Ancient Monuments Laboratory
Report 123/90

BALDOCK, HERTFORDSHIRE: LAND MOLLUSCS, CARBONISED CEREALS AND CROP WEEDS, CHARCOAL, AVIAN EGGSHELL AND COPROLITES FROM PRE-HISTORIC AND ROMAN CONTEXTS

Peter Murphy BSc MPhil

Ancient Monuments Laboratory Report 123/90

BALDOCK, HERTFORDSHIRE: LAND MOLLUSCS, CARBONISED CEREALS AND CROP WEEDS, CHARCOAL, AVIAN EGGSHELL AND COPROLITES FROM PRE-HISTORIC AND ROMAN CONTEXTS

Peter Murphy BSc MPhil

Summary

Land mollusc assemblages came from pits, solution hollows and other features of Neolithic-Roman date. A Neolithic pit produced as assemblage with a high proportion of woodland taxa but Bronze Age-Roman features produced open-country faunas. Iron Age and Roman features produced cereal/weed seed assemblages composed largely of spelt processing waste. An Iron Age 'pyre-pit' contained a collection of charred vegetative plant material and cereals. Charcoals from cremations and other contexts were mainly of oak. Eggshell fragments and a near-intact egg from an Iron Age cremation appear to be from domestic fowl. Macroscopic features and microscopic contents of coprolites, apparently mainly canine but including some human faecal material, are described.

Author's address :-

Peter Murphy BSc MPhil

Centre of East Anglian Studies
University of East Anglia
Norwich
Norfolk

Introduction

During excavations conducted by the Letchworth Museum under the direction of Mr G. Burleigh in the 1980s a large collection of samples (mainly from Late Iron Age and Roman contexts but including some earlier prehistoric material) was taken. This collection was assessed early in 1990 and samples with the potential for yielding useful palaeoecological and economic information were selected for analysis. In this report results from analyses of molluscs, avian eggshell, coprolites and carbonised plant material are presented.

Molluscs

Soils in the vicinity of Letchworth are predominantly rendzinas and brown calcareous soils with some argillic brown earths and most archaeological features are cut into the underlying chalk. Given these conditions land molluscs supply the main source of evidence for local vegetational change. No buried palaeosols were available for sampling but mollusc assemblages were extracted from a Neolithic pit at Bal 15, from a Bronze Age Pit in Area 1, from Middle/Late Iron Age pits in the pit alignment at areas 5 and 12a and from the fill of a solution hollow at Bal 15. Mollusc shells were also present in Late Iron Age and Roman contexts but these were almost exclusively of common open-country taxa with some synanthropic snails (Helix aspersa) and occasional shade-requiring taxa (Discus rotundatus, Ena obscura). Assemblages of this type are only to be expected in and around a major settlement and were not thought to be worth detailed examination. Extraction methods were those of Evans (1972). Ecological data is taken from Evans (1972) and Kerney and Cameron (1979).

Bal 15 7402 (Neolithic pit)

A 2kg sample from this feature was wet-sieved, using conventional methods for the extraction of mollusca, but apart from Cecilioides acicula very few shells were retrieved. Shells from the flot from a 25kg sample, taken primarily for retrieval of carbonised plant material are listed in Table 1. Obviously, dense elements (limacid plates etc.) were not retrieved by flotation. The sample included roots, intrusive seeds and small coal fragments: the feature was not well sealed. It is therefore not surprising that some of the mollusc shells present are also recent and intrusive, notably an introduced species, Candidula sp. . On the other hand the sparse fauna present is quite different from those in features of later date: woodland taxa predominate. Clearly detailed ecological interpretation of such a sparse and contaminated assemblage would be unwise but a markedly more shaded habitat than that which existed locally later does seem to be indicated.

