## APPENDIX 1  - ANIMAL BONE

**1.1**      **Animal Bone**

*by Julie Hamilton*

*Introduction*

1.1.1    A total of 2597 fragments of bone were recovered by hand from 116 contexts during watching brief fieldwork at Bower Road. A further 403 (280 g) fragments were recovered from environmental samples, sieved through meshes of 10 and 4 mm.

1.1.2    The animal bone was collected in accordance with the Landscape Zone Priorities and Fieldwork Event Aims for the site, which are set out in section 2 of the main report, above. The material was recovered in order to provide data relating to change in landscape organisation over time, especially at the late Iron Age/Roman transition, and to provide evidence of the economy and environment of the site at this time.

*Methodology*

1.1.3    Bones and teeth were identified using a comparative collection and standard references such as Schmidt (1972) and Hillson (1992). The assemblage was recorded on a computer spreadsheet (Excel) allowing details of context, species, element, side, completeness, age/sex data, pathology, measurements, alteration and condition to be recorded for each fragment; numbers of unidentified fragments and weights per context were also recorded. Total fragment numbers and, where useful, minimum numbers of individuals (based on the commonest element, with side taken into account, and fusion state for long bones) were calculated from these records. Ageing of domestic animals followed Silver (1969), Payne (1973, 1987), Grant (1982), and Levine (1982), sheep and goat bones were distinguished according to Boessneck (1969), and cattle horn cores were classified following Armitage and Clutton-Brock (1976) and Armitage (1982). Where no goat was positively identified, sheep/goat is referred to as sheep. Measurements followed von den Driesch (1976). Shoulder heights were calculated according to von den Driesch and Boessneck (1974). Small mammal and bird bones were noted but not identified to species.

1.1.4    A total of 1561 fragments (9602 g) of bone hand-recovered from 60 contexts were examined in detail. Contexts for detailed examination were selected based on their archaeological value (i.e. secure contexts that could be placed within the site phasing), potential information to be gained from the bone assemblage, and to obtain as much information as possible about phases of interest. For the purposes of assessment, data were grouped into phases: phase 1 (LIA), Roman period phases 2 (early Roman and pre- posthole building ditches), 3 (posthole building and associated ditches, Roman period to AD 200) and 4 (later phase of posthole building, Roman period to AD 400). There may be some overlap between these, especially phases 3 and 4. Contexts that did not fit this phasing were grouped as phase X (656,549,552,695,712).

*Quantification*

1.1.5    A total of 2597 fragments of bone were recovered by hand from 116 contexts. A further 403 (280 g) fragments were recovered from environmental samples, sieved through meshes of 10 and 4 mm.

1.1.6 A total of 1561 fragments (9602 g) of bone hand-recovered from 60 contexts were examined in detail. Of these, 240 (6837 g) from 47 contexts were identified to species, and there were also 2 bird bones (2 g). In addition, a total of 403 fragments (280 g) of bone from 15 contexts sieved through 10- and 4-mm mesh were examined in detail. Of these, 82 fragments from 12 contexts were identified to species (48) or group (33 small mammal/amphibian, 1 fish).

1.1.7 The number of hand-recovered fragments identified to species is summarised by context and phase in Table 6.1 and by percentage in Tables 6.2 and 6.3. Table 6.4 shows the number of fragments identified to species or group from the sieved environmental samples. Fragment types by phase are shown in Table 6.5, and measurements of the dog skeleton in context 557 are shown in Table 6.6.

1.1.8 There were only 2 identified fragments from phase 1 (LIA) and only 7 from contexts that did not fit into the phasing, grouped as phase X (656,549,552,695,712). Discussion therefore concentrates on phases 2-4. Species present were sheep, cattle, pig, horse, dog (phases 2 & 3 only) and red deer (Cervus elaphus), and 2 bird bones yet to be identified to species. In addition, there was a roe deer (Capreolus capreolus) antler fragment in a sample from phase 4.

