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THE ANIMAL BONES FROM PIT 5 VIABLES FARM, HAMPSHIRE

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The Animal Bones from Pit 5, Viables Farm, Hampshire

The animal bones from Pit 5 were examined at the Department of Environment Faunal Remains Project, University of Southampton. Most of the bone was recovered from layer 6 of the pit and was therefore found in the same layer as the two female inhumations of second century date. The animal remains consisted of two complete sheep burials, the majority of a horse skeleton and three partial skeletons, two of cattle and one of a horse.

1) Complete sheep skeleton (a)

Almost a complete skeleton of an immature sheep was recovered. Although some of the small bones, such as phalanges, sesamoids, carpal tarsals and caudal vertebrae were not recovered, it seems likely that this animal was buried whole. The absence of these bones can best be explained by the limitations of hand excavation, in which these small bones were overlooked. There was no evidence of butchery or skinning marks on any of the bones. All the bones were found near inhumation 2. Most of both forelimbs and the vertebral column, the sternebrae and parts of the pelvis were found below the skull of this inhumation; the skull, mandibles and first three cervical vertebrae were found slightly to the N.E.; part of the right pelvis and femur were found below the chest and the rest of the hindlimbs was found S. of the inhumation's left shoulder together with another cervical vertebra, the right metacarpus and the distal epiphysis of the left radius. Any breaks of the bone were modern and there is no evidence to suggest that the animal was disarticulated prior to burial.

The proximal epiphysis of the radius, the distal epiphysis of the humerus and the innominate bones had all fused. They all, however, showed signs that fusion had only just been completed and all three proximal phalanges that were recovered and all later fusing epiphyses were unfused. The application of modern fusion ages to archaeological material is limited by the variability in the rates of fusion caused by a number of factors including breed, nuitrition and castration. Using Silver's data (1969), the distal humerus, the proximal radius and the main bones of the pelvis all fuse by c.10 months. The proximal epiphyses of the first phalanges fuse between 13-16 months. Using this data we may suggest that the animal was c.1 year old. The skull and mandibles also provided ageing data; the mandibles possessed deciduous premolars and the first molar all in wear.

The second molar had not erupted, however, and the first molar was in a relatively early stage of wear (cf. stage e - Grant 1975: 439). In modern breeds the second molar usually erupts between 9 and 12 months (Silver 1969) and given the state of wear of the first molar an estimated age of about one year or a little younger would be feasible. Accordingly both sets of ageing data suggest that the sheep was killed or died at about one year of age, although this estimate may have to be amended when we possess a better understanding of the skeletal and dental development of Iron Age sheep. Examination of the horn cores indicated that they belonged to a ram or perhaps a castrated animal.

2) Complete sheep skeleton (6)

The second sheep skeleton belonged to an adult ewe. The skeleton was complete but admixed with bones of the younger sheep. Most of the bones of both hindlimbs were recovered from beneath the chest of inhumation 2 together with the sacrum, the caudal vertebrae and four lumbar vertebrae. Most of the remaining bones of the skeleton were found to the south of the left shoulder of that inhumation and consist of most of the bones of the left foreleg, the right radius, ulna and distal metacarpus, most of the remaining vertebrae and several of the ribs. The skull, mandibles and four of the cervical vertebrae were found associated together elsewhere in layer 6 together with the remaining (recently broken) bones of the right forelimb. Despite the scattering of the bones, there was no indication of butchery and it is uncertain whether the dismembering can be attributed to human or natural agency.

Examination of the horn cores and the pelvis indicated that the skeleton belonged to a ewe. All the epiphyses were fused and therefore the animal was over 42 months old (Silver 1969). The jaws possessed fully developed tooth rows and the wear on the mandibular first molar had progressed beyond the mature wear stage as defined by Payne (1973: 285). This tooth was at wear stage j using the system of analysis devised by Grant (1975: 439). Again it is not possible to be certain of the age of the animal because of our inadequate knowledge of the ancient tooth wear rates of sheep. It is likely that the animal was at least four or five years old and possibly rather older, if tooth development was substantially slower in the period in question.

