the same animal, whose skeleton somehow had become separated in the fills. The sets of lumbar vertebrae from the different contexts are a good match and the astragalus found in (1420) articulates with the right tibia recovered from (2306). The bones belonged to an adult male dog (the baculum was recovered), which had suffered from severe pathology to its left hindlimb. Both the femur and tibia were severely malformed and the latter appears to have been fractured at some stage in the animal's life. The femur was also distorted towards its distal articulation and the limb would have been substantially shorter than its counterpart. The fracture had healed but the animal is likely to have hobbled around for some considerable period of its life.

The 13 bones of crane consisted of bones from the left wing and some vertebrae, probably from the same individual. (2306) contained the distal half of the humerus and fragments of the proximal parts of the radius and ulna and (1445) contained fragments of the distal halves of the radius and ulna, the metacarpus, the ulnare and six vertebrae. The humerus had suffered quite severely from a pathological condition which resulted in the distortion of the shaft, exostosis and pitting.

Interior Pits

Pits (1177), (1458), (1608), (1619), (1672), (1844), (1848), (2112) and (2115) together with the stakehole (976) produced 95 bones. Only (1844) (29 fragments) and (1619) (15 fragments) produced over 10 bones. The bones identified are listed in Table 1. The elements represented are given in Table 9.

The assemblages from these shallow features were generally poorly preserved. 38 of the fragments were severely eroded, 38 moderately eroded and 16 slightly eroded. Eight fragments showed evidence of burning and at least 11 had been gnawed. Consequently there was a high proportion of unidentifiable fragments. Only cattle and pig were identified in more than one pit. Cattle bones were found in five pits and pig in three. Bones of sheep/goat were not identified. (1398) contained the proximal articulation of a radius, which in view of its extremely large size, may have belonged to auroch (Bos primigenius). A fragment of the top of a red deer antler was found in pit (2115). Finally, a radius of a dog was recovered from (1672). No bones of roe deer were identified.

Topsoil

55 fragments of animal bone were recovered from the topsoil. Several of these had a modern appearance and may have been relatively recent intrusions into the deposits. Table 1 lists the species represented. All the fragments identified to cattle, sheep/goat and pig consisted of loose teeth apart from a fragment of cattle tibia and a fragment of pig mandible. Most of the remaining fragments were eroded and seven bore some degree of burning. All three bird bones (one of a lapwing and two of unidentified passerines) all had a modern appearance.

TABLE 9

Fragments Represented in Interior Features

	Cattle	Pig	Dog	Red	LM	SM	UM
Skull frags.	-	1	-	-	5	3	-
Antler	-	-	-	1	-	-	-
Mandible	-	-	-	-	1	-	-
Loose teeth	5	2	-	-	-	-	-
Scapula	1	-	-	-	-	-	-
Humerus	1	1	-	-	-	-	-
Radius	2	-	1	-	-	-	-
Ulna	-	1	-	-	-	-	-
Os Coxae	1	-	-	-	-	-	-
Femur	1	-	-	-	-	-	-
Tibia	1	1	-	-	-	-	-
Metacarpal	2	-	-	-	-	-	-
Metatarsal	1	-	-	-	-	-	-
1st Phalanx	1	-	-	-	-	-	-
Ribs	-	-	-	-	8	1	-
Lumbar verts.	-	1	-	-	-	-	-
Unid. verts.	-	-	-	-	1	1	-
Longbone frags.	-	-	-	-	10	1	-
Unid. frags.	-	-	-	-	11	3	25
TOTAL	16	7	1	1	36	9	25

Red = Red Deer; LM = Unid. Large Mammal;
SM = Sheep-sized Mammal; UM = Unidentified Mammal.

Discussion

Interpretation of the faunal assemblage has to rely heavily on the evidence from the terminal ditch, which may not have been typical of the rest of the site. It seems clear that the upper fills of that section of the ditch contained the bone debris derived mainly from a particular stage in cattle carcase processing. That stage was one in which meat from the upper limb bones was processed and possibly in some instances roasted on the bone. It is possible that such processing took place nearby. Samples from the rest of the excavations were too small to test whether the waste from such processing was restricted to that area of the ditch nor whether there were other contemporary discrete concentrations of particular bone elements. Although several cattle were represented in the terminal ditch, there is no clear indication of the period of time in which they were deposited. It is possible that the pig assemblage was also derived principally from a similar stage of processing but the sample was too small to be certain.

Cattle and pig were the only two species eaten in any numbers. Most of the cattle bones appear to have belonged to fully grown animals. Only five porous bones belonging to young calves were identified. The epiphyseal fusion evidence (Table 10) showed that nearly all the articulations, even those of late-fusing age, were fused. Even allowing for the fact that unfused specimens are likely to be under-represented because of their

greater susceptibility to destruction, it does appear that most of the cattle represented in this sample were over four years of age and possibly considerably older in some cases. However the absence of tooth eruption evidence makes it impossible to gain a more detailed impression of cattle mortality patterns. The pig bones did include a greater proportion of immature specimens (Table 10).

TABLE 10

Epiphyseal Fusion Data for Cattle and Pig (Excluding Topsoil)

	Cattle			Pig		
	N	J	F	N	J	F
Early Fusion Points						
Scapula - glenoid	-	-	4	-	1	3
Humerus - distal	-	1	15	-	1	2
Radius - proximal	-	-	10	-	-	-
Later Fusion Points						
Tibia - distal	1	-	5	4	-	2
Metatarsus - distal	1	-	1	-	-	-
Calcaneus	-	-	-	1	-	-
Latest Fusion Points						
Humerus - proximal	-	-	1	-	-	1
Radius - distal	-	-	10	-	-	-
Femur - proximal	1	1	5	1	-	-
Femur - distal	-	-	2	-	-	-
Tibia - proximal	-	-	-	-	-	1

N = unfused; J = fusing; F = fused.

It was possible to gain some impression of the size of the cattle represented at the site, since measurements were possible on a number of bones. Table 11 summarises the more common measurements.

TABLE 11

Measurements of Cattle Bones from Coneybury Henge

Bone	Measurement (mm.)
Humerus - breadth distal trochlea	65.9, 68.8, 69.7, 72.5, 74.5 76.9, 84.9. Mean - 73.3
Radius - max. proximal breadth	73.3, 74.9
Radius - max. distal breadth	64.7, 67.4, 70.0
Tibia - max. distal breadth	59.4, 66.9
Metacarpus - max. proximal breadth	50.2, 51.9, 59.2
Metatarsus - maximum length	216.0
Metatarsus - max. proximal breadth	41.4, 45.1, 49.2

These measurements generally fall within the range of size of

animals represented in the larger samples from Durrington Walls (Harcourt 1971). The mean of the distal humeri measurements at Coneybury was slightly greater than at Durrington Walls (c.71.8 mm) but smaller than the mean obtained from specimens from Windmill Hill (75.4 mm - Grigson 1965: 155). Most of the Coneybury specimens were larger than those represented in the Middle Bronze Age deposits at Grimes Graves (Legge 1981: 84). The decrease in size of cattle from the Neolithic period to the Iron Age has been noted for some time (Jewell 1963). The results from Coneybury fall into that pattern.

The absence of sheep/goat bones from any of the primary fills of the deposits may indicate that they were not exploited in the early phases of the henge's development. Deer bones were also comparatively rare compared to their abundance in the Anomaly. There was no evidence of beaver from these excavations.

ANIMAL BONES FROM W2(1980-1981) THE CONEYBURY ANOMALY

This remarkable Early Neolithic feature was situated outside the area of the henge excavations. Its presence was located during a resistivity survey. Excavation revealed a deep pit, at the bottom of which was a primary deposit densely packed with pottery, animal bones and other artefacts. Above this was a substantial colluvial fill which probably accumulated over a considerable period of time after the contents of the primary deposit had slumped.

2,110 animal bone fragments were recorded. A roe deer rib was identified in (2515), a layer of chalk wash beneath the major primary deposit, and a cattle third phalanx and a roe deer cervical vertebra were not labelled to a specific context within the Anomaly. The species represented by the remaining 2,107 fragments are shown in Tables 1-2.

The Primary Deposits

The faunal assemblage in these layers consisted of a dense accumulation of extremely well preserved bones. Only 60 of the 1,715 fragments were slightly eroded. 32 bones bore evidence of canid gnawing and 125 fragments displayed various degrees of burning.

Cattle and roe deer bones dominated the assemblage, with pig, red deer and beaver represented in small numbers. At least one fish was also represented. Sheep-sized and large mammal fragments were roughly equally represented amongst the unidentified fragments. The vast majority of these probably also belonged to roe deer and cattle respectively. The primary deposit was very carefully excavated with 3-D recording of all finds in some layers. Most of the remainder of the bones were recovered by dry-sieving through a 4mm mesh. Further soil samples were wet-sieved through a 1mm mesh. These samples (from (2247), (2516) and (2538)) produced 253 of the fragments. 142 of these were small unidentified mammal fragments, many of them burnt. A further 57 sheep-sized mammal and 17 large mammal fragments were not identifiable to species. Those which were identifiable belonged to cattle (20 fragments), roe deer (4 fragments), beaver (2 fragments) and fish (11 fragments). The sieving programme therefore did increase the species list since these were the only fish bones represented in the deposits. However, the results generally did not add to the information obtained from the 4mm dry-sieving.

