Excavations at Great Holts Farm, Boreham, Essex, 1992–94

by Mark Germany

with contributions by
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Part 4. Zoological Evidence

I. Human bone

by S. Mays

Fourteen cremations were discovered but only the bone from three of them, 43, 122 and 185, was analysed; the bone from the remaining eleven was either undatable or too sparse and fragmentary for study. All three cremations had been heavily truncated by ploughing and this limited the amount of data which could be obtained from them. Nevertheless, there were some points of interest worth recording.

An adult corpse yields about 2kg of bone (Trotter and Hixon 1974). The Great Holts Farm burials are all very incomplete, probably in the main reflecting plough damage.

In each burial the bone was white in colour. According to Shipman *et al.* (1984) this suggests a firing temperature of above *c.* 940°C. A few additional fragments of unburnt bone were found in context 5060.

Mean fragment size was about 7–10 mm in each burial. The small size of the fragments meant that few could be identified to skeletal element.

Contexts 5332 and 5211 contained some animal bone. In 5332 there were only a few fragments of animal bone, none of which were identifiable to species. In 5211 most of the bone fragments which were identifiable were animal bone rather than human, only a few identifiably human fragments were present. The animal bone from this context which could be identified to species and skeletal element all came from the forelimb of a cow (carpals and metacarpal).

Animal bone fragments are quite frequent findings from cremation burials during Romano-British and other periods when cremation was practised. In such instances the question arises as to whether the animal fragments represent deliberate burning of animal remains with the corpse or whether they are pieces of bone lying around in the pyre area which were inadvertently burnt and collected with the human remains. The few fragments in context 5332 may well represent inadvertent inclusions, but the bones from 5211 must surely represent deliberate offering(s). The animal remains from 5211 to some extent recall those found in a Romano-British cremation from Brougham, Cumbria, where some bone fragments from the rear leg of a horse were found with an adult male (Mays nd).

Context	*Cremation*	*Phase*	*Age*	*Sex*	*Weight of bone (grams)*
5332	185	II.3	Adult	Unknown	204*
5211	122	II.3	Adult	Unknown	137
5060	43	II.3	Adult	Unknown	50

* the bone from this burial was poorly sorted, so the weight includes significant extraneous material (soil and stones)

Table 62 Cremated bone

II. Animal bone

by U. Albarella

Summary

A small assemblage of animal bones was recovered mainly from late 3rd/4th-century AD contexts. The majority of the bones are in excellent condition and derive from the waterlogged conditions of phase II.2 well 567. Beef was the most commonly eaten meat, but a variety of other resources including some wild animals, were also exploited. The size of cattle was very large and might indicate that these animals were recent imports from the continent. The simultaneous presence of sparrowhawk and thrush bones may represent early evidence of hawking, although the use of the raptor as a decoy is perhaps more likely. The evidence from the mammal and bird bones appears to corroborate the interpretation, derived from the study of the plant remains and fish bones, of a relatively affluent life-style and overseas contacts for the Great Holts Farm inhabitants.

Methods

Animal bones from most contexts were hand-collected. Small samples were taken and wet-sieved (mesh size 0.5mm) from a number of 'dry' contexts. These samples were mainly aimed at the recovery of plant remains, and produced no animal bones. This is probably due to the acidic conditions of the soil.

Due to the instability of the surrounding soil, the waterlogged fills from the bottom of the well had to be removed mechanically in blocks. Samples from these blocks were taken and water-sieved through a 0.5mm mesh. These produced quite a few bones, mainly of birds and fishes (Table 64).

The mammal bones were recorded following a modified version of the method described in Davis (1992) and Albarella and Davis (1994). In brief, all teeth (lower and upper) and a restricted suite of parts of the postcranial skeleton were recorded and used in counts. These are: skull (zygomaticus), scapula (glenoid articulation), distal humerous, distal radius, proximal ulna, carpal 2–3, distal metacarpal, pelvis (ischial part of acetabulum), distal femur, distal tibia, calcaneum (sustentaculum), lateral part of the astragalus, naviculo-cuboid, distal metatarsal and proximal phalanges (1, 2 and 3). At least 50% of a given part had to be present for it to be counted.

For birds the following were always recorded: scapula (articular end), proximal coracoid, distal humerous, proximal ulna, proximal carpometacarpus, distal femur, distal tibiotarsus, distal tarsometatarsus.