All measurements taken on this and other skeletons are available from the Faunal Remains Project, Southampton. The completeness of this skeleton enabled a comparison of the lengths of the limb bones to be made. Using the multiplication factors recommended by Teichert (1975: 63), the following withers heights were calculated from the maximum lengths of the bones; humerus 53.8 cm., radius 58.6 cm., metacarpus 57.3 cm., femur 55.8 cm., tibia 58.8 cm., talus (astragalus 54.2 cm., calcaneus 55.8 cm., metatarsus 59.2 cm. These bones therefo: produced a wide range in withers height estimations. The figures for the talus and the calcaneus may be unreliable since their lengths have a relatively low correlation with withers height (Teichert 1975: 60-61) and although these calculations use Teichert's amended multiplication factors for these bones, they may still underestimate the size of British Iron Age sheep. The upper limb bones give a much lower figure for withers height than the radius, tibia and metapodia and it would appear that unimproved breeds, such as the Soay, have comparatively shorter upper limbs than improved breeds, as has been suggested elsewhere (Wilson 1978: 124). Other measurements confirm the small, slender characteristics of this skeleton. The index of the midshaft width/ maximum length of the metacarpus was within the range of modern mouflon and Soay sheep and comparable to specimens from Iron Age levels at South Cadbury (Noddle 1978: 134) and Glastonbury (Bulleid & Gray 1917: 666). The measurements from other bones in this skeleton fell mostly towards the lower end of the range of sheep measurements of the contemporary occupation at Winnal Down, Hampshire (Maltby in preparation).

The small size of this skeleton may be attributed to some extent to poor nuitrition. This may be supported by the fact that there was some overcrowding of the cheektooth row and the first stages of periodontal disease was evident in the reduction of bone below some of these teeth. One of the horn cores had a small indentation near its base and Hatting (1975: 346) has suggested that such marks may be due to malnuitrition, although Siegel (1976: 362-363) has disputed this and has suggested that such marks could be caused by a minor trauma.

3) Partial horse skeletons

At least two horses were represented by articulated remains in layer 6. Unfortunately as no plot of the distribution of these bones was taken in situ, it was difficult to reconstruct exactly how the two partial skeletons were distributed in the pit. The admixing of the two

skeletons and the modern breaks on some of the bones made it a hard task to reconstruct which bones belonged to which horse. Certainly two complete sets of thoracic and lumbar vertebrae were present and several of the thoracic vertebrae of one animal and several of its ribs were pathological. The condition of the vertebrae appears similar to that of ankylosing spondylosis, although none of the thoracic vertebrae had actually fused together. The condition may result from old age or from infectious processes (Siegel 1976: 368). A similar condition has been recorded for lumbar vertebrae of a horse of Romano-British origin (Siegel 1976: 359). There are also two examples from the Netherlands of the same afflicion on more recent horse vertebrae (Wijngaarden-Bakker & Krauwer 1979: 40). The atlas and sacrum and several ribs also showed evidence of exostosis and it seems probable that they belonged to the same skeleton. If that is the case, the skull and pelvis represented here belonged to the same animal as their articulations "matched" those of the atlas and sacrum respectively. The mandibles of the same animal were found in layer 5 but the recently broken posterior portion of the right mandible was found in layer 6. The pelvis was found in association with both hindlimbs. Only the patellae and the right third phalanx were not recovered. Some of the tarsals and foot bones of the right hindlimb were found in layer 7. Finally the majority of a right forelimb was recovered. Only the scapula was missing. It is probable that this limb belonged to the same animal as metrical analysis showed that the size of the horse represented by the forelimb was similar to the size estimated from the bones of the hindlimb. No bones of the left foreleg were recovered. Accordingly it would seem that there were two horses; the first was represented by the head, the complete vertebral column, the ribs, the pelvis and the hindlimbs and the right forelimb; the second was represented only by the lumbar and thoracic vertebrae and some ribs.

