

5 THE ANIMAL BONES: DATA by Andy Hammon

5.1 Appendix 1: methods

Taxonomic identification

All specimens were identified to species or taxonomic group where possible. Ribs and vertebrae (excluding the axis and atlas) and unidentifiable specimens were assigned to size class (large/medium). The English Heritage vertebrate skeleton reference collection (held at Fort Cumberland, Portsmouth) was used for identification purposes in addition to published criteria (see below).

Sheep/goat

The distinction between sheep (*Ovis aries*) and goat (*Capra hircus*) was attempted on the mandibular third and fourth deciduous premolars using the criteria of Payne (1985) and on the permanent dentition when *in situ* using the criteria of Halstead *et al.* (2002). Distinction of the following elements was attempted using a combination of Boessneck (1969) and Prummel and Frisch (1986): horncore, humerus, radius, ulna, metacarpal, tibia, astragalus, calcaneum and metatarsal. Additionally, the criteria of Kratochvil (1969) was used for the distal tibia.

Pig/wild boar

Metrical data for the mandibular teeth and distal humerus were used to distinguish between domestic pig and its progenitor wild boar (*Sus scrofa*) following Payne and Bull (1988).

Equids

Species distinction was attempted on the maxillary and mandibular dentition when *in situ* using the criteria of Davis (1987b, 1980), primarily in the effort to separate horse (*Equus caballus*) from donkey (*E. asinus*).

Red/fallow deer

The distinction between red deer (*Cervus elaphus*) and fallow deer (*Dama dama*) was attempted on all elements using the criteria of Lister (1996).

Lagomorphs

The distinction between hare (*Lepus* sp.) and rabbit (*Oryctolagus cuniculus*) was attempted on all elements using the criteria of Callou (1997).

Domestic fowl

The distinction between chicken (*Gallus gallus*) and the closely related species of Guinea fowl (*Numida meleagris*) and pheasant (*Phasianus colchicus*) was attempted on the following elements using the criteria of Albarella (pers. comm.) and MacDonald (1992): scapula, carpometacarpus, femur and tarsometatarsus.

Recording

Identified or classified (rib and vertebrae) fragments were recorded on a Microsoft Access XP database. Each fragment was given an identification number and the following information was recorded: site code, context number; taxa/taxonomic group; skeletal element; side; presence/absence of bone zone (see below); mandibular tooth eruption and wear; post-cranial epiphyseal proximal and distal fusion; whether foetal/neonatal or juvenile; and articulation with other specimens. In addition, other variables were recorded relating to taphonomy and biometry (see below).

Taphonomy

The recovery method, state of surface preservation, presence/absence of root etching, angularity of breaks, gnawing, burning and completeness were all recorded. The type of burning was recorded because it provides a crude measure of temperature and may indicate cooking or disposal method. The type and location of butchery was recorded, the latter using Serjeantson's (1996, 195–200) zones. This will be especially useful when assessing diachronic butchery patterns and in discussions regarding the acculturation of the indigenous population.

Quantification

Three methods of quantification were used to compare the frequencies of the main taxa/taxonomic groups. These methods mirror those used in the earlier reports to make results directly comparable between the hillfort (Grant 1984), DEP (Hamilton 2000a, 2000c, 2000d, 2000e, 2000f; Roncaglia and Grant 2000) other DERP (Vol. 2 parts 1, 3–6) assemblages.

Number of Identified Fragments

All fragments identified to species were included in the Number of Identified Fragments (NIF) count; 'classified' vertebrae and ribs have been excluded. NIF equates to Number of Identified Specimens/Skeletal Parts (NISP). The fragmentation of specimens was recorded following the zoning system devised by Cohen and Serjeantson (1996, 109–12) and Serjeantson (1996, 195–200); each element has up to eight zones for which the presence (>50%) or absence is recorded.

Epiphyses Only

The epiphysis only (EO) method is described in Grant (1975, 379). In summary, it only includes bones with part of an epiphysis or diaphysis (shaft) fusion surface present, plus mandibles with at least one tooth. Whole bones, except phalanges, are counted twice, once for each epiphysis. Skull fragments, carpals, patella, tarsals, third phalange, sacrum, vertebrae and ribs are excluded.

Minimum Number of Individuals

Minimum Number of Individuals (MNI) was calculated for whole phases following the methodology used by Hamilton (2000b, 75; pers. comm.) for the DEP sites. MNI for individual anatomical elements equates to Minimum Number of Elements (MNE). For the long bones, MNI was calculated from the greater number of left or right ends for each element taking into account fusion. Foetal/neonatal and juvenile bones were treated separately and added to produce a total long bone MNI. A range of methods were used to calculate MNI from mandibles (see Table 7); the greater number of Zone 1 (area of symphysis) or Zone 8 (jaw articulation) taking into account side; the number of mandibles with teeth *in situ* taking into account wear stage and side; the number of mandibular deciduous fourth premolars (dP₄) and third molars (M₃), *in situ* or isolated taking into account side. The overall MNI was the highest element MNE.

Skeletal representation for the main species (sheep/goat, cattle, pig, equid and dog) was calculated using the same method as Grant (1984, 498–500). The percentage for each element is calculated relative to the most common element and corrections are made when there are fewer than two particular bones per skeleton; dog metapodials divided by four, equid phalanges divided by two and cattle/sheep/pig phalanges divided by four.

Ageing

Tooth eruption and wear

Tooth wear was recorded for mandibular teeth *in situ* and isolated: dP₄, permanent fourth premolar (P₄), first molar (M₁), second molar (M₂) and M₃. Tooth eruption and wear for cattle and pig were recorded and ‘Mandible Wear Stages’ (MWS) assigned using Grant (1982). Payne (1973, 1987) was used for recording eruption and wear stage and assigning age for sheep/goat.

The ‘maximum’ and ‘minimum’ values provided in the sheep mortality profiles (Vol. 2 part 2, Fig. 2.109) follow the format used by Hamilton for the DEP reports, Houghton Down (Hamilton 2000a, microfiche 14:B6–7) for instance.

Post-cranial epiphyseal fusion

Epiphyseal fusion stages were recorded and ages assigned using Silver (1969). The fusion stages for mammalian long bones were recorded as ‘unfused’, ‘fusing’ and ‘fused’. A bone was recorded as ‘fusing’ when spicules had formed between the shaft and epiphyses with open spaces still present and ‘fused’ when the line of fusion was closed (Albarella and Davis 1996, 5). Specimens were also classed as ‘foetal/neonatal’ and ‘juvenile’ where pertinent to provide greater resolution.

The data in the epiphyseal fusion tables show figures that have been ‘minimized’ following the method used in the DEP reports, Hamilton (2000a, 75–6) for instance; the greater number of either unfused epiphyses or number of corresponding shaft fusion surfaces taking side into account.

Discrepancies between tooth eruption and wear and the post-cranial epiphyseal fusion data are the result of small datasets and taphonomic factors, including recovery. Immature mandibles are especially prone to greater levels of post-depositional destruction (Munson 2000; Munson and Garniewicz 2003).

Sexing

An attempt was made to sex the pelvis of the main domesticates using Grigson (1982). Domestic fowl (chicken) was sexed on the tarsometatarsus using the presence of spurs and spur-scars. This is not always a reliable indicator because hens also occasionally develop spurs (see Sadler 1991; West 1985). No attempt was made to sex (and age) the horn cores of cattle and sheep/goat.

Measurements

Measurements were taken following the standards of von den Driesch (1976). The standardized method allows for the measurements to be compatible with animal bone measurements from the hillfort (Grant 1984, microfiche 16:A3–17:E8) and DEP assemblages, Hamilton (2000a, microfiche 14:B1–D11) for instance, in addition to other Iron Age and Romano-British datasets. The extra measurements to distinguish domestic pig and wild boar are described in Payne and Bull (1988). Additional measurements (BatF, 1, 2, 3, 4, 5, 6, a and b) were taken for cattle, sheep/goat and deer using Davis (1992). Skeletally immature specimens were not measured because to do so would introduce a bias into the dataset. The dimensions of a bone when burnt alter so they were excluded also (see Davis 1987a, 26).

Withers heights for dog were calculated using the factors of Harcourt (1974) and von den Driesch and Boessneck (1974), and for equid using May (1985).

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5.2 Appendix 2: measurements

Taxa codes

OVA	Sheep (<i>Ovis aries</i>)
CAH	Goat (<i>Capra hircus</i>)
O	Sheep (<i>O. aries</i>)/goat (<i>C. hircus</i>)
B	Cattle (<i>Bos taurus</i>)
BOP?	Aurochs? (cf. <i>B. primigenius</i>)
EQC	Horse (<i>Equus caballus</i>)
EQ	Equid (<i>Equus</i> sp.)
CAF	Dog (<i>Canis familiaris</i>)
CAF?	Dog? (cf. <i>Canis familiaris</i>)
VUV?	Ref fox? (cf. <i>Vulus vulpes</i>)
GAG	Chicken (<i>Gallus gallus</i>)
GN	Chicken (<i>G. gallus</i>)/Guinea fowl (<i>Numida meleagris</i>)
GP	Chicken (<i>G. gallus</i>)/pheasant (<i>Phasianus colchicus</i>)
GNP	Chicken (<i>G. gallus</i>)/Guinea fowl (<i>N. meleagris</i>)/pheasant (<i>P. colchicus</i>)

Sheep/goat

FOURTH DECIDUOUS PREMOLAR

Phase	Context number	Taxa	Bone ID	W	Comments
LIA	GR F708 (4)	OVA	1451	6.1	Skeleton(s); ID 1448-71
LIA	GR F735 (4)	OVA	1495	5.7	
LIA	GR F735 (4)	OVA	1496	5.3	
LIA	GR F735 (4)	OVA	1498	5.6	
LIA	GR F766/3 (6)	OVA	2684	6.0	
LIA	GR F766/3 (6)	OVA	2685	5.7	
LIA	GR F766/3 (6)	OVA	2686	5.6	
LIA	GR F785 (2)	OVA	2761	5.9	
LIA	GR F793 (8)	OVA	2931	5.8	
LIA	GR F793 (8)	OVA	2932	6.6	
LIA	GR F793 (11)	OVA	2970	5.6	
LIA	GR F793 (13)	OVA	3025	6.2	
LIA	GR F793 (15)	OVA	3064	6.2	
LIA	GR F826 (7)	OVA	3158	6.4	
LIA	GR F826 (7)	OVA	3159	5.8	
LIA	GR F835 (467)	OVA	3259	5.7	

ERB	GR F743	OVA	1504	5.8	Skeleton; ID 1504-11
ERB	GR 375	OVA	1590	6.4	
ERB	GR 371	OVA	1597	6.5	
ERB	GR 371	OVA	1598	6.0	
ERB	GR 373	OVA	1615	6.3	
ERB	GR 373	OVA	1616	6.7	
ERB	GR 392	OVA	1758	6.8	
ERB	GR 393	OVA	1778	6.1	
ERB	GR 393	O	1779	6.3	
ERB	GR 393	OVA	1781	6.1	
ERB	GR F749/5 (2)	OVA	1947	6.0	
ERB	GR F749/2 (1)	OVA	1990	5.8	
LRB	GR F683 (3)	CAH	1358	6.2	
LRB	GR F695 (2)	O	1369	5.8	
LRB	GR F769 (1)	OVA	2269	6.4	
LRB	GR 441	OVA	2467	6.4	
na	GR F666 (2)	O	1224	5.8	
na	GR 462	OVA	2417	6.2	
na	GR F755/2 (2)	OVA	2647	6.0	