The Cattle Sample

Cattle fragments were the most commonly identified in the primary deposits. This was largely due to their dominance in (2538). Roe deer bones were found almost as frequently in the other layers (Table 1). The bones represented in the cattle assemblage are listed in Table 3. They consisted almost entirely of bones from the head and neck or from the limb extremities. The sample was dominated by skull fragments, mandibles, cervical vertebrae, metapodia and phalanges. The upper limb bones, ribs and other vertebrae were rarely encountered. Carpals and some of the tarsals were slightly more common.

TABLE 1

Species represented in Coneybury Anomaly Primary Deposits

Species Context-	2235	2247	2248	2516	2517	2518
Cattle	10	20	3	24	29	4
Pig	-	2	-	-	-	-
Red Deer	-	2	-	-	2	-
Roe Deer	5	35	-	5	32	2
Beaver	-	1	-	-	1	-
Unid. Large Mammal	7	16	12	10	24	3
Sheep-sized Mammal	8	16	1	45	31	2
Unid. Mammal	13	59	2	75	32	2
Fish (Brown Trout)	-	-	-	11	-	-
TOTAL	43	151	18	170	151	14

Species	2519	2520	2536	2538	2539	Total
Cattle	4	1	4	336	15	450
Pig	-	-	-	17	-	19
Red Deer	-	-	-	17	-	21
Roe Deer	8	1	5	194	17	304
Beaver	-	-	1	19	-	22
Fish (Brown Trout)	-	-	-	-	-	11
Unid. Large Mammal	2	-	1	149	10	234
Sheep-sized Mammal	3	-	1	128	15	251
Unid. Mammal	5	3	4	192	16	403
TOTAL	22	5	16	1052	73	1715

TABLE 2

Species represented in Coneybury Anomaly Upper Fills

Species	Total
Cattle	94
Sheep/Goat	2
Pig	7
Red Deer	6
Roe Deer	18
Beaver	3
Unid. Large Mammal	123
Sheep-sized Mammal	53
Unid. Mammal	87
TOTAL	393

TABLE 3

Fragments of Cattle Represented in Coneybury Anomaly

Cattle	Context 2538	Other Primary	Upper Fills	Total
Skull frags.	75(19)	34	14	123
Mandible	31	5	10	46
Hyoid	6	-	-	6
Loose teeth	23(2)	16	25(2)	64
Scapula	2(1)	4	2	8
Humerus	-	1	5	6
Radius	-	1	-	1
Ulna	-	1	-	1
Os Coxae	3	2	1	6
Femur	3	1	3	7
Tibia	5	-	1	6
Carpals	5	-	2	7
Calcaneus	1	-	1	2
Astragalus	1	-	3	4
Centroquartal	2	1	1	4
Other tarsals	4	1	-	5
Metacarpal	24	2	6	32
Metatarsal	28(1)	3	4	35
Metapodial	7	6	3	16
1st Phalanx	30(1)	6	1	37
2nd Phalanx	25(1)	5	1	31
3rd Phalanx	22(2)	6	1	29
Sesamoids	8	4(1)	-	12
Ribs	1	3	-	4
Cervical verts.	25(1)	9	8	42
Thoracic verts.	5	2(1)	2	9
Lumbar verts.	-	1	-	1
TOTAL	363(18)	114(2)	94(2)	544

( ) number from 1mm wet-sieved samples.

Comparisons between (2538) and the other primary contexts revealed only small differences in the types of cattle bone represented. (2538) contained a greater proportion of foot bones and correspondingly fewer skull fragments but neither sample contained many bones from other parts of the body.

This assemblage is a classic example of the disposal of cattle primary butchery waste. Bones with little meat value were dumped, whereas the major meat-bearing bones were taken away for further processing and consumption. The impression gained during excavation was that the primary fills were formed over a short period of time. It is possible, therefore, that these cattle bones were dumped in one butchery episode. It is thus important to estimate how many animals were butchered in this manner to form some impression of the scale of the processing activity.

TABLE 4

Minimum Number of Cattle Elements in Primary Fills of Anomaly

	Neonatal	Immature	Adult	Imm./Adult	Total
Skull frags.	3	3	1	-	7
Mandible	3	5	1	-	9
Hyoid	1	-	-	2	3
Scapula	1	1	-	1	3
Humerus	1	-	-	-	1
Radius	-	-	-	1	1
Ulna	1	-	-	-	1
Os Coxae	1	1	-	1	3
Femur	1	-	-	1	2
Tibia	1	-	1	1	3
Carpals	1	-	-	1	2
Calcaneus	-	-	1	-	1
Astragalus	-	-	-	1	1
Centroquartal	1	-	-	1	2
Other tarsals	1	-	-	1	2
Metacarpal	2	4	-	3	9
Metatarsal	3	2	-	2	7
Metapodial	1	1	-	-	2
1st Phalanx	2	1	-	2	5
2nd Phalanx	2	1	-	3	6
3rd Phalanx	2	-	-	3	5
Sesamoids	1	-	-	1	2
Ribs	1	1	-	-	2
Cervical verts.	1	2	-	1	4
Thoracic verts.	1	1	1	-	3
Lumbar verts.	-	-	1	-	1
TOTAL	3	5	1	3	10

Table 4 gives the minimum number of cattle represented by each bone in the primary deposits. The calculations were made by taking the side of the body, age and the size of the bone into consideration. No account was taken of context, since it was assumed that bones in all these layers may possibly have belonged to the same animals. The various calculations showed that at least 10 cattle were represented. Three of these were young calves (neonatal), five or six were immature and one or two were adults. Although only a minimum of nine animals were represented by any individual bone, at least seven immature or adult cattle were represented by the metacarpus and, in addition, at least three neonatal animals were represented by some of the other bones. Consequenttly, at least ten cattle of various ages had been butchered.

It was possible to plot 232 of the cattle fragments onto the horizontal distribution plan of recorded finds. These are shown in Figures 1 and 2. There was no clear distinction between the distribution of bones from the head and neck and those from the feet, nor between bones of calves and older cattle. In several

instances, however, there were several groups of bones located in close proximity, which probably belonged to the same animal. Several of the skull fragments and phalanges were probably still attached to each other when originally deposited in the pit. The recovery of a large number of unfused epiphyses together with their diaphyses also suggests that these may have still been joined together by gristle when dumped.

Ageing data were obtained from the study of mandibular toothwear and epiphyseal fusion data. In addition, bones of young calves could be recognised by their porosity and these were duly recorded. Table 5 shows the epiphyseal fusion and porosity data for the limb bones. The results confirm that at least three young calves were represented by the very porous bones. Many of the phalanges, however, belonged to older animals, since their proximal epiphyses were fusing or had fused. These epiphyses fuse between 15-24 months, at a rough estimate (see discussion of the problems of ageing of epiphyseal fusion by Grigson (1982a)). The distal metapodia, however, were usually still unfused. These are generally thought to fuse between 24-36 months, although the age varies due to a variety of factors. At least three animals, however, had reached this stage of development, since the distal epiphyses of their metacarpi had fused.

TABLE 5

Epiphyseal Fusion Data for Cattle in Primary Deposits

	N	J	F	Porous	
Early Fusion Points				No.	%
Scapula - glenoid	1	-	1	2	33
Humerus - distal	-	-	-	1	100
Radius - proximal	-	-	-	1	100
1st Phalanx - proximal	18	2	10	18	50
2nd Phalanx - proximal	10	2	15	12	40
Later Fusion Points					
Tibia - distal	1	-	1	1	20
Metacarpus - distal	8	1	3	4	15
Metatarsus - distal	7	-	2	9	29
Calcaneus	-	-	1	-	-
Latest Fusion Points					
Femur - distal	1	-	-	2	50
Tibia - proximal	-	-	1		

N = unfused; J = fusing; F = fused; No. = number of porous bones.

13 mandibles bore evidence of tooth eruption and wear (Table 6). Six or possibly eight of these mandibles could be paired with each other and may have belonged to the same animals. Four mandibles from at least two cattle had none of the deciduous premolars fully erupted whilst the first molar was unerupted. These belonged to calves that were aged probably less than a month old (Higham 1967). Two other mandibles had the first molar only in an early stage of wear and belonged to

animals perhaps about a year old. Six other mandibles belonged to older, although still immature cattle. These still had their deciduous premolars in wear. In one specimen the second molar was in an early stage of wear but the third molar was unerupted. This may have belonged to an animal aged between 18-24 months. In two other specimens, however, the second molar was still not erupted. These may have belonged to animals under 16 months of age (Higham 1967). Only one specimen had a fully developed toothrow and this belonged to quite an old animal, judging by the wear patterns on the teeth. The dominance of immature animals supports the epiphyseal fusion evidence.

TABLE 6

Cattle Mandibular Tooth Eruption Data from Primary Deposits

Context	Side	P2	P3	P4	M1	M2	M3
2247	R	(W)	(W)	(j)	g	c	V
2538	L	(W)	(W)	(h)			
2538	R				g	V	
2538	R		W	g	l	k	j
2538	R			(j)			
2538	R	(U)	(U)	(U)			
2538	L	(W)	(W)	(j)	g		
2538	L	(U)	(U)	(U)	V		
2538	L	(E)	(U)	(U)	V		
2538	R				V		
2538	R	(U)	(W)	(f)	b		

Wear stages after Grant (1982). W = worn; U = erupted but unworn; E = erupting; V = visible in crypt; ( ) = deciduous tooth; P = premolar; M = molar.

