

# **Charred plant remains from Later Prehistoric features, a Bronze Age burnt mound and Saxon features at Willow Farm, Castle Donington, Leicestershire (XA14.1997).**

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## **Introduction**

Excavations were carried out by ULAS directed by Jon Coward in the South Area and Susan Ripper in the North Area (Coward and Ripper 1999) and samples were taken for the recovery of charred plant remains which can give evidence of diet, agriculture or activities on sites in the past. The features sampled included an Early Neolithic-Earlier Bronze Age pit containing numerous charred crab apples and other remains, Bronze Age and Saxon features in the South Area, and a Burnt Mound of Late Bronze Age date which was adjacent to a palaeochannel in the North Area. Palaeochannels were sampled for organic remains recorded separately.

## **Methods**

Features were sampled if they were datable and had the potential to contain charred plant remains. Samples from a total of 30 contexts in the South Area and 19 contexts from the burnt mound in the North Area were processed, assessed and submitted for analysis.

Samples were wet sieved in a York tank using a 0.5mm mesh with flotation into a 0.5mm mesh sieve. The residues were air dried and reserved for analysis. The flotation fraction (flot) was air dried and packed carefully in self-seal polythene bags. The coarse fraction over 4mm was sorted for all charcoal and finds, these fractions from the burnt mound were then graded to examine the composition of the burnt mound material. The fine fractions below 4mm were examined for the presence of charred plant remains, a proportion being sorted using a stereo microscope at x10 magnification.

After assessment the samples containing charred plant remains were selected for analysis and the flots were sorted using a x10-30 stereo microscope and the plant remains were removed to glass specimen tubes. For the larger flots only a proportion of the remains could be sorted in the time available. The plant remains were identified, counted and listed below (Table 1). The remains are seeds in the broad sense unless described otherwise, and plant names follow those of Stace (1991).

Charred plant remains were recovered from both South and North areas of the site and the remains are described by context below. Waterlogged plant remains were also recovered from the palaeochannels and are included in a separate report (Monckton 2002).

## **Identification of the plant remains**

The earliest sample included abundant fruit remains of whole and broken crab apples (*Malus sylvestris*) identified from the pips, core fragments and the size and shape of the fruits. Hazel nutshell (*Corylus avellana*) was also abundant. Glume wheat, either emmer or spelt (*Triticum dicoccum/spelta*), and barley (*Hordeum vulgare*) were present as grains with a single chaff fragment of barley. Bronze Age contexts contained a few cereal grains included those of wheat (*Triticum* sp.) some of which were identified as possibly emmer (*Triticum* cf. *dicoccum*), and some from Saxon contexts were of free-threshing form (*Triticum* cf. *aestivum*), both identified from their characteristic shapes. However identification of wheat grains is problematic because their variation and distortion can also occur on charring (Jacomet 1987). Barley (*Hordeum vulgare*) was also present including some hulled barley with twisted grains from Saxon contexts showing the presence of six-row barley then. Chaff was sparsely represented. Bronze Age contexts produced occasional glumes of wheat (*Triticum dicoccum/spelta*) which were

mostly fragmentary and abraded so could not be identified further, one of the Late Bronze Age wheat glumes was identified as emmer (*Triticum dicoccum*) from the small size, smooth appearance and two main keels. A few fragments of barley rachis were present which could not be identified further.

The Bronze Age cremation samples (table 1) produced numerous tubers of grasses including a few small tubers possibly of onion couch grass (*Arrhenatherum elatius*) and tiller bases of other smaller grasses. Fragments of grass stem (Poaceae) were also quite numerous in some samples also of smaller grasses. Other indeterminate stem and root fragments were also present with a few larger tubers of dicotyledenous plants were found which cannot be identified further at present. Some seeds were also present including ribwort plantain (*Plantago lanceolata*) a plant of grassy vegetation and small leguminous plants of clover type (*Trifolium* type) which also grow in grassy habitats. Other Bronze Age contexts contained seeds of damp or wet ground plants including water-blinks (*Montia fontana*) with other seeds of arable or disturbed ground plants mentioned below. Evidence of collected foods was occasionally found in the Bronze Age samples including hazel nutshell fragments together with elder (*Sambucus nigra*) and hawthorn (*Crataegus* sp.), which are edible and may have been consumed, found in the burnt mound samples. Some of these woody plants also represent woodland margin, scrub or hedgerow in the area.

