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**Assessment of vertebrate remains from excavations at Railway Street,  
Hertford Covered Market, Bircherley Green and Honey Lane, Hertford**

by

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**Summary**

*This report presents the results of the assessment of vertebrate remains recovered from four excavations undertaken in Hertford between 1977 and 1980. Deposits from the sites, Railway Street (P99 - HRS80), Hertford Covered Market (P100 - HCM80), Bircherley Green (P90 - HCA79/80) and Honey Lane (P88 - HL77) spanned a wide time period from the Saxo-Norman through to the early modern period.*

*The bones from these sites form a moderately large assemblage, with most of the more significant material dating to the Saxo-Norman/early medieval periods (between 950 and 1200 AD). Of particular interest were the goat, sheep and cattle horncores, which represent hornworkers' waste.*

*Some remains of large cattle and sheep were also noted from the post-medieval deposits from Railway Street and Honey Lane; these may be from improved 'modern' breeds.*

*The vertebrate remains at these sites can contribute significant information regarding craft and industry in early medieval Hertford and stock improvement in the post-medieval period.*

**Keywords:** RAILWAY STREET; HERTFORD COVERED MARKET; BIRCHERLEY GREEN; HERTFORD; ASSESSMENT; SAXO-NORMAN; EARLY MEDIEVAL; POST-MEDIEVAL; VERTEBRATE REMAINS; HORN WORKING

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## **Assessment of vertebrate remains from excavations at Railway Street, Hertford Covered Market, Bircherley Green and Honey Lane, Hertford**

### **Introduction**

A total of 80 boxes of animal bones (35 x 21 x 14 cm) from a series of sites were submitted to the EAU for assessment. The excavations had been undertaken by the East Hertfordshire Archaeological Group/Unit in Hertford between 1977 and 1980, but are now the responsibility of Hertfordshire Archaeological Trust. Redevelopment of the town centre enabled ten excavations and watching briefs to be carried out with the general aim of "building up a picture of the origins, development and nature of the Saxon *burhs* and medieval town" (Zeepvat 1994). Following a recent review of these sites and of the more recently excavated site of Millbridge, five were felt to be of sufficient size and interest to be worthy of more detailed investigation.

The vertebrate assemblages under consideration in this report represent four of the five sites, namely Railway Street (P99 - HRS80), the Covered Market (P100 - HCM80), Bircherley Green (P90 - HCA79/80) and Honey Lane (P88 - HL77), Millbridge having already been assessed by the Cambridge Faunal Remains Unit (1991). The bones from these excavations spanned a wide time period (Saxo-Norman through to the early modern period), the largest assemblages dating to the Saxo-Norman/early medieval periods (between 950 and 1200 AD). Material was selected for recording with reference to information supplied by Hertfordshire Archaeological Trust (HAT) and on the basis that they were representative (as far as possible) of the range of periods and deposits excavated.

The archaeological introduction to each site has been extracted from the review document (Zeepvat 1994).

It should be noted that no systematic sieving programme was employed at these sites, with the result that the available vertebrate assemblages will inevitably be biased towards larger species and elements.

### **Railway Street - P99 (HRS80)**

#### *Late Saxon/medieval*

The southern area of the site consisted of structural features such as gullies, post-holes and other evidence representing a series of timber buildings, the earliest of which was dated provisionally to c. 1000 AD. By the 12th century, occupation of these buildings appeared to have come to an end. A sequence of pits and an oven pit were located to the north of the buildings. For most of the medieval period the area was only used sporadically.

#### *Post-medieval*

During the 17th century a yard surface covered the west part of the site, which was subsequently sealed by a gravel path in the 18th century. A brick building was put up in the nineteenth century and demolished c. 1930.

#### *Bone*

A total of 6195 bones were recovered from this site, over half (3364 fragments) from deposits dated to 950-1100 AD. A small proportion (467 fragments) could be dated

to 1600-1700 and 1700-1800 AD, whilst the remainder fell into much broader periods (Table 1). As a result, of the 126 bone-bearing contexts, only 11 (dating to 950-1100 and 1700-1800 AD) were chosen for recording in detail, whilst an additional 29 were scanned and brief notes made.

The preservation (Table 4) of the bone from Railway Street was fair to good, whilst the nature of the broken surfaces was, on the whole, scored as 'spikey'. Colour ranged from brown to fawn, with the later material (1700-1800 AD) tending to be fawn. There was little variation apparent within contexts.