FIRST MOLAR

Phase	Context number	Taxa	Bone ID	W
LIA	GR F710 (3)	OVA	1480	6.6
LIA	GR F735 (4)	OVA	1496	6.3
LIA	GR F735 (4)	OVA	1497	6.6
LIA	GR F735 (4)	OVA	1498	6.2
LIA	GR F735 (4)	OVA	1499	6.8
LIA	GR 443	OVA	2424	7.0
LIA	GR 445	OVA	2539	7.2
LIA	GR F766/3 (3)	OVA	2604	6.3
LIA	GR F766/3 (6)	OVA	2683	6.3
LIA	GR F766/3 (6)	OVA	2684	6.1
LIA	GR F766/3 (6)	OVA	2685	6.7
LIA	GR F766/3 (6)	OVA	2686	5.9
LIA	GR F766/5 (1)	OVA	2707	6.6
LIA	GR F785 (2)	OVA	2761	6.7
LIA	GR F785 (2)	OVA	2762	6.8
LIA	GR F775/5 (1)	OVA	2768	6.7
LIA	GR F793 (8)	OVA	2931	6.6
LIA	GR F793 (11)	OVA	2970	6.9
LIA	GR F793 (12)	OVA	2988	6.9
LIA	GR F793/3 (467)	OVA	3010	6.9
LIA	GR F793/3 (467)	OVA	3011	7.0
LIA	GR F793 (14)	OVA	3045	7.1
LIA	GR F793 (15)	OVA	3063	6.9
LIA	GR F814 (1)	OVA	3141	6.5
LIA	GR F826 (7)	OVA	3160	6.6
LIA	GR F835 (467)	OVA	3258	6.8
ERB	GR F680 (1)	OVA	1283	7.0
ERB	GR 373	OVA	1616	7.2
ERB	GR 410	OVA	1727	7.3
ERB	GR 410	O	1728	7.1
ERB	GR 392	OVA	1757	8.1
ERB	GR 392	OVA	1758	7.6
ERB	GR 393	OVA	1778	6.6
ERB	GR 393	OVA	1780	6.9
ERB	GR 393	OVA	1781	6.9

ERB	GR 381	OVA	1824	7.2
ERB	GR 381	OVA	1825	7.4
ERB	GR 380	OVA	1872	7.4
ERB	GR 413	OVA	1914	7.2
ERB	GR 413	OVA	1915	6.7
ERB	GR 413	OVA	1916	7.1
ERB	GR F746 (1)	OVA	1932	7.5
ERB	GR F749/2 (3)	O	1966	6.8
ERB	GR F749/2 (3)	OVA	1967	6.6
ERB	GR F749/2 (1)	OVA	1990	6.4
ERB	GR F749/10 (3)	OVA	2194	6.1
ERB	GR F749/10 (2)	OVA	2220	6.1
ERB	GR F749/10 (6)	O	2223	6.4
ERB	GR F751/2 (2)	OVA	2315	7.0
ERB	GR F750/4 (6)	OVA	2343	6.9
ERB	GR F751/2 (1)	OVA	2363	7.1
LRB	GR F672/3 (2)	OVA	1272	7.5
LRB	GR F690 (2)	OVA	1306	7.2
LRB	GR 372	OVA	1626	6.8
LRB	GR 367	OVA	1711	8.1
LRB	GR F769 (1)	OVA	2269	7.2
LRB	GR F813 (1)	OVA	2390	7.1
LRB	GR 441	OVA	2467	6.9
LRB	GR F818 (1)	OVA	3204	8.0
na	GR F668 (1)	OVA	1258	6.9
na	GR 432	OVA	1923	7.8
na	GR F755/2 (2)	OVA	2647	7.1
na	GR F755/2 (1)	OVA	2695	7.0
na	GR F807 (1)	OVA	3136	6.5

SECOND MOLAR

Phase	Context number	Taxa	Bone ID	W
LIA	GR F710 (3)	OVA	1480	7.5
LIA	GR F735 (4)	OVA	1499	7.5
LIA	GR 443	OVA	2424	7.2
LIA	GR 445	OVA	2539	7.9
LIA	GR F766/3 (3)	OVA	2604	6.6
LIA	GR F766/3 (6)	OVA	2683	7.2
LIA	GR F766/3 (6)	OVA	2684	7.2
LIA	GR F766/3 (6)	OVA	2685	6.4
LIA	GR F766/3 (6)	OVA	2686	6.5
LIA	GR F766/5 (1)	OVA	2707	7.4
LIA	GR F766/5 (1)	OVA	2708	8.2
LIA	GR F785 (2)	OVA	2762	7.4
LIA	GR F775/5 (1)	OVA	2768	7.2
LIA	GR F793 (7)	O	2831	7.7
LIA	GR F793 (9)	OVA	2951	6.7
LIA	GR F793 (11)	OVA	2970	7.3
LIA	GR F793 (12)	OVA	2988	7.4
LIA	GR F793/3 (467)	OVA	3010	7.3
LIA	GR F793/3 (467)	OVA	3011	8.1
LIA	GR F793 (14)	OVA	3045	7.7
LIA	GR F793 (15)	OVA	3063	7.4
LIA	GR F814 (1)	OVA	3141	7.5
LIA	GR F826 (7)	OVA	3160	7.2
LIA	GR F835 (467)	OVA	3258	7.5
LIA	GR F835 (469)	OVA	3271	8.2

ERB	GR F680 (1)	OVA	1283	7.3
ERB	GR F722 (3)	OVA	1406	7.7
ERB	GR 373	OVA	1616	7.7
ERB	GR 410	OVA	1727	7.9
ERB	GR 410	O	1728	8.0
ERB	GR 393	O	1777	7.8
ERB	GR 393	OVA	1780	7.7
ERB	GR 393	OVA	1781	7.2
ERB	GR 381	OVA	1824	8.0
ERB	GR 381	OVA	1825	7.9
ERB	GR 380	OVA	1872	7.9
ERB	GR 413	OVA	1914	8.4
ERB	GR 413	OVA	1915	7.8
ERB	GR F746 (1)	OVA	1932	8.3
ERB	GR F749/2 (3)	O	1966	7.6
ERB	GR F749/2 (3)	OVA	1967	7.1
ERB	GR F749/10 (3)	OVA	2194	6.8
ERB	GR F749/10 (2)	OVA	2220	6.9
ERB	GR F749/10 (6)	O	2223	6.7
ERB	GR F750/2 (1)	OVA	2232	7.4
ERB	GR F751/2 (2)	OVA	2315	7.7
ERB	GR F750/4 (6)	OVA	2341	7.4
ERB	GR F751/2 (1)	OVA	2363	7.8
LRB	GR F672/3 (2)	OVA	1272	7.9
LRB	GR F690 (2)	OVA	1306	7.6
LRB	GR F683 (3)	OVA	1359	6.7
LRB	GR 372	OVA	1626	7.7
LRB	GR 372	OVA	1627	7.5
LRB	GR F769 (1)	OVA	2269	7.9
LRB	GR F813 (1)	OVA	2390	8.0
na	GR F668 (1)	OVA	1258	7.3
na	GR 432	OVA	1923	8.5
na	GR F807 (1)	OVA	3136	7.4

THIRD MOLAR

Phase	Context number	Taxa	Bone ID	W
LIA	GR F735 (4)	OVA	1499	7.7
LIA	GR 443	OVA	2424	8.2
LIA	GR 443	O	2430	7.7
LIA	GR 445	OVA	2539	8.0
LIA	GR F766/3 (3)	OVA	2604	6.9
LIA	GR F766/5 (1)	OVA	2707	8.0
LIA	GR F766/5 (1)	OVA	2708	8.1
LIA	GR F788 (1)	O	2729	8.0
LIA	GR F775/5 (1)	OVA	2768	7.5
LIA	GR F785 (1)	O	2806	7.9
LIA	GR F785 (1)	O	2807	7.7
LIA	GR F793 (7)	O	2831	7.9
LIA	GR F793 (7)	O	2838	8.5
LIA	GR F793 (9)	OVA	2951	7.9
LIA	GR F793 (12)	O	2990	7.8
LIA	GR F793/3 (467)	OVA	3010	7.5
LIA	GR F793/3 (467)	OVA	3011	8.4
LIA	GR F793/3 (467)	O	3013	7.0
LIA	GR F793 (14)	OVA	3045	7.6
LIA	GR F793 (15)	OVA	3063	7.4
LIA	GR F826 (7)	OVA	3160	7.4

LIA	GR F835 (467)	OVA	3258	7.7
LIA	GR F835 (467)	O	3260	7.4
LIA	GR F835 (467)	O	3261	7.5
LIA	GR F835 (467)	O	3262	8.0
ERB	GR F680 (1)	OVA	1283	7.8
ERB	GR 410	OVA	1727	8.0
ERB	GR 410	O	1728	8.1
ERB	GR 392	O	1759	8.7
ERB	GR 393	O	1777	7.6
ERB	GR 393	O	1785	8.1
ERB	GR 381	OVA	1824	8.2
ERB	GR 380	OVA	1872	8.0
ERB	GR 380	O	1879	8.7
ERB	GR 413	OVA	1914	8.6
ERB	GR 413	OVA	1915	7.9
ERB	GR F749/2 (1)	OVA	1989	7.7
ERB	GR F749/2 (2)	O	2011	7.5
ERB	GR F750/2 (1)	OVA	2232	7.6
ERB	GR F750/2 (2)	O	2250	7.7
ERB	GR F750/2 (2)	O	2251	7.5
ERB	GR F751/2 (2)	OVA	2315	7.6
ERB	GR F750/4 (6)	OVA	2341	7.6
ERB	GR F751/2 (1)	OVA	2363	7.6
LRB	GR F672/3 (2)	OVA	1272	7.9
LRB	GR F690 (3)	O	1312	8.6
LRB	GR F690 (1)	O	1325	6.6
LRB	GR F683 (3)	OVA	1359	7.7
LRB	GR 361	O	1581	7.4
LRB	GR 372	OVA	1626	8.1
LRB	GR 372	OVA	1627	8.0
LRB	GR 401	O	1744	9.1
LRB	GR 401	O	1745	7.5
LRB	GR 401	O	1746	7.4
LRB	GR F813 (1)	O	2392	8.4
LRB	GR 447	O	2449	7.4
LRB	GR 441	O	2474	7.5
LRB	GR 441	O	2475	7.7
LRB	GR 441	O	2476	8.6
LRB	GR 448	O	2509	8.6
LRB	GR 448	O	2510	8.1
na	GR 358	O	1699	7.7
na	GR 358	O	1700	8.8
na	GR 358	O	1701	7.3
na	GR 358	O	1702	7.9
na	GR F764 (2)	O	2306	7.1
na	GR 462	O	2416	7.4
na	GR F755/2 (2)	O	2649	7.8
na	GR F807 (1)	OVA	3136	7.8

HORNCORE

Phase	Context number	Taxa	Bone ID	41	42	Comments
LIA	GR F708 (4)	O	1448	29.2	17.4	Skeleton(s); ID 1448-71
LIA	GR F766/3 (6)	OVA	2680	30.2	21.7	
LIA	GR F793 (14)	O	3043	27.3	16.6	
LIA	GR F793 (16)	OVA	3083	35.3	22.8	Left
LIA	GR F793 (16)	OVA	3083	35.3		Right
ERB	GR F749/10 (1)	OVA	2182	36.0	21.7	

LRB	GR 441	OVA	2478	22.4	19.1
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SCAPULA

Phase	Context number	Taxa	Bone ID	SLC	Comments
LIA	GR F708 (4)	O	1453	12.8	Skeleton(s); ID 1448-71
LIA	GR F793 (8)	O	2935	15.3	