## RESULTS

### LATE NEOLITHIC – EARLY BRONZE AGE

#### Area 6, South Area

Pit 742 (741) contained a cache of charred crab apples, abundant hazel nutshell mainly in the residue, and a moderate number of cereal grains. Some of the grains were identified as barley together with some of glume wheat, emmer or spelt, and the rest were broken and abraded so were classed as indeterminate cereal grains. A single chaff fragment was identified as a rachis fragment of barley. The crab apples were represented by whole fruits, half fruits and large and small core fragments with fruit flesh attached, abundant fruit fragments as well as a number of apple pips were found (Table 1). The fruits were thought to have been deposited as unconsumed whole or broken charred fruits representing about 50 fruits. Weed seeds were very few in number but included small grasses and a few indeterminate seed fragments. One of the crab apples was submitted for radiocarbon dating by the AMS method which gave a result around 2000 BC (Wk10074: 3662 $\pm$ 57 BP calibrated as 2140-1950 cal BC at 68.2% probability, 2200-1880 cal BC at 95% probability).

### EARLY-MIDDLE BRONZE AGE

Plant remains were found in pits, hearths and a cremation deposit, of seven features which had samples taken from 12 contexts five were found to contain some cereal remains.

#### Area 6, South Area

Pit 1336 context (1335) contained six items including a wheat grain of glume wheat (*Triticum dicoccum/spelta*) and a seed of cleavers (*Galium aparine*). A large pit 739 sampled from three contexts produced a wheat grain and an indeterminate cereal grain from one context (1332). Hearth 555 context (553) contained nothing but charcoal. Hearth 357 contained a barley grain and five charred seeds including small grasses, water-blinks and fat-hen (*Chenopodium album*) a plant of disturbed or cultivated ground, however, this feature included Earlier and Later Bronze Age pottery so these remains may be of Later Bronze Age date.

#### Area 10, South Area

Pit 212 context 219 was of undefinable Bronze Age date but this sample contained only a few seeds of fat-hen so was uninformative.

#### Watching Brief, South Area

The cremation deposit was sampled at three levels, sample [100] top, middle and base of context (1499), which all contained similar material with most at the base of the deposit (table 1). Most of the remains were tubers of grasses, some of which may have been small tubers of onion couch grass, abundant burnt grass tiller bases and culm nodes of smaller grasses were also present together with a few seeds of grassland plants such as ribwort plantain (*Plantago lanceolata*), hawkbit (*Leontodon* sp.), and buttercup (*Ranunculus acris/repens/bulbosus*) which grows on damp grassland. A few seeds of arable or disturbed ground such as black-bindweed (*Fallopia convolvulus*) and silverweed (*Potentilla anserina*), a plant of bareish sandy soil which is now typical of waysides. A sample from the pot contents (1498) also contained charred grass tubers and stem fragments (Table 1). Similar remains were also present in context (1494) while context (1500) produced only charcoal. Unlike at Eye Kettleby (Finn et al forthcoming) no food plant remains were found in the samples from the cremation deposits.

Other features sampled were Pit (1492) which produced only charcoal flecks and an indeterminate seed fragment, and a Hearth (1537) which contained four barley grains and 18 fragments of hazel nutshell and a seed of fat-hen was also present.

### LATE BRONZE AGE

Pits and hearths were sampled from the south area and of the six contexts from the six features which were sampled only two contained cereal remains. In addition the burnt mound and associated features in the North Area were sampled and contained remains from this period described below.