The overall nature of those contexts more broadly dated to the period 1100-1600 AD resembled that of the Saxo-Norman material, whilst most of the contexts from 1100-1800 AD (with the exception of G7-119/3 and G7-136) were similar to the late post-medieval assemblage.

Fresh breakage and dog gnawing was observed from all periods but was limited in extent, mostly affecting few bones (i.e. 0-10% from each context). Butchery was also noted, particularly the longitudinal chopping of sheep vertebrae (indicating the splitting of carcasses) and crania from the Saxo-Norman period.

#### 950-1100 AD

The range of identified species is shown in Table 2 as well as total numbers of fragments, numbers of measurable bones, isolated teeth and numbers of mandibles with teeth still in situ. As is apparent from this table, caprine fragments make up the bulk of the assemblage, with cattle and pig remains being present in smaller proportions, as were the remains of chicken.

Perhaps one of the most interesting aspects of the assemblage from this period is the presence of appreciable numbers of identified goat fragments (19 from the recorded fraction and 10 from the scanned contexts). Few (7) goat post-cranial elements were identified despite careful use of comparative criteria for sheep and goat differentiation. Although numerous mandible fragments with teeth were present, time did not allow thorough separation of sheep and goat (after Payne 1985) and the possibility therefore exists that some of these may also be goat. Most (22) of the goat fragments were horncores, some of which had been chopped through their base. In addition, several ram and cattle horncores (again most showing similar chop marks) and sheep crania, with evidence of horn removal, were also noted.

Additionally, moderate numbers of fish bones were present, most being large gadids or unidentifiable fragments, although a single conger eel (*Conger conger* (L.)) maxilla was also identified.

Wild bird remains were few in number and identified only from a single scanned context (G2-74/1). These were a Columbidae (pigeon) coracoid and a wader scapula. Also noted from another scanned context (G1-62/5) was a ?black rat (*Rattus rattus* (L.)) femur.

A total of 123 measurable fragments, 75 mandibles with teeth, and 20 isolated teeth, were present in recorded contexts. On the basis of these numbers, it is envisaged that a total of 173 measurable and 105 mandibles with teeth would be available for study from the Saxo-Norman assemblage.

#### 1700-1800AD

A very small assemblage was recovered from deposits from this period, species

present and numbers of fragments being shown in Table 3. Although the assemblage is of limited interpretative value, the presence of large individuals of cattle, pig and caprine is worthy of note.

The recorded fraction of this assemblage included 29 measurable fragments and only three mandibles with teeth and it is expected that the remaining assemblage would include (approximately) an additional 20 measurable bones and 2 mandibles with teeth.

### **Hertford Covered Market - P100 (HCM80)**

#### *Late Saxon/medieval*

Much of the site was open ground during the 11th and 12th centuries, although evidence for two buildings, in the form of gullies and postholes, was uncovered, one on the west and one on the north side of the excavated area. The site was also much disturbed by a series of pits. After a period of abandonment a yard was laid across the centre of the site, associated with a hearth to the south, in the late 13th century.

#### *Post-medieval*

A lime kiln was built in the early 17th century, while in the 18th century two brick cottages with a yard were constructed.

#### *Bone*

A total of 1882 fragments comprised the vertebrate assemblage from the Covered Market, the vast majority (1396 fragments, 74%) from deposits tightly dated between 1000-1150 AD (Table 1). Material of medieval and post-medieval date represented very broad time periods and were therefore of little zooarchaeological

value. Consequently, the material recorded in detail came from 20 contexts all dating to the Saxo-Norman period and representing 75% of the assemblage from this period. Six further contexts of various dates were scanned and brief notes were made (see Table 1).

Preservation (Table 6) of the recorded material was mostly 'fair', although four contexts (G1-53/4, G153/6, G1-69/2 and G6-76/1) were scored as 'variable' and a single one (G7-61/1) recorded as 'poor'. Context G6-76/1 also contained some fragments which were fawn in colour and appeared somewhat 'greasy', possibly indicating contamination from later deposits. Conversely, some bones from context G1-69/2 appeared brittle, indicating the possibility of their having been subjected to sustained heating. This observation is corroborated by the fact that this context is described as the fill of a clay lined furnace. Much of the remaining material was brown in colour, whilst the nature of the broken surfaces was mainly 'spikey' or 'variable' in appearance.