1.1.9 Fragment numbers are too low for detailed interpretations and comparisons of assemblage attributes such as frequencies of species and skeletal elements: this should be borne in mind in the following sections.

Phase 1: LIA

1.1.10 One sheep innominate fragment and one cattle tooth were identified.

Phase 2: pre posthole building and early Roman period

1.1.11 Cattle predominates, followed by pig, horse and sheep. Pig seems commoner than sheep, and horse is commoner in this phase than any other. There were also 2 dog teeth.

1.1.12 There are elements from all parts of the cattle skeleton (vertebrae and ribs were not identified to species, but some "large" vertebrae are undoubtedly cattle). Butchery marks were seen on 2 out of 15 (13%, excluding teeth) cattle fragments (meat-stripping cuts on 2 humeri, one of which had also been chopped through the elbow joint), and also on a large longbone fragment (cuts) and a large rib (chopped). One pair of mandibles was from a mature animal with heavily worn teeth, and one mandible from a juvenile (1-2 years); one maxillary tooth row was from a 2- to 3-year-old animal; one 2nd phalanx was fused proximally. This is not enough to deduce an age structure, but suggests the presence of cattle of a range of ages at the site. One cattle naviculocuboid showed slight degenerative changes of the proximal articular surface, maybe related to heavy work as a draught animal.

1.1.13 5 out of a total of 7 sheep fragments were from the skull region including 2 teeth, and the 2 others were from distal limbs: this could be because of poor preservation. No butchery was seen. There were 2 stageable mandibles, from sheep 2-3 and 3-4 years old. One calcaneum was from an animal <2.5-3 years old. This is not enough for an age profile, and would be compatible with use of sheep for meat (slaughtered young) and/or secondary products e.g. wool (slaughtered older).

1.1.14 Most of the pig fragments are from mandible/teeth, perhaps because of relatively poor preservation. One pig femur (of 2 limb bone fragments) had a cut mark. One mandible was from a young (1-1.5 years) male, and the femur was unfused at both ends, i.e. <3.5-4 years. The lack of any old animals suggests the use of pigs for meat.

1.1.15 8/11 horse fragments were from the skull including 5 teeth (from 4 contexts, 2 groups), and the remaining radius+ulna and phalanx 1, from a skeletally mature animal, were all from the same context. No butchery was seen.

1.1.16 2 dog teeth were found.

1.1.17 The 1 bird bone should be identified to species if possible.

Phase 3: posthole building and Roman period to AD 200

1.1.18 Cattle predominate with relatively few sheep and pig fragments. There was one horse tooth, a partial dog skeleton from a pit (554), and a group of worked red deer antler fragments and 2 limb bones from a ditch (428), as well as a metacarpal from another ditch (547).

1.1.19 All parts of the skeleton are represented, with more fragments from the appendicular skeleton than skull/teeth. Butchery was seen on 5/16 (31%, excluding teeth) cattle fragments (a horncore sawn through at base, an innominate with chop, cut and scrape marks, two scapulae chopped and cut, and a mandible with cuts). The horncore suggests horn working, while the other marks can be explained by carcass division and meat stripping. There was also a large rib chopped through. 1 mandible was from an animal 2-3 years old at death, and the sawn horncore was probably from a juvenile male (about the same age). All epiphyses were fused: since most would have been fused by 1-2 or 2-3 years this is not very informative, but one was late-fusing (3.5-4 years) so at least some older animals were present. Exploitation of cattle for meat and horn is certainly indicated.

1.1.20 There were only 4 sheep fragments: a distal tibia from a skeletally mature animal (>18-24 months), a metacarpal scrap, a mandible from an animal ≥4 years old, and a tooth. No butchery was seen.