22 of the cattle bones bore evidence of butchery in the form of fine cuts made with a sharp blade (Table 7). Most examples were found near the proximal articulation of the first phalanx. These were produced during the disarticulation of the phalanges from the distal metapodia. The presence of cuts on the medial surfaces of three of these phalanges indicates that the toes were carefully separated from the metapodia. At the other end of the metapodia, cuts on three tarsals and near the proximal articulation of a metacarpus and a metatarsus indicate how these bones were detached from the upper limbs.

Cuts on the skull fragments may be indicative of filleting, although skinning marks cannot be ruled out. A calf's mandible bore cuts on the lateral aspect of the ramus. An os coxae had cuts inflicted during the detachment of the femur from the pelvis. A radius had knife cuts on its posterior aspect near the proximal articulation. These were probably associated with the separation of bones at the radio-cubitus joint. A rib and a thoracic vertebra bore cuts near their attachments, indicating how the ribcage was separated from the vertebrae.

TABLE 7

Location of Butchery Marks on Animal Bones in Primary Deposits

	Cattle	Red Deer	Roe Deer	Large Mam.	Unid Mam.
Skull frags.	1	1			
Mandible	1		2		
Hyoid	2		1		
Scapula			1		
Humerus			2		
Radius	1		4		
Ulna			1		
Os Coxae	1				
Carpals			2		
Centroquartal	2		5		
Other tarsals	1				
Metacarpal	1		1		
Metatarsal	1				
1st Phalanx	6				
Ribs	1			3	
Thoracic verts.	1		1		
Lumbar verts.					1
Unid. fragment					2
TOTAL	22	1	20	3	3

TABLE 8

Fragmentation of Cattle Metapodia in Primary Deposits

Fragment Size	Metacarpus	Metatarsus
Complete	1	1
Proximal 75%	1	
Distal 75%	4	2
Shaft 75%		1
Proximal 50%	6	2
Distal 50%	3	
Shaft 50%		2
Proximal 25%	1	1
Distal 25%	4	5
Shaft 25%	1	5
Proximal <25%		1
Distal <25%		1
Shaft <25%	4	9
Distal Epiphysis		1
TOTAL	25	31

Further evidence for the the treatment of cattle carcases can be gleaned from the study of the fragmentation pattern of the metapodia (Table 8). Only two (belonging to young calves) were complete. Most of the rest appear to have been deliberately broken. The metatarsi tended to be more fragmented than the metacarpi. The breakage pattern, however, appears to have been quite consistent. One side of the shaft appears to have been struck by, or hit against, a sharp edge to crack open the bone, which was then twisted apart. This would have enabled the marrow to be removed. This process may have been done in association with fire. Seven of the metacarpi and two of the metatarsi fragments bore evidence of burning. Bones processed for marrow are often heated to facilitate the operation (Binford 1981: 148). The high fragmentation of the skulls would also suggest that these had been broken open to remove the brain for food.

Some of the fragmentation of the limb bones can be explained by carnivore scavenging. 24 cattle fragments (mostly metapodia and phalanges) bore gnawing marks and a few bones may have been totally destroyed by such activity.

Measurements were taken where possible but the high frequency of immature animals limited the scope for metrical analysis. All the bones belonged to animals the size of domestic cattle. The cattle were of a similar large size to those represented on other Early Neolithic sites in southern England. All measurements from this site are stored in archive.

Roe Deer (Capreolus capreolus)

The 304 fragments identified to this species are shown in Table 9. A much more balanced representation of the different skeletal elements was encountered. The minimum number of animals represented by each element is given in Table 10. At least seven animals were represented by the radii and tibiae, six by the mandibles and four by the humeri. Most of the other bones belonged to at least two or three animals. (2247) produced two sets of lumbar and some thoracic vertebrae and ribs which formed two articulated groups. In addition to these, several sets of phalanges and tarsals seem to have been dumped in articulation, as were some of the major limb bones. Figure 3 shows the distribution of recorded finds of roe deer with the articulated bones indicated.

Most of the roe deer bones represented belonged to skeletally mature animals. Table 11 shows the epiphyseal fusion data. Nearly all the surviving articular surfaces of limb bones and phalanges were fused. However, in addition, at least four very young roe deer were represented by porous bones. However, only the radii and tibiae produced more than one porous specimen.

The mandibular tooth eruption data (Table 12) revealed that at least one roe deer had a fully erupted toothrow. Two other mandibles had their permanent premolars erupted but not in wear. They may have belong to animals aged between 12-15 months. Two others had the deciduous premolars in an early stage of wear and at least one of these specimens had an unerupted first molar. These belonged to animals under six months old.

TABLE 9

Fragments of Roe Deer Represented in Coneybury Anomaly

Roe Deer	2538	Other Primary	Upper Fills	Total
Skull frags.	15	7	1	23
Mandible	6	5	1	12
Hyoid	5	-	-	5
Loose teeth	14(1)	3	4	21
Scapula	3	3	1	7
Humerus	3	2	1	6
Radius	11	4	1	16
Ulna	8(1)	2	-	10
Os Coxae	3	2	3	8
Femur	4	3	-	7
Patella	2	-	-	2
Tibia	9	1	-	10
Carpals	9	4	-	13
Calcaneus	2	1	-	3
Astragalus	2	-	-	2
Centroquartal	4	1	-	5
Other tarsals	2	1	-	3
Metacarpal	9	1	-	10
Metatarsal	10(1)	5	4	19
Lat. Metapodial	2	1	-	3
Metapodial	4	-	-	4
1st Phalanx	11(1)	5	2	18
2nd Phalanx	9	4	1	14
3rd Phalanx	5	4	-	9
Ribs	27	13	-	40
Cervical verts.	11	3	-	14
Thoracic verts.	4	17	-	21
Lumbar verts.	-	15	-	15
Sacrum	-	1	-	1
TOTAL	194(4)	110	19	323

( ) number of fragments found in 1mm wet-sieved samples.

20 roe deer bones bore cut marks (Table 7). Cuts on the anterior surfaces of the carpals, metacarpus and centroquartals were made during the disarticulation of the feet from the upper limb bones. Marks on the distal humeri and proximal ulna and radii were associated with the disarticulation of the radio-cubitus joint. Cuts on the distal scapula revealed how this was disarticulated from the proximal humerus. Two mandibles bore cuts on the lateral aspect of the ramus. probably associated with the disarticulation of these bones from the skull. A thoracic vertebra had cuts on its articulating surface with the rib made during the separation of these two bones. The butchery evidence indicates that the skeletons had been disarticulated in a systematic manner. No evidence for the filleting of meat from the bones was found, although such procedures need not have left any trace. Most of the limb bones appear to have been broken open for marrow, however. Few bones bore canid gnawing marks.

TABLE 10

MNI of Elements of Other Species in Primary Fills of Anomaly

	Pig	Red Deer	Roe Deer	Beaver
Skull frags.	1	1	3	1
Antler	-	1	-	-
Mandible	1	1	6	-
Hyoid	-	-	2	-
Scapula	-	-	2	1
Humerus	-	-	4	1
Radius	-	-	7	2
Ulna	-	-	5	1
Os Coxae	-	-	2	-
Femur	-	-	2	2
Patella	-	-	1	-
Tibia	2	-	7	2
Fibula	1	-	-	-
Carpals	-	-	2	-
Calcaneus	-	-	3	1
Astragalus	-	-	2	-
Centroquartal	-	-	3	-
Other tarsals	-	-	2	-
Metacarpal	1	1	2	-
Metatarsal	-	-	3	-
Lat. Metapodial	-	-	1	-
Metapodial	-	1	1	-
1st Phalanx	-	2	2	1
2nd Phalanx	-	2	2	-
3rd Phalanx	-	-	2	-
Ribs	-	-	3	1
Cervical verts.	1	-	2	1
Thoracic verts.	-	-	2	-
Lumbar verts.	1	-	3	-
Sacrum	-	-	1	-
TOTAL	2	2	7	2

Other Species

Red deer (Cervus elaphus) was represented by 21 fragments in the primary deposits. These belonged to at least two animals (Table 10). A very young calf was represented by two unworn deciduous premolars, three porous phalanges and and by a mandible, in which the deciduous premolars were erupted but not in wear. An older animal (or animals) was represented by two fragments of metacarpus, five phalanges and four skull fragments, three of which definitely belonged to the same skull. In addition, there were two substantial fragments of antler, which may have been associated with the digging of the pit. The red deer assemblage therefore resembled that of cattle, since only head and feet bones were represented. The distribution of recorded finds of red deer is indicated in Figure 4.

TABLE 11

Epiphyseal Fusion Data for Roe Deer in Primary Deposits

	N	J	F
Early Fusion Points			
Scapula - glenoid	-	-	2
Humerus - distal	-	-	3
Radius - proximal	-	-	5
1st Phalanx - proximal	-	-	12
2nd Phalanx - proximal	-	-	11
Later Fusion Points			
Tibia - distal	-	-	2
Metacarpus - distal	1	-	1
Metatarsus - distal	-	-	5
Calcaneus	-	-	1
Ulna - proximal	-	-	3
Latest Fusion Points			
Humerus -proximal	-	-	2
Radius - distal	2	-	2
Femur - proximal	-	-	2
Femur - distal	-	-	1
Tibia - proximal	-	-	2

N = unfused; J = fusing; F = fused.