HUMERUS

Phase	Context number	Taxa	Bone ID	BT	HT	HTC	Comments
ERB	GR F750/2 (1)	O	2233			12.4	
LIA	GR F708 (4)	OVA	1454			12.1	Skeleton(s); ID 1448-71; left
LIA	GR F708 (4)	OVA	1456	22.7	13.4	11.0	Skeleton(s); ID 1448-71; right
LIA	GR F708 (4)	OVA	1457	24.1	14.9	11.9	Skeleton(s); ID 1448-71; left
LIA	GR F775/1 (2)	O	2781		14.8	11.6	
LIA	GR F793 (7)	OVA	2850	24.0	15.7	11.9	
LIA	GR F793 (14)	OVA	3047	25.7	15.8	12.2	
LIA	GR F826 (11)	OVA	3209	24.7	15.2	11.6	
LIA	GR F826 (12)	OVA	3224	25.0	16.5	12.6	Skeleton; ID 3217-55
na	GR Ph1061 (2)	O	1544	23.9	16.1	12.2	

RADIUS

Phase	Context number	Taxa	Bone ID	GL	SD	Bp	BFp	Bd	BFd	Comments
LIA	GR F708 (4)	OVA	1459	125.4	10.6	22.9	22.4	21.9	18.7	Skeleton(s); ID 1448-71
LIA	GR F723 (4)	O	1525				23.2		21.3	
LIA	GR F775/1 (2)	O	2782				26.2		25.4	
ERB	GR 381	OVA	1829				31.4		29.0	
ERB	GR F749/2 (3)	OVA	1968				25.6		23.6	

METACARPAL

Phase	Context number	Taxa	Bone ID	GL	SD	Bp	BatF	Bd	1	2	3	4	5	6	a	b	Comments
LIA	GR F723 (1)	O	1534														
LIA	GR F793 (8)	OVA	2941														
LIA	GR F793 (12)	OVA	2992														
LIA	GR F826 (6)	OVA	3190	110.7	11.4	20.0	20.9	22.2	10.0	14.5	12.5	9.3	13.9	12.4	10.8	10.3	Articulated; ID 3190-1; right
LIA	GR F826 (6)	OVA	3191	110.5	11.1	20.0	20.9	22.2	9.8		12.2	9.1	13.6	12.4	10.8	10.1	Articulated; ID 3190-1; left
ERB	GR F749/2 (3)	OVA	1969														
ERB	GR F749/2 (1)	OVA	1996														
LRB	GR F690 (1)	O	1326										10.7	15.7	14.3		11.2
LRB	GR F683 (4)	OVA	1339	112.1	10.9	21.7	23.6	23.8	9.9	14.7	12.8	9.4	14.4	12.5	11.2	11.0	Skeleton; ID 1336-53; right
LRB	GR F683 (4)	OVA	1343	112.3	11.2	21.7	23.4	24.0	9.6	15.0	13.0	9.1	14.4	12.8	11.2	10.6	Skeleton; ID 1336-53; left
na	GR F755/2 (2)	OVA	2653														

PELVIS

Phase	Context number	Taxa	Bone ID	LA
ERB	GR 410	O	1730	26.0

TIBIA

Phase	Context number	Taxa	Bone ID	Bd	Dd
LIA	GR F710 (3)	OVA	1481	21.3	17.1
ERB	GR F749/4 (3)	OVA	1943	21.9	18.1
ERB	GR F749/10 (2)	OVA	2222	23.0	17.4

ASTRAGALUS

Phase	Context number	Taxa	Bone ID	GLI	GLm	DI	Bd
LRB	GR F683 (3)	O	1364	26.2	23.7	13.3	16.5

CALCANEUM

Cattle

FOURTH DECIDUOUS PREMOLAR

Phase	Context number	Bone ID	W
LIA	GR F766/3 (5)	2560	11.9
LIA	GR F775/5 (1)	2765	11.6
LIA	GR F775/5 (1)	2766	11.4
LIA	GR F793 (12)	2986	12.1
LIA	GR F826 (6)	3183	12.4
ERB	GR F722 (2)	1378	12.6
ERB	GR F749/6 (2)	1980	11.3
ERB	GR F749/2 (2)	2004	11.6
ERB	GR F749/10 (2)	2219	12.5
ERB	GR F751/2 (1)	2356	12.4
LRB	GR F813 (1)	2388	12.5

FIRST MOLAR

Phase	Context number	Bone ID	W
LIA	GR F793 (11)	2963	13.3
LIA	GR F793/3 (467)	3002	14.2
LIA	GR F826 (6)	3183	13.2
ERB	GR F722 (2)	1378	13.7
LRB	GR 401	1738	14.8

SECOND MOLAR

Phase	Context number	Bone ID	W
LIA	GR F793 (11)	2963	13.8
LIA	GR F793/3 (467)	3002	15.2
ERB	GR 380	1858	16.4
na	GR 350	1677	16.5

THIRD MOLAR

Phase	Context number	Bone ID	L	W
LIA	GR F723 (1)	1531		15.7
LIA	GR F766/3 (1)	2611	34.3	16.4
LIA	GR F766/3 (6)	2668	32.7	14.5
LIA	GR F766/3 (6)	2669		15.4
LIA	GR F766/3 (6)	2670	32.5	14.4
LIA	GR F766/3 (6)	2671	36.1	15.5
LIA	GR F766/5 (2)	2746	16.7	
ERB	GR 379	1633	35.7	15.2
ERB	GR 410	1721	34.4	15.1
ERB	GR 380	1858	35.8	16.0
ERB	GR F750/4 (5)	2261	37.1	16.4
ERB	GR 464	2516	36.7	15.5
LRB	GR 401	1738	37.5	16.2
na	GR F658 (2)	1266	35.0	15.6
na	GR Ph1061 (2)	1543	15.7	
na	GR 368	1604	31.8	13.6
na	GR 350	1677	36.0	15.9

HORNCORE

Phase	Context number	Bone ID	45	46
LRB	GR F789 (3)	2697	61.6	37.4

SCAPULA

Phase	Context number	Bone ID	SLC
LIA	GR F793 (11)	2962	42.3
ERB	GR 410	1724	60.7
LRB	GR F690 (2)	1301	44.0

HUMERUS

Phase	Context number	Bone ID	BT	HT	HTC
LIA	GR 445	2524	77.0	47.8	36.0
LIA	GR F793 (9)	2950		39.9	29.4
ERB	GR 393	1769			34.6

RADIUS

Phase	Context number	Bone ID	GL	SD	Bp	BFp	Bd	BFd
ERB	GR F722 (3)	1395			83.2	74.3		
na	GR F764 (2)	2295	259.0	32.1	69.5	64.3	61.0	56.8
na	GR F755/2 (2)	2641			73.4	67.1		

METACARPAL

Phase	Context number	Bone ID	GL	SD	Bp	BatF	Bd	1	2	3	4	5	6
LIA	GR F793 (7)	2819			51.0								
LIA	GR F793 (14)	3040			53.8								
LRB	GR F690 (362)	1290			61.8								
LRB	GR F700 (1)	1429	188.1	32.6		54.1	61.0	24.7	33.3	30.0	23.3	32.5	29.7
na	GR F755/4 (1)	2740			50.9								

TIBIA

Phase	Context number	Bone ID	Bd	Dd
LIA	GR F775/1 (2)	2780	53.4	37.2
ERB	GR F680 (1)	1282	56.5	43.9
ERB	GR F722 (3)	1397	63.7	46.0

ASTRAGALUS

Phase	Context number	Bone ID	GLI	GLm	DI	Bd
LIA	GR F708 (3)	1415	58.4	54.2	33.0	37.4
ERB	GR F722 (2)	1380	62.3	56.2	34.5	39.3
ERB	GR F722 (3)	1398	68.7	62.8	37.9	43.9
LRB	GR F690 (1)	1320	71.7	64.9	39.7	45.2

CALCANEUM

Phase	Context number	Bone ID	C	C+D
LIA	GR 445	2528	24.5	42.2
LIA	GR 445	2529	26.1	43.8
LIA	GR F766/5 (2)	2749	24.8	43.9
ERB	GR 381	1821	27.1	45.7

METATARSAL

Phase	Context number	Bone ID	Bp	BatF	Bd	1	2	3	4	5	6	a	b
LIA	GR F766/3 (5)	2564	42.3										
LIA	GR F766/3 (6)	2689		42.3	45.6	19.9	27.6	25.4	21.0	28.7	25.2	21.0	21.7
LIA	GR F766/5 (1)	2705	42.1										
LIA	GR F793 (12)	2987		42.7	48.0	20.7	28.9	25.7	18.8	27.7	25.8	23.0	22.5
LIA	GR F814 (2)	3121	42.3										
ERB	GR F722 (2)	1381		51.4									
ERB	GR F722 (3)	1399				22.5	31.3	27.9					26.3
ERB	GR 393	1772		53.8		25.2	32.9	28.5			29.4		29.9
ERB	GR F749/2 (3)	1958		41.2	44.4								
ERB	GR F750/2 (6)	2240	43.4	45.6	50.5	21.9		26.0	21.3	29.8	27.0		23.4
LRB	GR F700 (1)	1430	45.5										

*Pig***FOURTH DECIDUOUS PREMOLAR**

Phase	Context number	Bone ID	L	WP
ERB	GR 377	1693	19.5	8.6
ERB	GR F749 (1)	1929	19.7	8.7

FIRST MOLAR

Phase	Context number	Bone ID	WA	WP
LIA	GR F766/3 (6)	2693	9.7	10.6
LIA	GR F793 (7)	2876	10.5	10.5
LIA	GR F793 (7)	2877		11.0
ERB	GR 381	1838	9.5	10.3
ERB	GR F749 (1)	1929	10.0	10.7

SECOND MOLAR

Phase	Context number	Bone ID	WA	WP
LIA	GR F766/3 (6)	2693	12.5	13.0
LIA	GR F793 (7)	2876	12.5	
LIA	GR F793 (7)	2877		13.4
LIA	GR F793 (12)	2993	13.9	

RADIUS

Phase	Context number	Bone ID	Bp
ERB	GR F750/4 (6)	2348	23.9

*Equid***SCAPULA**

Phase	Context number	Bone ID	SLC
LRB	GR F672/1 (3)	1263	50.7

HUMERUS

Phase	Context number	Bone ID	GLI	GLC	SD	BT	HT	HTC	Bd
LIA	GR F826 (6)	3167	256.6	240.9	29.0	65.9	43.9	31.4	72.1
ERB	GR F749/2 (2)	2014						31.0	
ERB	GR F749/2 (2)	2015				67.8	45.1	32.4	

RADIUS

Phase	Context number	Bone ID	GL	LI	SD	Bp	BFp	Bd	BFd	Comments
LIA	GR F826 (6)	3168	301.7	288.7	31.4	71.9	66.1	67.6	56.3	Articulated; ID 3167-82 (complete limb)
LIA	GR F826 (6)	3198				70.5	66.2			
ERB	GR 410	1733						67.1	57.4	
ERB	GR F749/6 (2)	1983				72.3	66.7	64.1	55.7	
ERB	GR F749/4 (4)	2018					67.2			

METACARPAL

Phase	Context number	Bone ID	GL	GLI	LI	SD	Bp	Dp	Bd	Dd	Comments
LIA	GR F793 (5)	2919	199.5	199.1	196.0	27.1	44.5	28.4	42.5	31.5	Articulated; ID 3167-82 (complete limb)
LIA	GR F826 (6)	3170	202.8	200.2	195.4	27.9	47.9	31.4	47.1		
ERB	GR F749/5 (2)	1950									
LRB	GR F700 (1)	1437					41.8	28.9	41.9		