The range and frequency of species (Table 5) is similar to that from Railway Street, although only two fragments of fish were recovered. In addition, two goose (*Anser* sp.) fragments were also identified. Cattle, sheep and goat horncores were once again noted, most being chopped in the same fashion as those previously described from Railway Street.

Several other interesting observations include a horse metapodial fragment (context G1-35) split and extensively chopped along the shaft, and possibly evidence for bone working, as well as a cattle mandible fragment with scorch marks in the area of the diastema. This phenomenon has been extensively noted in the late 4th century assemblage from the Lincoln Waterfront and interpreted as the

result of liquid marrow extraction (Dobney *et al.* in press).

Eighty-three measurable fragments, 45 mandibles with teeth and eight isolated teeth were present in the recorded assemblage. It is envisaged from these numbers that the unrecorded fraction would produce an additional 28 measurable bones and 15 mandibles with teeth.

### **Bircherley Green - P90 (HCA79/80)**

#### *Late Saxon/medieval*

The main feature during this period was a large 'V' shaped ditch possibly of late 12th century date, with an associated bank. In addition, there were a number of pits, postholes and a small oven. Between the 14th and the 18th centuries the area appeared to be open ground, layers of soil accumulation sealing the earlier features indicating a period of disuse.

#### *Post-medieval*

Features dating to this period suggest that industrial and residential development took place.

#### *Bone*

A total of 1191 fragments of animal bones were recovered from excavations at Bircherley Green. Five hundred and fifty fragments (from 26 contexts) represented the assemblage dated between 1050-1200 AD (Table 1). Material from five of these contexts (all fills from the same ditch) were recorded in detail, whilst a further six were quickly scanned. A small proportion of the remaining animal bones, from much more broadly dated deposits, was also scanned.

The preservation, angularity and colour (Table 8) of most of the well dated recorded material was variable, both within and between contexts, and this is possibly indicative of the presence of reworked material. Context G3-32/5 contained a single, very eroded, human femur shaft fragment supporting the view that a residual component is present in this early medieval assemblage.

The range and frequency of species is shown in Table 7 and although the total medieval assemblage is somewhat small, sheep and goat horncores were again present.

A total of only 17 measurable bones, 10 mandibles with teeth, and eight isolated teeth was recorded. As these totals represent just under half of the assemblage dated between 1050-1200, it is expected that the unrecorded half will include a similar number of measurable fragments and mandibles with teeth (i.e. an additional 17 measurable fragments and 10 mandibles).

### **Honey Lane - P88 (HL77)**

#### *Late Saxon/medieval*

The earliest features, dating to 11th century, included a series of pits, postholes and gullies. These features were followed by successive phases of timber buildings of 12th/13th century date. A 'black earth' deposit suggested that the site underwent a period of disuse during the 14th and 16th centuries.

#### *Post-medieval*

The site seemed to have been reoccupied in the 16th and 17th centuries with the construction of an alleyway and buildings on either side. A well was also dug during

this period. The 18th century saw further sequences of surfaces and make-up layers in the alleyway and rebuilding (in the form of extensions and alterations) of the structures. Tip layers were recorded within Building 1.

### *Bone*

As a result of problems with the original site record, sufficient information was not available to produce detailed summaries of the vertebrate assemblage as produced for the previous sites and detailed in Table 1. Although 31 boxes (35 x 21 x 14 cm) of animal bones were recovered from these excavations, few of the larger contexts were sufficiently well dated to warrant further investigation. On the basis of general period summaries, only those principal features and layers described by HAT were included in this assessment.

The most striking characteristics of most of the recorded and scanned material is its obvious mixed nature. The variability of preservation, angularity and colour (Table 9) of bones within most of the deposits suggests the presence of much residual material. Context 531 (late 11th-14th century) contained numerous cat bones described as 'greasy', as well as a cat mandible with knife marks. Another cat mandible showing knife marks was recovered from a supposed 16th/17th century deposit (Context 371). Badly eroded human bones were also recovered from a 16th/17th century deposit (Context 392).

However, recorded and scanned material from five eighteenth century deposits was, on the whole, better preserved and of a more uniform nature. Cattle fragments represented mostly immature individuals, whilst those which could be measured were noticeably larger than individuals from earlier periods.