1.1.21 There were only 2 pig fragments (1 mandible, 1 tooth).

1.1.22 There was 1 horse tooth.

1.1.23 Most of the red deer fragments were in one context (ditch 428, context 429). The 13 antler pieces were probably waste from antler working and showed saw and trimming marks. In the same context were a mandible and a radius fragment, and it is likely that some or most of the shattered long bone in the same context was also from red deer, and there was also a metacarpal from a ditch (547, context 587). This is not just imported antler for working: it is likely that red deer was present in the neighbourhood of the site.

Phase 4: later phase of posthole building and Roman period to AD 400

1.1.24 Species proportions cannot be meaningfully estimated because most of the bone comes from clear groups in one pit (242, contexts 243, 250) (the cattle skeletons, sheep skull, pig teeth and skull and mandible fragments) of associated fragments. The contents of this pit are suggestive of "ritual" depositon.

Pit group 242

1.1.25 The animal bone in the pit comprised the following, listed by species. Material is from contexts 243 and 250 unless otherwise stated.

1.1.26 Most of the skeleton of a calf <7-10 months old, and a few longbone fragments and vertebrae of a foetal calf; both of these may have been deposited complete. There were also fragments of humerus (with meat-stripping marks), metatarsal, calcaneum

and phalanx 1 from older animal(s), and a horncore from a juvenile/subadult animal sawn at the base, probably waste from hornworking.

1.1.27   The skull and mandibles of a male sheep (definitely not goat) 3-4 years old, and the mandible of another sheep of similar age, a tibia fragment and a 2nd phalanx. The horncores of the skull showed grooving/hollowing at the base, especially posterior/laterally. The aetiology is uncertain, but possibly it was caused by some kind of tether or harness.

1.1.28   Pig skull and mandible fragments and teeth (including a right and a left male tusk), possibly all from one individual (around 1 year old at death judging by tooth eruption), and a humerus fragment.

1.1.29   Horse fragments comprising a distal humerus (fused, so >3-3.5 years) and a calcaneum fragment..

1.1.30   A piece of maxilla of a red deer with the permanent premolar2 in place i.e. >2 years old.

1.1.31   A single bird bone (context 250), which should be identified to species if possible.

Other

1.1.32   Cattle fragments were also recovered from the waterhole 372, and fill 732 of pit 731; these included longbone fragments and teeth from at least 2 older animals.

1.1.33   Sheep fragments from waterhole 372 comprised fragments of skull, mandible and humerus. A longbone fragment which may have been from sheep showed signs of a healed fracture.

1.1.34   Pig fragments from other contexts included a first phalanx and a distal radius fragment, both with unfused epiphyses i.e. from young pig(s).

1.1.35   A femur fragment from a horse <3-3.5 years old at death (context 103), and a piece of roe deer antler, sawn at the base (from a >10 mm sample, context 102) were found in waterhole 372.

1.1.36   The partial dog skeleton in the clay-lined pit 554 outside the posthole building (context 557) may well have been whole originally. It was from a skeletally mature individual with heavily worn teeth. Measurements (Table 6.6) indicate a shoulder height of 30-35 cm; this is a small to medium size, common in the Romano-British period but not in the preceding Iron Age (Harcourt 1974).

Phase X: Other contexts

1.1.37   There were 1 sheep, 5 cattle, and 1 pig fragment identified from these contexts.

Samples

1.1.38   The sieved samples cannot be compared directly with the hand-recovered bone, but they provide a useful check on biases. Small mammal/amphibian, fish and roe deer were found only in the sieved samples. Compared to cattle, the proportions of pig and sheep are much higher, pig in the >10 mm and sheep in the 10-4 mm samples. There was also some foetal bone, possibly pig. This suggests that the proportions of smaller species and younger animals in the hand-recovered samples will be underestimates. Without sieving, no fish would have been recovered, and this is a resource that is often ignored simply because the evidence has not been searched for.