TIBIA			
Phase	Context number	Bone ID	Dd
ERB	GR F750/2 (1)	2238	40.4

ASTRAGALUS				
Phase	Context number	Bone ID	GH	LmT
LIA	GR F793 (5)	2920	54.5	55.9

METATARSAL							
Phase	Context number	Bone ID	Bp	Dp	Bd	Dd	Comments
ERB	GR F749/2 (3)	1973	46.6	36.5	44.6	34.8	Articulated; ID 1973-5 (PMTs)

SECOND PHALANGE									
Phase	Context number	Bone ID	GL	SD	Bp	BFp	Dp	Bd	Comments
LIA	GR F826 (6)	3174	43.3	40.2	47.7	40.5	28.9	44.6	Articulated; ID 3167-82 (complete limb)

THIRD PHALANGE				
Phase	Context number	Bone ID	BF	Comments
LIA	GR F826 (6)	3175	42.3	Articulated; ID 3167-82 (complete limb)

Dog

FIRST MOLAR					
Phase	Context number	Bone ID	L	W	Comments
ERB	GR 380	1889	21.2	8.3	
ERB	GR F749/10 (1)	2042	23.6	10.4	Skeleton; ID 2019-36; left
ERB	GR F749/10 (1)	2043	23.7	10.2	Skeleton; ID 2019-36; right

MANDIBLE												
Phase	Context number	Bone ID	7	8	9	10	11	12	14	19	20	Comments
LIA	GR 445	2552	79.5	75.8	71.4	35.9	39.8	35.5				
ERB	GR 381	1842	72.8	71.2	67.0	34.9	38.1	33.6	21.9	22.6	19.4	Articulated; ID 1842-3 (MD)
ERB	GR 380	1889		72.0	66.9	34.8	38.2	33.4	20.8	22.8	18.6	
ERB	GR F749/10 (1)	2042			73.9	36.9		36.6				Skeleton; ID 2019-36; left
ERB	GR F749/10 (1)	2043	86.9	80.1	74.6	39.3	41.9					Skeleton; ID 2019-36; right
LRB	GR 441	2494	79.9	74.4	70.2	33.9	41.2	36.8	20.3			

SCAPULA				
Phase	Context number	Bone ID	SLC	Comments
ERB	GR F749/10 (1)	2046	26.6	Skeleton; ID 2019-36; left
ERB	GR F749/10 (1)	2047	26.5	Skeleton; ID 2019-36; right

HUMERUS										
Phase	Context number	Bone ID	GL	GLI	GLC	SD	HT	HTC	Bd	Comments
ERB	GR 373	1622							22.6	Articulated; ID 1622-5 (HU, RA & MC3-4)
ERB	GR F749/10 (1)	2048	173.6	171.8	168.3	14.8	21.3	13.8	35.2	Skeleton; ID 2019-36; left
ERB	GR F749/10 (1)	2049	174.1	172.8	168.6	14.7	21.1	13.6	34.8	Skeleton; ID 2019-36; right

RADIUS									
Phase	Context number	Bone ID	GL	SD	Bp	Bd	Comments		
ERB	GR 373	1623	94.4	9.7	13.4	17.5	Articulated; ID 1622-5 (HU, RA & MC3-4)		
ERB	GR F749/10 (1)	2050	172.5	14.6	19.9	24.0	Skeleton; ID 2019-36; left		
ERB	GR F749/10 (1)	2051	172.1	14.5	19.9	25.7	Skeleton; ID 2019-36; right		

ULNA				
Phase	Context number	Bone ID	GL	Comments
ERB	GR F749/10 (1)	2052	203.3	Skeleton; ID 2019-36; left
ERB	GR F749/10 (1)	2053	204.1	Skeleton; ID 2019-36; right

SECOND METACARPAL					
Phase	Context number	Bone ID	GL	Bd	Comments
ERB	GR F749/4 (4)	2026	46.0	7.2	Skeleton; ID 2019-36; right
ERB	GR F749/4 (4)	2027	46.0	7.5	Skeleton; ID 2019-36; left
ERB	GR F749/10 (1)	2075	61.1	9.7	Skeleton; ID 2041-176; left
ERB	GR F749/10 (1)	2076	60.2	9.9	Skeleton; ID 2041-176; right

THIRD METACARPAL					
Phase	Context number	Bone ID	GL	Bd	Comments
ERB	GR 373	1624	42.5	6.4	Articulated; ID 1622-5 (HU, RA & MC3-4)
ERB	GR F749/10 (1)	2077	69.2	9.6	Skeleton; ID 2041-176; left
ERB	GR F749/10 (1)	2078	69.0	9.5	Skeleton; ID 2041-176; right

FOURTH METACARPAL					
Phase	Context number	Bone ID	GL	Bd	Comments
ERB	GR 373	1625	42.4	6.2	Articulated; ID 1622-5 (HU, RA & MC3-4)
ERB	GR F749/10 (1)	2079	68.9	9.1	Skeleton; ID 2041-176; left
ERB	GR F749/10 (1)	2080	68.8	9.0	Skeleton; ID 2041-176; right

FIFTH METACARPAL					
Phase	Context number	Bone ID	GL	Bd	Comments
ERB	GR F749/10 (1)	2081	58.1	10.1	Skeleton; ID 2041-176; left
ERB	GR F749/10 (1)	2082	58.1	9.8	Skeleton; ID 2041-176; right

PELVIS

Phase	Context number	Bone ID	LA	Comments
ERB	GR F749/4 (4)	2020	23.6	Skeleton; ID 2019-36; right
ERB	GR F749/4 (4)	2021	23.0	Skeleton; ID 2019-36; left
ERB	GR F749/10 (1)	2054	28.7	Skeleton; ID 2041-176; right
ERB	GR F749/10 (1)	2055	28.6	Skeleton; ID 2041-176; left

FEMUR

Phase	Context number	Bone ID	GL	GLC	SD	Bd	Comments
ERB	GR F749/4 (4)	2023	139.0	139.3			Skeleton; ID 2019-36
ERB	GR F749/10 (1)	2056	185.4	185.8	15.0	34.0	Skeleton; ID 2041-176; left
ERB	GR F749/10 (1)	2057	185.0	185.7	14.6	34.9	Skeleton; ID 2041-176; right

TIBIA

Phase	Context number	Bone ID	GL	SD	Bp	Bd	Dd	Comments
ERB	GR F749/4 (4)	2024	141.7	11.0	29.8	19.9	14.0	Skeleton; ID 2019-36
ERB	GR F749/10 (1)	2058	195.9	13.9	36.8	22.9	18.3	Skeleton; ID 2041-176; left
ERB	GR F749/10 (1)	2059	193.1	13.8	37.7		17.6	Skeleton; ID 2041-176; right

CALCANEUM

Phase	Context number	Bone ID	GL	Comments
ERB	GR F749/10 (1)	2073	49.1	Skeleton; ID 2041-176; left
ERB	GR F749/10 (1)	2074	48.9	Skeleton; ID 2041-176; right

SECOND METATARSAL

Phase	Context number	Bone ID	GL	Bd	Comments
ERB	GR F749/10 (1)	2083	67.2	8.8	Skeleton; ID 2041-176 (exc. 2037-40); left
ERB	GR F749/10 (1)	2084	65.6	9.0	Skeleton; ID 2041-176 (exc. 2037-40); right

THIRD METATARSAL

Phase	Context number	Bone ID	GL	Bd	Comments
ERB	GR F749/4 (4)	2032	52.7	7.1	Skeleton; ID 2019-36; right
ERB	GR F749/4 (4)	2033	52.2	7.3	Skeleton; ID 2019-36; left
ERB	GR F749/10 (1)	2085	75.0	9.3	Skeleton; ID 2041-176 (exc. 2037-40); left
ERB	GR F749/10 (1)	2086	74.3	9.5	Skeleton; ID 2041-176 (exc. 2037-40); right

FOURTH METATARSAL

Phase	Context number	Bone ID	GL	Bd	Comments
ERB	GR F749/4 (4)	2030	53.2	6.5	Skeleton; ID 2019-36; right
ERB	GR F749/4 (4)	2031	53.1	6.6	Skeleton; ID 2019-36; left
ERB	GR F749/10 (1)	2087	77.9	8.7	Skeleton; ID 2041-176 (exc. 2037-40); left
ERB	GR F749/10 (1)	2088	77.1	8.7	Skeleton; ID 2041-176 (exc. 2037-40); right

FIFTH METATARSAL

Phase	Context number	Bone ID	GL	Bd	Comments
ERB	GR F749/4 (4)	2028	45.1	6.4	Skeleton; ID 2019-36; left
ERB	GR F749/4 (4)	2029	45.3	6.4	Skeleton; ID 2019-36; right
ERB	GR F749/10 (1)	2089	69.4	8.1	Skeleton ID 2041-176 (exc. 2037-40)

*Domestic fowl***ULNA**

Phase	Context number	Taxa	Bone ID	Element	GL	SC	Bp
ERB	GR 379	GNP	1656	UL	71.1	4.9	8.5

CARPOMETACARPUS

Phase	Context number	Taxa	Bone ID	Element	GL	L	Bp	Did
ERB	GR F749/5 (2)	GP	1950	MC	34.6	32.4	10.6	6.8

FEMUR

Phase	Context number	Taxa	Bone ID	Element	Bp	Dp
na	GR F657 (2)	GN	1242	FE	15.6	11.1

5.3 Appendix 3: mandibular tooth eruption and wear

Taxa codes

OVA	Sheep (<i>Ovis aries</i>)
CAH	Goat (<i>Capra hircus</i>)
O	Sheep (<i>O. aries</i>)/goat (<i>C. hircus</i>)

Element codes

dP4	Deciduous fourth premolar
P4	Fourth premolar
M1	First molar
M2	Second molar
M3	Third molar
M12	First OR second molar

Sheep/goat

Phase	Context number	Bone ID	dP4	P4	M1	M2	M3	M12
LIA	GR F723 (1)	1531					c	
LIA	GR 443	2420						j
LIA	GR 445	2522						k
LIA	GR F766/3 (5)	2560	k		g	f		
LIA	GR F766/3 (4)	2573		f				
LIA	GR F766/3 (6)	2589		c	k			
LIA	GR F766/3 (6)	2590		f				
LIA	GR F766/3 (1)	2611		f	k	k	k	
LIA	GR F766/3 (1)	2612		d				
LIA	GR F766/3 (1)	2615						l
LIA	GR F766/3 (1)	2616						k
LIA	GR F766/3 (1)	2617						j
LIA	GR F766/3 (6)	2668		c	k	j	f	
LIA	GR F766/3 (6)	2669				k	g	
LIA	GR F766/3 (6)	2670					f	
LIA	GR F766/3 (6)	2679						l
LIA	GR F766/5 (2)	2746					g	
LIA	GR F775/5 (1)	2765	f					
LIA	GR F775/5 (1)	2766	g		a			
LIA	GR F793 (4)	2813						k
LIA	GR F793 (4)	2814						j
LIA	GR F793 (3)	2895						j
LIA	GR F793 (8)	2924	l					
LIA	GR F793 (11)	2963			l	k		
LIA	GR F793 (11)	2964						d
LIA	GR F793 (12)	2983			k	k	g	
LIA	GR F793 (13)	2985	a					
LIA	GR F793 (12)	2986	k					
LIA	GR F793/3 (467)	3000						k
LIA	GR F793/3 (467)	3001						j
LIA	GR F793/3 (467)	3002			l	k		
LIA	GR F826 (6)	3183	g		b			
ERB	GR F680 (1)	1276					g	
ERB	GR F722 (2)	1378	f		b			
ERB	GR 379	1633					g	
ERB	GR 410	1721					j	
ERB	GR 393	1767			E			
ERB	GR 380	1858		f		k	k	
ERB	GR F749/6 (2)	1980	c					
ERB	GR F749/2 (2)	2004	d					
ERB	GR F749/2 (2)	2006						l
ERB	GR F749/2 (2)	2007						k
ERB	GR F749/10 (1)	2178						j
ERB	GR F749/10 (3)	2184		e	k	g	g	
ERB	GR F750/1 (1)	2197						b
ERB	GR F750/1 (1)	2198						a
ERB	GR F749/10 (2)	2219	j		E			
ERB	GR F750/2 (1)	2224						g
ERB	GR F750/4 (5)	2261		c	k	j	f	
ERB	GR F751/2 (4)	2333				k	g	
ERB	GR F751/2 (1)	2356	h		b	V		
ERB	GR F751/4 (2)	2375						k

