Animal Remains from Latton Lands, Latton, Wiltshire (LALA)

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Introduction

A total of 5,058 refitted fragments of animal bone, weighing 64,678g, was recovered during the excavations at Latton Lands. This figure is somewhat misleading, as it includes several animal burials, mostly of Early Iron Age date. Material was recovered from contexts dating from the Late Neolithic through to the Roman period (Table 1). A very small amount of bone was also recovered from the medieval ploughsoil, although most bone came from Early Iron Age to Roman contexts. The bulk of the material was collected through hand recovery, and a small amount (mostly unidentifiable) from wet-sieving using 10mm and 4mm mesh.

Methods

Material was identified using the reference collection of Oxford Archaeology (OA) along with relevant identification manuals (Schmid 1972; Cohen & Serjeantson 1996). Attempts were made to identify all bone fragments to element and species, although ribs, vertebrae (except atlas and axis), and skull fragments were classed as large, medium, or small mammal-sized. Methods of Boessneck (1969) and Payne (1985) were used to distinguish between sheep (*Ovis*) and goat (*Capra)*. Number of Identified Specimens (NISP) was calculated, with partial or complete skeletons counted as one. Bones were recorded using the zoning systems of Serjeantson (1996) for mammals and Cohen and Serjeantson (1996) for birds. This was used in turn to calculate the Minimum Number of Individuals (MNI) and the Minimum Number of Elements (MNE), which was based on counts of fused and unfused epiphyses as well as complete bones.

Measurements, following von den Driesch (1976) for mammals and Cohen and Serjeantson (1996) for birds, were restricted to long bones of mature specimens, along with the first and second permanent molars of pigs, except for cattle burial 3461, where Habermehl (1975) was used to estimate age at death. When possible, pigs were sexed on the basis of their canines (Schmid 1972) with morphological traits of the pelvis used to sex cattle and sheep/goat (Grigson 1982).

Dental eruption/attrition and epiphyseal fusion were used to estimate age at death. Grant's methods (1982) were used for recording tooth wear in cattle, sheep and pig, with wear stages being assigned using standards set out by Halstead (1985) for cattle, Grant (1982) for pigs, and Payne (1973,1987) for sheep. Fusion data was used to assign ages to cattle, sheep and pigs using data given by Getty (1975). Horses were aged through tooth crown heights (Levine 1982). Butchery, burning and gnawing were also recorded. Levels of preservation were recorded using Behrensmeyer's (1978) standards, with 0 signifying excellent preservation, and 5 very poor preservation. Full records will be retained with the site archive.

Taphonomy

Overall, the assemblage was largely derived from pits (47.9%) and ditches (34%), with the remainder coming from a variety of different context types, although there is some variation between phases. In the Early Iron Age, a substantial proportion (40.8%) of bone comes from waterhole feature 3878, whereas in the middle Iron Age the vast majority of faunal remains were recovered from pits and ditches, with more bone coming from pits than any other feature type. In contrast, 66.4% and 84.6% of bone comes from ditches in the Late Iron Age and Roman periods respectively.

Bone condition ranged from very good to poor, with the majority being well preserved. Bones from late Iron Age contexts are in better condition than those from other phases (Table 2) and also seem to be in a less fragmentary state, with 57.2% identified to species, compared to 29.5% for the whole assemblage. This is also supported by the considerably lower proportions of loose teeth in this period (Table 3), with lower amounts of butchery and gnawing (Table 4); the latter suggesting scavengers were largely denied access to the bone.

Species represented

Of the bone recovered from the Late Neolithic/Early Bronze Age enclosure, only four fragments could be identified to species; a cattle skull fragment and maxillary molar, and two sheep mandibular molars. Unsurprisingly, the Iron Age and Roman assemblages consist almost completely of domestic animals, with cattle, sheep/goat,

pig, horse and dog all present. No specimens were identified as goat, and hereafter caprid species are referred to as sheep in this report. Although Johnstone's (2006) methods were used to try and distinguish between horses and other equids, sample sizes meant this was not possible. All equid species are referred to here as horse, although other species, such as mules and donkeys, may also be present.