Horncores with a complete transverse section and 'non-countable' elements of particular interest were recorded, but not included in the counts.

Wear stages were recorded for all P_4s and dP_4s as well as for the lower molars of cattle, caprines and pig, both isolated and in mandibles. Tooth wear stages follow Grant (1982) for cattle and pig and Payne (1973, 1987) for caprines.

Measurements are listed in the archive. These in general follow von den Driesch (1976). All pig measurements follow Payne and Bull (1988). Humerus HTC and BT and tibia Bd measurements were taken for all species as suggested by Payne and Bull (1988) for pigs.

Provenance and preservation

All animal bones derive either from fills of pits and ditches or from well 567 (Table 63). The bones from pits and ditches were moderately well preserved, whereas the bones from the well were generally in excellent condition, due to the waterlogged environment. However, a few cattle metapodials from the well (context 6459) had very eroded surfaces, which suggest that they had been subject to aerobic conditions for some time, and therefore the backfilling of the well does not represent a single event. Context 6459 is at the top of the sequence of waterlogged levels located at the bottom of the well (Fig. 33) and may thus represent the top level of the initial backfilling. Unfortunately, we do not know the condition of the bones above, because part of the well contents was removed by machine.

A few bones had been gnawed by carnivores, although this condition was not particularly common. No gnawing marks were recognised on the bones from the well.

The bones from the well were probably in a primary deposit, as were those from context 6082 in bath-house 414, as suggested by the presence of a pig astragalus and calcaneum in articulation.

The bone condition, the context, and the small quantity of material from other phases suggest that there is no significant residual or intrusive material in the late Roman assemblage.

Overview of the bone assemblage

Cattle is by far the most common species (Table 63), as is typical of sites of full Roman tradition (see King 1984, but also table 6 in Robinson and Wilson 1987). Due to the lack of 'whole earth' samples, we cannot establish to what extent this is due to a recovery bias, but it seems improbable that better recovery could have significantly altered the frequencies of the main species.

The assemblage from the late Roman well seems to be related to some special activities and can hardly be used for establishing the relative economic importance of the different animals. The hand-collected assemblage from the well is mainly represented by elements of cattle skull and feet (Table 65). Most metapodials were complete. Cut marks, almost certainly due to skinning, were found on carpals, metapodials and phalanges (Plates VI and VII).

Plate VI Cattle metatarsal with cut mark, probably due to skinning

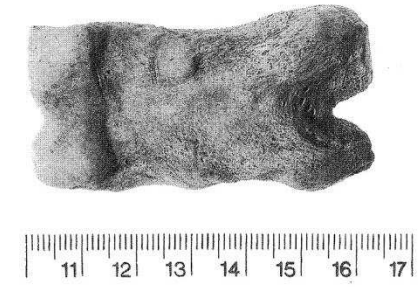


Plate VII Cattle 1st phalanx with cut marks, probably due to skinning

	Early Roman	*Late Roman (3rd/4th cent. AD)*			*Medieval*	*Total*
	(1st/2nd cent.)	*Well 567*	*Other contexts*	*total*		
Cattle (*Bos taurus*)	6	64	28	92	3	101
Caprine (*Ovis/Capra*)	–	2	6	8	1	9
(sheep (*Ovis aries*))		(1)	(–)	(1)	(1)	(2)
(goat (*Capra hircus*))		(–)	(–)	(–)	(–)	(–)
Pig (*Sus scrofa*)	1	1	5	6	–	7
Equid (*Equus* sp.)	–	–	5	5	1	6
Dog (*Canis familiaris*)	–	–	–	–	2	2
Cat (*Felis catus*)	–	–	1	1	–	1
Red deer (*Cervus elaphus*)	–	+	1	1	–	1
Hare (*Lepus* sp.)	–	1	1	2	–	2
Chicken/pheasant/guinea fowl (*Gallus/Phasianus/Numida*)	–	1	2	3	–	3
Goose (Anserinae)	–	2	–	2	–	2
Bird (Aves)	–	–	–	–	2	2
Total	**7**	**71**	**49**	**120**	**9**	**136**

Table 63 Number of identified specimens (NISP) by taxon, at Great Holts Farm (hand-collected assemblage). + = present, but not 'countable' (Davis 1992). Figures in brackets for sheep and goat are included in the total for caprine

Plate VIII Sawn antler tine

Plate IX Arthropathic cattle metatarsal

Plate X Woodcock humerus with cut marks (mm scale)

This sort of deposit can be associated with primary butchery wastes or tanning wastes (see Schmid 1972 and Serjeantson 1989). The lack of horncores, generally associated with these sort of deposits, may be due to the fact that they were used elsewhere for making tools. Evidence of horn and antler working has indeed been found in other parts of the site. Five cattle horncores, three chopped from the skull, and two antler fragments, one sawn at the base (Plate VIII), were recovered from the late Roman period. The sawn antler is the only one to have been found in the well. The tip of this antler is worn, probably due to some kind of use.