A single metatarsal showed a pathological condition which has previously been described from a number of other medieval and post-medieval assemblages by O'Connor (1984) and the present authors (Carrott *et al.* 1993a, Carrott *et al.* 1993b, Dobney *et al.* 1994, Dobney *et al.* in press). It is manifested by a vertical ridge of highly remodelled bone positioned parallel with and medial to the position of the median extensor tendon. This condition still remains problematic in its interpretation.

### **Discussion of potential**

Deposits from Railway Street, Covered Market and Bircherley Green together yielded a moderate assemblage of animal bone, the largest, and hence, most useful, body of material being from deposits dating between 950-1200 AD.

Of particular interest is the evidence for craft activities from these Saxo-Norman deposits, primarily noted from Railway Street and the Covered Market. Goat, sheep and cattle horncores, which had obviously been chopped, indicate the presence of hornworkers waste. Goat remains (presumably horncores) were also noted from the larger assemblage from Millbridge. Whether horn working was actually carried out in the immediate vicinity remains open to question. The very limited numbers of post-cranial elements identified as goat, in contrast to those of sheep and cattle, perhaps indicates that goat horncores or hides with heads still attached were imported into the town. This interpretation has also been suggested for the site of Deansway, Worcester (Nicholson and Scott 1992) where a predominance of goat horncores was also recorded. In that case documentary evidence from post-medieval Worcester indicates that goat skins were

important for the making of kid gloves. The importance of goat in Hertfordshire has previously been noted by Trow-Smith (1957). He states that during the Saxon period, at the monastery of Hatfield in Hertfordshire, the ratio of sheep to goat was 5:1. Other similar assemblages, of early medieval date, have also been identified from a number of sites in York, including 9th-12th century deposits at North Street (Dobney and Jaques 1993), post-conquest deposits at Skeldergate (O'Connor 1984), 12th-13th century contexts from Tanner Row (O'Connor 1988), Petergate (Ryder 1970) and 11th-14th century deposits at Swinegate (Carrott *et al.* 1994).

Taking into consideration the lack of systematic sieving and sampling, a moderately large fish bone assemblage was recovered from Railway Street. However, this represents an assemblage biased in favour of larger individuals and species and therefore must be regarded as unrepresentative. As such, its potential to address any detailed questions regarding exploitation of marine resources is severely restricted. However, small mammals, fish, and birds, recovered from sieving experiments undertaken at the site of Millbridge, may help to redress the balance, providing not only economic but also palaeoecological information.

Few well-dated animal bone assemblages of Saxo-Norman date have been published, so that this material is of high priority. However, the small size of the assemblage limits its zooarchaeological potential.

Much of the remaining material represents much broader timescales and is therefore of little academic value. Although the vertebrate assemblage from Honey Lane was comparatively large, archaeological and zooarchaeological information indicates the presence of reworked and

residual material. It is therefore considered that only bones from deposits of 18th century date from this site would be of any interpretative value. Additional small quantities of post-medieval material were recovered from Railway Street and Millbridge, both of which included the remains of large individuals of the principal domesticates. Well dated post-medieval material is rare and, until recently, has largely been overlooked and in some cases even discarded. Detailed studies of bone from this period may add useful information with which to address the question of livestock improvement (suggested by size increase) associated with the agricultural revolution. This phenomenon has already been noted from the few published post-medieval assemblages recovered from the sites of Aldgate, London (Armitage 1984), Launceston Castle, Cornwall (Albarella and Davis 1994), St. Frideswide's Priory, Oxfordshire (Stallibrass 1988) and from Hungate and St Paul-in-the-Bail, Lincoln (Dobney *et al.* in press).

The academic potential of this material fits well within the broad research framework outlined by English Heritage (1991) and can be used to address two of their major research themes: 'The origins and development of the small town and rural markets' (*ibid.*, p40) and 'Patterns of industry and craftsmanship' (*ibid.*, p42).

### **Recommendations**

It is recommended that well-dated remains of Saxo-Norman/early medieval date (950-1200 AD) from the sites of Railway Street, the Covered Market and Bircherley Green be recorded in detail and the data be compared directly with that from Millbridge.

All well-dated remains of late post-medieval date (1700-1800 AD) from the

sites of Railway Street and Honey Lane should be recorded in detail and the data again be compared directly with that from Millbridge.

Particular attention should be paid to the biometrical analyses of the caprine material (especially goat horncores) from Saxo-Norman/early medieval periods and to the bovid remains from 18th century.