Area 1 F90 (Bronze Age pit)

Two samples were examined (Table 2). They produced mollusc shells, bone fragments, small mammal bones and teeth, avian eggshell, small quantities of charcoal, charred hazel nutshell fragments, a fragment of a charred barley grain and a grass caryopsis. The presence of some intrusive material in the pit fill is indicated by scraps of Helix aspersa shell and avian eggshell, neither of which would be expected in a Bronze Age context. The sparse land mollusc assemblages from these samples

Carychium tridentatum (Risso)	1
Carychium sp(p)	13
Cochlicopa sp	1
Columella edentula Draparnaud	1
Vertigo sp(p)	2
Pupilla muscorum (Linné)	4
Vallonia sp(p)	4
Acanthinula aculeata (Müller)	4
Punctum pygmaeum (Draparnaud)	4
Discus rotundatus (Müller)	1
Arionid granules	+
Vitrina sp	1
Aegopinella pura (Alder)	4
Zonitidae indet.	1
Cecilioides acicula (Müller)	+++
Clausilia bidentata (Ström)	1
Candidula sp	1
Helicella itala (Linné)	1
Helicellinae indet.	3
Trichia hispida gp.	4
Indeterminate (small apical frags)	2
Charcoal frags.	+
Cereal grain frags.	+
Gramineae indet.	1

Table 1: Macrofossils from F7402.

Sample	F90 L(1) FF	F90 L(1) N of FF
Pomatias elegans (Müller) (a)	+	-
Cochlicopa sp	-	1
Truncatellina cylindrica (Ferussac)	1	-
Pupilla muscorum (Linné)	13	4
Vallonia costata (Müller)	1	-
Vallonia excentrica Sterki	7	-
Vallonia spp	15	5
Zonitidae indet. (abraded)	1	-
Cecilioides acicula (Müller)	+	+
Clausiliidae indet. (a)	-	+
Helicella itala (Linné)	2	3
Trichia hispida gp	7	1
Helix aspersa Müller (a)	+	-
Bone fragments (some burnt)	+	+
Small mammal bone	+	+
Avian eggshell fragments	+	+
Cereal indet (caryopsis)	-	1
Hordeum sp (caryopsis frag)	1	-
Corylus avellana (nutshell frags)	+	+
Gramineae indet (caryopsis)	1	-
Charcoal	+	+
Sample weight (kg)	3.5	2.0

Table 2: Macrofossils from F90
Note (a) Non-apical whorl fragments.

are composed almost entirely of open-country taxa with a few abraded shells and fragments of Clausiliidae and Zonitidae. Although the samples are evidently contaminated by some intrusive material there is no evidence for anything other than open conditions during infilling of this feature.

Areas 5 and 12a. F196 and 2790 (Mid-Late Iron Age pit alignment)

A column sample, collected by the excavators, was available from 2790, together with samples from layers 4 and 5 in 196. The samples, as received, were desiccated and part-disaggregated but samples from 196(5) and from below 50cm in 2790 were basically pale brown calcareous loams with a high context of chalk fragments and the upper samples were brown chalky loams. From their lithology and lower content of shells the lower fills seem to have formed quite rapidly, presumably by erosion of the pit sides. There is, however, no significant variation in species composition through these fills (Table 3). Open-country taxa vastly predominate. The consistently high frequencies of Pupilla muscorum suggest that areas of bare ground existed in the vicinity, whilst the comparative abundance of Vallonia costata implies very dry conditions. Remarkably Vertigo pygmaea is apparently absent. This snail favours habitats with a continuous grassland cover. Overall then, an open, dry, at least partly bare habitat seems to be represented. This might have resulted from heavy grazing, trampling or even, perhaps, deliberate de-turfing around the pit alignment.

BAL-15: Southern solution hollow

The two solution hollows excavated in 1989 were both sampled for analysis of mollusca and other macrofossils but only samples from the southern feature were examined in detail. The fills of this feature were as follows (soil descriptions refer to moist, partly disaggregated samples as received for analysis and layer thicknesses are as measured by the excavator):

6495 (30cm) Dark greyish-brown loam; slightly stony; rounded-angular flints to 40mm, chalk fragments to 15mm; brick/tile fragments; rare small charcoal fragments; fibrous and fleshy roots.

6496 (20cm) Brown/Dark brown loam; slightly stony; rounded-angular flints (some heat-shattered) to 45mm, chalk fragments; rare small charcoal fragments; rare fine fibrous roots.

6497 (25cm) Brown loam; slightly stony; rounded-angular flints to 55mm, rare chalk fragments under 10mm; rare small charcoal fragments; rare fine fibrous roots.

6498 (10cm) Dark yellowish-brown loam; slightly stony; rounded-angular flints to 55mm, very rare small chalk fragments under 10mm; very rare small charcoal fragments; rare fine fibrous roots.