The first skeleton belonged to a male since it possessed fully developed canines in both sets of jaws and a pelvis that showed typical male characteristics. All epiphyses were fused and the examination of both sets of incisors indicated that the animal had lived for c.9 years (Duerst 1926). Metrical analysis of the longbones

produced the following estimates of shoulder height using Keisewalter's multiplication factors of the maximum lateral length of the bones (von den Driesch & Boessneck 1974: 333); radius 120.2 cm. metacarpus 119.6 cm., femur 117.0 cm., tibia 119.4 cm., metatarsus 122.9 cm. These would represent a very small pony of only 10-11 hands high. The multiplication factors produced a range of 5.9 cm. in the estimations of shoulder height but there is no significant difference between the estimates for the bones of the fore and hindlim This can be used to support the contention that they belonged to the same animal. Wilson (1979: 130-131) also noted a discrepancy in height estimates obtained from different bones from the double horse burial of Romano-British date at Farmoor, Oxfordshire. In those specimens the metatarsus gave a larger estimate than the tibia, which in turn gave a higher estimate than the femur. The same pattern was observed in this skeleton. Close examination of the cheekteeth confirmed that the skeleton belonged to a horse and not to a donkey. Small Iron Age ponies have been recovered from Gussage All Saints, Dorset (Harcourt 1979). They may have been too small to be very efficient as riding horses but they could have been used as pack animals. The pathological condition of the spine may indeed have been the penalty of such work, although other explanations are possible. Despite the incompleteness of the skeletons no butchery marks were observed.

4) Partial cattle skeleton (a)

An incomplete skeleton of an immature animal was found in layer 6. Most of the lumbar vertebrae, the sacrum, pelvis and three caudal vertebrae were found associated together south of the left shoulder of inhumation 2. Most of the other vertebrae and ribs were recovered elsewhere in the same layer. These bones may have been associated with a complete right metacarpus and a complete left metatarsus together with almost complete sets of phalanges of these feet. It is impossible to be certain that these originated from the same skeleton as the vertebrae and ribs but they appear to have belonged to an animal of about the same age. Knife cuts were discovered on the atlas towards the cranium on the dorsal aspect and running in a medio-lateral

direction. Other knife cuts were discovered on the ventral aspect of the midshaft of the pubis.

All the vertebrae were unfused and the wings of the atlas were only just fusing, which would suggest that the animal was under six months of age(Silver 1969). The fusion data from the metapodia and phalanges were less helpful. The proximal epiphyses of the first and second phalanges and the distal epiphyses of the metapodia were all unfused but the former do not fuse until c.18 months in any case and the distal metapodia are not fused until at least the third year of the animal's life. The size and slightly porous texture of these bones, however, would suggest that they belonged to a young animal and could indeed have been under six months old, supporting the suggestion that these limb extremities were associated with the vertebral column.

5) Partial cattle skeleton (6)

This consisted of a left foreleg found in layers 6 and 7. All bones from the humerus downwards were present. Knife cuts were discovered on the medial aspect of the distal joint surface of the radius and also on the proximal aspect of the accessory carpal. Measurements of the metacarpus length (194.7 mm.), minimum diaphyseal width (32.2 mm.) maximum distal width (60.7 mm.), maximum width at the distal fusion point (53.4 mm.) and the maximum depth at the distal fusion point (29.5 mm.) indicated that the animal was probably a castrate. It fell into the range of Iron Age specimens classified as castrates at Gussage All Saints (Harcourt 1979) and on upper Thames Valley sites (Wilson 1978: 115-116). The fusion evidence showed that the distal metacarpus had fused but the distal epiphyses of the radius and ulna and the proximal epiphysis of the humerus were just fusing. The olecranon of the ulna was unfused. Silver (1969) gives the fusion age the distal metacarpus at 2-2½ years and those of the others at 3½-4 years. These estimates would therefore suggest that the animal died c.3½-4 years but it is possible that fusion age may have been later if this specimen did belong to a steer, as castration slows down the process of epiphyseal fusion. The development of cattle may also have been slower in this period. Therefore the estimate of 3½-4 years must be regarded as the minimum age. Certainly, however, the animal died or was slaughtered on the point of skeletal maturity and was too young to have had much service as a working animal.