The cattle bones from the well derive from mature animals, some of them with severe arthropathies (Plate IX), a condition generally associated with working stress generated by ploughing or by pulling carts (Jewell 1963, Bartosiewicz *et al.* 1993). However, the absence of similar conditions in cattle — probably also used for traction — from other sites suggests that the nature of the terrain may also have been a factor.

The metric data are listed in the archive. These can be useful as part of a more general database of metric data from Roman sites. The eleven complete cattle metapodials are particularly valuable in this respect and are discussed in the next section.

Several species of bird were found, mainly in the sieved samples from the well (Tables 63 and 64). Most of the duck and goose bones are relatively small and may derive from wild animals. Woodcock and plover provide tasty meat, and, when found in sites of later periods, tend to be associated with people of high status (*e.g.* Maltby 1982; Albarella and Davis 1996). The fact that they were eaten by the inhabitants of Great Holts Farm is demonstrated by the presence of cut marks on one of the woodcock bones (Plate X). Woodcock remains have been found in several other Roman sites and are particularly common at Exeter (Maltby 1979). The intriguing presence of both sparrowhawk and thrushes is discussed below. This variety of birds, together with the presence of wild

	6459 (V= c. 60l)	6461 (V= c. 30l)	6462 (V= c. 60l)	6463 (V= c. 105l)	6465 (V= c. 15l)	Total
Cattle (*Bos taurus*)	–	–	–	1	–	**1**
Hare (*Lepus* sp.)	1	–	–	–	–	**1**
Chicken/Pheasant/guinea fowl (*Gallus/Phasianus/Numida*)	16	–	1	–	–	**17**
Goose (Anserinae)	4	–	–	2	–	**6**
Duck (Anatinae)	3	2	2	–	–	**7**
Sparrowhawk (Accipter nisus)	–	–	–	1	–	**1**
Woodcock (*Scolopax rusticola*)	11	1	9	1	–	**22**
Golden/Grey Plover (*Pluvialis* sp.)	1	–	–	–	–	**1**
Thrush (*Turdus* cf. *merula*)	33	4	33	56	5	**131**
Total	69	7	45	61	5	**187**
Fish	5	3	34	62	–	**104**
Grand total	**74**	**10**	**79**	**123**	**5**	**291**

Table 64 Number of identified specimens (NISP) by taxon from phase II.2 well 567 (sieved collection). 6459–6465 are the different contexts at the bottom of the well. 'V' is the volume of the sample sieved from that context

mammals such as red deer and hare (Table 63) appears to corroborate the interpretation derived from the plant remains of a relatively affluent life-style at Great Holts Farm.

The cattle metapodials

The size and shape of the eleven cattle metapodials found in the fills at the bottom of phase II.2 well 567 are compared to those from other Roman sites in eastern England (Figs 119–120).

It is clear that both the metacarpals and metatarsals at Great Holts Farm are from very large animals. The metatarsals are particularly massive (Fig. 119), and this can only be marginally due to their abnormally splayed out distal ends.

The difference in size between the Great Holts Farm animals and those from other sites is very marked (for both lengths and distal widths of metacarpals and metatarsals $p<0.01$ according to a two-tailed Student's t-test).

Though larger, these specimens are not much more robust than those from other sites (Fig. 120). The metacarpals from three Roman sites considered here (Great Holts Farm, Colchester, and Lincoln), seem to cluster in two groups (Fig. 120 top). It is tempting to suggest that the specimens in the 'more gracile' group, which are more numerous, belong to cows and the more robust ones to oxen (it is unlikely that such a high number of bulls could be kept on site). However, a clear shape difference between females and castrates only occurs in some cattle breeds (see Fock 1966; Albarella 1997). Ox metapodials can appear more female-like or male-like according to their breeds and, presumably, to the age of castration. Furthermore, difference in shape between different breeds or populations can be even larger than between different sexes. However, when this is the case, the difference is generally more pronounced in metatarsals than in metacarpals (Albarella 1997), the former being less sexually dimorphic (Grigson 1982; Higham 1969; Howard 1963). In the case of the Roman sites considered here the clustering can be detected in the distribution of the metacarpals (Fig. 120 top), but not of the metatarsals (Fig. 120 bottom) and it is therefore more probably due to a sex difference than to the contemporary presence of two different breeds.