ERB	GR 464	2516							g	
LRB	GR F690 (2)	1299								a
LRB	GR F690 (2)	1300							V	g
LRB	GR F690 (1)	1319								
LRB	GR F700 (1)	1428	f							
LRB	GR 401	1738		j					j	
LRB	GR 412	1848								B
LRB	GR 422	1852								I
LRB	GR F769 (1)	2264								a
LRB	GR F811 (1)	2370		d						
LRB	GR F813 (1)	2388	j		f					
LRB	GR 441	2456				m				
LRB	GR 441	2458								g
LRB	GR 448	2499	c							
LRB	GR 448	2501								g
na	GR F658 (2)	1266							g	
na	GR Ph1055 (1)	1529								I
na	GR Ph1061 (2)	1543							g	
na	GR Ph1053 (1)	1545								f
na	GR 368	1604							k	
na	GR 350	1677		f	k	k			k	
na	GR 358	1696	k							
na	GR 358	1697								k
na	GR F764 (2)	2288		e	k	g				
na	GR F764 (2)	2299			b	C				
na	GR Ph1124	3276			V					

Cattle

Phase	Context number	Bone ID	Taxa	dP4	P4	M1	M2	M3	M12	Articulated
LIA	GR F708 (3)	1418	O						9A	
LIA	GR F708 (4)	1451	OVA	11L						Y
LIA	GR F708 (4)	1452	O						7A	Y
LIA	GR F710 (3)	1480	OVA		11S	9A	9A	7A		
LIA	GR F735 (4)	1495	OVA	12L						
LIA	GR F735 (4)	1496	OVA	16L		6A				
LIA	GR F735 (4)	1497	OVA			4A				
LIA	GR F735 (4)	1498	OVA	16L		2A				
LIA	GR F735 (4)	1499	OVA		E	9A	6A	E		
LIA	GR F735 (3)	1553	O				9A			
LIA	GR 443	2424	OVA			9A	9A	6A		
LIA	GR 443	2425	OVA		7A					
LIA	GR 443	2426	O		12S					
LIA	GR 443	2427	O						9A	
LIA	GR 443	2428	O						9A	
LIA	GR 443	2429	O						6A	
LIA	GR 443	2430	O					11G		
LIA	GR 445	2539	OVA		9A	9A	9A	7A		
LIA	GR F766/3 (3)	2604	OVA		8B	9A	9A	9H		
LIA	GR F766/3 (1)	2622	OVA		8B	9A	9A	4A		
LIA	GR F766/3 (1)	2623	OVA		7A	9A	9A	2A		
LIA	GR F766/3 (6)	2683	OVA			9A	6A			
LIA	GR F766/3 (6)	2684	OVA	14L		8A	E			
LIA	GR F766/3 (6)	2685	OVA	14L		7A	0			
LIA	GR F766/3 (6)	2686	OVA	14L		8A	2A			
LIA	GR F766/5 (1)	2707	OVA		9A	9A	8A	2A		
LIA	GR F766/5 (1)	2708	OVA		12S	12A	9A	11G		
LIA	GR F766/5 (1)	2713	O		0					
LIA	GR F766/5 (1)	2714	O						3A	
LIA	GR F766/5 (1)	2715	O						7A	
LIA	GR F766/5 (1)	2716	O						9A	
LIA	GR F775/5 (1)	2727	O						8A	
LIA	GR F788 (1)	2728	O						9A	
LIA	GR F788 (1)	2729	O					11G		
LIA	GR F785 (2)	2761	OVA	14L		5A				
LIA	GR F785 (2)	2762	OVA			8A	2A			
LIA	GR F785 (2)	2763	O						9A	
LIA	GR F775/5 (1)	2768	OVA			9A	9A	2A		
LIA	GR F775/5 (1)	2770	O						9A	
LIA	GR F775/5 (1)	2771	O					0		
LIA	GR F785 (1)	2806	O					11G		
LIA	GR F785 (1)	2807	O					11G		
LIA	GR F793 (7)	2831	O				9A	11G		
LIA	GR F793 (7)	2832	O						8A	
LIA	GR F793 (7)	2833	O						7A	
LIA	GR F793 (7)	2834	O						9A	
LIA	GR F793 (7)	2835	O						12A	
LIA	GR F793 (7)	2836	O						9A	
LIA	GR F793 (7)	2837	O						6A	
LIA	GR F793 (7)	2838	O					10H		
LIA	GR F793 (4)	2912	O						6A	
LIA	GR F793 (5)	2916	O						6A	
LIA	GR F793 (8)	2931	OVA	16L		6A	0			
LIA	GR F793 (8)	2932	OVA	14L						
LIA	GR F793 (9)	2951	OVA				15A	11G		

LIA	GR F793 (11)	2970	OVA	17L		9A	8A			
LIA	GR F793 (12)	2988	OVA		V	9A	7A	E		
LIA	GR F793 (12)	2989	O						9A	
LIA	GR F793 (12)	2990	O					4A		
LIA	GR F793/3 (467)	3010	OVA			9A	9A	7A		
LIA	GR F793/3 (467)	3011	OVA			9A	9A	8G		
LIA	GR F793/3 (467)	3012	O						5A	
LIA	GR F793/3 (467)	3013	O					10H		
LIA	GR F793 (13)	3025	OVA	16L		E				
LIA	GR F793 (14)	3045	OVA		12S	9A	9A	6A		
LIA	GR F793 (15)	3063	OVA		12S	9A	9A	10G		
LIA	GR F793 (15)	3064	OVA	14L		7A	V			
LIA	GR F815/1 (1)	3132	O						9A	
LIA	GR F814 (1)	3141	OVA			8A	7A			
LIA	GR F814 (1)	3142	O			12A				
LIA	GR F800 (1)	3149	OVA		14S	15A	9A	11G		
LIA	GR F800 (1)	3150	OVA		14S	15A	9A	11G		
LIA	GR F826 (7)	3158	OVA	13L						
LIA	GR F826 (7)	3159	OVA	E	C					
LIA	GR F826 (7)	3160	OVA			9A	7A	0		
LIA	GR F826 (6)	3189	O						9A	
LIA	GR F835 (467)	3258	OVA		12S	12A	9A	11G		
LIA	GR F835 (467)	3259	OVA	12L						
LIA	GR F835 (467)	3260	O					2A		
LIA	GR F835 (467)	3261	O					11G		
LIA	GR F835 (469)	3271	OVA				7A	C		
ERB	GR F680 (1)	1283	OVA		5B	9A	9A	2A		
ERB	GR F722 (3)	1406	OVA		12S	10A	9A			
ERB	GR F743	1504	OVA	5A		E	V			Y
ERB	GR 375	1590	OVA	7L		E				
ERB	GR 371	1597	OVA	13L						
ERB	GR 371	1598	OVA	13L						
ERB	GR 373	1616	OVA	14L		7A	E			
ERB	GR 379	1640	O						9A	
ERB	GR 410	1727	OVA		E	9A	7A	V		
ERB	GR 410	1728	O		12S	9A	9A	8G		
ERB	GR 427/430	1736	O						7A	
ERB	GR 427/430	1737	O						9A	
ERB	GR 392	1757	OVA		9A	9A				
ERB	GR 392	1758	OVA	14L		6A	E			
ERB	GR 392	1759	O					4C		
ERB	GR 393	1777	O				9A	8G		
ERB	GR 393	1778	OVA	14L		9A				
ERB	GR 393	1779	O	14L						
ERB	GR 393	1780	OVA			9A	9A			
ERB	GR 393	1781	OVA	16L		9A	5A			
ERB	GR 393	1782	O						9A	
ERB	GR 393	1783	O						6A	
ERB	GR 393	1784	O						0	
ERB	GR 393	1785	O					11G		
ERB	GR 381	1824	OVA		14S	12A	9A	11G		
ERB	GR 381	1825	OVA		11S	11B	9A			
ERB	GR 381	1826	O						9A	
ERB	GR 380	1872	OVA			9A	8A	2A		
ERB	GR 380	1877	O						9A	
ERB	GR 380	1878	O						5A	
ERB	GR 380	1879	O					11G		
ERB	GR 413	1914	OVA			11B	9A	10G		
ERB	GR 413	1915	OVA		11S	9A	9A	11G		
ERB	GR 413	1916	OVA		11S	9A				
ERB	GR F746 (1)	1932	OVA		12S	10A	9A			
ERB	GR F749/5 (2)	1947	OVA	14L						
ERB	GR F749/2 (3)	1966	O			6A	V			
ERB	GR F749/2 (3)	1967	OVA			9A	6A			
ERB	GR F749/2 (1)	1989	OVA				9A	11G		
ERB	GR F749/2 (1)	1990	OVA	16L		5A				
ERB	GR F749/2 (1)	1992	O						9A	
ERB	GR F749/2 (2)	2011	O					11G		
ERB	GR F749/10 (3)	2194	OVA			9A	7A			
ERB	GR F750/3 (2)	2196	O						8A	
ERB	GR F750/1 (1)	2201	O					0		
ERB	GR F749/10 (2)	2220	OVA			9A	7A			
ERB	GR F749/10 (6)	2223	O			7A	E			
ERB	GR F750/2 (1)	2232	OVA				8A	0		
ERB	GR F749/8 (3)	2246	O						8A	
ERB	GR F750/2 (2)	2251	O					11G		
ERB	GR F751/2 (2)	2315	OVA			9A	7A	4A		
ERB	GR F751/2 (2)	2316	O						B	
ERB	GR F750/4 (6)	2341	OVA				7A	2A		
ERB	GR F750/4 (6)	2342	OVA		9A	9A				
ERB	GR F750/4 (6)	2343	OVA			5A	E			
ERB	GR F751/2 (1)	2363	OVA			9A	7A	5A		
ERB	GR F751/4 (2)	2379	O						9A	
ERB	GR F751/4 (2)	2380	O						9A	
LRB	GR F672/3 (2)	1272	OVA		6A	9A	8A	2A		
LRB	GR F690 (362)	1291	O						9A	
LRB	GR F690 (2)	1306	OVA			8A	0			
LRB	GR F690 (3)	1312	O					11G		