Cattle dominate the assemblages in all phases, and in the Early-Middle Iron Age and Roman periods, horse bones outnumber those of sheep. Figure 1 presents relative frequencies of the main domesticates (cattle, sheep/goat and pigs) in terms of NISP and MNI. Although horses are well represented, body-part patterns indicate their remains were treated differently from the other species (see below), and so are excluded. Quantification technique has no effect on the ranking of these species, but the actual proportions of cattle decline significantly when using MNI. This is not unusual, and is explicable because bones of larger animals are susceptible to greater fragmentation than smaller taxa, meaning that their numbers are inflated when using NISP. The representation of horses is interesting; at Iron Age sites in Britain sheep and cattle are usually the two most frequent species along with cattle.

Studies have shown that the composition of bone assemblages can vary considerably between different context-types and locations at a site (Maltby 1985; Wilson 1996; Driver 2004). For example, remains of larger species (cattle and horse) are often better represented in the peripheral areas of a site, with smaller mammals more frequent closer to a settlement's main focus. Unfortunately, the nature of the archaeology found during the 2001-2004 excavations at Latton Lands, and relatively small sample sizes makes this difficult to assess. In particular, whilst there is evidence of Early Iron Age domestic occupation, most features from other phases consist of field systems and animal enclosures, with no evidence for structural remains. The bones thus seem to come from areas away from occupation, as is clearly the case for the Roman archaeology, with a scheduled Roman-British site adjacent to the excavation area. While the numbers of bones are insufficient to allow valid comparisons of the assemblages recovered from different locations, it is possible that the dominance of large animals is at least in part a product of the types of contexts excavated. However, there is no clear difference in the species composition within the assemblages excavated from the Middle Iron Age pits and ditches (pits - 55% cattle,

22.8% sheep, 7.6% pig, 14.6% horses; ditches - 57.3% cattle, 25.5% sheep, 5.7% pigs, 11.5% horses). Very few identifiable bones were recovered from Early Iron Age contexts, apart from the waterhole and animal burials, despite this phase having the only clear evidence of domestic occupation and structures. This suggests that, apart from the animal burials (see below), most animal remains from this phase of occupation were deposited off-site, beyond the limits of this excavation.

The only wild species present are red deer, duck and weasel. Of these, the deer and duck are likely to have been food items, while the weasel bone would be more likely to represent a natural death (but see below). Red deer make up a small proportion of the total bone in the Early/Middle Iron Age and Roman periods, but are well represented in relation to pig. In the Middle Iron Age, all remains of wild species, apart from one red deer fragment, came from pit fills. The duck bone (a metatarsal) came from a species comparable in size to teal (*Anas crecca*). The weasel bone, a tibia, was recovered from the fill of Pit 3869, which held burnt material from iron working, and a neonatal human burial (3871) on it base. Other animal remains from this feature were a cattle femur, red deer metacarpal, large-sized mammal vertebra and rib, and unidentifiable fragments.

Ageing

Cattle

Due to small sample sizes, epiphyseal fusion data for cattle have been pooled by phase. Although the samples are small, there are some interesting differences between the phases. Unfused pelves in both the Early and Middle Iron Age indicate the presence of juvenile animals in both periods. However, there would seem to be a trend towards later slaughter of cattle in the Early Iron Age, with 78% of animals still alive at 36-48 months, in contrast to 57% in the Middle Iron Age. Unfortunately, there is insufficient fusion data for the Late Iron Age, although 71% of animals were still alive at 24-36 months. In contrast, there are no foetal/neonatal bones in the Roman period, and it would seem that animals were being kept to older ages than before, with 88% still alive at 36-48 months. However, skeletal elements of immature animals tend to be more porous than skeletally mature animals. The greater the porosity of bone

tissue, the greater the susceptibility of that tissue to chemical degradation, weathering and other taphonomic processes (Lyman 1994:418), and it is probable that younger animals are under-represented in the assemblage. In contrast, tooth enamel, with its high density and low porosity is the most resistant skeletal tissue, frequently surviving where bones do not, and dental eruption and attrition may be considered a better guide to cattle mortality at Latton Lands.

Having said this, the dental data largely support the picture suggested by epiphysial fusion (Figure 2). In summary, it would seem that there is a shift between the Early and Middle Iron Age towards the culling of cattle at younger ages, continuing into the Late Iron Age, before a shift towards older cattle in the Roman period.