6499 (15cm) Dark yellowish-brown sandy clay loam; slightly stony; rounded-angular flints to 60mm, chalk fragments to 35mm; very rare very small charcoal fragments; rare fine fibrous roots.

6501 (5cm) Yellowish-brown sandy loam; stony; abundant chalk fragments to 20mm, rare angular flints to 25mm; very rare very small charcoal fragments; rare fine fibrous roots.

Context	2790	2790	2790	2790	2790	2790	2790	2790	196(4)	196(5)
Depth (cm)	0	10	20	30	40	50	60	70	-	-
Pomatias elegans (Müller) (a)	-	+	-	+	+	+	+	1	-	-
Cochlicopa spp	-	12	6	-	1	3	3	-	11	2
Truncatellina cylindrica (Férussac)	-	-	1	-	-	-	-	-	5	-
Pupilla muscorum (Linné)	3	106	56	15	17	17	10	4	91	54
Vallonia costata (Müller)	2	15	15	8	5	1	-	-	34	3
Vallonia excentrica Sterki	5	23	13	5	3	1	2	-	36	18
Vallonia spp	20	61	23	9	5	9	4	1	112	26
Punctum pygmaeum (Draparnaud)	2	-	2	-	-	-	-	-	4	2
Discus rotundatus (Müller)	-	-	-	-	-	1	-	1	-	-
Limacidae indet	1	-	-	1	1	-	-	-	1	-
Cecilioides acicula (Müller)	+	+	+	+	+	+	+	+	+	+
Clausiliidae indet (b)	-	-	-	2	-	-	-	-	-	-
Helicella itala (Linné)	3	28	6	3	3	3	5	3	32	14
Trichia hispida gp	6	3	4	3	4	5	3	1	-	2
Cepaea/Arianta	-	-	-	-	-	2	1	-	-	-
Helix aspersa Müller	1	-	-	-	-	-	-	-	-	-
Indeterminate (b)	-	6	2	-	-	-	-	-	-	-
Ostrea shell fragments	+	-	-	-	-	-	-	-	-	-
Bone fragments	+	+	+	+	+	+	+	-	+	-
Charcoal fragments	+	+	+	+	+	+	+	+	+	+
Fallopia convolvulus (charred nutlet)	1	-	-	-	-	-	-	-	-	-

Table 3: Macrofossils from pits in the pit alignment

All samples 1kg. Notes (a) Non-apical whorl and operculum frags.
(b) Shells abraded or badly encrusted with sediment.

Layer no.	6495	6496	6496	6497	6497	6497	6498	6498	6499	6499	6499	6501
Depth (cm) below top of layer	20-25	0-5	10-15	0-5	10-15	20-25	0-5	5-10	0-5	5-10	10-15	0-5
Pomatias elegans (Müller)	+	+	+	+	+	-	-	-	-	-	-	-
Vertigo sp(p)	-	-	-	-	-	-	-	1	1	-	-	-
Pupilla muscorum (Linné)	1	1	-	4	7	4	1	-	1	-	-	2
Vallonia costata (Müller)	-	-	-	1	-	-	1	-	-	-	-	-
Vallonia excentrica Sterki	-	-	-	1	5	-	2	-	-	-	-	2
Vallonia sp(p)	1	4	3	8	13	6	-	1	2	1	2	1
Limacidae	-	-	-	-	-	-	-	-	1	-	-	-
Cecilioides acicula (Müller)	7	22	44	95	77	20	24	8	6	10	17	6
Helicella itala (Linné)	-	3	4	4	3	-	2	1	2	-	-	-
Trichia hispida gp	1	1	-	-	4	2	-	1	-	1	+	+
Helicidae indet	3	-	-	-	-	-	-	-	-	-	-	-
Indet	-	-	-	-	1	-	-	-	-	-	-	-
Ostrea edulis (frags)	+	+	+	-	-	-	-	-	-	-	-	-
Mytilus edulis (frags)	+	+	+	-	+	-	-	-	-	+	-	-
Avian eggshell frags	+	+	-	-	+	+	-	-	-	-	-	-
Fish bone	+	-	-	+	-	-	-	-	-	-	-	-
Small mammal bone	-	+	+	+	-	-	-	-	-	-	-	-
Mammal bone frags	++	++	++	+	+	+	+	+	+	-	+	-
Charcoal	++	++	++	++	++	++	+	+	+	+	+	+
Cereal indet (caryopses)	-	-	4	1	-	-	-	-	-	-	-	-
Hordeum sp(p) (caryopses)	3	-	1	-	-	-	-	-	-	-	-	-

Table 4: Mollusca and other macrofossils from the Southern Solution Hollow at BAL-15.