TABLE 12

Roe Deer Mandibular Tooth Eruption Data in Primary Deposits

Context	Side	P2	P3	P4	M1	M2	M3
2235	L	W					
2247	L		W	W	W	W	W
2247	R			U	W	W	J
2538	L	(W)	(W)	(W)	V		
2538	L				W	W	J
2538	L	U	U				
2538	L		(W)	(W)			
2538	R					W	W

W = worn; J = just in wear; U = erupted but unworn; E = erupting; V = visible in crypt; ( ) = deciduous tooth; P = premolar; M = molar.

At least two immature beavers (Castor fiber) were represented by 22 fragments in the primary deposits (Table 10). 1mm wet-sieving produced the calcined remains of a third phalanx. Two animals were represented by the radius, femur and tibia. No evidence of butchery marks was found on any of the bones, most of which were found in a relatively complete state. The recorded

finds of the beaver bones in (2538) were clustered in two separate areas of the pit (Figure 4).

Only 19 pig fragments were recovered from a minimum of two animals. One newborn (or possibly foetal) pig was represented by a tibia. The other bones could have belonged to a single, older but still immature animal. These consisted of three skull fragments, two mandible fragments, five loose teeth, two cervical and one lumbar vertebrae, two fragments of the same tibia, two fibulae fragments and part of a metacarpal. One of the mandible fragments articulated with a maxilla. These still possessed their deciduous premolars and had only the first of the molars in wear. The second molars were unerupted. These bones belonged to an animal probably under a year old (Bull & Payne 1982).

A fish vertebra recovered from the 1mm sieve was a good match for a brown trout (Salmo trutta) of about 0.3m length. The other fragments of fish could have belonged to the same species and indeed the same fish.

The unidentifiable bones included a large number of small skull fragments of large mammal, probably belonging to cattle.

The Colluvial Deposits

The species represented by the 393 fragments recorded in these levels are shown in Table 2. The sample was much less well preserved with a high proportion of eroded fragments (178). The sample was dominated by cattle fragments (Table 3). 27% of the cattle fragments consisted of loose teeth, an indication of the poorer state of preservation of the assemblage. There was still a bias towards bones of the head, neck and feet but the fills also included bones from other parts oof the skeleton. Two humeri fragments, a first phalanx, an astragalus and a fragment of pelvis belonged to animals the size of aurochs (Bos primigenius). The remainder of the bones were of a similar size to those of the domestic cattle found in the primary deposits. One humerus in (2254) was charred in a similar manner to the specimens of humeri and radii found in the terminal ditch of the henge.

Only 19 fragments of roe deer were identified in the upper fills. The bones represented are shown in Table 9. Pig was represented by seven fragments (three loose teeth, two humeri, a scapula and an ulna); red deer by six fragments (a mandible, an antler tine, a scapula, two first phalanges and a third phalanx); beaver by two teeth and a first phalanx and sheep by fragments of a radius and a metacarpus. These were the only identifications of sheep in this feature.

Discussion

The faunal remains from the primary fills of this deposit are unparalleled in Britain. They appear to represent a major butchery episode, in which at least ten cattle and several roe deer of varying ages were butchered. At least one pig and two red deer carcases were processed at about the same time.

The cattle were from domestic stock and the cull included at

least three calves and two or three other immature animals. It is clear that their carcases were heavily exploited, with the metapodia showing clear evidence of systematic marrow extraction. The major meat-bearing bones must have been taken for consumption elsewhere. Although chronologically distinct, the bones from the upper layers of the henge's terminal ditch represent evidence for the same process which resulted in the spatial separation of different parts of cattle carcases.

The deer appear to have been butchered at the same time as the cattle. Unless the animals were killed nearby, people must have been prepared to carry their carcases to this site for processing. The beavers and the trout may have been caught in the nearby river Avon.

The roe deer assemblage did differ from those of cattle and red deer in that more of the major meat-bearing bones were represented. It is possible that these bones represent the remains of meat consumed immediately after butchery, whereas the dressed cattle and red deer carcases were either taken away for consumption elsewhere or were preserved (possibly by smoking?) for later consumption.

If most of the meat was destined for immediate consumption, it implies that it was supposed to cater for a large gathering. The remains could be evidence for the preparation of a major feast nearby. The presence of relatively large numbers of cattle major meat-bearing bones in the later henge ditches suggests that the site may have been the focus for such feasts and gatherings over a considerable period of time. The presence of the young calves of cattle, red deer and roe deer would suggest that the butchery episode may have taken place during the summer months, assuming these animals were born in the spring.

The most remarkable aspect of the species represented in this feature is that, although domestic cattle would have provided the bulk of the meat, wild animals provided a significant proportion of the assemblage. Sheep were not represented at all in the primary deposits and were probably not kept in the area at that time. Only one young pig was represented and it is not clear whether this was a wild or domestic animal. Beaver and trout were the other wild species exploited. The beavers may have been processed for their skins only.

The colluvial fills probably contained some material that was associated with the major butchery event but was not immediately buried. This would explain the continued bias amongst the cattle assemblage towards bones of the head,neck and the limb extremities, and the presence of most of the roe deer, red deer and beaver bones. However, these upper fills also included bones that were incorporated into the deposits over a considerable period of time. These include bones of auroch and sheep which were not present in the primary fills and also some of the other pig and cattle bones.

ANIMAL BONES FROM W31 - WILSFORD DOWN FLINT SCATTER

Only two contexts produced animal bones:-

Context 302: 6 bones of a rabbit (os coxae, both femora and tibiae and a metatarsal) were recovered. These were modern intrusions into the deposits.

Context 542: an upper tooth of a pig and a severely eroded unidentifiable fragment of a large mammal were found. Both fragments were recovered from 1mm wet-sieving and both were slightly charred.

The bones from this site were not computer-recorded.

ANIMAL BONES FROM W32 - FARGO WOOD I FLINT SCATTER

These excavations produced only three animal bones. These were not computer-recorded.

Context 171: this contained a longbone fragment of an unidentified large mammal and a sacrum of a rabbit that was a modern intrusion into the deposits.

Context 305: a severely charred fragment of an unknown mammal was recovered from the 1mm wet-sieving.

ANIMAL BONES FROM W34 - FARGO WOOD II
LATE BRONZE AGE POTTERY SCATTER

1,109 animal bone fragments were recovered from the excavations. These were subdivided into the following groups:-

(1) Topsoil from 1 metre sample squares.
(71) Area A topsoil.
(97) Area B topsoil; (206) Area B sorted horizon.
(123) Area C topsoil; (180) Area C sorted horizon.
(149) Area D topsoil.
(232) Area E topsoil.
Other (Contexts 175, 258, 262, 267, 269, 270).

The bones found in each of these groups are shown below:-

	Context									
Species	1	71	97	123	149	180	206	232	Other	Total
Cattle	37	24	7	19	19	12	8	15	15	156
Sheep/Goat	57	20	-	14	12	14	1	28	18	164
Pig	1	2	-	2	-	1	-	1	-	7
Horse	1	-	-	-	-	1	-	3	-	5
Dog	-	-	-	-	-	1	-	-	-	1
Rabbit	2	-	-	-	-	17	-	2	46	67
Hare	1	-	-	-	-	-	-	-	-	1
Water Vole	-	-	-	-	-	1	-	-	-	1
Large Mammal	115	10	1	22	22	30	-	32	7	239
Sheep-sized Mam.	81	11	-	19	16	29	-	42	10	208
Unid. Mammal	94	3	1	5	8	14	-	44	1	170
TOTAL	389	70	9	81	76	120	9	167	97	1019

The above totals included 17 fragments from sieved samples. The number of bones from the sample squares tended to be greater in squares to the northern part of the sampling area. Of the 5 metre squares, Area C produced the most fragments but these included most of the intrusive rabbit bones. Area E was the only other 5 metre square to produce over 100 fragments. Area B appears to have preserved bones particularly badly. Only loose teeth survived and these had lost most of their calcification.

Amongst the identifiable bones, cattle and sheep/goat fragments dominated. Sheep/goat fragments outnumbered those of cattle in the 1 metre sample squares. In Areas, A, C and D cattle fragments narrowly outnumbered those of sheep/goat, whereas sheep/goat fragments were more common in Area E. Such variations may not be very significant, however, given the small sample size and the extremely fragmentary nature of the faunal assemblage. The only bone positively identified to sheep was a fragment of metacarpus. There was no positive identification of goat.

Pig fragments were consistently poorly represented throughout the deposits. Three of the five horse fragments were teeth from Area E that may have been from the same animal. Dog was represented by a single fragment of tibia. No bones of red or roe deer were identified.

The rabbit, hare and water vole bones may all have been relatively recent intrusions into the deposits. Rabbit bones were found particularly in context (180) and in the cut (258 - 265), which supports the suspicion that this feature may have been a rabbit burrow and that Area C in general was disturbed by rabbit activity.

The poor preservation of the assemblage is indicated by the high proportion of loose teeth in the assemblage.