A comprehensive record should be made of tooth eruption and wear stages from the numerous caprine mandibles recovered from Saxo-Norman/early medieval deposits and analysis of epiphyseal fusion should be focussed on the post-medieval cattle remains

Time estimates for the main phase of work can be found in Table 10.

## Archive

The animal bones are currently stored in the Environmental Archaeology Unit, University of York, along with paper and electronic records pertaining to the work described here.

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Table 1. Summary data for the vertebrate assemblages from Railway Street, Hertford Covered Market and Bircherley Green.

Site	Period (AD)	No. of contexts	No. contexts recorded	No. contexts scanned	No. of fragments recorded	*Total no. of fragments
Railway Street	950-1100	45	9	13	1954	3364
	1100-1600	20	-	5	-	1143
	1100-1800	25	-	4	-	1002
	1600-1700	3	-	-	-	16
	1700-1800	16	3	7	249	451
	modern	17	-	-	-	219
Covered Market	1000-1150	53	20	2	1041	1396
	1150-1550	17	-	3	-	314
	1550-1850	17	-	1	-	164
	modern	3	-	-	-	8
Bircherley Green	1050-1200	26	5	6	265	550
	1050-1930	17	-	1	-	311
	1200-1800	3	-	1	-	61
	1700-1930	17	-	3	-	184
	modern	7	-	-	-	85

\*compiled using data provided by Hertfordshire Archaeological Trust

Table 2. Recorded animal bone from Railway Street: 950 - 1100 AD.

Taxon		No. fragments	No. measurable	No. mandibles	*No. isolated teeth
<i>Canis f. domestic</i>	dog	1	-	-	-
<i>Felis f. domestic</i>	cat	2	-	-	-
<i>Equus f. domestic</i>	horse	3	2	-	-
<i>Sus f. domestic</i>	pig	65	3	7	4
<i>Capreolus capreolus</i> (L.)	roe deer	1	1	-	-
<i>Bos f. domestic</i>	cattle	112	28	7	8
<i>Capra f. domestic</i>	goat	19	14	-	-
Caprinae	sheep/goat	303	40	61	8
Gallus/Phasianus	chicken/pheasant	4	3	-	-
<i>Gallus f. domestic</i>	chicken	53	32	-	-
Indeterminate bird		11	-	-	-
Fish		68	-	-	-
<b>Sub-total</b>		<b>642</b>	<b>123</b>	<b>75</b>	<b>20</b>
Unidentified		1312	-	-	-
<b>Sub-total</b>		<b>1312</b>	-	-	-
<b>Total</b>		<b>1954</b>	<b>123</b>	<b>75</b>	<b>20</b>

\*Only shows those teeth for which tooth wear could be recorded

Table 3. Recorded animal bone from Railway Street: 1700 - 1800 AD.

Taxon		No. fragments	No. measurable	No. mandibles
<i>Equus</i> f. domestic	horse	1	1	-
<i>Sus</i> f. domestic	pig	6	1	1
<i>Bos</i> f. domestic	cattle	24	3	1
Caprinae	sheep/goat	53	24	1
<b>Sub-total</b>		<b>84</b>	<b>29</b>	<b>3</b>
Unidentified		165	-	-
<b>Sub-total</b>		<b>165</b>	<b>-</b>	<b>-</b>
<b>Total</b>		<b>249</b>	<b>29</b>	<b>3</b>

Table 4. Notes on recorded animal bone from Railway Street. Key: Pres/ang/col-preservation/angularity/colour respectively.