+ (for mollusca) = non-apical fragments. All samples 1kg.

A column sample sub-divided at 5cm intervals was collected by the excavators. Mollusca and other macrofossils extracted are listed in Table 4.

The shell assemblages retrieved are clearly very restricted both in terms of numbers of individuals and species diversity. It seems probable that this is related to rapid accumulation of deposits and also, perhaps, because the solution hollow fills were derived from largely decalcified deposits: some common thin-shelled taxa are conspicuously absent. Excluding the intrusive burrowing snail Cecilioides acicula and abraded scraps of Pomatias elegans the assemblages are composed entirely of 'open-country' snails and provide no evidence for any phases of scrub development. The slightly higher numbers of shells from the brown loam 6497 suggest that this represents a phase of stability and incipient pedogenesis. The upper fills 6496 and 6495 include marine mollusc shell fragments, eggshell, bone, larger charcoal fragments and charred cereals. It seems likely that these were derived from domestic refuse spread on arable fields and that the top fills are material dragged into the hollow by ploughing.

Artefactual evidence (G. Burleigh, pers.comm) indicates that infilling of this solution feature occurred over a long period from the Neolithic onwards. However, it would seem that infilling was not a continuous process and most of the fills seem to have accumulated quite rapidly in phases when local vegetation cover was sparse and soil surfaces unstable.

Carbonised crop plant remains, weed seeds etc.

Samples had been collected from Iron Age ditches in Area 2, a depression in Area 1, Roman wells in Area 1 and 9 and Roman pits in Areas 10 and 18. Many of these samples had been wet-sieved in a coarse mesh and consisted only of charcoal, which has not been examined. Some unprocessed soil samples were, however, available. The soil samples from the Roman wells were from their upper fills and did not include macrofossils preserved by waterlogging. Plant material, preserved predominantly in a carbonised state, was extracted by water flotation using a 0.5mm collecting mesh. Mollusc shells were also present but have not been examined in detail. They consist mainly of open-country terrestrial taxa, with Anisus leucostoma in the well F34.

Area 1 F13/14 and F95 (Roman kiln and LIA pyre-pit)

Close to the centre of a square ditched burial enclosure a burial (F106) and pyre pit (F95) of Late Iron Age date had been sealed beneath a barrow, into which was subsequently inserted a Roman 'kiln' (F13/14). The entire fill of F95 had been collected and most of it sieved in a coarse mesh to recover artefacts and cremated bone but some small soil samples and pre-processed flots from this feature and F13/14 were available. Some of these samples had been collected in relation to a 0.5m grid, others were not precisely located within each feature. Material identified is listed in Table 5. The samples also produced a typical open-country mollusc fauna dominated by P. muscorum, Vallonia spp, H. itala and the T. hispida group with some Cochlicopa spp and Vertigo pygmaea; some shells were burnt. The plant material associated with the Iron Age pyre-pit comprised sparse remains of cereals, grassland plants and rhizomatous and tuber fragments. At present few of the latter can be identified