LRB	GR F690 (1)	1325	O						9G
LRB	GR F683 (3)	1358	CAH	10N					
LRB	GR F683 (3)	1359	OVA		11S		14A		11G
LRB	GR F695 (2)	1369	O	14L					
LRB	GR F695/4 (382)	1375	O						5A
LRB	GR 361	1581	O						11G
LRB	GR 372	1626	OVA		9A	9A	8A		2A
LRB	GR 372	1627	OVA				9A		6A
LRB	GR 359	1665	O						9A
LRB	GR 367	1711	OVA		9A	9A			
LRB	GR 367	1712	O						7A
LRB	GR 401	1743	O		9A				
LRB	GR 401	1744	O						9G
LRB	GR 401	1745	O						11G
LRB	GR 401	1746	O						11G
LRB	GR 390	1908	O						9A
LRB	GR 390	1909	O		0				
LRB	GR 390	1910	O						5A
LRB	GR F769 (1)	2269	OVA	16L		9A	7A	E	
LRB	GR F769 (1)	2270	O						7A
LRB	GR F762/2 (2)	2324	O						9A
LRB	GR F813 (1)	2390	OVA			9A	7A		
LRB	GR F813 (1)	2391	O						9A
LRB	GR F813 (1)	2392	O						5A
LRB	GR 447	2449	O						2A
LRB	GR 441	2467	OVA	16L		9A			
LRB	GR 441	2468	O						9A
LRB	GR 441	2469	O						2A
LRB	GR 441	2470	O						9A
LRB	GR 441	2471	O						8A
LRB	GR 441	2472	O						9A
LRB	GR 441	2473	O						9A
LRB	GR 441	2474	O						11G
LRB	GR 441	2475	O						11G
LRB	GR 441	2476	O					0	
LRB	GR 448	2508	O						9A
LRB	GR F787 (1)	2788	O						0
LRB	GR F818 (1)	3204	OVA		8B	9A	9A	5A	
na	GR F655 (2)	1177	O			15A	10A	11G	
na	GR F661 (2)	1227	O						7A
na	GR F668 (1)	1258	OVA	1A		9A	5A		
na	GR 368	1608	O						6A
na	GR 358	1699	O						11G
na	GR 358	1700	O						6A
na	GR 358	1701	O						5A
na	GR 358	1702	O						4A
na	GR 358	1703	O						9A
na	GR 358	1704	O						9A
na	GR 358	1705	O						9A
na	GR 352	1715	O						7A
na	GR 432	1923	OVA		7A	9A	8A		
na	GR F764 (2)	2306	O						11G
na	GR F759 (1)	2385	OVA		14S				
na	GR Ph1087 (1)	2400	O						9A
na	GR Ph1095 (3)	2404	O						
na	GR 462	2416	O						11G
na	GR 462	2417	OVA	0					
na	GR F755/2 (2)	2646	O				3C		
na	GR F755/2 (2)	2647	OVA	14L			9A		
na	GR F755/2 (2)	2649	O						11G
na	GR F755/2 (1)	2695	OVA		9A	9A			
na	GR F755/2 (1)	2696	O						8A
na	GR F784 (1)	2810	O						8A
na	GR F807 (1)	3136	OVA			11B	9A	10H	
na	GR Ph1121 (1)	3274	O						6A
na	GR Ph1124	3278	O						7A

Pig

Phase	Context number	Bone ID	dP4	P4	M1	M2	M3	M12
LIA	GR F766/3 (6)	2693		c	f	d	E	
LIA	GR F793 (7)	2876			e	b		
LIA	GR F793 (7)	2877			e	f		
LIA	GR F793 (12)	2993				b	V	
LIA	GR F826 (6)	3197				C		
ERB	GR 377	1693	f		a			
ERB	GR 381	1838		c	f			
ERB	GR F749 (1)	1929	d		a			
LRB	GR F672/1 (2)	1251						d

5.4 Tabulated data (Tables 1–19)

Table 1. Numbers of fragments (NIF) for all cases by phase and feature type

Phase/ Feature/ Taxa	LIA										ERB															
	Pit		Ditch		Quarry		Hollow-way		Other		LIA Total		Pit		Ditch		Oven		Structure		Industrial		Other		ERB Total	
	NIF	%	NIF	%	NIF	%	NIF	%	NIF	%	NIF	%	NIF	%	NIF	%	NIF	%	NIF	%	NIF	%	NIF	%	NIF	%
Cattle	72	13.4	104	41.1	7	12.5	19	31.1			202	22.2			92	18.4	1	5.9	61	24.4					154	19.6
Sheep	49	9.1	14	5.5	6	10.7	3	4.9			72	7.9			22	4.4			22	8.8	1	7.7			45	5.7
Goat																										
Sheep/Goat	245	45.7	73	28.9	28	50.0	26	42.6	1	33.3	373	41.0	1	33.3	125	25	9	52.9	88	35.2	12	92.3			235	29.9
Pig	29	5.4	14	5.5	3	5.4	2	3.3			48	5.3			12	2.4	1	5.9	17	6.8					30	3.8
Horse	1	0.2				0.0					1	0.1														
Equid	22	4.1				0.0	2	3.3			24	2.6			14	2.8			8	3.2					22	2.8
Dog	3	0.6	1	0.4	1	1.8	2	3.3			7	0.8			156	31.2			12	4.8					168	21.4
Dog/Fox																										
Cat																			1	0.4					1	0.1
Red deer															1	0.2			3	1.2					4	0.5
Red fox?																										
Hare																										
Chicken/Guinea fowl															1	0.2									1	0.1
Chicken/Pheasant																										
Chicken/Guinea fowl/Pheasant	29	5.4									29	3.2							11	4.4					11	1.4
Mallard/Domestic duck																										
Anatin																			1	0.4					1	0.1
Duck																										
Columbid															1	0.2									1	0.1
Red kite	2	0.4									2	0.2														
Rook/Carrion crow	1	0.2									1	0.1														
Turdid/Sturnid			1	0.4							1	0.1														
Turdidae			2	0.8							2	0.2														
Passeriforme	1	0.2									1	0.1														
Total identified	454		209		45		54		1		763		1		424		11		224		13				673	
Large mammal	25	4.7	25	9.9	4	7.1	3	4.9	1	33.3	58	6.4	1	33.3	43	8.6	1	5.9	12	4.8			1	33.3	58	7.4
Medium mammal	56	10.4	19	7.5	7	12.5	4	6.6	1	33.3	87	9.6	1	33.3	33	6.6	5	29.4	14	5.6			2	66.6	55	7.0
Bird	1	0.2									1	0.1														
Total classified	82		44		11		7		2		146		2		76		6		26				3		113	
TOTAL	536		253		56		61		3		909		3		500		17		250		13		3		786	

Table 1 cont. Numbers of fragments (NIF) for all cases by phase and feature type

Phase/ Feature/ Taxa	LRB		Ditch		Occupation		Oven		Structure		Quarry		Demolition		Hollow-way		Other		LRB Total		ND		TOTAL	
	Pit NIF	%	NIF	%	NIF	%	NIF	%	NIF	%	NIF	%	NIF	%	NIF	%	NIF	%	NIF	%	NIF	%	NIF	%
Cattle	4	20.0	41	35.0			17	18.5	11	11.1	12	40.0	8	40.0	10	13.5	1	7.7	104	21.5	68	528	21.2	
Sheep	1	5.0	2	1.7	2	11.1	3	3.3	4	4.0					2	2.7			14	2.9	9	140	5.6	
Goat									1	1.0									1	0.2		1	0.0	
Sheep/Goat	7	35.0	28	23.9	6	33.3	35	38.0	47	47.5	12	40.0	5	25.0	46	62.2	3	23.1	189	39.1	117	914	36.7	
Pig	1	5.0	4	3.4			1	1.1	2	2.0			1	5.0	1	1.4			10	2.1	19	107	4.3	
Horse																						1	0.0	
Equid			6	5.1	4	22.2	1	1.1	4	4.0									15	3.1	4	65	2.6	
Dog			4	3.4											4	5.4			8	1.7	1	184	7.4	
Dog/Fox															2	2.7			2	0.4		2	0.1	
Cat																						1	0.0	
Red deer																						2	6	0.2
Red fox?															1	1.4			1	0.2		1	0.0	
Hare			1	0.9					1	1.0			1	5.0					3	0.6		3	0.1	
Chicken/Guinea fowl																					1	1	0.0	
Chicken/Pheasant																						1	0.0	
Chicken/Guinea fowl/Pheasant	2	10.0	1	0.9	1	5.6							1	5.0					5	1.0	2	47	1.9	
Mallard/Domestic duck																						1	1	0.0
Anatin																						1	0.0	
Duck																						1	0.0	
Columbid			1	0.9					1	1.0									2	0.4		3	0.1	
Red kite																						2	0.1	
Rook/Carrion crow																						1	0.0	
Turdid/Sturnid	1	5.0																	1	0.2		2	0.1	
Turdidae																						2	0.1	
Passeriforme																						1	0.0	
Total identified	16		88		13		57		71		24		16		66		4		355		225	2016		
Large mammal	2	10.0	19	16.2	2	11.1	13	14.1	13	13.1	3	10.0	2	10.0	4	5.4	4	30.8	62	12.8	38	216	8.7	
Medium mammal	2	10.0	10	8.5	3	16.7	22	23.9	15	15.2	3	10.0	2	10.0	4	5.4	5	38.5	66	13.7	50	258	10.4	
Bird																						1		
Total classified	4		29		5		35		28		6		4		8		9		128		88	475		
TOTAL	20		117		18		92		99		30		20		74		13		483		313	2491		

Table 2. Surface preservation and root etching by phase and feature type

LIA	Poor	%	Moderate	%	Good	%	Yes	%	No	%	Total
Pit	70	15.4	205	45.2	179	39.4	104	22.9	350	77.1	454
Ditch	91	43.5	116	55.5	2	1.0	111	53.1	98	46.9	209
Quarry	30	66.7	15	33.3			34	75.6	11	24.4	45
Hollow-way	49	90.7	5	9.3			51	94.4	3	5.6	54
Other			1	100.0					1	100.0	1
Total	236	30.9	343	45.0	184	24.1	297	38.9	466	61.1	763

ERB	Poor	%	Moderate	%	Good	%	Yes	%	No	%	Total
Pit	1	100.0					1	100.0			1
Ditch	116	27.4	296	69.8	12	2.8	210	49.5	214	50.5	424
Oven	4	36.4	7	63.6			6	54.5	5	45.5	11
Structure	104	46.4	87	38.8	33	14.7	170	75.9	54	24.1	224
Industrial	10	76.9	3	23.1			13	100.0			13
Total	233	34.6	395	58.7	45	6.7	399	59.3	274	40.7	673

LRB	Poor	%	Moderate	%	Good	%	Yes	%	No	%	Total
Pit	6	37.5	9	56.3	1	6.3	11	68.8	5	31.3	16
Ditch	52	59.1	32	36.4	4	4.5	73	83.0	15	17.0	88
Occupation	7	53.8	5	38.5	1	7.7	9	69.2	4	30.8	13
Oven	32	56.1	20	35.1	5	8.8	40	70.2	17	29.8	57
Structure	54	76.1	15	21.1	2	2.8	67	94.4	4	5.6	71
Quarry			24	100.0			5	20.8	19	79.2	24
Demolition	16	100.0					15	93.8	1	6.3	16
Hollow-way	53	80.3	13	19.7			57	86.4	9	13.6	66
Other	4	100.0					4	100.0			4
Total	224	63.1	118	33.2	13	3.7	280	78.9	75	21.1	355

Table 3. Butchery marks by phase and taxa, excluding isolated teeth

EIA	Cattle	%	Sheep/goat	%	Pig	%	Equid	%	Dog	%
Chopped	2	1.6	3	0.9	2	5.3				
Cut	6	4.7	13	4.1	1	2.6	1	4.2		
Sawn										
Shave marks										
Split axially	4	3.1								
Unbutchered	115	90.6	302	95.0	35	92.1	23	95.8	6	100.0
Total	127		318		38		24		6	