#### Area 10, South area.

Large pit 286 (285) produced 36 items which included grains probably of emmer wheat although grains are not often diagnostic and can distort on charring. Charred seeds outnumbered grains in the sample and included seeds of plants of disturbed or arable land such as fat-hen, black-bindweed and persicaria. Other plants found were clover type plants which grow in grassy vegetation, while water-blisks and spike-rush grow in wet areas but all these plants can also grow on disturbed or arable land. Other samples from were from Pit 247 (246) and Hearth 357 (358) both of which contained a few seeds of the same plants as above while Pit (1482) contained only fragments of slag-like material.

#### Watching Brief, South area.

Hearth (1541) contained cereal grains and some chaff. The grains included wheat with hulled barley, while the chaff was that of glume wheat including a glume of emmer (*Triticum dicoccum*). Hazel nutshell was present and seeds of disturbed or arable land were similar to those mentioned already but with the addition of stinking mayweed (*Anthemis cotula*). This plant is an indicator of the cultivation of heavy clay soils and is not usually found before the Roman period (Greig 1991). This may be an early record but the presence of Saxon activity in the area may be the source of this single seed.

### Burnt Mound, North Area

Samples were taken a total of 19 contexts from hearths and troughs found on the burnt mound together with samples of the mound material which were taken from four defined boxes of 0.5 metres square from different parts of the mound (see plan of Burnt Mound 1). The samples were processed in 59 parts and assessment of a 14 parts produced only two seeds and two

nutshell fragments from two contexts, however, sorting all the flots during analysis produced plant remains from 10 contexts including charred cereals from five contexts. The results were summarised (Table 2) and the sampling sites recorded on the site plans.

Cereal remains were found in similar numbers to those from the features in the South Area and included the same cereals and seeds. Wheat was present as emmer or spelt with occasional chaff fragments and grains, barley was also present. The most remains were found in the samples from Box 2 near the top of the mound, all three contexts contained cereals (560) with a glume of emmer or spelt and indeterminate broken cereal grains, and (577) with hulled barley grains (Table 1). The lowest sample (578) contained a wheat glume and a cereal grain. A wheat grain was also found in the sample from Trough (624) while the later Oval feature (619) contained a grain probably of emmer wheat. Two of the contexts with cereal remains also contained fragments of hazel nutshell; Box 2 (577) and Trough (624). Additional contexts which contained nutshell were Hearth (609) near Box 2 and context (559) from Box 1. The hearth (195) also contained nutshell. Other remains of possibly edible plants were charred elder seeds from Box 2 (Table 1) and a hawthorn pip from Box 3 (579). Hence most of the food remains from the burnt mound were found at the top of the mound near the hearth (609). A few charred seeds were found in some of the other samples (Table 2). In addition waterlogged seeds were found in the lower trough (622) sample 72 which were similar to those found in the adjacent palaeochannel described in a separate report (Monckton 2002).

### **Unphased samples, South area**

Samples from eight contexts produced less than five or no plant remains other than charcoal. From the Watching brief area two stakeholes from the ringditch (1591) and (1587) contained only small charcoal fragments, pit (1532) contained a fragment of hazel nutshell and pit (1509) contained four clover type seeds. From Area 5 hearths (527) contained small grass and clover type seeds and ((1053) only a fragment of charcoal. From field 9 hearth (167) contained a single seeds of fat-hen and water-blinks and pit (177) charcoal only.

### **SAXON South Area**

Two saxon features were sampled both of which contained small numbers of charred plant remains. The cereals, free-threshing wheat and barley were represented here, these were the main cereal crops found at Eye Kettleby (Finn et al forthcoming) where a larger assemblage of remains was examined from the settlement there.