	Cattle	Sheep/G	Pig	Horse	Dog	LM	SM	UM
Skull frags.	2	-	1	-	-	1	-	-
Mandible	7	2	-	-	-	-	-	-
Loose teeth	131	131	5	4	-	7	1	17
Scapula	2	-	-	-	-	-	-	-
Humerus	4	1	-	-	-	-	-	-
Radius	1	5	-	-	-	-	-	-
Ulna	-	1	-	-	-	-	-	-
Os Coxae	-	1	-	-	-	-	-	-
Femur	2	1	-	-	-	-	-	-
Patella	1	-	-	-	-	-	-	-
Tibia	1	7	-	-	1	-	-	-
Astragalus	1	1	-	-	-	-	-	-
Metacarpal	1	8	-	-	-	-	-	-
Metatarsal	1	5	-	-	-	-	-	-
Lat. Metapodial	-	-	-	1	-	-	-	-
Metapodial	-	1	-	-	-	-	-	-
1st Phalanx	2	-	1	-	-	-	-	-
Ribs	-	-	-	-	-	4	2	-
Unid. verts.	-	-	-	-	-	1	-	-
Longbone frags.	-	-	-	-	-	66	165	3
Unid. frags.	-	-	-	-	-	160	40	150
TOTAL	156	164	7	5	1	239	208	170

LM = Unid. Large Mammal; SM = Sheep-sized Mammal; UM = Unid. Mammal.

84% of the cattle and 80% of the sheep/goat assemblages therefore consisted of loose teeth. Although no bones were severely eroded, 477 had slight and 33 had moderate surface erosion (total of eroded bones excludes loose teeth). The fragmentary nature of the assemblage can be attributed to weathering, trampling, shallow burial and plough disturbance. As a result of these factors, a high percentage of the bones consisted of small unidentifiable fragments and, apart from loose teeth, only a few sturdy elements survived in an identifiable state. 68 fragments bore evidence of burning. 13 of these were from Area D, where they accounted for 17% of the fragments recorded.

Ageing evidence was sparse dspite the large numbers of loose teeth. There was little evidence for the presence of a

significant number of young cattle in the assemblage, whereas the sheep/goat assemblage did include a few bones and teeth that belonged to young lambs.

Two observations of butchery were made. A cattle mandible had superficial chop marks on the medial aspect of the posterior of the ramus and a knife cut on the lateral aspect of the ramus near the posterior condyle. The latter mark was probably inflicted during the detachment of the mandible from the skull. An astragalus of a sheep/goat had knife cuts on the anterior aspect towards the distal articulation. These would have been made during the disarticulation of the lower hindlimb from the tibia. Both types of butchery have been found commonly on Iron Age specimens from southern England.

ANIMAL BONES FROM W52 - WILSFORD DOWN NORTH KITE LINEAR EARTHWORK

41 animal bone fragments were recovered, of which 14 were found in the 1mm-sieved samples. The species represented were as follows:-

Species	Layer			
	Ditch	20	50	Total
Cattle	-	3	3	6
Pig	-	1	4	5
Unid. Large Mammal	1	5	3	9
Sheep-sized Mammal	2	2	3	7
Unid. Mammal	-	9	5	14
TOTAL	3	20	18	41

Only three bones, none of which was identifiable, were found in the fill of the ditch. The early Bronze Age layers 20 and 50 each produced a small collection of poorly preserved bones. 14 of these were collected in the 1mm-sieved samples. These contained four fragments of pig, two of cattle, two of sheep-sized mammal and six small unidentifiable mammal fragments.

Five of the six cattle fragments were loose teeth and the other was a small fragment of the fused distal articulation of a metapodial. The five pig fragments consisted of three loose teeth, an unfused calcaneus and a small fragment of a humerus. No bones of other species were positively identified, although a small sheep-sized longbone fragment bore close similarities to the proximal articulation of a sheep/goat's metatarsus.

21 bones were observed to have suffered various degrees of surface erosion and 11 fragments (mostly from the sieved samples) were charred.

ANIMAL BONES FROM W53 - ROBIN HOOD'S BALL FIELDWALKING

53 fragments of poorly preserved animal bones were recovered from the surface collection of freshly ploughed old grassland adjacent to the causewayed enclosure. The bones belonged to the following species:-

Cattle - 18 fragments; Sheep/Goat - 6 fragments; Horse - 5 fragments; Red Deer - 1 fragment; Unidentified Large Mammal - 12 fragments; Sheep-sized Mammal - 4 fragments; Unidentifiable Mammal - 7 fragments.

The presence of horse, the absence of pig and the presence of a few fragments with a suspiciously modern appearance are all factors that suggest that the assemblage may not be purely Neolithic in origin.

ANIMAL BONE FROM W55 THE LESSER CURSUS

Animal bones were recovered from all three of the sections cut through the ditches of the cursus. 178 fragments were recovered. The species represented in each section are shown below:-

Species	Area A S.+ Cross Ditch	Area B Terminal Ditch	Area C North Ditch	Total
Cattle	4	11	-	15
Sheep/Goat	2	4	-	6
Pig	-	4	-	4
Red Deer	11	1	7	19
Unid. Large Mammal	13	18	7	38
Sheep-sized Mammal	2	26	1	29
Unid. Mammal	6	45	16	67
TOTAL	38	109	31	178

The bones from Area B were all found in the upper fills of the ditch and were associated with Bronze Age pottery. Very few bones were recovered in the bottom of the ditches. However, 18 red deer antler fragments were found in Areas A and C. Most of these were substantial pieces and all had presumably been used as picks during the digging of the ditch. At least two bore evidence of working and both shed and unshed antlers were represented. The other red deer bone was a small fragment of a metacarpus from the Terminal ditch.

A cattle metacarpus from the Cross ditch belonged to alarge animal, either a large bull or possibly an auroch (Bos primigenius). The other cattle bones from Area A consisted of fragments of a calcaneus, a metatarsus and a loose tooth. The cattle bones from the Terminal ditch fills consisted of two skull fragments, three loose teeth, two fragments of the same tibia and fragments of a calcaneus, an astragalus and a metatarsus.

Sheep/goat was represented only by teeth fragments and pig by three loose teeth and a radius. The assemblages were poorly preserved. Nearly all the bones displayed a considerable amount of surface erosion. The friable nature of the assemblage explains the high proportion of unidentified fragments. Apart from the antlers, nearly all the fragments in the North ditch were burnt. Five fragments from the Terminal ditch were also charred. Five fragments, mostly from the Terminal ditch bore gnawing marks. The sample was too small to merit further analysis.

ANIMAL BONES FROM W56 - THE STONEHENGE CURSUS

The following identifications were made of animal bones recovered from the excavations:-

Context	
3:	a hare scapula.
4:	a pig humerus; a sheep-sized mammal rib; a tooth fragment of an unidentified large mammal.
8:	an ulna and an os coxae of a hare; an unidentifiable tooth fragment.
14:	a hare femur

All these bones could be relatively recent intrusions into the deposits. Both the pig humerus and the sheep-sized rib fragment had the appearance both in size and texture of modern animals. It is also likely that the hare bones were intrusive. These bones were not computer-recorded.

ANIMAL BONES FROM W57 - DURRINGTON DOWN ROUND BARROW

The following 73 animal bone fragments were recovered:-

Species	Feature					
	Topsoil	225	230	241	245	251	Total
Cattle	5	2	3	-	-	2	12
Sheep/Goat	1	1	3	-	-	-	5
Horse	4	-	-	-	-	-	4
Dog	-	-	3	-	-	-	3
Red Deer	1	-	-	1	1	2	5
Rabbit	4	-	-	-	-	-	4
Water Vole	-	-	2	-	-	-	2
Unid. Large Mammal	21	-	3	-	-	-	24
Sheep-sized Mammal	2	-	-	-	-	-	2
Unid. Mammal	8	-	2	1	1	-	12
TOTAL	46	3	16	2	2	4	73

The bones from the topsoil should best be discounted, since many of them had a modern appearance and four had modern styles of butchery marks on them. (225) contained a cattle metacarpus with an unfused distal articulation, a fragment of cattle horn core and a sheep/goat tooth. (230), which contained the secondary inhumation, also produced the fragmented remains of a cattle skull and a fragment of ilium and most of a thoracic vertebra, also of cattle. Sheep/goat was represented by two loose teeth and the distal half of a tibia. The three dog teeth may all have belonged to the same maxilla. The two bones of water vole were probably intrusive. The only identifiable bones from (241) and (245) were the top of a red deer antler and a small fragment of red deer antler tine respectively. The grave (251) produced a small tip of an antler (with a modern break) and a much larger portion of the stem and the base of the trez tine of a red deer antler. It also contained a thoracic and lumbar vertebra of cattle.

Both the cattle vertebrae belonged to large animals and the thoracic vertebra in particular was comparable in size to an auroch (Bos primigenius). In contrast, the cattle skull from (230) belonged to a much smaller animal. Its horn core had a maximum width of 47.3 mm and a basal circumference of c.125 mm. This was smaller than any of the Neolithic horn core measurements of domestic cattle presented by Grigson (1982b: 28), although the skull did belong to an adult animal.