ERB	Cattle	%	Sheep/goat	%	Pig	%	Equid	%	Dog	%
Chopped	3	3.0								
Cut	1	1.0	3	1.8					1	0.6
Sawn										
Shave marks										
Split axially	2	2.0								
Unbutchered	95	94.1	165	98.2	19	100.0	20	100.0	164	99.4
Total	101		168		19		20		165	

LRB	Cattle	%	Sheep/goat	%	Pig	%	Equid	%	Dog	%
Chopped	2	2.7	1	0.8						
Cut			2	1.6						
Sawn										
Shave marks										
Split axially										
Unbutchered	72	97.3	124	97.6	7	100.0	9	100.0	9	100.0
Total	74		127		7		9		9	

Table 4. Burning frequencies by phase, excluding isolated teeth

LIA	Pit	%	Ditch	%	Quarry	%	Hollow-way	%	Other	ALL	%
Singed	4	1.5	4	3.1						8	1.7
Burnt	4	1.5								4	0.8
Calcined			1	0.8						1	0.2
Burnt and calcined	3	1.1	1	0.8						4	0.8
Unmodified	264	96.0	124	95.4	32	100.0	33	100.0	1	454	96.4
Total	275		130		32		33		1	471	

ERB	Pit	Ditch	%	Oven	Structure	%	Industrial	Other	ALL	%
Singed		13	6.9	1	17	12.4			31	9.3
Burnt		3	1.6						3	0.9
Calcined		1	0.5						1	0.3
Unmodified	1	172	91.0	7	120	87.6			300	89.6
Total	1	189		8	137				335	

LRB	Pit	%	Ditch	%	Occupation	Oven	%	Structure	%	Quarry	%	Demolition	%	Hollow-way	%	Other	ALL	%
Singed			4	6.3				3	8.6	1	5.6	2	13.3	2	5.7		12	5.2
Burnt						1	2.2							1	2.9		2	0.9
Calcined																		
Burnt and calcined						1	2.2										1	0.4
Unmodified	11	100.0	60	93.8	4	43	95.6	32	91.4	17	94.4	13	86.7	32	91.4	2	214	93.4
Total	11		64		4	45		35		18		15		35		2	229	

Table 5. Gnawing frequencies by phase, excluding isolated teeth

LIA	ALL exc.	%	ART.	%	Inc.	%
Canid	36	7.6			36	6.2
Felid						
Rodent	2	0.4	1	0.9	3	0.5
Part digested	3	0.6			3	0.5
Unmodified	430	91.3	111	99.1	541	92.8
Total	471		112		583	

ERB	ALL exc.	%	ART.	%	Inc.	%
Canid	48	14.3	1	0.6	49	9.6
Felid						
Rodent						
Part digested						
Unmodified	287	85.7	173	99.4	460	90.4
Total	335		174		509	

LRB	ALL exc.	%	ART.	%	Inc.	%
Canid	17	7.4			17	6.7
Felid						
Rodent						
Canid and rodent	2	0.9			2	0.8
Part digested						
Unmodified	210	91.7	23	100.0	233	92.5
Total	229		23		252	

Table 6. Numbers of identified fragments (NIF), Epiphyses only (EPIF) and minimum numbers of individuals (MNI) by major domesticate and phase

LIA	All except articulated						Articulated						All					
	NIF	%	Epiph.	%	MNI	%	NIF	%	Epiph.	%	MNI	%	NIF	%	Epiph.	%	MNI	%
Cattle	196	31.0	54	28.9	8	16.7	6	6.4	2	3.4	1	202	27.8	56	22.9	9	16.7	
Sheep	373	58.9	104	55.6	34	70.8	72	76.6	47	81.0	3	445	61.2	151	61.6	37	68.5	
Pig	48	7.6	19	10.2	4	8.3						48	6.6	19	7.8	4	7.4	
Equid	9	1.4	9	4.8	1	2.1	16	17.0	8	13.8	1	25	3.4	17	6.9	2	3.7	
Dog	7	1.1	1	0.5	1	2.1			1	1.7	1	7	1.0	2	0.8	2	3.7	
Total	633		187		48		94		58		6	727		245		54		

ERB	All except articulated						Articulated						All					
	NIF	%	Epiph.	%	MNI	%	NIF	%	Epiph.	%	MNI	%	NIF	%	Epiph.	%	MNI	%
Cattle	151	31.6	43	41.7	8	22.9	3	1.7	1	1.6	1	154	23.5	44	26.8	9	22.5	
Sheep	272	56.9	33	32.0	21	60.0	8	4.5	11	18.0	1	280	42.8	44	26.8	22	55.0	
Pig	30	6.3	13	12.6	2	5.7						30	4.6	13	7.9	2	5.0	
Equid	17	3.6	13	12.6	2	5.7	5	2.8	4	6.6	1	22	3.4	17	10.4	3	7.5	
Dog	8	1.7	1	1.0	2	5.7	160	90.9	45	73.8	2	168	25.7	46	28.0	4	10.0	
Total	478		103		35		176		61		5	654		164		40		

LRB	All except articulated						Articulated						All					
	NIF	%	Epiph.	%	MNI	%	NIF	%	Epiph.	%	MNI	%	NIF	%	Epiph.	%	MNI	%
Cattle	102	31.8	35	46.1	5	18.5	2	9.1	1	10.0	1	104	30.3	36	41.9	6	20.7	
Sheep	186	57.9	30	39.5	19	70.4	18	81.8	9	90.0	1	204	59.5	39	45.3	20	69.0	
Pig	10	3.1	2	2.6	1	3.7						10	2.9	2	2.3	1	3.4	
Equid	13	4.0	5	6.6	1	3.7	2	9.1				15	4.4	5	5.8	1	3.4	
Dog	10	3.1	4	5.3	1	3.7						10	2.9	4	4.7	1	3.4	
Total	321		76		27		22		10		2	343		86		29		

Table 7. Minimum Number of Individuals, using different methods

Cattle	LIA		ERB		LRB	
	ALL exc.	ART.	ALL exc.	ART.	ALL exc.	ART.
Longbone	5	1	4	1	4	1
Prox/dist mandible			7		5	
dP4/M3	8		8		4	
Teeth <i>in situ</i>	6		2		4	

Sheep	LIA		ERB		LRB	
	ALL exc.	ART.	ALL exc.	ART.	ALL exc.	ART.
Longbone	8	3	3	1	3	1
Prox/dist mandible		1	16		5	
dP4/M3	34	1	21	1	19	
Teeth <i>in situ</i>	8		3		1	

Pig	LIA		ERB		LRB	
	ALL exc.	ALL exc.	ALL exc.	ALL exc.	ALL exc.	ALL exc.
Longbone	2	2	1			
Prox/dist mandible	2	1				
dP4/M3	2	2				
Teeth <i>in situ</i>	4	2				

Equid	LIA		ERB		LRB	
	ALL exc.	ART.	ALL exc.	ART.	ALL exc.	ART.
Longbone		1	2	1	1	
Prox/dist mandible	1		1			
dP4/M3	1				1	
Teeth <i>in situ</i>	1					

Dog	LIA		ERB		LRB	
	ALL exc.	ART.	ALL exc.	ART.	ALL exc.	ART.
Longbone	1		1	2	1	
Prox/dist mandible	1		1	2	1	
dP4/M3			2			
Teeth <i>in situ</i>		1		1	1	

Table 8. Sheep mandible wear stages following Payne (1973 and 1987)

LIA	Def.	Attrib.	Accum.	Accum. %	Range	Range	Accum. min. %	Accum. max. %	Suggested age
A	1		1	2.6			2.0	2.0	0-2 mnths
B	1		2	5.3	BC	1 BCD	4.1	12.2	2-6 mnths
C		6	8	21.1			24.5	24.5	6-12 mnths
D	5		13	34.2		DEF	34.7	36.7	1-2 yrs
E	11	2	26	68.4		EFG	63.3	65.3	2-3 yrs
F	5		31	81.6		FGH	75.5	85.7	3-4 yrs
G	5	1	37	97.4			98.0	98.0	4-6 yrs
H	1		38	100.0			100.0	100.0	6-8 yrs
I			38	100.0			100.0	100.0	8-10 yrs
Total	29	9				1	10		

ERB	Def.	Attrib.	Accum.	Accum. %	Range	Range	Accum. min. %	Accum. max. %	Suggested age
A									0-2 mnths
B	1(1)		1	4.5	BC	2 BCD		9.4	2-6 mnths
C	3	4	8	36.4			31.3	31.3	6-12 mnths
D	3		10	45.5			40.6	40.6	1-2 yrs
E	6		16	72.7		EFG	59.4	68.8	2-3 yrs
F	3		19	86.4		FGH	78.1	90.6	3-4 yrs
G	3		22	100.0			100.0	100.0	4-6 yrs
H			22	100.0			100.0	100.0	6-8 yrs
I			22	100.0			100.0	100.0	8-10 yrs
Total	18(1)	4				2	8		

LRB	Def.	Attrib.	Accum.	Accum. %	Range	Range	Accum. min. %	Accum. max. %	Suggested age
A									0-2 mnths
B									2-6 mnths
C	1	1	2	14.3			9.5	9.5	6-12 mnths
D	2		4	28.6			19.0	19.0	1-2 yrs
E	6	1	11	78.6		EFG	52.4	57.1	2-3 yrs
F	2		13	92.9		FGH	66.7	95.2	3-4 yrs
G			13	92.9			95.2	95.2	4-6 yrs
H	1		14	100.0			100.0	100.0	6-8 yrs
I			14	100.0			100.0	100.0	8-10 yrs
Total	12	2				7			

NB. Articulated specimens in parenthesis, excluded from calculations

Table 9. Sheep epiphyseal fusion data following Silver (1969), excluding articulated specimens

Phase Element/Fusion	LIA			ERB			LRB		
	U	F	F%	U	F	F%	U	F	F%
6-8 mnths									
Scapula		1	100.0					1	100.0
10 mnths									
Humerus D	1	5	83.3	1	2	66.7		1	100.0
Radius P	2	6	75.0	1	3	75.0	1	1	50.0
Total/Average	3	11	78.6	2	5	71.4	1	2	66.7
13-16 mnths									
1st phalange	6	10	62.5		2	100.0			
2nd phalange		3	100.0					1	100.0
Total/Average	6	13	68.4		2	100.0		1	100.0
1.5-2 yrs									
Tibia D		2	100.0		3	100.0	1	2	66.7
Metapodial D	10	4	28.6	1			2	1	33.3
Total/Average	10	6	37.5	1	3	75.0	3	3	50.0
2.5-3 yrs									
Radius D	4						3		
Ulna		1	100.0						
Femur P	2	1	33.3		2	100.0		1	100.0
Total/Average	6	2	25.0		2	100.0	3	1	25.0
3-3.5 yrs									
Humerus P	1								
Femur D	5			1			1		
Tibia P	3			2			1		
Calcaneum		2	100.0	1			1		
Total/Average	9	2	18.2	4			3		