The Area 5 Grubbenhaus 499 was the more productive. This contained only free-threshing wheat, possibly bread wheat, represented by grains only and not found elsewhere on the site. A grain of glume wheat was also present but because of the prehistoric activity on the site this cannot be taken as evidence of the continued use of this wheat in the Saxon period. This sample contained hulled twisted barley grains showing the presence of six-row barley in this phase, a fragment of barley chaff (rachis) which could not be identified further was present. The seeds found probably represent the weeds of the crops. From the Watching brief area a pit 1484 contained a barley grain, a few seeds and a fragment of either pea or bean showing the consumption of edible legumes (Table 1).

**Table 2: Summary of results from the Burnt Mound and associated features.**

Samp No.	Cont No.	Feature type	Samp Vol. litres	Flot Vol. mls	Gr	Cf	Se ch	Se un	Nut	Ch	Plant remains Total charred items.
42	559	BM Box 1	28	155	-	-	2	-	1	+++	Black-bindweed and Mare's-tail seeds.
44	561		37.5	275	-	-	-	-	-	+++	A stem fragment, Glass bead 2mm blue.
45	562		36.5	207	-	-	-	-	-	++	A stem fragment
											<b>Total: 3 items</b>
43*	560	BM Box 2	37.5	112	1	1	18	+	-	+++	A cereal grain, a wheat glume, elder +seeds*
46*	577		8	200	7	-	13	-	1	+++	Barley grains, elder +seeds *
47	578		8	20	1	1	-	+	-	++	A cereal grain, a wheat glume.
											<b>Total: 43 items</b>
48	579	BM Box 3	25	8	-	-	2	-	-	+	Hawthorn, dock seed.
49	580		28.5	16	-	-	-	-	-	+	
											<b>Total: 3 items</b>
50	602	BM Box 4	25.5	17	-	-	-	-	-	fl	
51	603		6	4	-	-	-	-	-	fl	
											<b>Total: NONE</b>
52	609	Hearth	14	75	-	-	1	-	2	++	Black-bindweed seed.
53	608		5.5	30	-	-	-	-	-	+	
											<b>Total: 3 items</b>
73	624	U.Trough	38.5	180	1	-	-	+	1	++	A wheat grain.
75	625		10.5	40	-	-	-	-	-	+	
											<b>Total: 2 items</b>
54	607	Trough	11	5	-	-	-	-	-	fl	
71	621		13	22	-	-	-	-	-	+	
72 #	622		13.5	21	-	-	-	79	-	+	Waterlogged seeds #
											<b>Total: NONE +WL</b>
39	195	Hearth	5	110	-	-	2	-	1	+++	Large grass and black-bindweed seeds. Glass bead, black.
											<b>Total: 3 items</b>
74*	619	Oval Feat.	17.5	52	1	-	-	1	-	++	An emmer grain, black-bindweed seed, stem frag, a thorn.*
											<b>Total: 2 items</b>

Key: Gr = cereal grain, Cf = chaff, Se ch = charred seed, Se un = uncharred seed, Nut = hazel nutshell, Ch = charcoal, frag = fragments, fl = fleck, BM = burnt mound, \* = see Table 1, # = see separate report.

## Discussion

The plant remains from the Late Neolithic- Early Bronze Age pit included crab apples, hazel nutshell and cereal grains with crab apples most abundant. The crab apple remains were thought to represent about 55 unconsumed charred whole or broken fruits deposited in the pit. It has been suggested that crab apples may have been dried for later use and so may have been charred in the process (Robinson 2000). It is also possible that they may have been charred during cooking or boiling to extract juice, or even burnt deliberately for some ritual purpose but this is all speculation. The greater abundance of nutshell fragments than cereal grains found here has been noted in many samples of this date. It has been pointed out that nutshell is waste for disposal whereas grains are the product to be used, so the waste of grains would have been