ANIMAL BONES FROM W58 - AMESBURY 42 LONG BARROW

268 animal bone fragments were recorded from the excavations. Bones were retrieved from the topsoil and the two ditch cuttings. The following species were identified:-

Species	Topsoil	Ditch Fill South Cut	Ditch Fill North Cut	Total
Cattle	2	12(10)	41(7)	55(17)
Sheep/Goat	3	14(6)	2	19(6)
Pig	-	-	8	8
Horse	-	2(2)	1(1)	3(3)
Red Deer	-	1(1)	2(1)	3(2)
Roe Deer	-	1	-	1
Fox	-	1	1	2
Unid. Large Mammal	3	30(21)	49(2)	82(23)
Sheep-sized Mammal	2	17(11)	24(11)	43(22)
Unid. Mammal	2	24(17)	26(11)	52(28)
TOTAL	12	102(68)	154(33)	268(101)

( ) = Number found in 1mm wet-sieved sample

Most of the bone was found in fills associated with Bronze Age pottery near the top of the ditches. Only one bone - a cattle calcaneus - was found in a primary fill in the South Cut. Cattle were the most commonly identified species, followed by sheep/goat. Most of the sheep/goat fragments, however, were found in the topsoil or in the top of the ditch fills. They were not recorded, for example, in (90) or (91), which were lower fills in the North cutting. In contrast, all but one of the pig fragments came from those layers. Horse bones were only identified in sieved samples from the top fills of the ditches. This tenuous evidence again points to the scarcity of sheep and horse bones amongst Neolithic material.

Red deer were represented by two fragments of antler and a tibia. A metatarsus fragment of a roe deer and two fox humeri were also recorded. The fragments represented in the samples of the other identified species and the unidentified categories are given below. The poor preservation of the sample is reflected by the high proportion of loose teeth in the assemblage. The large percentage of unidentified fragments is a reflection both of poor preservation and of the types of bone recovered in the 1mm wet-sieved samples.

235 fragments were eroded, many of them severely. Only one fragment was burnt. Six bones bore gnawing marks. Metrical and ageing data were recorded where possible but the samples were unsatisfactory to merit further analysis.

	Cattle	Sheep/G	Pig	Horse	LM	SM	UM
Skull frags.	2	-	-	-	1	-	1
Mandible	-	1	2	1	-	-	2
Loose teeth	18	13	1	1	-	-	-
Scapula	2	1	2	-	1	-	1
Humerus	7	-	1	1	-	3	-
Radius	4	1	-	-	-	-	-
Ulna	1	-	-	-	-	-	-
Os Coxae	1	-	1	-	-	-	-
Femur	3	-	-	-	1	1	-
Tibia	6	3	1	-	-	2	-
Calcaneus	2	-	-	-	-	-	-
Astragalus	2	-	-	-	-	-	-
Metacarpal	1	-	-	-	-	-	-
Metatarsal	5	-	-	-	-	-	-
Ribs	-	-	-	-	4	-	-
Cervical verts.	1	-	-	-	-	-	-
Unid. verts.	-	-	-	-	6	-	-
Longbone frags.	-	-	-	-	25	36	1
Unid. fragments	-	-	-	-	44	1	47
TOTAL	55	19	8	3	82	43	52

LM = Unid. Large Mammal; SM = Sheep-sized Mammal;
UM = Unidentified Mammal.

ANIMAL BONES FROM W59 - KING BARROW RIDGE FLINT SCATTER

510 animal bone fragments were recovered from a number of late Neolithic pits. The species represented in each pit are given below:-

Species	Pit 418	420	430	432	438	440	Other	Total
Cattle	10	1	3	1	5	16	3	39
Sheep/Goat	-	-	-	1	1	1	-	3
Pig	84	-	-	2	-	4	-	90
Red Deer	2	-	-	-	1	2	-	5
Wild Cat	-	-	-	-	-	1	-	1
Unid. Large Mammal	22	5	3	7	2	8	1	48
Sheep-sized Mammal	135	-	6	9	11	12	-	173
Unid. Mammal	82	3	11	15	18	9	-	138
Unid. Rodent	10	-	-	1	-	-	-	11
Frog/Toad	2	-	-	-	-	-	-	2
TOTAL	347	9	23	36	38	53	4	510

These totals include 248 fragments recovered from the 1mm wet-sieved samples. These came mainly from pit (218), which produced by far the largest quantity of bones:-

Species	1mm Wet-Sieved Samples from (418)	Other Samples	Total
Cattle	-	1	1
Pig	18	-	18
Unid. Large Mammal	-	3	3
Sheep-sized Mammal	109	28	137
Unid. Mammal	50	26	76
Unid. Rodent	10	1	11
Frog/Toad	2	-	2
TOTAL	189	59	248

The faunal assemblage from pit (418) was dominated by pig and sheep-sized mammal fragments. The bones represented for all species from the site are given below:-

	Cattle	Sheep/G	Pig	Red Deer	LM	SM	UM
Skull frags.	3	-	11	-	3	29	2
Antler	-	-	-	2	-	-	-
Mandible	2	-	10	-	1	-	2
Loose teeth	10	1	14	-	3	-	4
Scapula	1	-	3	-	-	-	-
Humerus	1	-	1	-	-	-	-
Radius	-	2	2	-	-	-	-
Os Coxae	2	-	1	-	-	-	-
Femur	-	-	2	1	-	-	1
Tibia	1	-	-	-	-	-	-
Fibula	-	-	2	-	-	-	-
Carpals	-	-	1	-	-	-	-
Calcaneus	-	-	2	-	-	-	-
Astragalus	1	-	-	-	-	-	-
Other tarsals	-	-	1	-	-	-	-
Metacarpals	1	-	5	1	-	-	-
Metatarsals	2	-	2	-	-	-	-
Lat. Metapodials	-	-	8	-	-	-	-
Metapodial	-	-	2	-	-	-	-
1st Phalanges	-	-	6	-	-	-	-
2nd Phalanges	1	-	7	1	-	-	-
3rd Phalanges	-	-	2	-	-	-	-
Ribs	2	-	2	-	4	2	1
Cervical verts.	6	-	2	-	-	-	-
Thoracic verts.	5	-	1	-	-	-	-
Lumbar verts.	1	-	3	-	-	-	-
Unid. verts.	-	-	-	-	-	2	-
Longbone frags.	-	-	-	-	10	25	1
Unid. frags.	-	-	-	-	27	115	127
TOTAL	39	3	90	5	48	173	138

LM = Unid. Large Mammal; SM = Sheep-sized Mammal
UM = Unid. Mammal

Pit (418) produced all the pig fragments identified apart from a calcaneus and loose tooth from pit (432), and a mandible, humerus, scapula and another loose tooth from pit (440). It appears that the bones from several pigs were dumped in pit (418). At least two immature pigs were represented by several parts of the skeleton. In addition, at least one neonatal mortality or foetus was represented by a calcaneus and a metatarsal. On the other hand, a femur with its distal articulation just fusing belonged to an older animal. This was a large bone (max. distal breadth = 56.6 mm) comparable in size to one of a wild boar (Sus scrofa). At least four pigs were represented, therefore, in pit (418) but most of the bones could have derived from two carcases. The fragmentary nature of the assemblage limited further conclusions. The contents of the pig assemblage were biased towards the bones (and teeth) of the head, metapodials and phalanges. This is partially the result of fragmentation and the relative abundance of different bones in the pig skeleton. However, the vertebrae and major meat-bearing upper limb bones (scapula, os coxae, humerus, radius, ulna, femur and tibia) were not as well represented, nor indeed were the tarsals and metatarsals. It is possible that most of the major meat-bearing bones of these animals were deposited elsewhere and

the assemblage in this pit was consequently biased towards bones of lower meat value dumped after initial butchery. Surface erosion on the bones made observations of butchery difficult but one mandible fragment did have knife cuts on the lateral aspect of the ramus close to the posterior condyle. These would have been made during the disarticulation of the mandible from the skull.

Two pig mandibles from pit (418) bore evidence of tooth eruption. The older specimen had its second and third permanent premolars just in wear. It probably belonged to an animal aged between 18-36 months old. The younger mandible belonged to a sow. In this specimen the deciduous incisors were still in wear and the permanent canine was just coming into wear. This animal may have been killed between 12-18 months of age (by analogy with tooth eruption data presented by Bull & Payne 1982). Both maxillae had their deciduous premolars still in wear and probably belonged to pigs under 18 months of age. They possibly belonged to the same animal. Apart from the distal articulation of a lateral metapodial and an acetabulum, all the surviving articulations of pig limb bones were unfused. Several unfused epiphyses of phalanges were also recovered. This would support the impression that most of the bones belonged to immature animals of a similar age to those represented by the mandibles and maxillae, and possibly to the same animals.

Ageing data for pig from the rest of the pits were limited to the presence of a humerus of a neonatal mortality, a scapula with a fused distal articulation and a mandible, in which the deciduous fourth premolar was still present.

Pig bones were generally less well represented than cattle bones apart from pit (418). The 39 cattle fragments included several articulated vertebrae in pit (440). The nine cattle bones in layer (516) consisted of the last two cervical vertebrae and the first two thoracic vertebrae of one animal. A further set of three thoracic vertebrae and two ribs in this layer may also have belonged to the same animal. In addition, layer (520) contained the second-fifth cervical vertebrae of one animal, probably the same one as described above. Their distribution in the pit was recorded during excavation and their position would support the belief that an articulated section of thoracic and cervical vertebrae were deposited in this pit.

A few cattle bones, including 10 loose teeth, were found in each of the pits. They included a large tibia (max. distal breadth = 71.3 mm) in pit (418), which either belonged to a very large domestic animal or possibly to an auroch. Other measurements fell within the range usually attributed to domestic cattle. No bones of young calf were represented in this small sample and the only cattle bone that could be assigned to an immature animal was a metatarsus with an unfused distal articulation in pit (420).