Period	Context	Pres/ang/col	Notes
950-1100 AD	G1-61/5 (pit fill)	Fair Spikey Brown	10-20% dog gnawing <i>Cattle</i> - 1 horncore <i>Goat</i> - 2 horncores, both chopped from the skull <i>Sheep</i> - 1 ram horncore, chopped from the skull
	G1-62/3 (pit fill)	Fair Spikey Brown	<i>Cattle</i> - mostly small sizes represented. <i>Goat</i> - 3 horncores, no post-cranial elements. <i>Sheep</i> - 4 horncores including 1 ram <i>Roe deer</i> - proximal radius <i>Chicken</i> - range of sizes; 1 tarsometatarsus with a spur <i>Unidentified</i> - many sheep-sized rib and shaft fragments
	G1-63 (fill of beam slot)	Fair Spikey Brown	<i>Horse</i> - femur with knife marks on shaft <i>Goat</i> - 2 horncores, both large and chopped from skull <i>?Goat</i> - radius <i>Fish</i> - 1 unidentified fragment
	G1-65/2 (pit fill)	Fair Variable Variable	All horncores have been removed from skull <i>Cattle</i> - 2 horncores <i>Goat</i> - 5 horncores ( 2 are large); 1 cranium with the horncores removed, 1 metacarpal <i>Sheep</i> - 7 horncores, 2 represent one ram. <i>Fish</i> - 1 unidentified fragment
	G2-74/2 (pit fill)	Fair Spikey Brown	20-50% butchery <i>Cattle</i> - 3 horncores <i>?Goat</i> - 2 metatarsals <i>Sheep</i> - some large individuals represented <i>Cat</i> - maxilla and radius <i>Chicken</i> - very small individuals <i>Fish</i> - 17 fragments including large gadid <i>Unidentified</i> - some sheep-sized vertebrae split transversely and longitudinally and a sheep skull split longitudinally
	G2-77/1 (fill of hollow)	Fair Spikey Brown	<i>Cattle</i> - 3 horncores <i>Sheep</i> - 1 ram horncore chopped longitudinally
	G2-78/1 (pit fill)	Fair Spikey Brown	<i>Cattle</i> - 2 horncores <i>Sheep</i> - 1 horncore <i>Fish</i> - 18 fragments including large gadids and conger eel maxilla <i>Unidentified</i> - Vertebrae split transversely and longitudinally

Period	Context	Pres/ang/col	Notes
950-1100 AD	G2-78/2 (pit fill)	Fair Spikey ?Brown	Bone dirty - needs washing <i>Goat</i> - 1 large horncore <i>Fish</i> - 17 fragments including 2 large, chopped gadid vertebrae and one ?cod articular <i>Unidentified</i> - large sheep crania split longitudinally; some sheep-sized vertebrae split transversely and longitudinally
	G2-78/3 (pit fill)	Good Spikey Brown	<i>Goat</i> - 1 horncore and 2 metacarpals <i>Sheep</i> - 2 horncores <i>Fish</i> - 14 fragments including 9 large gadid vertebrae, all chopped <i>Unidentified</i> - some sheep cranial fragments split longitudinally
1700-1800 AD	G1-9 (layer)	Fair Variable Fawn	<i>Cattle</i> - large femur and radius fragments
	G2/7-35 (pit fill)	Fair Variable Variable	<i>Horse</i> - large metatarsal <i>Cattle</i> - fragments from large individuals <i>Caprine</i> - some large individuals represented <i>Pig</i> - enormous metacarpal
	G2-41 (layer)	Good Variable Fawn	<i>Caprine</i> - range of sizes, including some very large individuals

Table 5. Recorded animal bone from Covered Market: 1000-1150 AD.

Taxon		No. fragments	No. measurable	No. mandibles	*No. isolated teeth
<i>Felis f. domestic</i>	cat	2	-	-	-
<i>Equus f. domestic</i>	horse	3	-	-	-
<i>Sus f. domestic</i>	pig	81	2	11	-
<i>Capreolus capreolus</i> (L.)	roe deer	1	-	-	-
<i>Bos f. domestic</i>	cattle	83	23	2	2
<i>Capra f. domestic</i>	goat	16	13	-	-
Caprinae	sheep/goat	157	35	32	6
<i>Anser sp.</i>	goose	2	1	-	-
Gallus/Phasianus	chicken/pheasant	1	-	-	-
<i>Gallus f. domestic</i>	chicken	14	9	-	-
Indeterminate bird		12	-	-	-
Fish		2	-	-	-
<i>Sub-total</i>		374	83	45	8
Unidentified		667	-	-	-
<i>Sub-total</i>		667	-	-	-
<b>Total</b>		<b>1041</b>	<b>83</b>	<b>45</b>	<b>8</b>

\*Only shows those teeth for which tooth wear could be recorded

Table 6. Notes on recorded animal bone from Covered Market. Key: Pres/ang/col-preservation/angularity/colour respectively.