Sheep/goat

Epiphysial fusion and dental data are insufficient to allow inter-period comparisons to be made. Dental attrition data can be seen in Table 7. What can be said is that no animals from the two earliest wear stages are represented, except for one mandible aged 2-6 months old from the Late Iron Age, and in all Phases, most sheep are dead by Stage E (3-4 years). Far more sheep mandibles and teeth were recovered from the Middle Iron Age occupation than other periods, indicating a peak killing of animals at Stage D (2-3 years), and the culling of prime meat animals. In contrast to dental data, epiphysial fusion, where available, indicates the presence of younger animals. For the Middle Iron Age, an unfused 2nd phalanx and unfused distal humerus are from animals aged less than 5-7 months and 3-4 months old respectively, and for the Late Iron Age, an unfused scapula was from a sheep/goat less than 5 months old. Given the usual better preservation of teeth compared to bone, the absence of teeth from younger animals is odd, and will be considered further below.

Pigs

Very little ageing data is available for pigs. In the Early Iron Age, an unfused distal humerus and unfused proximal ulna came from animals less than 15 months and 42 months old at death, whilst a mandible was from an animal aged 21-27 months. In the Middle Iron Age, one mandible was aged 2-7 months old, one at 7-14 months and

three at 14-21 months. No mandibles were aged older than 21 months, although a fused proximal tibia came from an animal at least 42 months old at death. No dental data was available for the Late Iron Age; a fused scapula and distal humerus were from animals aged at least 9-12 months and 15-18 months, whilst an unfused calcaneus and proximal femur were both from animals less than 36-42 months old at death. For the Roman period, the only ageable bone was a fused scapula.

Horse

Apart from the juvenile horse burial in pit 2785 (see below), and one unfused distal tibia from Middle Iron Age ditch 3616 (from an animal less than 24 months old at death), all horse bones, from all phases, had fused. This demonstrates a limitation of epiphysial fusion data, as it can only tell us that an animal was at least a certain age – it could have been considerably older. Dental wear data provides more of an insight, with most animals being at least 7 years old at death and some considerably older (Table 8).

Body-part patterns

As samples are relatively small, anatomical representation data was grouped by phase. Cattle are represented by most parts of the body, but it is clear that the denser skeletal elements, in particular the mandible, distal humerus, distal femur, distal tibia, proximal radius and proximal metacarpal are most frequent, in contrast to those of lower density, such as the proximal humerus, proximal femur, proximal tibia, ulna, and distal radius. Although bone condition was, in general, quite good, it would seem that the body-part patterns can be explained by differential preservation.

There is insufficient body-part data for sheep to allow detailed patterns to be observed, but it is significant that the bones present, like cattle, tend to be those with greater density, in particular mandibles, and similar is true for pig. For horses, most parts of the skeleton are present in all phases, although in the Early Iron Age, the metatarsal is the most frequent element. However, this could be explained by differential identification; metapodial fragments being easier to identify than long

bone fragments. There is little difference, in most cases, between representation of bones with greater or lesser density, suggesting that horse bones were less fragmented than those of the other domestic species, with a greater number of complete bones. Certainly, this is indicated by the number of greatest length measurements for horses in Roman contexts (see *Metrics*). This suggests differential treatment of horse carcasses compared to other animals.

Red deer remains from Early Iron Age contexts consist of two pieces of antler, one mandibular molar, a pelvis and tibia, whilst in the Middle Iron Age consist of eleven antler fragments, two mandibular molars, a metatarsal, pelvis, third phalanx and femur (showing a chop mark on the medial side of the distal end of the diaphysis). In the Roman period there are only two fragments of tibia.

Butchery

Very little butchery was noted on the Latton Lands bone. In all phases, only 28 fragments had signs of butchery, of which 19 (68%) were cattle bones. The majority consisted of cut marks, and are characteristic of skinning and dismemberment of the carcass. A fragment of red deer antler from an Early Iron Age context had been chopped longitudinally across its width, providing evidence of craftworking.