Other remains

None of the other bones associated with the inhumations could be shown to be articulated, although a complete cattle metatarsus (max. length 226 mm.) may have been associated with a complete set of phalanges found scattered in layer 6. Two ribs, three cervical vertebrae and a fragment of ilium completed the cattle assemblage. Pig was represented only by a charred upper canine and a fragment of sawn red deer antler was also recovered. All the remaining sheep/goat fragments (an incisor, an upper third molar, a hyoid and the distal halves of three first phalanges) could all have belonged to one or other of the sheep burials described above. Also found in layer 6 were bones of the short-tailed vole (Microtus agrestis), frog (Rana sp.) and toad (Bufo sp.) and several unidentifiable bones of small rodents.

The only other bones found in the pit came from layer 3 and consisted of a butchered cattle radius and ulna and a humerus perhaps all from the same animal. Part of a cattle sacrum and a sheep/goat maxilla were also found. These were less well preserved than the bones from layer 6 and the cattle bones showed signs of gnawing, indicating that they had been exposed to dogs before being buried.

Discussion

Complete or partial burials of domestic animals are not uncommon on Iron Age and Roman sites but only recently has attention been drawn to them. It is unusual to find so many associated together in one layer, particularly with human skeletons. The absence of a forelimb from the otherwise almost complete horse burial has parallels elsewhere in southern England. The two Romano-British horse burials at Farmoor possessed neither of their front legs (Wilson 1979: 130). It was suggested there that the removal of the forelimbs can be interpreted as an early stage in carcass dismemberment and indeed the skeletons at Farmoor did show evidence of skinning and primary butchery. No similar marks were observed on the Viables Farm horse but that does not rule out a similar practice. Remains of less complete horse skeletons have also been discovered. At Winklebury, Hampshire, the thorax and hindlimbs were discovered in association in a gully (Jones 1977: 62). Complete sheep burials have been rarely recorded from Iron Age sites in southern England, although many partial skeletons have been recovered. Several of these can be shown to have

been at least partially butchered(e.g. Wilson 1978: 123-124, Jones 1977: 62, Maltby in preparation). The absence of any butchery marks on the Viables Farm skeletons suggests that they were buried whole with the two inhumations, with which their bones appear to be closely associated. Certainly there is no evidence from the bones to explain why they were not butchered in the normal manner.

On the other hand, the two partial cattle carcasses had been butchered. The calf had cut marks on the atlas and pelvis, which were probably caused during the removal of the skull and hindlimb respectively The presence of the foot bones probably of the same animal suggests that they were removed from the upper limb and discarded. Meat could also have been stripped off the vertebrae before they were dumped into the pit. The cattle foreleg had cut marks on the distal radius and the accessory carpal. These could be skinning marks or butchery marks. Meat may have been removed from the limb without leaving any other marks on the bone but unusually for cattle bones of this date, there was no sign of butchery marks around the elbow joint made during the removal of meat nor had the long bones been broken in order to remove the marrow.

It is impossible to be certain whether all the animal skeletons were associated directly with the inhumations. Animal burials of this sort have been linked with ritual practices but many may simply have been carcasses which were only partially butchered before being dumped. However, there are no published parallels from British Iron Age sites of two complete animal burials and the substantial remains of four other skeletons in the same layer. Their association with the inhumations and the other finds in this layer is perhaps indicative that in this case the animal burials had more significance than that of ordinary butchery waste.

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