avoided and deposits may not represent the availability of foods (Moffett et al 1989). The nutshell fragments outnumber the grains but may only represent a dozen or so nuts, however the food value of nuts is greater per unit. The greater abundance of nutshell in this period than subsequently is thought to indicate their greater importance in the diet than in later periods (Robinson 2000). It has been suggested that the finds of nutshell in pits may perhaps be explained by the storage of nuts in pits which were removed and consumed nearby, or possibly because the deposition of burnt nutshell was a common ceremony associated with pits (Robinson 2000). The grains here are quite numerous compared with many deposits of this date, possibly 50 grains being represented in total when fragments are taken into account. The cereal found here was glume wheat which could not be identified further although it is likely to be emmer, barley was also present with similar numbers of grains to the wheat and a chaff fragment, the small amount of chaff and weed seeds show this was cleaned grain, possibly burnt during food preparation.

Late Neolithic-EBA contexts which have produced similar evidence for abundant crab apples include two sites with Grooved Ware pits; Barton Court Farm, Abingdon, Oxfordshire (Jones in Miles 1984) and Barrow Hills, Oxfordshire excavated by Halpin (Moffett et al 1989). This later site on the Thames gravels had a similar group of remains to that found here with crab apple fragments, nutshell and cereal grains showing the use of cultivated as well as gathered woodland resources.

### **Bronze Age Cremation**

In the cremation deposit the bulk of the remains other than charcoal consisted of tubers and tiller bases of grasses, a few of the tubers were possibly small tubers of onion couch grass. These tubers are known to be edible and this has been discussed by Robinson at Rollright (1988) where they are described as coarse and probably requiring much preparation to extract anything edible. However, onion couch grass grows on ungrazed grassland and abandoned arable land (Robinson 1988) which may reflect the site of the pyre. However Robinson goes on to suggest that the frequent presence of these tubers in cremations may be because the stems were gathered as kindling for the pyre, the moist tubers being more likely to survive charring than the dry stems (Robinson 1988). This seems likely for other larger grass tubers as found in abundance here, the evidence for onion couch grass being sparse here compared with other grasses. The seeds present in this deposit are also those of grassy vegetation perhaps gathered with kindling although some damp ground plants and a few of the same plants found in the palaeochannel were present. It is therefore possible, that the damp grassy vegetation represented by the seeds may be that of the site of the pyre and this may also be the case for the abundant small grass tiller bases included in the deposit. These may have become charred because they were growing in the ground below the pyre, this would slow the burning process resulting in charring of these small stem bases which may otherwise have burnt away. This material could then have been collected together with the pyre remains to include in the deposit. It is therefore suggested that the pyre was made on damp grassland although kindling gathered from elsewhere may also be included.

Other Bronze Age features contain a few cereal remains and seeds of wild plants. The cereals include glume wheat and barley. The E-MBA samples include a pit 1336 where wheat and cleavers occurs together. The hearth 1537 produced a few barley grains with more nutshell fragments showing the use of cultivated and gathered food in this phase. In the late Bronze Age emmer wheat is present in pit 286 and emmer chaff confined in hearth 1591. Unfortunately this context also contained a seed of stinking mayweed which was thought to be intrusive as this is not usually found before the Roman period (Greig 1991). A similar occurrence was found at Eye Kettleby where Saxon activity was also found in the same area as prehistoric features (Monckton in Finn forthcoming). The presence of cereals, weed seeds and nutshell show the preparation and consumption of food on the site and nearby occupation,

whether permanent or transient, is likely. The seeds of wild plants probably include weeds of the crops and plants of damp grassland possibly from the surroundings of the site.