Pathology

A small number of pathological finds were recorded in addition to the fractured dog metacarpal from Post hole 3360 (see below), all from Early Iron Age contexts. A cattle metacarpal had well-healed periostitis on its shaft, whilst one large mammal rib seems to have been broken and subsequently remodelled. Perhaps the most interesting pathological specimen was an unshed red deer antler from the fill of Waterhole 3778. Somewhere along its length, the bez tine seems to have been split along its length and rehealed, leaving only around half of the cross-section intact. The antler was fully grown, and it is possible that this pathology was caused by rutting, which usually occurs in late August/September (Hoffman 1995:194).

Metrics

Only a limited amount of measurements could be taken for each species, hindering inter-period and inter-site comparison. A small number of measurements could be taken of cattle tibiae distal breadths, with no size change evident between the Middle and Late Iron Age measurements, and measurements from both within the range for other contemporary sites.

For the Early Iron Age, a cattle metacarpal gave a withers height of 112.5cm, within the range for the period, as was a horse withers height of 125cm, obtained from a metacarpal (Harcourt 1979:153). The dog femur from the partial articulating skeleton provided a height of 50cm, within the range given by Harcourt (1974) and Clark (1995) for the Iron Age. A Middle Iron Age cattle metacarpal came from an animal with a withers height of 101.9cm, and sheep calcaneus from an animal with a 49cm withers height.

A Roman cattle metacarpal was from an animal with a withers height of 119.9cm. Horse wither heights in the Roman period ranged from 130.2-146.5cm, with a mean of 137.2cm.

Articulating remains

Eight sets of articulating remains were recovered in total from Latton Lands, with cattle, horse, dog and sheep represented. Most articulating remains came from the Early Iron Age, all of which were recovered from pit fills, except the partial dog skeleton from Post hole 3360.

Early Iron Age

Four cattle skeletons were recovered, from Early Iron Age Pits 3441 (Skeleton 3442), 3367 (Skeleton 3368), 3460 (Skeleton 3461) and 3907 (Skeleton 3908). Of these, Pits 3367 and 3441 were within one metre of each other, one cattle carcass being tightly fitted into each, suggesting the pits were cut specifically for the remains. Skeleton 3442 had been heavily truncated, with only the skull, vertebrae, some ribs, a right scapula and left humerus still present. A mandibular deciduous fourth premolar from

this animal was unworn, indicating it was only 0-1 month old at death. In the adjacent pit, Skeleton 3368 was substantially complete, and appears to have been deposited whole. All ageing evidence indicated that this animal was a young calf, of less than 7 months old at death. No butchery marks were noted on either skeleton.

Skeleton 3461 was also probably substantially complete when placed, but the posterior half of the body has been truncated. Most of the anterior half is present, and measurements indicate an age of 230-240 days old at death (around 8 months), and again no butchery marks were noted. It was buried around 5m north of a four-posted structure. Skeleton 3908 was complete, and placed tightly into a pit close to roundhouse 3340. No epiphyses had fused, and a deciduous fourth premolar was unworn, indicating an animal of 0-1 month old at death. As with the other calf skeletons, no butchery marks were noted.

Pit 2785, to the rear of structure 2760, contained a substantially complete horse burial. The skull and teeth were highly fragmented, but unfused scapulae, distal humeri, proximal radii, and pelvis suggest this horse was less than 12 months old at death.

Post hole 3360, from a grain store or drying platform, contained an articulating right dog pelvis, femur, tibia and fibula. A right calcaneus and four articulating metatarsals are probably from the same limb. The same context also contained a left dog radius and tibia, four first phalanges, and four articulating left metacarpals. The fourth metacarpal had been fractured midshaft, with the two halves of bone subsequently displaced. Although the break has healed, exostosis has enveloped the affected area, as well as the other metacarpals. It is possible, though cannot be proven, that all of these bones come from the same animal.

Late Iron Age

Fill 1126 of pit 1127 contained an articulating sternum, twelve ribs and six thoracic vertebra of a sheep. The same context held sheep skull fragments, a maxilla, maxillary teeth, a complete mandible, a right mandible, left pelvis and femur, right scapula and radius. It is possible that there are portions of one to two sheep within this deposit, which also held a cattle humerus, mandibular molar and horse 1st phalanx. The

complete mandible came from a sheep of 3-4 years old at death, and the right mandible from a sheep 2-3 years old.