Context	F95	F95	F95	F95	F13/14	F13/14	F13/14	F13/14	F13/14	F13/14 L(7)
Grid Square	-	19	26	27	37	38	45	46	47	(a)
Cereal indet. ca.fr.	+	+	+	+	+	+++	+	+	+	+
Cereal indet. ca.	4	-	1	4	13	8	5	23	-	3
Cereal indet. spr.	-	-	-	-	-	-	-	-	-	1
Triticum sp(p) ca.	5	1	-	-	10	7	-	2	3	-
Triticum sp(p) gb.	-	-	-	-	17	55	5	30	22	3
Triticum sp(p) ri.	-	-	-	-	2	4	-	1	-	-
Triticum sp(p) spb.	-	-	-	-	-	10	2	8	1	-
Triticum sp(p) spf.	-	-	-	-	-	1	-	-	-	-
Triticum spelta L gb.	4	1	-	2	1	37	1	60	18	2
Triticum spelta L spb.	-	-	-	-	-	-	-	1	-	-
Triticum spelta L spf.	-	-	-	-	-	-	-	-	-	-
Hordeum sp. ca.	1fr	-	1	-	1	-	-	1cf	-	-
Hordeum sp. ri.	-	-	-	-	-	1cf	-	-	-	-
Avena sp a.fr.	-	-	-	-	-	-	-	+	-	-
Malva sp	-	-	-	-	-	-	-	fr	-	-
Medicago lupulina-type	-	-	-	-	-	-	1	-	-	-
Leguminosae indet.	1	-	2co	fr	-	-	-	-	-	-
Rumex sp(p)	1	-	-	-	-	-	-	1	-	-
Corylus avellana L	-	-	-	-	-	-	-	+	-	-
Plantago lanceolata L	2	-	-	-	-	-	-	-	-	-
Sherardia arvensis L	-	-	-	-	-	-	-	-	-	1
Compositae indet	-	-	-	-	-	-	-	1	-	-
Bromus mollis/secalinus	-	2fr	-	-	fr	2	-	-	-	-
Gramineae indet.	-	-	-	-	10	24	4	4	-	-
Arrhenatherum elatius (tu)	1	-	-	-	-	-	-	-	-	-
Monocotyledones ? Gramineae (rh)	+	+	+	+	-	-	-	-	-	+
'Tubers' (c)	15+fr	2+fr	2+fr	5+fr	-	-	-	-	-	-
Tubers/rhizomes (d)	2	1	-	1	-	-	-	-	-	-
? Flattened tubers	4	2	-	-	-	-	-	-	-	1
Indet (e)	1	-	-	-	-	-	-	-	-	-
Indet (f)	1	-	-	-	-	-	-	-	-	-
Stem fragments.	+	+	+	+	-	-	-	-	-	+
Indeterminate seeds etc.	2+1(m)	-	-	3	-	-	-	-	-	-
Sample wt (kg).	(b)	(b)	(b)	(b)	(b)	(b)	0.9	5.3	0.5	(b)

Table 5: Carbonised plant remains from F90 and F13/14.

All taxa are represented by fruits or seeds unless otherwise indicated.

Abbreviations: a - awn; ca - caryopsis; co - cotyledon;
fr - fragment; gb - glume base; m - mineralised;
rh - rhizome; ri - rachis internode;
spb - spikelet base; spf - spikelet fork;
spr - 'sprout'; tu - tuber.

Notes: (a) Described as 'smear at S.edge of pit' on label
(b) Samples received pre-processed; soil wt. unknown.
(c) Rounded ovoid tubers attenuated at either end. Clear epidermal cell paterning giving an impression of fine cross-wise striation.
(d) Ovoid organs with projecting 'stumps' of roots.
(e)/(f) ? Vegetative material.

though a tuber of the onion couch grass, Arrhenatherum elatius, is present. Overall these assemblages closely resemble material from Bronze Age cremations at Brightlingsea, Essex. (Murphy, in prep.) and elsewhere in the country (Robinson 1988). It seems probable that the use of cereal straw, including incompletely-threshed ears and uprooted grassland plants as kindling for the pyre is represented.

Samples from the kiln F13/14 consisted mainly of spelt chaff with some grains of wheats and barley, oat awn fragments and a few weed seeds. It is likely that this charred material was derived from crop processing waste used as fuel, though the precise function of the kiln is uncertain.

Bal 15 Miscellaneous plant remains from Iron Age cremations

During coarse sieving for the extraction of cremated bone large plant material from the cremations had been retained. Almost all specimens proved to be recent and intrusive but carbonised 'tubers' of Arrhenatherum elatius came from 4126, 5284 and 5570.

Areas 1 and 2: Plant remains from other Iron Age contexts

Plant remains from the depression in area 1 (519) and from ditches (217, 224) and a hearth (328) in area 2 are listed in Table 6. Cereal remains, mainly of spelt with some emmer and barley and an associated weed flora are represented. There is some variation in sample composition: the hearth 519 contained grain and weed seeds with relatively little chaff, whereas hearth 328 produced relatively more chaff. The layer 6 in ditch 217 included a concentration of charred cereal chaff, mainly of spelt. Interpreting such a small group of samples in terms of specific activities is impossible but it is probable that the samples are related to the processing of cereal crops in the vicinity and to the charring of waste material either in refuse fires or whilst being used as fuel for the hearths.