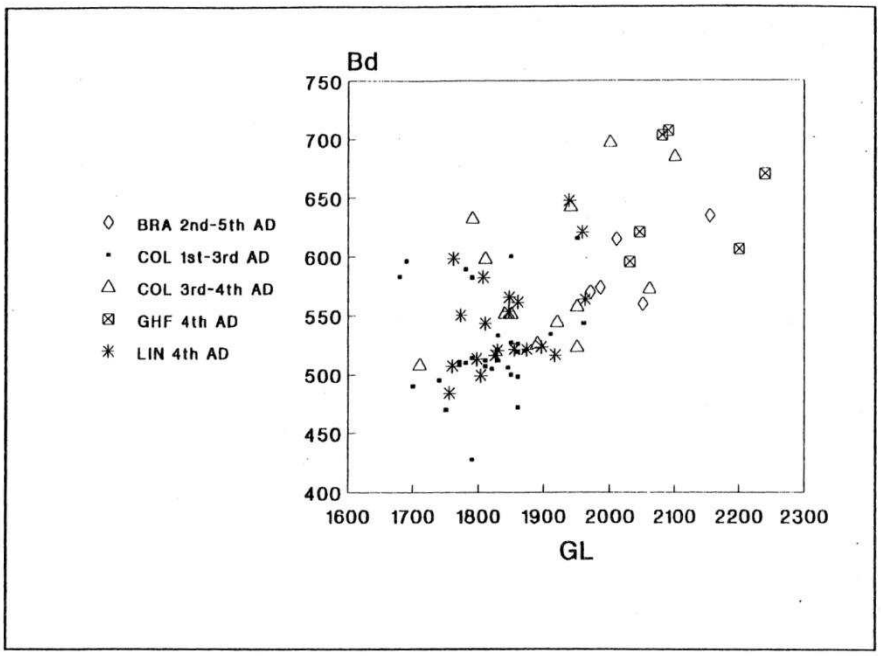
	6459	6460	6462	6463	Total
Cranium	2	–	–	1	**3**
Teeth (max. & mand.)	8	1	6	1	**16**
Radius	–	–	1	–	**1**
Tibia	–	1	–	–	**1**
Carpal	–	–	2	–	**2**
Calcaneus	1	–	–	–	**1**
Metacarpal	6	–	1	–	**7**
Metatarsal	9	–	1	–	**10**
Phalanges (1, 2 & 3)	14	–	9	–	**23**
Total	**40**	**2**	**20**	**2**	**64**

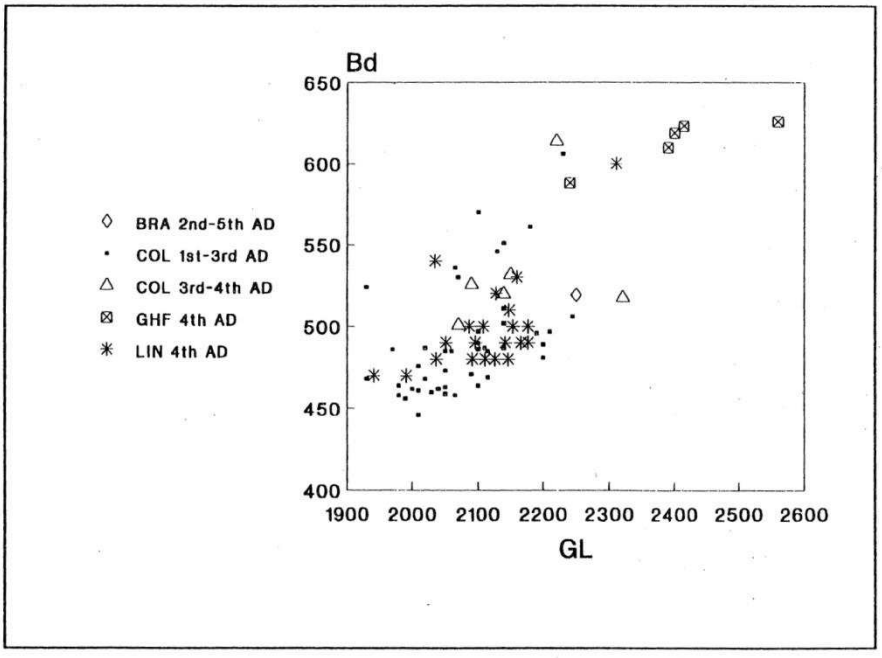
Table 65 Representation of cattle body parts by number of identified specimens (NISP) from phase II.2 well 567 (hand collected assemblage). 6459–6463 are the different contexts at the bottom of the well