Roman

An articulating right horse femur and tibia were recovered from ditch fill 1449, mixed in with other remains of cattle, horse, sheep and pig, the former two species making up the vast majority of the identified portion. Ditch fill 1450, from the same section of ditch, also contained a significant amount of bone. In neither feature, however, does there seem to be any patterning in body parts for any species.

Discussion

Latton Lands is in line with most Iron Age and Roman sites in the Upper Thames valley and Britain, in being dominated by domestic species, with very few wild animal remains,. The relative frequencies of the main species are slightly at odds with this picture, however, with quantification data suggesting that, in all periods, cattle were the most important animals at Latton Lands. Sites in and around the Upper Thames valley typically have a range of 30-60% cattle (Hambleton 1999) in relation to sheep and pig (based on NISP), as is the case at the nearby sites of Thornhill Farm, Fairford (Levine 2004) and Longdoles Field, Claydon Pike (Sykes, n.d.1). However, in all cases, the Latton Lands bone exceeds this, with 68%, 61% and 82% cattle in the Early, Middle and Late Iron Age respectively. Site topography has been cited as a factor affecting the relative proportions of sheep and cattle (Grant 1984), with cattle best kept in lower lying areas, where they have ready access to water, and sheep better kept on well-drained downland sites, to avoid susceptibility to liver fluke (Dark & Dark 1997:112). However, Latton Lands sits at around 82m OD, higher than other sites in the region, and this would not seem to explain the pattern evident here. Instead it seems that spatial patterning of animal remains disposal may have unduly biased the Latton sample, with remains of larger species (cattle and horse) preferentially dumped away from the focus of settlement in the Middle/Late Iron Age and Roman periods. At many sites, a move towards greater proportion of cattle is noted between the Iron Age and Roman periods. This trend is not apparent at Latton, but problems of spatial distribution and small sample size mean that the patterns evident here may not

directly reflect the relative importance of the different animals to the local economy through time.

Interestingly, horses are significantly well represented in all phases except the Late Iron Age, being more frequent than sheep and pigs in the Early Iron Age and Roman periods. No butchery marks were noted on horse bones, and in general, their remains seem to have been less fragmented than those of other species, suggesting that they were treated differently to the remains of the main domesticates, and were rarely, if ever, consumed by people living in the site vicinity.

The ageing data in particular is indicative of the different uses to which animals were put, with differences evident between the Phases, particularly with regards to cattle. Although the small assemblage size needs to be considered, it would seem that in general a greater proportion of animals were retained to an older age in the Early Iron Age than in the subsequent periods. This, coupled with the evidence for the culling of neonatal and young calves, indicates exploitation for a range of products, including milk, meat and possibly traction. In the Middle and Later Iron Age most animals were culled between age 1 month (Stage B) and 36 months (Stage E), which may indicate a greater emphasis on the production of prime meat animals. This pattern continues into the Later Iron Age, before a shift to maintenance of older animals in the Roman period. This is a common feature of the faunal assemblages on other contemporary sites (Grant 1989).

Epiphyseal fusion data, although small, indicates the presence of younger sheep at the site during the Middle and Later Iron Age than in other periods. However, in all phases there is an absence of sheep mandibles and bones from the two earliest mandible wear stages. This is a pattern often noted for Iron Age sites, and it has been suggested to represent a transhumance strategy, with animals bred away from settlements (Hambleton 1999). Given that the excavations revealed areas peripheral from the main settlement focus, it may be that we have some evidence for animal breeding. However, it is unclear why younger animals at Latton are represented by bones and not teeth/mandibles, which usually preserve better. Mandibles of younger animals are more prone to destruction than their older counterparts, and their teeth, being small, are more likely to be missed than postcranial elements. It is perhaps

significant that the young sheep bones recovered at Latton are those that, in the adult skeleton, have greater density than other postcrania, namely the distal humerus, proximal scapula and 2nd phalanx, although the presence of the latter may argue against recovery bias. Pigs provide very little in the way of secondary products, and tend to be killed at the optimal age for meat, during their second and third years of life. Since no mandibles were recovered from animals aged over 27 months of age, it is likely that here too most pigs were culled at the most efficient age for meat.