NB. Metatarsal 20-28 mnths

Table 10. Sheep anatomical representation by phase

Phase/ Articulation/ Element	LIA		ART.	ERB		ART.	LRB		ART.
	ALL exc.	%		ALL exc.	%		ALL exc.	%	
Horncore	1	2.2	3	2	5.6		2	9.1	
Skull	16	34.8	2	13	36.1		22	100.0	
Mandible	46	100.0	1	36	100.0	1	19	86.4	
Atlas	1	2.2	3	1	2.8				
Axis	4	8.7	2						
Scapula	3	6.5	1	1	2.8		1	4.5	
Humerus P	7	15.2	3	3	8.3		1	4.5	
Humerus D	18	39.1	6	9	25.0		5	22.7	
Radius P	15	32.6	4	20	55.6	1	9	40.9	
Radius D	15	32.6	4	14	38.9		11	50.0	
Ulna	4	8.7	2	2	5.6		1	4.5	
Metacarpal P	20	43.5	4	8	22.2	2	11	50.0	2
Metacarpal D	23	50.0	4	12	33.3	2	12	54.5	2
Pelvis	6	13.0	3	4	11.1		3	13.6	
Femur P	6	13.0	3	8	22.2		1	4.5	
Femur D	7	15.2	1	6	16.7		2	9.1	
Patella									
Tibia P	21	45.7	3	9	25.0		8	36.4	
Tibia D	31	67.4	1	29	80.6	1	18	81.8	
Astragalus			2				1	4.5	
Calcaneum	2	4.3		1	2.8				
Navicular cuboid							2	9.1	
Metatarsal P	27	58.7	6	17	47.2	2	8	36.4	
Metatarsal D	26	56.5	6	12	33.3	2	9	40.9	
1st phalange	4	8.7	2	1	2.8	1	1	4.5	1
2nd phalange									
3rd phalange							1	4.5	2

Table 11. Cattle mandible wear stages following Grant (1982)

LIA	Def.	Attrib.	Range	Range	Suggested age
1-5			1-10	2 1-15	
6-10			6-15	6-20	<6 mnths
11-15			11-20	11-25	
16-20			16-25	6-25	
21-25			21-30		
26-30		1	26-35	26-40	2-2.5 yrs
31-35		1	31-40		2-3 yrs
36-40			36-45	36-50	3
41-45	2	1	41-50	2 41-55	
46-50	1		46-55		
Total	3	3		4	3

ERB	Def.	Attrib.	Range	Range	Suggested age
1-5		1	1-10	1-15	
6-10		2	6-15	6-20	<6 mnths
11-15			11-20	11-25	
16-20			16-25	6-25	
21-25			21-30		
26-30			26-35	26-40	2-2.5 yrs
31-35			31-40		2-3 yrs
36-40	1		36-45	36-50	3
41-45	1	1	41-50	1 41-55	
46-50		1	46-55		
Total	2	2		1	3

LRB	Def.	Attrib.	Range	Range	Suggested age
1-5			1-10	1-15	
6-10			6-15	6-20	<6 mnths
11-15			11-20	11-25	
16-20		1	16-25	1 6-25	
21-25			21-30		
26-30			26-35	26-40	2-2.5 yrs
31-35			31-40		2-3 yrs
36-40			36-45	36-50	1
41-45			41-50	41-55	
46-50			46-55	1	
Total		1		2	1

Table 12. Cattle epiphyseal fusion data following Silver (1969), excluding articulated specimens

Phase Element/Fusion	LIA			ERB			LRB		
	U	F	F%	U	F	F%	U	F	F%
7-10 mnths									
Scapula	1	2	66.7		1	100.0		4	100.0
12-16 mnths									
Humerus D	1	3	75.0		4	100.0			
Radius P		3	100.0		2	100.0			
1st phalange		2	100.0		8	100.0		4	100.0
2nd phalange					2	100.0		4	100.0
Total/Average	1	8	88.9		16	100.0		8	100.0
2-3 yrs									
Tibia D		2	100.0		3	100.0			
Metapodial D	2	6	75.0		5	100.0		3	100.0
Total/Average	2	8	80.0		8	100.0		3	100.0
3.5-4 yrs									
Humerus P					2	100.0			
Radius D	1	2	66.7	2			1		
Ulna									
Femur P				1					
Femur D	1	1	50.0		2	100.0	1		
Tibia P		2	100.0		1	100.0			
Calcaneum		1	100.0					1	100.0
Total/Average	2	6	75.0	3	5	62.5	2	1	33.3

Table 13. Cattle anatomical representation by phase

Phase/ Articulation/ Element	LIA		ERB		LRB		ART. N
	ALL exc.		ALL exc.		ALL exc.		
	N	%	N	%	N		
Horncore							
Skull	13	81.3	6	26.1	5		
Mandible	16	100.0	12	52.2	8		
Atlas			2	8.7	1		
Axis	1	6.3					
Scapula	8	50.0	5	21.7	6		
Humerus P	1	6.3	23	100.0	2		
Humerus D	5	31.3	5	21.7	2		
Radius P	2	12.5	2	8.7	2		1
Radius D	5	31.3	2	8.7	2		1
Ulna	3	18.8	2	8.7	1		1
Metacarpal P	6	37.5	3	13.0	6		
Metacarpal D	7	43.8	2	8.7	3		
Pelvis	3	18.8	3	13.0	3		
Femur P	1	6.3	1	4.3			
Femur D	1	6.3	1	4.3	1		
Patella	1	6.3					
Tibia P	4	25.0	6	26.1			
Tibia D	2	12.5	8	34.8	2		
Astragalus	2	12.5	2	8.7	2		
Calcaneum	5	31.3	2	8.7	3		
Navicular cuboid							2
Metatarsal P	7	43.8	5	21.7	3		
Metatarsal D	7	43.8	9	39.1	1		
1st phalange	1	6.3	2	8.7	4		
2nd phalange	1	6.3	1	4.3	1		
3rd phalange	1	6.3	1	4.3			

Table 14. Pig mandible wear stages following Payne (1973 and 1987)

LIA	Def.	Attrib.	Range	Range	Suggested age
1-5			1-10	1	<6 mnths
6-10			6-15		<12 mnths
11-15			11-20	11-35	3 <15 mnths
16-20			16-25		c. 15 mnths
21-25			21-30	21-50	1 <2 yrs
26-30			26-35		
31-35			31-40		>2 yrs
36-40			36-45		
41-45			41-50		
46-50			46-55		
Total				1	4

ERB	Def.	Attrib.	Range	Range	Suggested age
1-5			1-10	2	<6 mnths
6-10			6-15		<12 mnths
11-15			11-20	11-35	1 <15 mnths
16-20			16-25		c. 15 mnths
21-25			21-30	21-50	<2 yrs
26-30			26-35		
31-35			31-40		>2 yrs
36-40			36-45		
41-45			41-50		
46-50			46-55		
Total				2	1

Table 15. Pig epiphysial fusion data following Silver (1969), excluding articulated specimens

Phase Element/Fusion	LIA			ERB		LRB	
	U	F	F%	U	F	U	F
1 yr							
Scapula	1				1		
Humerus D	1						
Radius P					2		
2nd phalange	1	1	50.0				
Total/Average	3	1	25.0		3		
2-3 yrs							
Tibia D				1			
Calcaneum				1			
Metapodial D	2				1		
1st phalange	2					1	
Total/Average	4			2	1	1	
3.5-4 yrs							
Humerus P	1						
Radius D							
Ulna				1		1	
Femur P	1						
Femur D							
Tibia P				1			
Total/Average	2			2		1	

Table 16. Pig anatomical representation by phase

Phase/ Articulation/ Element	LIA	ERB	LRB
	ALL exc. N	ALL exc. N	ALL exc. N
Skull	1	1	
Mandible	7	4	1
Atlas	1		
Axis			
Scapula	4	2	1
Humerus P	1		
Humerus D	3		
Radius P		1	
Radius D		1	
Ulna	1		1
Metacarpal P	1	1	
Metacarpal D	1	1	
Pelvis	1	1	
Femur P	1		
Femur D	1		
Patella			
Tibia P	2	2	2
Tibia D		1	1
Astragalus	2		
Calcaneum	1	1	
Navicular cuboid			
Metatarsal P	1		
Metatarsal D	1		
1st phalange	1		1
2nd phalange	1		
3rd phalange			

Table 17. Equid epiphysial fusion data following Silver (1969), excluding articulated specimens

Phase Element/Fusion	LIA		ERB			LRB	
	U	F	U	F	F%	U	F
1 yr							
Scapula				1	100.0		1
1st phalange				1	100.0		
2nd phalange							
<i>Total/Average</i>				2	100.0		2
15-18 mnths							
Humerus D				2	100.0		
Radius P	1			2	100.0		
Metapodial D		1		1	100.0		1
<i>Total/Average</i>	1	1		5	100.0		1
20-24 mnths							
Tibia D	1			1	100.0		
3-3.5 yrs							
Humerus P				1	100.0		
Radius D				2	100.0		
Ulna							
Femur P							1
Femur D				1	100.0		
Tibia P	1						
Calcaneum							
<i>Total/Average</i>	1			4	100.0		1

NB. Scapula 12 mnths; Metatarsal 16-20 mnths; 1st phalange 13-15 mnths; 2nd phalange 9 mnths

Table 18. Equid anatomical representation by phase

Phase/ Articulation/ Element	LIA		ERB		LRB	
	ALL exc. N	ART.	ALL exc. N	ART.	ALL exc. N	
Skull			1		1	
Mandible	1		1		1	
Atlas						
Axis						
Scapula					1	
Humerus P		1	2			
Humerus D		1	2			
Radius P	1	1	2			
Radius D	1	1	2		2	
Ulna		1				
Metacarpal P	1	1		1	1	
Metacarpal D	1	1	1	1	1	
Pelvis			1			
Femur P	1					
Femur D	1		1			
Patella						
Tibia P	1		1			
Tibia D	1		2			
Astragalus	2					
Calcaneum						
Navicular cuboid						
Metatarsal P	1			1		
Metatarsal D	1		1	1		
1st phalange		1	1		1	
2nd phalange		1				
3rd phalange		1				

Table 19. Dog anatomical representation by phase

Phase/ Articulation/ Element	LIA	ERB	LRB	
	ALL exc. N	ALL exc. N	ART. N	ALL exc. N
Skull	1	1	1	
Mandible	1	1	4	3
Atlas				
Axis		1		
Scapula			2	
Humerus P			3	1
Humerus D			3	1
Radius P	1		3	1
Radius D	1		3	
Ulna		1	2	1
Metacarpal P			1	
Metacarpal D			1	
Pelvis		1	4	
Femur P			3	
Femur D	1		3	
Patella				
Tibia P	1	1	3	
Tibia D	1	1	3	
Astragalus			2	
Calcaneum			2	
Navicular cuboid				
Metatarsal P			2	
Metatarsal D			2	
1st phalange				
2nd phalange				
3rd phalange			1	

5.5 Small mammal bones: data by Jim Williams

Table 1. Small mammal bones from Grateley.

Species code: 20 = indet. Rodentia; 8 = field vole

SITE	GR99	GR98	GR99	GR99	GR98	GR99	GR99	GR99	GR99		
CONTEXT	F787 (1)	F735 (2)	F749/2 (2)	F826 (7)	F655 (2)	F793 (15)	F793 (15)	F793 (15)	F812 (7)		
SAMPLE	3140										
SPECIES	20	20	20 large	20	20	20	20 small	8	20		
No. of bones	1	1	1	1	1	6	2	21	1		
							shrew?				
Right mandible											
R M ₁											
R M ₂											
R M ₃											
Left mandible											
L M ₁									1		
L M ₂									1		
L M ₃									1		
Mandibular incisors											
								1			
Right maxilla											
								2			
R M ¹									1		
R M ²									2		
R M ³									2		
Left maxilla											
								2			
L M ¹									2		
L M ²									1		
L M ³									1		
Maxillary incisors											
								4			
Scapula											
Ulna							1				
Radius											
Humerus											
Pelvis				1				1			
Femur	1	1	1				3				
Tibia					1	2	1				