Period	Context	Pres/ang/col	Notes
1000-1150 AD	G1-35 (layer)	Fair Spikey Brown	<i>Horse</i> - metapodial fragment, split and extensively chopped - worked?
	G1-53/1 (pit fill)	Fair Spikey Brown	<i>Goat</i> - 2 large horncores from the same individual, 2 metacarpals
	G1-53/2 (pit fill)	Fair Spikey Brown	<i>Pig</i> - very large metacarpal (?wild) <i>Chicken</i> - range of sizes <i>Unidentified</i> - numerous sheep-sized rib fragments
	G1-53/4 (pit fill)	Variable Variable Brown	<i>Cattle</i> - fragments with heavy dog gnawing
	G1-53/5 (pit fill)	Fair Variable Brown	<i>Goat</i> - 1 cranium fragment
	G1-53/6 (pit fill)	Variable Variable Variable	<i>Goat</i> - large horncore chopped from skull <i>?Goat</i> - metacarpal
	G1-53/7 (pit fill)	Fair Variable Brown	<i>Goat</i> - large horncore and metacarpal <i>Sheep</i> - 1 ram horncore Both horncores removed from skull
	G1-54 (pit fill)	Fair Spikey Fawn	<i>Cattle</i> - metacarpal, small and gracile
	G7-55 (pit fill)	Fair Variable Brown	<i>Sheep</i> - 1 ram horncore and one fragment, both chopped



Period	Context	Pres/ang/col	Notes
	G7-55/1 (pit fill)	Fair Spikey Brown	10-20% butchery <i>Cattle</i> - horncore. Some small individuals represented <i>Goat</i> - 2 horncores <i>?Goat</i> - metatarsal <i>Sheep</i> - 2 horncores including ram <i>Goose</i> - greylag-sized <i>Fish</i> - large gadid fragment
	G7-55/2 (pit fill)	Good Spikey Fawn	<i>Goat</i> - first phalanx <i>Roe deer</i> - metacarpal fragment
1000-1150 AD	G7-61/1 (pit fill)	Poor Variable Brown	<i>Cattle</i> - horncore <i>Goat</i> -metacarpal
	G1-69/2 (fill of furnace)	Variable Variable Variable	Bones rather brittle - possibly subjected to heating <i>?Goat</i> - metatarsal
	G7-70/1 (pit fill)	Fair Variable Brown	10-20% butchery <i>Cattle</i> - horncore
	G7-70/2 (pit fill)	Good Spikey Brown	<i>Caprine</i> - very brittle mandible - subjected to heating? Cat - 2 skull fragments
	G6-73/1 (pit fill)	Fair Spikey Brown	<i>Pig</i> - two mandibles probably from same individual
	G7-75/2 (ashy layer)	Fair Spikey Variable	<i>Cattle</i> - scorched mandible fragment
	G6-76/1 (pit fill)	Variable Variable Variable	Some fragments fawn and almost greasy, whilst others are very rounded <i>Goose</i> - greylag-sized <i>Fish</i> - unidentified fragment

Table 7. Recorded animal bone from Bircherley Green:1050-1200 AD.

Taxon		No. fragments	No. measurable	No. mandibles	*No. isolated teeth
<i>Equus f. domestic</i>	horse	4	2	1	-
<i>Sus f. domestic</i>	pig	14	-	2	3
Cervidae	deer	1	-	-	-
<i>Dama dama</i> (L.)	fallow deer	1	1	-	-
<i>Bos f. domestic</i>	cattle	34	2	2	3
<i>Capra f. domestic</i>	goat	2	2	-	-
Caprinae	sheep/goat	44	8	5	2
<i>Gallus f. domestic</i>	chicken	2	2	-	-
Human		1	-	-	-
<b><i>Sub-total</i></b>		<b>103</b>	<b>17</b>	<b>10</b>	<b>8</b>
Unidentified		162	-	-	-
<b><i>Sub-total</i></b>		<b>162</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Total</b>		<b>265</b>	<b>17</b>	<b>10</b>	<b>8</b>

\*Only shows those teeth for which tooth wear could be recorded

Table 8. Notes on recorded animal bone from Bircherley Green. Key: Pres/ang/col-preservation/angularity/colour respectively.