For horses, the ageing data adds further support to other evidence, indicating that at Latton they were generally not eaten. Charles (1999:222) suggests that horses would have been prized animals, indicative of status, since it was expensive to keep animals that do not have the same exploitation potential of cattle and sheep. Most animals have been maintained into adulthood and beyond, and were probably used as riding and/or pack animals. The juvenile horse burial from Early Iron Age Pit 2785 and juvenile bone from the Middle Iron Age ditch are also of interest. Juvenile horses are infrequently recovered from Iron Age sites, leading Harcourt (1979) to suggest that horses were not bred by people, but were captured wild and tamed, with the poorer animals released. However, juvenile and infant animals were recovered from Gravelly Guy (Mulville & Levitan 2004) and Rooksdown (Powell & Clark 1996). Indeed, Wilson & Allison (n.d.) suggested that the Thames Valley could have been a suitable environment for horse breeding, and the evidence from Latton Lands may add support to this.

Wild animals are only present in small numbers at Latton Lands, a pattern consistent with that from other contemporary sites. This relatively scarcity of wild taxa may be linked to these animals being proscribed to some degree (King 1991:18). In addition, it is often suggested that deer would have been more important as sources of antler for raw materials than for meat (Grant 1981) with people collecting shed antler rather than hunting. However, whilst the presence of worked antler at Latton suggests it was a useful material, the unshed antler and post-cranial bones, including a butchered femur, show that deer were at least on occasion hunted for meat.

Animal burials

A number of articulated remains were recovered from the Stage 6-9 excavations at Latton Lands, the majority coming from Early Iron Age contexts. Indeed, these burials represent the majority of bone dumped at the site during this period. So-called 'special deposits' have often been recovered from sites in Iron Age Britain (Grant 1984; Wilson 1992, 1999; Hill 1995). As noted above, the frequency of species found in this type of deposit does not tend to reflect their representation in the total number of animal bones recovered from the same sites (Hill 1995). At Latton, a different picture is apparent, with cattle being the animals most frequent in the Early Iron Age bone assemblage and also in the special deposits.

While it is possible that these animals represent natural mortalities, or sick/diseased animals which have been buried simply to dispose of them, although none exhibited marks from the cause of death. In contrast to other sites, where animal burials were often placed in pits interpreted as grain stores, most of those at Latton seem to have been cut specifically for the animals; unusually they contained little artefactual evidence. In one case, two calves were placed into two separate pits immediately next to each other, when one would have sufficed. In two further instances, animals were buried close to buildings: the calf burial associated with Structure 3340 and the horse burial with Structure 2760. Additionally, the animals placed within the pits were all very young: from 0-8 months of age for the cattle, and less than 12 months for the horse. In all cases these were animals with economic potential, although it is possible that the very young calves were considered surplus, their culling freeing up milk for Latton's inhabitants.

The placing of what appear to have been complete individuals in several of the pits is unusual in an Iron Age context; partial skeletons are a more frequent occurrence (Hill 1995:100). Larger species including cattle and horse are more commonly found as articulated units or skulls rather than as whole animals (Wait 1985: 134-7), however young cattle were found as separate burials in several pits at Danebury (Grant 1984). Quite what the meaning of placing the remains into these pits is unclear, but it is possible that where the pits are associated with a building they represent some sort of foundation deposit, as suggested for cattle remains from a pit associated with a structure at Warrens Field, Claydon Pike (Sykes n.d.2) The articulating dog elements

from the posthole could represent the opposite; animal remains placed when the structure had ceased to be used. The articulating horse leg from the Roman ditch is rather more difficult to interpret. It may represent some kind of sacrifice, but just as easily could have resulted from differential disposal of horses; as noted earlier, their remains seem to have been treated differently from other species.

Whilst the weasel bone from Pit 3369 may represent an accidental inclusion, either from an animal that fell into the pit or burrowed in, weasels have been found within special deposits at other sites (Hill 1995; Mulville & Levitan 2004:473). The bone was found in association with several other animal bones, including a red deer metacarpal, and significantly the fill also contained neonatal human remains. Given the rarity of wild animals at Latton Lands, and British Iron Age sites generally, it is probably significant that two wild species were recovered from the same context, in association with human bone. As noted above, at other Iron Age sites the frequency of species in 'special' deposits tends to differ from the total faunal remains of the sites where they occur (Hill 1995), and the fact that almost of all of the wild remains are from pit fills may be of importance.

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