Three pits each produced a single fragment of sheep/goat. The radius in pit (440) definitely belonged to a sheep and possessed a fused proximal articulation. Another radius and a lower incisor were found in the top fills of pits (432) and (438) respectively.

The five fragments of red deer included fragments of a metacarpus and femur in pit (418). A substantial part of an antler base and brow tine was found in pit (440). This antler, which had not been cast, had a coronet breadth of 53.5 mm and a depth of 68.4 mm. The red deer assemblage was completed by a second phalanx of an immature animal (proximal epiphysis just fusing) in pit (438).

The upper fill of pit (440) produced a canine tooth of a wild cat (Felis silvestris) (SF512). Roe deer, beaver and dog fragments were not identified in this collection. Several bones of rodents and amphibians were recovered from the sieving programme but none could be identified to species.

The unidentified portion of the assemblage was dominated by sheep-sized mammal fragments. This reflected their abundance in the sieved samples from pit (418) in particular. 18 of the pig fragments in that pit were also found in sieved samples. These consisted of six loose teeth, two skull fragments, two second phalanges (one lateral), three epiphyses of phalanges, a carpal, the distal epiphysis of a metapodial, a fragment of a lateral metapodial and two bones of newborn or foetal pigs. Although sieving of these deposits produced mainly unidentifiable fragments, it did add to the information gained from normal excavation methods. It confirmed and indeed strengthened the impression that pit (418) was dominated by pig fragments and that bones of the limb extremities were common in the assemblage. It also produced the only evidence for the presence of foetal or neonatal animals, rodents and amphibians in that pit. Sieving also increased the proportion of burnt bones represented. 62 of the 83 charred and calcined fragments were found in the sieved samples. 413 fragments (excluding loose teeth) were eroded. Bones from the upper fills of the pits tended to have suffered more from such surface erosion. Only one bone was recorded as gnawed (in pit (440)).

ANIMAL BONES FROM W83 - ROBIN HOOD'S BALL NEOLITHIC SETTLEMENT

73 animal bone fragments were obtained from the following deposits:-

Species	Topsoil	Pit 102	Pit 104	Pit 106	Pit 108	Pit 114	Other	Total
Cattle	3	2	2	1	3	11	1	23
Sheep/Goat	-	-	-	-	2	1	-	3
Pig	-	7	1	-	-	-	-	8
Unid. Large Mammal	1	3	-	-	2	6	1	13
Sheep-sized Mammal	-	1	-	-	-	-	-	1
Unid. Mammal	1	14	-	-	6	3	1	25
TOTAL	5	27	3	1	13	21	3	73

These totals include 22 fragments recovered from 1mm sieved samples. 12 of those could only be assigned to the unidentifiable mammal category and four belonged to unidentified large mammal. The sieving produced three identifiable fragments of pig, two of sheep/goat and one of cattle.

Cattle fragments were found in small numbers in all of the pits. The cattle sample consisted of 12 loose teeth fragments, a radius, two metacarpi, two metatarsi, a first and third phalanx, a proximal sesamoid, a lumbar and two cervical vertebrae fragments. Pit 114 produced all but two of the postcranial fragments. The sparse ageing evidence indicated that immature cattle were represented. The distal articulations of one of the metacarpi and one of the metatarsi were both unfused and thus belonged to animals probably under three years of age (Silver 1969). The third phalanx was porous and belonged to a young calf. So did a deciduous fourth premolar which was only just coming into wear. On the other hand, older cattle were represented by the fused lumbar vertebra, some of the teeth and a metacarpus with a fused distal epiphysis.

Measurements were possible on three cattle bones. The radius had a maximum proximal breadth of 76.6 mm, a metacarpus had a maximum distal breadth of 62.8 mm. and the first phalanx had a maximum length of 59.2 mm. These all fell within the range of measurements obtained for large domestic cattle found in other Neolithic assemblages in southern England.

Sheep/goat was represented in two of the pits. Two fragments of loose teeth were recovered in a sieved sample from pit 108 and pit 114 included a shaft fragment of a metacarpus. The slenderness of the shaft indicated that the bone probably belonged to sheep rather than goat. All but one of the pig fragments were found in pit 102. These included at least four bones from the same animal. The proximal portions of a third and a fourth metatarsal were found in association (SF216). A sieved sample from the same context (177) produced two of the tarsals that articulated with the metatarsals. Context (176) produced the distal half of the fourth metatarsal (SF208). This

articulation was unfused and the bones belonged to an immature animal. The rest of the pig assemblage consisted of teeth fragments. A lower third molar in an early stage of wear had a length of 36.5 mm. This was within the size range usually attributed to domestic pig rather than to wild boar.

The assemblage as a whole was poorly preserved. 32 fragments consisted of loose teeth fragments, several not identifiable to species, and all but one of the other fragments had surface erosion which was moderate or severe in most instances. The cattle first phalanx bore evidence of gnawing, possibly by a dog. Four small fragments (three from sieved samples) had been burnt.

ANIMAL BONES FROM W85 - NETHERAVON BAKE LONG BARROW

The following bones were identified from the excavations:-

Species	Topsoil	(25)	Ditch Fills	Total
Cattle	2	1	14	17
Sheep/Goat	-	2	3	5
Red Deer	-	-	1	1
Roe Deer	-	-	3	3
Fox	-	-	3	3
Unid. Large Mammal	-	3	17	20
Sheep-sized Mammal	-	2	2	4
Unid. Mammal	-	-	7	7
TOTAL	2	8	50	60

These figures include 24 fragments recovered in the 1mm sieved samples. All but one of the bones from the ditch fills came from cut (22). 31 of these were from context (34) including the mandibles and skull of a fox and 11 of the cattle bones.

Nearly all of the cattle bones identified indeed came from the lower fills of the ditch. The cattle assemblage was comprised of eight loose teeth, four mandible fragments, a carpal, two metacarpi fragments and a single fragment each of tibia and a lumbar vertebra. One of the metacarpi in context (34) had an unfused distal articulation, which would have attained a maximum distal width of c.70 mm. This bone therefore belonged to a large immature animal, probably of a bull or steer. The distal articulation of the tibia was also unfused and belonged to an animal under three years of age. All five sheep/goat fragments (four loose teeth and a fragment of tibia) were found in the sieved samples. Two of these were from context (25) and three from context (27). No sheep/goat bones were therefore identified from the lower fills of the ditch and these may have been of Bronze Age origin.

Red deer was represented by a single antler tine in context (42). The three roe deer fragments (of a mandible, a tibia and a metatarsus) were also recovered from sieved samples from contexts (27) and (32). No bones of pig were recorded from the excavations.

The assemblage was poorly preserved. It included 14 loose teeth fragments and 31 eroded bones. Nearly all the bones in context (32) upwards were severely eroded, whereas surface erosion was less severe in the lower fills. None of the bones bore evidence of gnawing or burning.

CONCLUSIONS - EXPLOITATION OF ANIMALS IN THE STONEHENGE ENVIRONS IN THE NEOLITHIC AND BRONZE AGE

The Stonehenge Environs Project was designed to study the development of the Neolithic and Bronze Age landscape "within a geographically restricted but focal part of the central Wessex chalkland" (Richards 1984: 177). Animal bones were recovered from 14 sites examined during the course of the project. Although several of these samples were too small or not securely dated enough to be of much value, there was sufficient material from some excavations to attempt to compare possible changes and variations in the exploitation of animals in the area during this period.

Early Neolithic

Of the sites that produced evidence for Early Neolithic activity, the tiny faunal samples from Fargo Wood I (W32) and from the fieldwalking on Robin Hood's Ball (W53) were both probably contaminated by later material. This leaves the small sample from the Early Neolithic settlement at Robin Hood's Ball (W83) and the substantial sample from the Coneybury Anomaly (W2).

These samples were quite different. The Robin Hood's Ball sample contained only 73 fragments and only domestic species (cattle, sheep/goat and pig) were identified. These bones were scattered in small numbers in several pits. The only articulated group consisted of two tarsals and metatarsals of a pig. The primary deposits of the Anomaly, on the other hand, produced 1,715 fragments, mainly of cattle and roe deer with red deer, beaver, pig and brown trout also represented in small numbers. No sheep/goat bones were found. The deposit contained a dense accumulation of bones from the butchery of over 20 animals, which were processed over a short period of time. If the meat processed from these bones was destined for immediate consumption, it follows that the remains represent evidence for the preparation for a substantial feast.

The contrast between these two assemblages can be highlighted in two ways. The first is by simply comparing the relative species abundance and the second by considering the type of activities involved in the formation of these faunal assemblages.

Sheep bones have been identified in Early Neolithic contexts in southern England. They have been recovered, for example, on several sites in the Avebury area, including Windmill Hill - in both the causewayed enclosure and in pre-enclosure deposits - (Jope 1965), and in the long barrows at Horslip and South Street (Smith 1984). However, there is no evidence that sheep were exploited at Coneybury. Of course if, as it is argued, the assemblage was derived from one butchery event, it could simply be that sheep were not culled on that occasion. However, given the largescale procurement of wild animals as well as domestic cattle, including calves, and the evidence for the intensive processing of the carcases to extract all the valuable meat and marrow content, it seems surprising that if sheep were available, they were not culled. It would imply the operation of some form of ritual taboo. Alternatively sheep may not have been kept in

this area. It could also be suggested that domestic pigs were not available in any numbers either, since only one animal appears to have been butchered during this event. If this was the case, the only domestic species kept in any numbers in the area around Coneybury at the time was cattle. The abundance of wild species would also suggest that the area may still have been heavily wooded.