Period	Context	Pres/ang/col	Notes
1050-1200 AD	G3-32/1 (ditch fill)	Fair Variable Brown	<i>Sheep</i> - horncore <i>Cervid</i> - very worn and eroded antler fragment
	G3-32/3 (ditch fill)	Variable Variable Brown	<i>Goat</i> - 2 horncores <i>Sheep</i> - 1 horncore <i>Fallow deer</i> - scapula (m)
	G3-32/5 (ditch fill)	Variable Variable Brown	Some bones very poorly preserved, with eroded surfaces <i>Sheep</i> - 1 horncore, showing condition known as thumb printing, also sawn <i>Human</i> - very eroded shaft fragment
	G3-32/6 (ditch fill)	Variable Variable Brown	Context number possibly incorrect
	G3-32/8 (ditch fill)	Fair Variable Variable	<i>Unidentified</i> - includes two sheep cranial fragments with horncores removed

Table 9. Notes on the animal bone from Honey Lane. Key: Pres/ang/col-preservation/angularity/colour respectively.

Period	Context	Pres/ang/col	Notes
L11-14th century	531 (pit fill)	Fair Variable Variable	Very mixed appearance, some fragments bleached almost white. Some of the cat bones appear 'greasy' <i>Cattle</i> - 2 horncores and a very small metapodial <i>Fallow deer</i> - proximal metacarpal <i>Cat</i> - 47 fragments representing at least 5 individuals. Includes 1 mandible with knife marks and a femur, with a well-healed fractured
	597 (pit fill)	Fair Not recorded	Mostly unidentifiable
	598 (gully fill)	Not recorded	<i>Goat</i> - small horncore
	600 (layer)	Not recorded	Mostly unidentifiable
15th century	451 (layer)	Variable Variable Variable	Fairly mixed appearance Mostly unidentifiable Species present include horse, cattle, caprine, pig, cat, dog, chicken and fish
	453 (layer)	Fair Variable Variable	<i>Cattle</i> - 4 horncores, all chopped <i>Cat</i> - 6 fragments
	473 (layer)	Very poor Variable Brown	Very poor preservation, eroded bone surfaces. Bone very battered in appearance, some with black mottling <i>Cattle</i> - 3 horncores and skull fragment indicating a polled individual
	483 (layer)	Fair Variable Variable	20-50% of fragments less than 5 cm Species present include horse, cattle, caprine, pig, chicken and ?goose
16th and 17th centuries	240 (layer)	Fair Variable Brown	Mostly cattle fragments <i>Cattle</i> - large individuals represented
	371 (clay floor)	Not recorded	<i>Cattle</i> - horncore <i>Cat</i> - mandible with knife marks

Period	Context	Pres/ang/col	Notes
	392 (layer)	Variable Variable Variable	Very mixed appearance A number of human bones with greenish sandy/powdery layer, some with ?mortar concretions Species present include horse, cattle, caprine, pig, hare, cat and chicken <i>Human</i> - bones include clavicle of small child <i>Goat</i> - large horncore chopped at base
	525 (pit fill)	Fair Variable Brown	Much fresh breakage
18th century	171 (tip layer)	Fair Spikey Variable	20-50% butchery <i>Fallow deer</i> - scapula, pelvis fragment and first phalanx <i>Hare</i> - mandible <i>Unidentified</i> - some cow and sheep-sized vertebrae are chopped longitudinally
	179 (layer - alleyway)	Fair Variable Fawn	Most unidentified
	182 (alleyway surface)	Variable Spikey Fawn	<i>Cattle</i> - large individuals represented
	188 (alleyway surface)	Not recorded	<i>Cattle</i> - large individuals represented <i>Pig</i> - large first phalanx <i>Fallow deer</i> - radius
	270 (alleyway surface)	Fair Variable Brown	<i>Cattle</i> - 15 fragments include 4 tibia and 3 femur fragments

Table 10. Time estimates (in days) for recommended programme of investigation of vertebrate remains from the Hertford Central Area sites. Key to staff initials: RF1 = Keith Dobney; RF2 = Harry Kenward; RA = Deborah Jaques

Task	Staff	Time
Project planning	RF1	0.5
	RA	0.5
General laboratory tasks, moving boxes etc.	RA	0.5
Maintain databases	RA	1
Administration	RA	0.5
Obtain and organise archaeological information	RF1	0.5
	RA	0.5
Record selected bone material	RF1	2
	RA	15
Analyse data	RF1	2
	RA	10
Prepare Technical Report	RF1	2
	RA	4
Finalise EAU Report	RF1	1
	RF2	0.5
Contingency	RF1	2
	RA	3.5
Totals	RF1	10
	RF2	0.5
	RA	35.5