1.1.39　In terms of fragment numbers or weights, cattle predominated in all Roman period phases, followed by pig, sheep, dog and horse. In phase 2, pig exceeds sheep, while in phases 3 and 4 sheep exceeds pig. There are also more horse fragments in phase 2. With relatively few fragments, however, interpretation cannot be pushed too far, particularly as there were some clear groups of associated bone which could distort species proportions. Most of the dog fragments came from one individual (pit 554, phase 3) and there was also most of the skeleton of a calf in a pit (242, phase 4). Other obvious groups include a fragmented skull of a sheep (and possibly of a pig) and some foetal cattle bones in the same pit (242, phase 4) and pig mandible fragments and teeth in a ditch (366, phase 2). These may distort the species proportions as indicated by fragment numbers or weights to some extent, but if all of them are removed from the calculations the rank order is similar. There are too few fragments for MNI calculations to be useful.

1.1.40　Deposition of whole/part carcases differs from butchery/domestic waste disposal, but is not necessarily "ritual" -- the animals may have been diseased or not eaten for some other reason (e.g. the dog in pit 554). A fragmentary skull may represent a "ritual" deposit, or be discarded butchery waste. It is therefore difficult to find any consistent way to distinguish refuse from ritual. The assemblage in pit 242, which included pottery, a glass vessel and human remains, does suggest something other than ordinary waste disposal, but also included elements indistinguishable from this.

1.1.41　Taken at face value, the results suggest that cattle supplied at least three-quarters of the meat, with pig and sheep making up most of the rest. There is nothing to indicate that horse and dog were eaten, but they were clearly present at the site. Most of the red deer fragments were in one group of antler pieces (429, ditch, phase 3), probably waste from working, but there were also other skeletal elements, so it is possible that its meat was eaten, if infrequently. Roe deer is represented by a single worked antler fragment (from a sieved sample), which may have been imported as raw material for working, so it does not necessarily indicate that roe deer was present nearby.

1.1.42　Apart from meat and carcass by-products (skin, antler, horn, bone, fat etc.), animals could supply secondary products such as milk (cattle, possibly sheep), wool (sheep) and be used for traction/transport (cattle, horses). Dogs could be pets or guard dogs, or be used in herding or hunting.

1.1.43　It was not possible to construct formal age-at-death profiles. For cattle, there was a range of ages from foetal to old, typical of a "producer" site. There was no evidence of young sheep, but this could be accounted for by preservation bias; it seems likely that secondary products (wool) were important since most ageable sheep were 3-4 years old or older. Pigs, on the other hand, were generally young, suggesting rearing for meat.

1.1.44　Though scanty, the animal bone evidence suggests that this was a producer site, where cattle, sheep and pigs were reared both for consumption and for secondary products (wool, milk) and uses (traction). Horse and dog were both present, and red and possibly roe deer may have been hunted.

*Provenance*

1.1.45　There were no clear differences between phases or feature types in the condition of the bone. Overall, about 4% of fragments showed traces of burning, and there was a concentration of burnt fragments in a boundary ditch (group 169, context 487). Surface erosion was noted on c. 20% of fragments overall, with concentrations in a

boundary ditch (group 169, context 367) and a pit (242, context 243). About 3% of fragments overall had been gnawed by carnivores, probably dogs. Butchery marks were seen on about 5% of identified fragments (not counting the sawn antler deposit), or 1% of fragments overall. The rather low overall percentage of identified fragments (15%) and the relatively high proportion of loose teeth among the identified fragments (around 30% overall) reflects the generally fragmentary nature of the bone.

1.1.46    Comparison of the hand-collected bone with the sieved samples clearly shows that proportions of smaller/younger animals are underestimated in the hand-collected sample, and some species (notably roe deer, and fish) would have been missed altogether without sieving. Identification of small mammal/amphibian bone from the sieved samples to species could potentially contribute environmental information.