The assumption that the metapodials from Great Holts Farm derive from both females and castrates is important for our interpretation of their large size. Indeed this hypothesis rules out the possibility that the large size of the Great Holts Farm animals is due to the fact that they were all oxen, whereas most of the bones from the other sites are from females. My suggestion is that the Great Holts Farm animals rather belong to a genuinely larger and perhaps different type of cattle.

In his study of the Dutch Eastern River area Lauwerier (1988) has argued that the cattle found in Romanised sites reflect the import and subsequent improvement of the stock through interbreeding. In one site, Druten (3rd century AD), there is contemporary presence of two size groups, which Lauwerier interprets as being derived from two different populations: a larger, imported type and a smaller, native one. The 4th-century cattle from another site, Nijmegen, are intermediate in size between the two Druten Groups and might be the consequence of subsequent interbreeding. No large animals were found in Dutch regions outside the Roman empire.

A remarkable difference in the size of cattle from *Germania Romana* and *Germania Libera* was noted by Teichert (1984). The cattle from the Roman provinces were definitely larger, although a few large cattle were also





Size of cattle metacarpals (top) and metatarsals (bottom) at Great Holts Farm and other Roman sites. BRA = Braintree (Smoothy 1993), COL = Colchester (Luff 1993), GHF = Great Holts Farm, LIN = Lincoln (Dobney *et al.* 1996). GL = greatest length, Bd = distal breadth, SD = smallest breadth of diaphysis. Measurements in tenths of mm.

Figure 119 Size of cattle metacarpals (top) and metatarsals (bottom)

found in the area occupied by the Germans. This suggests the existence of some trade between the Germans and the Romans. With the retreat of the Romans, large cattle were no longer to be found north of the Alps (Teichert 1984).

Dobney *et al.* (1996) have noticed an increase in size of the Lincoln cattle from the 1st/2nd century to the 3rd. In the 4th century there is greater variation, but the very large animals found in the 3rd century are no longer present. Although caution is necessary, due to the very small number of measurements from the 3rd century, Dobney *et al.* (1996) also raise the possibility that the largest specimens may be recent Roman imports, and that later animals may represent the product of interbreeding between local and imported stock.

Reviewing cattle size from European archaeological sites, Audoin-Rouzeau (1991) also suggests that the large Roman cattle found in northern Europe were the product of importation rather than local improvement.

Using the average multiplying factor for males and females recommended by von den Driesch and Boessneck (1974), the height of cattle from Great Holts Farm has been calculated as being *c.* 130cm. This makes them similar in size to the larger group from 3rd-century Druten and in the upper range of the large cattle from *Germania Romana*. They are also larger than the largest 3rd-century cattle from Lincoln. Few Roman sites have similarly large cattle (see Audoin-Rouzeau 1991) and, interestingly, some of them are from Italy (see also King 1994).

On the basis of the evidence discussed above my suggestion is that the cattle from Great Holts may represent imported rather than native stock and, due to their very large size, recent imports, which have not interbred with local populations.

Sparrowhawk and thrushes

The distal part of a sparrowhawk tarsometatarsus (context 6463) and many thrush post-cranial bones were collected from the waterlogged samples from the bottom of the well (Table 64; Fig. 33).