The samples here contain grains of wheat and barley together with a little chaff and weed seeds which can be interpreted as waste from cleaning the cereal before consumption. In the glume wheats, emmer and spelt, the grains are held tightly in the chaff which can be removed by parching and pounding and the waste chaff and seeds can be removed by fine sieving. This was carried out in Late Iron Age and Roman times but burnt chaff is scarce in the earlier periods so cereal cleaning may have been carried out by other methods than heating (Robinson 2000, 89). Barley threshes freely from the chaff, but before consumption both cereals would probably be hand sorted in small batches, to remove seeds, chaff and other contaminants. The waste would tend to include some spilled or spoiled grains. This appears to be some of this waste which was burnt, in the hearths during food preparation. Some of the seeds could represent the weeds of the crops such as fat-hen, black-bindweed and docks, and although grassy plants and damp ground plants could also have been growing with the crops, some are likely to be plants from the surroundings of the site which included disturbed ground, and grassy vegetation seen from the evidence of waterlogged remains in the palaeochannel (see separate report Table 3).

How and why people used burnt mounds is a matter for speculation. The evidence from the plant remains shows food waste included cereals, nuts and perhaps gathered fruits suggesting that food was prepared and consumed on the site. This is only to be expected if people spent any time there for any other activity, the extensive burning found is certainly unnecessary for cooking on a domestic scale. Plant remains are sparse which may suggest only small scale use of cereals and gathered plant foods on the site. The find of cereals was unexpected from the assessment results, and because evidence for processing wild foods had been reported from burnt mounds on the Essex coast (Wilkinson and Murphy 1995). Here the evidence suggests the preparation and consumption of both wild and cultivated plant foods and that one of the functions of the hearths was food preparation. This may suggest at least transient occupation of the site but does not give any clues about other activities carried out there.

In comparison with other sites cereal cultivation is known from the region from at least 3000BC with abundant charred grain from a Neolithic building at Lismore Fields Buxton including emmer dated to 3990-3150 cal BC at 95% probability (Jones 2000) and a deposit of numerous emmer grains from Aston Cursus dated to c.3500 BC (Loveday 2000). Bronze Age glume wheats in moderate numbers from Lockington, Leicestershire show spelt already present by the Later bronze Age. At Lockington emmer was dated to cal BC 1735 (cal BC 1875-1805 and 1795-1645 at 68% probability Beta-83721) and spelt with emmer dated to cal BC 1385 (cal BC 1425-1260 at 68% probability Beta 83722). These were found in Bronze Age pits dated from charcoal (Monckton 2000). However, evidence for spelt has not been found at all Bronze Age sites in the county, Eye Kettleby, near Melton Mowbray, Leicestershire produced only evidence for emmer from Bronze Age contexts as is the case here. A small amount of evidence for spelt was found at Ridlington Rutland but at that site hulled barley was abundant with grains dated to cal BC 1390-1210 at 68% probability (Wk-10073: 3025+/- 69 BP). The evidence from the prehistoric features of Bronze Age date here at Willow Farm shows the use of glume wheat with emmer identified from the Late Bronze Age.

## **Conclusions and summary**

A deposit from a pit provided evidence for Late Neolithic-EBA use and possible cultivation of wheat and barley in the area, and the reliance on both cultivated as well as collected foods including crab apples and hazel nuts. This shows the use of woodland resources and suggests the proximity of woodland. A large group of charred crab apples were found in the pit they appeared to be unconsumed whole and broken fruits which were dated to around 2000BC by AMS radiocarbon analysis.

The Bronze Age cremation samples contained evidence which suggested that the pyre was constructed on the damp grassland nearby the river as the environment compares with that suggested from waterlogged remains in the palaeochannels. No food remains or other evidence was found to suggest more about the ritual.

Other Early to Late Bronze Age features contained waste from food preparation including grains of wheat and barley with a little chaff and weed seeds thought to be sorted from the cereals before cooking for consumption. Emmer was the only wheat identified and this was found in LBA contexts. A seed of stinking mayweed was also found in a LBA context but this was thought to be intrusive. Weed seeds of spring sown crops and disturbed ground were present in the samples and hazel nutshell was present as a collected food. At least transient occupation of the area was suggested.