Areas 1 and 10: Plant remains from Roman wells and pits

These are listed in Table 7. The samples from the upper fills of wells F18 and F34 are again composed predominantly of spelt chaff with some sprouted grains, traces of barley and a sparse weed flora. Samples of this type are extremely common at Roman sites and are probably related to disposal of charred residues from refuse fires in which crop processing waste had been burnt. The remaining samples produced little material. F794 contained some macrofossils and concretions characteristic of latrine pits though mineralised seeds were not seen.

Bal-15 Charcoal samples

Numerous charcoal samples had been collected during the excavation but of these only samples thought by the excavator to represent possible structural or artefactual items, with a few from pyre deposits and possible garden features have been examined. A maximum of 30 fragments >6mm was inspected. Identifications are given in Table 8. The samples from 4021 and 4022 were not of wood charcoal and may perhaps represent debris from some industrial activity.

Area	1	2	2	2
Context	519	217(a)	224	328
Layer	3	6	5	1
Cereal indet ca.fr	+	++	+	+
Cereal indet ca	34	+	1	15
Cereal indet spr	-	+	-	6
Cereal/grass c.fr.	+	-	-	-
Triticum sp(p) ca	28	+(b)	2	6
Triticum sp(p) gb	7	+++	fr	35
Triticum sp(p) ri	-	+	-	4
Triticum sp(p) spb	-	+++	-	3
Triticum sp(p) spf	-	-	-	1
Triticum dicoccum Schubl gb	3	-	-	1
Triticum spelta L gb	1	+++	-	34
Triticum spelta L spf	1	+++	-	-
Hordeum sp ca	4	-	fr	-
Avena sp a.fr	+	-	-	-
Stellaria media-type	1	-	-	-
Vicia/Lathyrus	3+2co	-	-	-
Medicago lupulina-type	10	-	-	-
Polygonum aviculare agg	7	-	-	-
Fallopia convolvulus	3	-	-	1
Rumex sp(p)	14	-	-	1
Rumex acetosella agg	3	-	-	-
Sherardia arvensis L	2	-	-	-
Gallum aparine L	-	-	-	1
Eleocharis sp	2	-	-	-
Bromus mollis/secalinus	3+1cf	+	-	3
Gramineae indet.	9	+	-	14
Indet. seeds etc.	19	-	-	6
Sample wt (kg)	4.4	5.0	6.1	5.0

Table 6: Plant remains from Late Iron Age contexts in Areas 1 and 2

All taxa are represented by fruits or seeds unless otherwise indicated.

Abbreviations: a - awn; ca - caryopsis; co - cotyledon; fr - fragment; gb - glume base; ri - rachis internode; spb - spikelet base; spf - spikelet fork; spr - 'sprout'.

Notes: (a) This sample included a high proportion of very fragmented material and quantification was not possible.

(b) Includes germinated grains.

Other samples from these areas F224 L(6), F566 and F610 L(1) either produced only charcoal and a few cereal grain fragments or were too small to be worth examining.