Thrush bones have been identified as such (*Turdus* sp.), rather than starling (*Sturnus vulgaris*) on the basis of the morphological criteria suggested by Stewart (1992), in particular those which apply to the proximal carpometacarpus. The size of the bones is also more compatible with *Turdus* rather than *Sturnus*. Large size overlap occurs between the different *Turdus* species (Stewart 1992) and therefore specific identification of these bones has not been possible. However, the bones are of a medium-large size and they certainly do not belong to the rather small redwing (*Turdus iliacus*). When compared with the metric data presented in Stewart (1992), they seem to fit particularly well with the distribution of the blackbird (*Turdus merula*), and are quite consistently larger than any of the song thrush (*Turdus philomelus*) bones, but partly overlap with the larger fieldfare (*Turdus pilaris*) and mistle thrush (*Turdus viscivorus*).

The thrush bones are derived from various parts of the body, but no skulls were found. This might be due to the fragmentation of these fragile elements, although a genuine lack of heads, probably connected to their early separation and discard, cannot be excluded.

Sparrowhawk bones have only occasionally been found on Roman sites in Britain (Parker 1988), but they are much more common in later periods. In a number of medieval sites they are found as complete skeletons, and they are generally interpreted as tame birds used for hawking (Mulkeen and O'Connor 1997). Sparrowhawks are unlikely birds to be found in archaeological sites for any other reasons, as they do not scavenge, and are too small and tough to make valuable meat or feathers. At Great Holts Farm there is only one bone rather than the whole skeleton, though it is possible that the rest of the body was in fact in the well but was not collected.

Thrushes occur much more commonly in Roman sites (Parker 1988), and they are generally interpreted as eaten birds (Coy 1987).

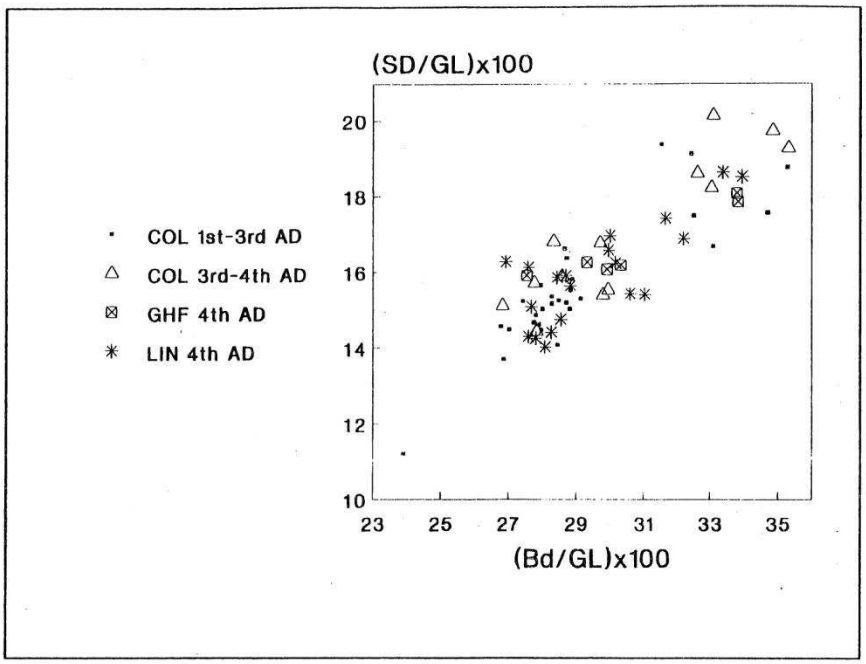
Turdids are among the birds most commonly caught by the wild sparrowhawk, and much more so by the trained bird, for which they can represent as many as 90% of the prey (Prummel 1997). It is therefore tempting to correlate the presence of sparrowhawks and thrushes and to suggest that the raptor was a tamed bird kept to catch passerines and possibly other birds, such as woodcocks. However, we do not have evidence that hawking was practised in Europe before the 4th–5th century (Prummel 1997) and in Britain until mid Saxon times (Parker 1988). Due to the almost total absence of any pictorial or literary evidence, it is obvious that the Romans were not commonly engaged in hawking.