The Burnt mound produced evidence of the charred cereals glume wheat and barley, a little chaff and weed seeds with hazel nutshell, similar to the evidence from the other Bronze Age features. In addition elder and hawthorn were also found which may also have been consumed. These remains occurred with the main concentration of charcoal at the top of the mound near the hearth. It was therefore suggested that one of the functions of the hearth was food preparation of cultivated and gathered food for the people using the mound.

Saxon remains were sparse but showed the use of free-threshing wheat, possibly bread wheat, and barley including six-row barley. A legume fragment of pea or bean was evidence of another crop.



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**TABLE 1: CHARRED PLANT REMAINS Willow Farm, Castle Donington, Leicestershire.**

AREA	S							N			S		
Phase	L.Neo	E-MBA				LBA					Saxon		
Context type	Pit	Pit	Crem	Crem	Hth	Pit	Hth	BM	BM	BM	Grub	Pit	
Feature No.	742	1336	Pot	Base	-	286	-	Box2	Box2	Oval	498	1484	
Context	741	1335	1498	1499	1537	285	1541	560	577	619	499	1483	
Sample	82	89	99	100	104	35	105	43	46	74	90	93	
CEREALS													
<i>Triticum dicoccum</i> Schubl. glume base	-	-	-	-	-	-	1	-	-	-	-	-	Emmer chaff
<i>Triticum</i> cf <i>dicoccum</i> grain	-	-	-	-	-	2	-	-	-	1	-	-	Emmer wheat
<i>Triticum dicoccum/spelta</i> glume base	-	-	-	-	-	-	1	1	-	-	-	-	Emmer/Spelt chaff
<i>Triticum dicoccum/spelta</i> grain	9	1	-	-	-	-	-	-	-	-	1	-	Emmer/Spelt (Glume wheat)
<i>Triticum</i> cf <i>aestivum</i> grain	-	-	-	-	-	-	-	-	-	-	2	-	Free-threshing Wheat
<i>Triticum</i> sp(p) grain	1	-	-	-	-	-	1	-	-	-	-	-	Wheat
<i>Hordeum vulgare</i> L. grain	10	-	-	-	1	-	1	-	-	-	2	1	Barley
<i>Hordeum vulgare</i> L. hulled grain	-	-	-	-	3	-	1	-	2	-	3	-	Barley
<i>Hordeum</i> sp. rachis	1	-	-	-	-	-	-	-	-	-	1	-	Barley chaff
Cereal indet grain	22	-	-	-	-	6	6	1	5	-	3	-	Cereal grains
Culm node cereal	-	-	-	1	-	-	1	-	-	-	-	-	Cereal straw
WOOD/SCRUB/COLLECTED													
<i>Corylus avellana</i> L.	102	-	-	-	18	-	3	-	1	1	-	-	Hazel nutshell
<i>Malus sylvestris</i> (L.) Miller pips	40	-	-	-	-	-	-	-	-	-	-	-	Crab apple pips
<i>M. sylvestris</i> whole fruits and cores	37	-	-	-	-	-	-	-	-	-	-	-	Crab apple fruits
<i>M. sylvestris</i> core fragments	= c.18	-	-	-	-	-	-	-	-	-	-	-	Crab apple core frags
<i>M. sylvestris</i> flesh fragments	+++	-	-	-	-	-	-	-	-	-	-	-	Crab apple fragments
<i>Crataegus</i> sp.	-	-	-	-	-	-	-	-	-	1	-	-	Hawthorn
<i>Sambucus nigra</i> L.	-	-	-	-	-	-	-	-	1	1	-	-	Elder
SEEDS OF OTHER PLANTS													
<i>Ranunculus acris/repens/bulbosus</i>	-	-	-	3	-	-	-	-	-	-	-	-	Buttercups
<i>Ranunculus</i> sp.	-	-	-	2	-	-	-	-	-	-	-	-	Buttercups
<i>Chenopodium</i> sp	-	-	-	1	1	2	-	-	2	-	-	1	Goosefoots
<i>Montia fontana</i> L.	-	-	-	-	-	3	-	2	-	-	-	-	Water-blinks
<i>Stellaria/Cerastium</i>	-	-	-	-	-	1	1	-	-	-	-	-	Chickweed/Mouse-ears
<i>Persicaria maculosa/lapathifolia</i>	-	-	-	-	-	1	-	-	-	-	-	-	Persicaria
<i>Polygonum aviculare</i> L.	-	-	-	-	-	-	-	2	-	-	-	1	Knotgrass