Context	F18	F34	F34	F34	F484	F794	F796
Layer	L12A	L3	L4	L5	L9(c)	-(d)	-
Cereal indet ca.fr.	+	+	+	+	-	-	-
Cereal indet ca.	1	3	-	1	-	2	-
Cereal indet spr.	2	2	4	3	-	-	-
Cereal indet ib(si).	-	-	+	-	-	-	-
Triticum sp(p) ca	2	2	2	3(b)	-	1	-
Triticum sp(p) gb	64	55	15	42	-	-	-
Triticum sp(p) ri	28	17	11	44	-	-	-
Triticum sp(p) spb	4	10	10	19	-	-	-
Triticum sp(p) afr (si+c)	+	-	+	+	-	-	-
Triticum spelta L gb	80	60	68	94	3	1	-
Triticum spelta L spf	1	3	13(a)	7	-	-	-
Hordeum sp ca	-	1	2	-	-	-	1
Hordeum sp ri.fr.	1	1	2	5	-	-	-
Hordeum sp a.fr.(si+c)	-	-	+	-	-	-	-
Caryophyllaceae indet	-	1	-	-	-	-	-
Atriplex patula/hastata	-	-	1	-	-	1	-
Leguminosae indet	-	-	-	1	-	1	-
Rumex sp.	1	-	-	2	-	1	-
Polygonaceae indet	1	-	-	-	-	-	-
Lithospermum arvense L	-	-	9	-	-	1	-
Galium aparine L	-	1	-	-	-	-	-
Tripleurospermum maritimum L	-	1	-	-	-	-	-
Bromus mollis/secalinus	-	-	1	2	fr	1cf	-
Gramineae indet.	1	4	12	1	-	-	-
Indet. Seeds etc.	1	2	2	-	-	-	-
Sample wt (kg)	9	1.4	2.6	1.0	1.8	3.3	1.8
% flot sorted.	3.125	12.5	6.25	6.25	100	100	100

Table 7: Plant remains from Roman wells and pits

All taxa are represented by fruits or seeds unless otherwise indicated.

Abbreviations: a - awn; c - carbonised; ca - caryopsis; fr - fragment; gb - glume base; ib - inflorescence bract fragments; ri - rachis internode; si - silica skeletons; spb - spikelet base; spf - spikelet fork; spr - 'sprouts'

Notes: (a) Including a part-fragmented rachis section

(b) Some germinated grains

(c) Described as 'fill from deep holes in well side'. A few uncarbonised weed seeds (Stellaria, Sonchus etc.) also present

(d) Sample also includes bone fragments, small mammal bone a fish scale, Ostrea shell fragments and some phosphatic concretions but no mineralised seeds were observed.

132	4021	Sample consists of coal and charred amorphous vesicular material
143	4022	Sample consists of coal and charred amorphous vesicular material
252	4022	Sample consists of charred amorphous vesicular material and powdery carbon ('soot')
133	4030	Quercus sp (oak): mature wood
340	4063	Quercus sp: mature wood and ?bark
269	4086	Not located. 267 4086 Quercus sp: mature wood
325	4108	Fraxinus sp (ash): mature wood
498	4110	Quercus sp: mature wood
499	4110	Quercus sp: mature wood
511	4110	Quercus sp: mature wood
515	4110	Quercus sp: mature wood
418	4112	Fraxinus sp: mature wood
441	4120	Quercus sp: mature wood
421	4121	Quercus sp: mature wood and bark
427	4135	Quercus sp: mature wood
428	4135	Quercus sp: mature wood
637	4273	Quercus sp: mature wood
730	4281	Not located. 733 4281 Prunus sp: large frags, mature wood
945	4310	Quercus sp: mature wood
1004	4326	Not located 1001 4326 ?Quercus sp (small frags only)
1034	4349	?Quercus sp: (small fragments only)
1071	4471	Not located. 1072 4471 Quercus sp: mature wood
1260	4509	Quercus sp: mature wood
1085	4656	Quercus sp: (small fragments only)
1145	4671	Quercus sp: mature wood
1234	4855	Quercus sp: mature wood
1490	5160	Quercus sp: mature wood
1641	5170	Quercus sp: mature wood
1745	5845	Quercus sp: (small fragments only)
1747	5857	Daub fragments with charcoal flecks
1781	6417	Sample of dark brown loam with small frags of Quercus
1835	6725	Sample of dark brown loam with charcoal flecks
1875-7	6860	Samples from this context not located

Table 8: Charcoals

Avian eggshell

Shell fragments came from Late Iron Age cremations (Bal 15 89 6829) and contexts within a Roman cess pit (Bal 83 A10 782, 786, 787). In addition partly intact eggs came from the cremations Bal 15 89 7269 and Bal VII 1971 TC/DH. Specific identification of avian eggshell from archaeological contexts is not usually possible, though characteristics of size and shell thickness give at least some indication of the size of bird represented (Keepax 1981, 323). Dimensions of the material from Baldock are given in Table 9. Shell thicknesses were measured using a screw-gauge micrometer.