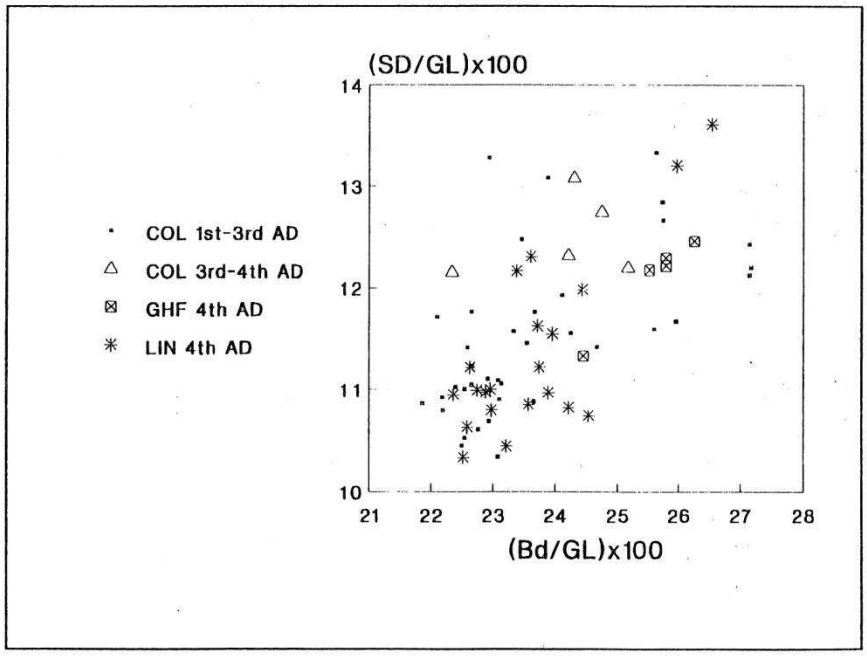
Nevertheless, falconry is very ancient; it was practised as early as the 8th century BC by the Assyrians (Epstein 1943). Although Romans were obviously not keen falconers, it is unlikely they were totally unaware of this practice. There is a passage in an epigram of Martial (40–102 AD), in which there is quite definite reference to hawking. Epstein (1943) suggests that 'it is just possible that (...) a few Roman gentlemen, who had learned it in one of Rome's Asiatic or African provinces, practised this sport'.

The well 567 at Great Holts Farm was an integral part of building 416 and was probably covered by a portico. Its indoor location is also confirmed by the absence of weed seeds deriving from the local vegetation and by the presence of insects of indoor habitats. It is assumed that the well deposit is represented by material intentionally dumped in the well, derived from human activities.

We can therefore rule out the possibility that the bird bones do not have an anthropogenic origin, a hypothesis which had to be taken into account in view of the absence of cut marks on the thrush bones. Since both the sparrowhawk and the thrushes are the product of human activities, the possibility that they represent an early case of hawking must be raised. As discussed above there are hardly any other reasons why a sparrowhawk should be kept or killed and its association with such a high number of thrush bones could be significant. Another possibility is that the sparrowhawk was used as a decoy to attract and catch small birds, as suggested by Reilly (1985) for his remains of hobby (*Falco subbuteo*) bones from the site of Settefinestre in Italy and as depicted in the 'Small Hunt' mosaic at Piazza Armerina in Sicily (4th century AD) (Parker 1988, Reilly 1985).

Whatever the explanation, it is not here suggested that the date of the introduction of hawking in Europe should be moved back by one or two centuries. The occasional case of falconry may have occurred anywhere in the Roman Empire and, since it was not part of a widespread phenomenon, may have escaped the attention of the pictorial and literary sources of the time. Whether interpreted as an early case of hawking or as the use of





Shape of cattle metacarpals (top) and metatarsals (bottom). COL = Colchester (Luff 1993), GHF = Great Holts Farm, LIN = Lincoln (Dobney *et al.* 1996). GL = greatest length, Bd = distal breadth, SD = smallest breadth of diaphysis.
These diagrams are size independent: the higher the value the more robust is the specimen.

Figure 120 Shape of cattle metacarpals (top) and metatarsals (bottom)

raptors as decoys, the presence of the sparrowhawk possibly reinforces the overseas connections and the upper class life-style of the inhabitants at Great Holts Farm.

Conclusions

The small assemblage of mammal and bird bones from Great Holts Farm provides an interesting insight into the life and economy of a Roman farmstead in Essex. As is common for Roman sites in the north-western Provinces of Europe, beef was the most commonly eaten meat. A variety of other resources, including wild mammals, birds and fishes attest to the prosperous life-style of the Great Holts Farm inhabitants. This is somewhat surprising, due to the rather unpretentious flooring of the building which initially indicated that we were dealing with a low status site.