*Conservation*

1.1.47    Storage in boxes is satisfactory.

*Comparative material*

1.1.48    General reviews of the Roman period are given by King (1978, 1984). There have been many excavations of Roman villas in Kent, unfortunately mostly with little or no study of the animal bones (but see Philp et al. 1991, 1999).

1.1.49    In general, the low potential of the assemblage for further work (see below) suggests that there is little scope for comparative zoo-archaeological work.

*Potential for further work*

1.1.50    The following section discusses potential for further work in the light of the Landscape Zone Priorities and Fieldwork Event Aims.

1.1.51    The animal bone material as it stands will not yield much more information.

1.1.52    The information contained in the present assessment could, however, usefully be included with data from other sites along the route of the CTRL (for example, Thurnham Villa) if an overview of Romano-British agriculture in Kent is proposed in the context of study of the landscape, environment and economy over time. The information in this assessment also helps to characterise the nature of farming activity at the site, in general terms, and should be taken into account during any further analytical or interpretative work. As such, it would be worth reporting in any final publication.

1.1.53    The animal bone associated with possible ritual deposits is of considerable interest in terms of understanding ritual and ceremonial activity during the Roman period, and the results of this assessment should be taken into account in any further analysis of these deposits. The animal bone associated with human remains in context 367 (ditch group 169) should be identified to species to assist in analysis of ritual practices in the Roman period.

1.1.54    The small mammal bone recovered can contribute further to environmental information in the form of specific ecological indicators. The bird and fish bones would also contribute to a better understanding of the economy (diet, status of the inhabitants). Therefore, it would be worth identifying to species.

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Table 6.1: Number of identified fragments by context, feature interpretation and phase

| Context | Interpre-tation | Phase | N identified fragments | | | | | | | Count | Weight (g) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Sheep | Cattle | Pig | Horse | Dog | Bird | Deer | | |
| 492 | Ditch | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 493 | Ditch | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 2 |
| 117 | Ditch | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 5 |
| 141 | Ditch | 2 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 3 | 32 |
| 142 | Ditch | 2 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 4 | 44 |
| 144 | Ditch | 2 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 4 | 24 |
| 145 | Ditch | 2 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 3 | 62 |
| 300 | Ditch | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 16 |
| 305 | Ditch | 2 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 3 | 234 |
| 366 | Ditch | 2 | 0 | 2 | 6 | 0 | 0 | 0 | 0 | 8 | 299 |
| 367 | Ditch | 2 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 3 | 310 |
| 380 | Ditch | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 21 |
| 384 | Ditch | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 74 |
| 386 | Ditch | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 22 |
| 388 | Ditch | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 |
| 481 | Ditch | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 4 |
| 482 | Ditch | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 |
| 484 | Ditch | 2 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 4 | 496 |
| 487 | Ditch | 2 | 0 | 2 | 0 | 5 | 0 | 1 | 0 | 8 | 168 |
| 488 | Ditch | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 49 |
| 489 | Ditch | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 112 |
| 124 | Pit | 3 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 4 | 34 |
| 126 | Pit | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 17 |
| 138 | Ditch | 3 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 3 | 217 |
| 139 | Ditch | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 3 | 80 |
| 424 | Posthole | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 |
| 429 | Ditch | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 15 | 16 | 257 |
| 441 | Ditch | 3 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 3 | 114 |
| 462 | Ditch | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 85 |
| 508 | Ditch | 3 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 4 | 363 |
| 515 | Ditch | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 179 |
| 557 | Pit | 3 | 0 | 0 | 0 | 0 | 19 | 0 | 0 | 19 | 87 |
| 567 | Ditch | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 103 |
| 569 | Ditch | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 13 |
| 573 | Ditch | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 15 |
| 587 | Ditch | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 93 |
| 890 | Pit | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 |
| 891 | Pit | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 9 |
| 102 | Waterhole | 4 | 3 | 3 | 1 | 0 | 0 | 0 | 0 | 7 | 81 |
| 103 | Waterhole | 4 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 4 | 459 |
| 243 | Pit | 4 | 7 | 28 | 11 | 1 | 0 | 0 | 0 | 47 | 549 |
| 250 | Pit | 4 | 5 | 35 | 2 | 1 | 0 | 1 | 1 | 45 | 1827 |
| 435 | Burrow | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 28 |
| 732 | Pit | 4 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 8 | 174 |
| 549 | Ditch | X | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 7 |
| 552 | Ditch | X | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 6 |
| 712 | Ditch | X | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 4 | 57 |
| *TOTAL* | | | *29* | *124* | *30* | *15* | *23* | *2* | *17* | *240* | *6839* |