In addition, if we follow Smith's (1984: 109) argument that sheep remains were unusually common on the only Early Neolithic sites in the Avebury area where in-situ cereal growing could be proven, the lack of sheep in the Coneybury Anomaly could conversely sugest the lack of cereal production in that area at that time.

In contrast, sheep bones were found, albeit in small numbers, in the Early Neolithic pits on a site adjacent to the Robin Hood's Ball causewayed enclosure. Here there was seemingly reliance principally on domestic stock. Whether these deposits were subsequent to those at the Coneybury Anomaly remains to be established. If they were, they could represent chronological change in the exploitation of animals in the region. If, however, they were roughly contemporary, they could demonstrate markedly different emphases of animal exploitation within a small area of chalkland.

The evidece from the Anomaly would clearly suggest some sort of communal activity took place there. This may have involved co-operative hunting and communal sharing or redistribution of meat amongst other activities. It has also been suggested that communal activities and exchanges commonly took place at causewayed camps such as Windmill Hill and Hambledon, Dorset (Legge 1981) in the Early Neolithic period. The evidence from Coneybury suggests that such activities were not necessarily restricted to such sites. Indeed, Coneybury has produced better evidence for the actual butchery of animals in some numbers than any of the causewayed enclosures investigated to date. Legge (1981: 174) has argued that the types of bone represented in the cattle assemblage from Hambledon Hill, with their low numbers of skull and mandible fragments, are indicative of an emphasis upon meat consumption as opposed to carcase processing. The results from Coneybury further demonstrate how different bones from the same carcase can be deposited in quite separate locations.

Legge (1981a: 179; 1981b) has also suggested that the high proportion of calf bones in some Neolithic and Bronze Age collections and the general dominance of adult females indicates that there was a dairy basis to cattle husbandry in these periods. Perhaps in support of this, we should note that calves were well represented in the Coneybury Anomaly and were also recorded on the Robin Hood's Ball site. The three fused distal metacarpi at Coneybury all fell within the range suggested to belong to cows at Windmill Hill (Legge 1981a: 176). The presence too, however, of older but still immature cattle, could equally suggest that meat production was an important component in the exploitation of cattle. Both strategies would result in the slaughter of a relatively high proportion of immature males.

Middle Neolithic

This has been defined as the period of the construction of monuments such as the cursuses and short long barrows in the area around the middle of the second millennium b.c. Unfortunately the excavations at these monuments produced little in the way of contemporary faunal data. The primary fills of the ditches of the Lesser Cursus (W55) were remarkable because of the disposal of red deer antlers used in their construction. However, these fills contained no other information about animal exploitation. The only bones recovered from the Stonehenge Cursus (W56) were probably all of recent origin. Most of the bones from the Amesbury 42 long barrow were of Bronze Age date from the upper ditch fills. The ditch fills of the Netheravon Bake clong barrow (W85) produced only 50 fragments, with cattle the most commonly identified species. Sheep/goat, roe and red deer (antler only) and fox were also identified.

Late(r) Neolithic

This period produced better evidence for animal exploitation. The best sample was obtained from the Coneybury Henge (1,797 fragments). The sample was dominated by cattle and there is evidence from the Terminal Ditch for the disposal principally of upper limb bones, some of which appear to have been roasted. Pigs appear to have been the only other species eaten in any numbers. Sheep bones were found only in small numbers and not in any of the interior features nor in any of the primary fills of the ditch sections. The cattle sample was dominated by bones of adult animals. Dog, red and roe deer were represented in small numbers. However, deer were now at most only a supplement to the meat diet.

Any consideration of the assemblage from Coneybury should be seen in comparison with the large sample from Durrington Walls (Harcourt 1971: Richards & Thomas 1984). Pig bones were by far the most abundant, followed by cattle. As at Coneybury, sheep were poorly represented. Richards & Thomas (1984: 206) suggest that there was a correlation between the abundance of pigs used as a feasting animal and ritual sites with Grooved Ware pottery. Although the Coneybury Henge is within the zone of ritual activity defined by Richards (1984: 182), it contained only small amounts of Grooved Ware pottery and comparatively fewer pig bones were represented. Evidence, however, for the deposition of different cattle bones in different locations was encountered at both sites. Both cattle samples contained a large proportion of the major upper limb bones in some deposits and correspondingly low numbers of skull and mandible fragments. Although Thomas shows that loose teeth were well represented at Durrington Walls, his explanation that the low representation of skull fragments was due to taphonomic tactors (Richards & Thomas 1984: 206) cannot be used to explain the low numbers of mandibles, which survive well even in poorly preserved assemblages. Nevertheless, intra-site variability in the composition of the cattle assemblage resulting from differential disposal strategies does appear to have taken place (Richards & Thomas 1984: 210-211). The emphasis, however, does appear to have been on meat consumption on both these sites. By analogy, butchery deposits like those recorded in the earlier Coneybury Anomaly are likely

to have been created in association with these Late Neolithic assemblages. Communal feasting at Coneybury, therefore, seems to have taken place in both the Early and Late Neolithic periods. In the latter period, cattle still appear to have been the most important species but pigs had replaced roe deer in secondary importance.

510 animal bone fragments were recorded from Late Neolithic features found in association with the King Barrow Ridge flint scatter (W59). This site has been regarded as a domestic area within the same "ritual zone" focused on Durrington Walls (Richards 1984: 183). One pit contained the remains of at least four pigs, with an emphasis on the disposal of bones of low meat value of two of the animals. This is perhaps indicative of the primary butchery of their carcases. The tiny samples from the other pits contained more cattle bones than pig, including some articulated vertebrae. Again few immature cattle were represented. Sheep bones were poorly represented and their bones were found no more commonly than those of red deer. A tooth of a wild cat was also identified.

The low representation of sheep in this area therefore appears to have continued throughout the Neolithic. The arguments that pigs became more important during the Late Neolithic period in comparison with sheep because of ecological changes in the landscape (Grigson 1982c; Smith 1984) do not really apply to these sites, since they provide little evidence that sheep were kept in the area at all during the Neolithic period. Even the colluvial fills of the Anomaly support this view. These fills must have accumulated over a substantial proportion of the Neolithic period, yet only two sheep/goat fragments were identified. They were outnumbered by auroch bones in these fills, whereas pig and cattle in particular were better represented.

Unfortunately the contemporary flint scatter on Wilsford Down (W31) did not produce a faunal sample for comparison. The only other possible Late Neolithic deposit was the primary burial in the Durrington Down round barrow (W57). The grave produced two vertebrae comparable in size to auroch and two fragments of red deer antler.

The Second Millennium

Beaker and Bronze Age material was encountered mainly in secondary fills in several deposits of the sites discussed above. At Coneybury, for example, (1501) - an upper fill in the Terminal Ditch - produced Beaker pottery in association with a similar type of cattle assemblage encountered in lower layers. This suggests that the site continued to function as a focus for meat consumption at this date. The same layer did also, however, produce the first evidence for the presence of sheep in that ditch section.

The appearance of sheep at Coneybury in many ways sets the tone for the developments in animal husbandry that must have taken place during the Bronze Age. On the late Bronze Age site of Fargo Wood II (W34), a poorly preserved faunal sample derived from topsoil deposits produced 1,019 fragments. Of the identified sample - restricted almost entirely to loose teeth -

cattle and sheep/goat were represented in roughly equal numbers whereas pig was poorly represented. Although it is unwise to place too much weight on the interpretation of such a sample to extrapolate general regional trends for changes in animal exploitation, the increased importance of sheep and the corresponding decline in pigs must have been developments that took place during the Bronze Age as a more setttled mixed farming system developed on these chalklands. It also implies that woodland declined. Similar concentrations on the exploitation of cattle and sheep have been observed in Beaker and late Bronze Age assemblages on the Marlborough Downs (Maltby n.d.).

Unfortunately the other sites of Bronze Age date produced little in the way of animal bones, so it is not possible to study how quickly these changes occurred or how variable they were between sites in different parts of the region. The upper fills of the Terminal Ditch of the Lesser Cursus produced 109 fragments of Middle and late Bronze Age date but only 20 of these were identifiable and the secondary deposits at the Durrington Round Barrow produced even fewer identified bones. The upper fills of the Amesbury 42 Long Barrow produced more sheep/goat than pig bones but both were comfortably outnumbered by cattle in another unreliably small sample. Conversely, the Wilsford Down North Kite Linear Earthwork (W52) only contained cattle and pig bones amongst its identifiable assemblage. However as these totalled only 11 fragments, this is not thought to provide a strong argument against the general trend of the growing importance of sheep!

The metrical and ageing data are stored in archive. The samples were generally too small to add to the observations about size and mortality patterns of stock animals made by previous authors.

The animal bones from the sites investigated by the Stonehenge Environs Project have demonstrated the value of such a detailed regional approach. Although most of the faunal samples were too small fro detailed analysis, those which were have provided new insights into the exploitation of animals in the Neolithic period in particular. They have created a broader basis for further investigation of the complex variations in animal exploitation and carcase disposal strategies which appear to have been prevalent throughout the Neolithic period in Wessex.

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