Bal VII	1971	TC/DH	Partly intact egg. Diameter c 37mm, length not determinable. Three detached fragments 0.28-0.31mm thick.
Bal 15	1989	6829	Fragments. Range 0.25-0.31mm; mean 0.27mm n = 19
Bal 15	1989	7269	Partly intact egg. Dimensions not determinable. Loose fragments. Range 0.28-0.36mm; mean 0.31mm n = 30
Bal 83	A10	782	Fragments. Range 0.27-0.36mm; mean 0.33mm n = 30
Bal 83	A10	786	Fragments in a dish. Range 0.26-0.36mm; mean 0.32mm. n = 30
Bal 83	A10	786	Fragments from pit fill. Range 0.29-0.38mm; mean 0.33mm. n = 30
Bal 83	A10	787	Fragments. Range 0.28-0.38mm; mean 0.34mm. n = 30

Table 9: Dimensions of Avian eggshell

The fragments were mostly in a relatively unabraded state, though those from cremation 6829 were somewhat weathered, perhaps accounting for their lower mean thickness. On thickness criteria alone the shell fragments show very similar means and ranges and these all fall within the range of thicknesses for modern domestic fowl eggs quoted by Keepax (ibid).

Coprolites and faecal concretions

Specimens collected during the excavation of Roman pits and wells are listed and described in Table 10. Many of these include large bone fragments and are thought probably to be canine coprolites. Other specimens including those from F773 and F777, however, appeared from their macroscopic contents (sloe fruitstones, corn-cockle testa, very small mussel shell fragments and bone fragments under 5mm) to be of probable human origin. Small sub-samples of these were disaggregated in dilute HCl and the resultant suspensions of material were examined by transmitted light at high power. The suspensions included angular-rounded sand grains, phytoliths, occasional pollen grains, small charcoal fragments, eggs of the intestinal parasites Ascaris and Trichuris and amorphous brown aggregates. There were occasional scraps of plant tissue but no fragments of cereal periderm or bean testa. High power examination thus did not confirm a human origin, though the overall composition and context of the samples makes this highly likely.

Bal 83 A1 F557 L(5)

Off-white soft porous coprolite fragments up to 20mm; bone frags up to 5mm; some impressions of monocot stem frags.

Bal 83 A10 F768

Off-white to brown hard brittle porous platey faecal concretions up to 20mm; some mineralised monocot stems and fragments of epidermal tissue.

Bal 83 A10 F742

Pale brown ovoid coprolite, 35 x 20mm; large bone fragments

Bal 83 A10 771

Off-white fragments up to 35mm of ovoid coprolites; large bone fragments. Off-white to brown platey faecal concretions and coprolite fragments up to 45mm; monocot stem fragments; bone frags up to 10mm.

Bal 83 A10 F773

Off-white ovoid coprolite 35 x 27mm; bone fragments up to 20mm;
Off-white ovoid coprolite 45 x 30mm.
Off-white to brown platey faecal concretions and coprolite fragments up to 55mm; large monocot stem frags up to 20mm long; epidermal tissue fragments; cavities representing moulds of Prunus spinosa fruitstones; 1mm Mytilus shell frags; small bone frags up to 5mm; moulds of fly puparia.

Bal 83 A10 F777

Off-white ovoid coprolite 32 x 21mm; high proportion of large bone fragments; monocot stem frags.
Off-white to brown platey faecal concretions up to 40mm; monocot stem frags; scrap of Agrostemma testa.

Bal 84 A18 906

Two fragments of off-white ovoid coprolites up to 30mm with bone fragments.

Bal 84 A18 913

Off-white coprolite fragment, 32mm, with bone fragments.
Ovoid off-white coprolite 35 x 25mm; some monocot stem frags.

Bal 84 A18 914

Small off-white coprolite fragments

Table 10; Coprolites and faecal concretions

References

Evans J.G. (1972) Land Snails in Archaeology
Seminar Press: London

Keepax C.A. (1981) Avian egg-shell from archaeological sites.
Journal of Archaeological Science
1981, 8, 315-335.

Kerney M.P. and Cameron R.A.D. (1979) A Field Guide to the Land Snails of Britain and North-West Europe
Collins: London

Robinson M. (1988) The significance of the tubers of Arrhenatherum elatius (L) Beauv. from Site 4, cremation 15/11, in Lam brick G.H. The Rollright Stones
English Heritage Archaeological Report 6, 102. London.