*Table 6.2: Percentage of identified fragments of domestic species by phase*

| Phase | % identified fragments | | | | | Count |
|-------|-------|--------|-----|-------|-----|-------|
|       | Sheep | Cattle | Pig | Horse | Dog |       |
| 1     | 50    | 50     | 0   | 0     | 0   | 2     |
| 2     | 13    | 42     | 21  | 21    | 4   | 53    |
| 3     | 8     | 43     | 4   | 2     | 43  | 49    |
| 4     | 15    | 68     | 15  | 3     | 0   | 110   |
| X     | 14    | 71     | 14  | 0     | 0   | 7     |
| *Total* |     |        |     |       |     | *221* |

*Table 6.3: Percentages of fragment weights of domestic species by phase*

| Phase | Sheep | Cattle | Pig | Horse | Dog | Total (g) |
|-------|-------|--------|-----|-------|-----|-----------|
| 1     | 34    | 66     | 0   | 0     | 0   | 3         |
| 2     | 3     | 59     | 5   | 33    | 0   | 1943      |
| 3     | 3     | 88     | 1   | 1     | 7   | 1350      |
| 4     | 17    | 55     | 5   | 23    | 0   | 3106      |
| X     | 6     | 53     | 41  | 0     | 0   | 117       |
| *Total* |     |        |     |       |     | *6519*    |

*Table 6.4: Number of identified fragments by mesh size and period (sieved samples)*

| Phase | Sheep | Cattle | Pig | Small mammal | Fish | Roe deer | Total |
|-------|-------|--------|-----|--------------|------|----------|-------|
| 2              |    |   |    | 1  |   |   | 1  |
| 3              | 1  | 2 | 7  | 0  | 0 | 0 | 10 |
| 4              | 4  | 2 | 4  | 1  | 0 | 1 | 12 |
| Total, >10 mm  | 5  | 4 | 11 | 2  | 0 | 1 | 23 |
| 3              | 5  |   |    | 14 |   |   | 19 |
| 4              | 17 |   | 5  | 17 | 1 |   | 40 |
| Total, 10-4mm  | 22 | 0 | 5  | 31 | 1 |   | 59 |