The assumed wealth of the site is confirmed by the presence of a number of 'exotic' plants, such as Mediterranean stone-pine (*Pinus pinea*), sweet chestnut (*Castanea sativa*), walnut (*Junglans regia*), grape (*Vitis vinifera*) and olive (*Olea europaea*). Of these species only the olive was definitely imported, but all others, although they can grow in Britain, are typical Mediterranean plants. The presence of the Spanish mackerel (*Scomber scombrus*), and possibly of the scad (*Trachurus trachurus*) among the fish remains also suggests imported goods, perhaps in the form of stored fish.

The evidence from the mammal and bird bones also points to overseas contacts, although no exotic species were found. The first piece of evidence is represented by the size of the cattle remains. This is very large and suggests the presence of non-native, recently imported livestock. The second piece of evidence is the simultaneous presence of a sparrowhawk tarsometatarsus and a large number of thrush bones. This is tentatively interpreted as an early indication of hawking or, alternatively, of the use of the raptor as a decoy. Both these would suggest a connection between the Great Holts Farm inhabitants and the southern Provinces or Rome itself.

III. Fish bone

by A. Locker

A small assemblage of fish bones was recovered from four contexts within late 3rd/early 4th-century well 567. Samples from the contexts were sieved through a 0.5mm mesh and the following species were identified: Eel (*Anguilla anguilla*), Herring (*Clupea harengus*), Pike (*Esox lucius*), Scad (*Trachurus trachurus*), Scombridae and plaice/flounder (*Pleuronectes platessa/Platichthys flesus*). These are tabulated in Table 66, unidentified vertebrae have been included, but not indeterminate fragments.

Discussion

The site is 13km from the Blackwater Estuary, and of the species identified only pike and eel are representative of local river fishing. Flatfishes could have been caught on lines or in shoreline traps along the local coastline. Herring would have been seasonally available; the annual migration of separate populations could have given rise to a winter fishery in November and December off the Essex coastline, if current migrations have any relevance to the Roman period (Cushing 1982, 61).

	6450	*6461*	*6462*	*6463*	*Total*
Eel	1sk	0	0	0	**1**
Herring	0	0	0	1sk	
	2v	0	17v	19v	**39**
Pike	3v	0	0	3v	**6**
Scad	0	0	6v	0	**6**
Scombridae	0	0	0	3v	**3**
Plaice/flounder	1sk	0	0	4sk	
	9v	0	3v	14v	**31**
Unidentified	0	3v	6v	0	**9**
Total	**16**	**3**	**32**	**44**	**95**

Table 66 Fish bones from phase II.2 well 567

The scad vertebrae are from a mature fish, this pelagic species would have been caught offshore, although found in the North Sea it has not been regarded as a prime food fish in Britain, but it is valued in the Mediterranean (Wheeler 1978, 246). Together with the scombrid precaudal vertebrae, which are closer to the Spanish mackerel (*Scomber japonicus*) than the more northerly distributed mackerel (*Scomber scombrus*), it is feasible that the scad and ?Spanish mackerel remains may represent stored fish imported from the Mediterranean, possibly in amphorae. The well also contained some seeds of imported species such as the olive and Mediterranean stone pine and it appears that a variety of imported foods were brought to the site.

Spanish mackerel vertebrae were also identified from 1st/2nd-century deposits at Gorhambury villa, Herts (Locker 1990, 212) and also from six heads in a 1st-century amphorae from Winchester Palace, London, on which the inscription described the contents as *liquamen* and the property of Lucius Tettius Africanus from Antipolis, modern Antibes (Yule 1989).

A larger assemblage of Roman fish bones combined from a number of sites in Colchester contained a high proportion of indeterminate material and many more species, often represented by a single bone. In contrast to the Great Holts Farm assemblage the species all represented local exploitation of rivers and the North Sea (Locker 1992, 278 and Locker 1987) and there was no evidence of wealth through imports of luxury items.

Despite the small size of the fish assemblage from the well, Great Holts Farm has provided more valuable data regarding the range of possible imports from the Mediterranean during the Roman period.

IV. Marine mollusca

by K. Reidy

The shells were washed and counted, the left and right valves of the oyster shell were separated and then divided into those which could be measured (whole valves) and those which could not be measured (fragmented valves). A minimum number of individuals (MNI) was calculated by adding together the totals of measurable and unmeasurable valves for both left and right valves. The highest of the two was taken to be the MNI. There were few other species present and their presence was merely noted.

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