*Table 6.5: Fragment types by phase for domestic species*

| | NIFs | | | | | Percentages | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| *Phase 2* | Sheep | Cattle | Pig | Horse | Dog | Sheep | Cattle | Pig | Horse | Dog |
| Scapula, Innominate, Limb | | 3 | 1 | 2 | | 0 | 14 | 9 | 18 | 0 |
| Podial/Metapodial | 2 | 6 | 1 | 1 | | 29 | 27 | 9 | 9 | 0 |
| Phalanges | | 1 | | 1 | | 0 | 5 | 0 | 9 | 0 |
| Vertebrae | | | | | | 0 | 0 | 0 | 0 | 0 |
| Skull/Horncore | 1 | 2 | | 2 | | 14 | 9 | 0 | 18 | 0 |
| Mandible | 2 | 3 | 4 | | | 29 | 14 | 36 | 0 | 0 |
| Teeth | 2 | 7 | 5 | 5 | 2 | 29 | 32 | 45 | 45 | 100 |
| *Phase 2 Total* | *7* | *22* | *11* | *11* | *2* | | | | | |
| *Phase 3* | Sheep | Cattle | Pig | Horse | Dog | Sheep | Cattle | Pig | Horse | Dog |
| Scap, Innom, Limb | 1 | 6 | | | 7 | 25 | 29 | 0 | 0 | 50 |
| Podial/Metapodial | 1 | 3 | | | 1 | 25 | 14 | 0 | 0 | 7 |
| Phalanges | | 4 | | | | 0 | 19 | 0 | 0 | 0 |
| Vertebrae | | | | | 3 | 0 | 0 | 0 | 0 | 21 |
| Skull/H'core/Antler | | 1 | | | | 0 | 5 | 0 | 0 | 0 |
| Mandible | 1 | 2 | 1 | | 2 | 25 | 10 | 50 | 0 | 14 |
| Teeth | 1 | 5 | 1 | 1 | 1 | 25 | 24 | 50 | 100 | 7 |
| *Phase 3 Total* | *4* | *21* | *2* | *1* | *14* | | | | | |
| *Phase 4* | Sheep | Cattle | Pig | Horse | | Sheep | Cattle | Pig | Horse | |
| Scap, Innom, Limb | 3 | 11 | 2 | 2 | | 19 | 15 | 13 | 67 | |
| Podial/Metapodial | | 7 | | 1 | | 0 | 9 | 0 | 33 | |
| Phalanges | 1 | 2 | 1 | | | 6 | 3 | 6 | 0 | |
| Vertebrae | | 40 | | | | 0 | 53 | 0 | 0 | |
| Skull/Horncore | 6 | 6 | 2 | | | 38 | 8 | 13 | 0 | |
| Mandible | 4 | | 3 | | | 25 | 0 | 19 | 0 | |
| Teeth | 2 | 9 | 8 | | | 13 | 12 | 50 | 0 | |
| *Phase 4 Total* | *16* | *75* | *16* | *3* | | | | | | |

*Table 6.6: Dog measurements – skeleton in context 557*

| Element | Measurements (von den Driesch 1976) (mm) | | | | | |
|---|---|---|---|---|---|---|
| Lower 1st molar | GL | GB | | | | |
| | 17.7 | 7.4 | | | | |
| 2nd cervical vertebra | LCDe | LAPa | Bfcr | Bpacd | SBV | Bfcd |
| | 36.7 | - | 24.1 | 21.6 | 18.0 | 13.9 |
| Scapula | SLC | GLP | LG | BG | | |
| | 19.7 | 23.2 | 20.6 | 12.8 | | |
| Humerus | GLC | Dp | SD | Bd | | |
| | 98.0 | 30.1 | 10.5 | 24.1 | | |
| Ulna | DPA | SDO | BPC | | | |
| | 18.4 | 15.8 | 11.5 | | | |
| Tibia | GL | Bp | SD | Bd | | |
| | 102.6 | 21.5 | 10.7 | - | | |

**GL**: greatest length ; **GB**: greatest breadth ; **LCDe**: Greatest length in region of body ; **LAPa**: Greatest length of arch including Process articulares caudales ; **Bfcr**: Greatest breadth of the cranial articular surface ; Bpacd: Greatest breadth across the processus articulares caudales ; **SBV**: Smallest breadth of vertabrae ; **Bfcd**: Breadth of the Caudal articular surface ; **SLC**: smallest length of the colum scapulae ; **GLP**: greatest length of the processors articularis, **LG**: Length of glenoid cavity ; **BG**: Breadth of glenoid cavity ; **GLC**: Greatest length from caput (head) ; **Dp**: Depth of proximal end ; **SD**: Smallest breadth of diaphysis : **Bd**: Greatest breadth of distal end ; **Bp**: Greatest breadth of proximal end ; **DPA**: Depth across the processus anconaeus ; **SDO**: Smallest depth of the Sleoranum ; **BPC**: Greatest breadth across the coronoid process.