<i>Fallopia convolvulus</i> (L.) A.Love	-	-	-	1	-	1	-	6	6	1	-	-	Black-bindweed
<i>Rumex</i> sp	-	-	-	-	-	-	-	1	1	-	1	-	Docks
Brassicaceae small	-	-	-	-	-	-	-	1	-	-	-	-	Cabbage family (wild)
<i>Potentilla anserina</i> L.	-	-	-	1	-	-	-	-	-	-	-	-	Silverweed
<i>Vicia/Pisum</i>	-	-	-	-	-	-	-	-	-	-	-	1	Bean/Pea
<i>Vicia/Lathyrus</i>	-	-	-	-	-	9	2	-	-	-	-	-	Vetch
<i>Medicago/Melilotus/Trifolium</i>	-	1	-	2	-	3	-	-	-	-	2	-	Medick/Melilot/Clover
<i>Plantago lanceolata</i> L.	-	-	-	1	-	-	-	-	-	-	-	-	Ribwort Plantain
<i>Galium aparine</i> L.	-	1	-	-	-	-	-	-	-	-	-	-	Cleavers
<i>Galium</i> sp.	-	1	-	-	-	-	-	-	-	-	-	-	Bedstraw
Lamiaceae	-	-	-	1	-	-	-	-	-	-	-	-	Dead-nettle family
<i>Anthemis cotula</i> L.	-	-	-	-	-	-	1	-	-	-	-	-	Stinking mayweed
<i>Leontodon</i> sp.	-	-	-	1	-	-	-	-	-	-	-	-	Hawkbbit
<i>Eleocharis</i> sp.	-	-	-	-	-	-	2	-	-	-	-	-	Spike-rush
<i>Carex</i> sp.	-	1	-	-	-	3	1	-	-	-	-	-	Sedges
Poaceae (small)	1	1	-	-	-	-	1	2	1	-	-	-	Grasses
<i>Bromus hordeaceus/secalinus</i>	-	-	-	-	-	-	-	-	-	-	1	-	Brome grass
Poaceae (large)	-	-	-	-	-	-	1	-	1	-	4	-	Grasses large
Capsules indet	-	-	-	-	-	-	-	-	1	-	-	-	Capsules indet.
Indeterminate seeds/seed frags	3	-	2	9	1	3	2	3	-	-	-	-	Indeterminate seeds
OTHER REMAINS													
<i>Arrhenatherum elatius</i> (L.) tuber	-	-	-	4cf	-	-	-	-	-	-	-	-	Onion couch grass
Poaceae swollen culm bases/tubers	-	-	21	40	-	-	-	-	-	-	-	-	Grass roots/ tubers
Poaceae, small tillers + roots	-	-	1	82	-	-	-	-	-	-	-	-	Grass, small tillers
Culm node small	-	-	c.15	c.160	-	-	-	-	-	-	1	-	Grass stem
Root fragments indet.	-	-	+	++	-	-	-	-	-	-	-	-	Root fragments
Buds	-	-	-	2	-	-	-	-	-	-	-	1	Buds
Tubers (Dicot.)	-	-	-	3	-	-	-	-	-	-	-	-	Tubers
Charred fragments, large	+	+	-	++	+	++	+	-	-	-	+	+	Charred fragments
Sample Vol.	7	23	5	6	15	25	23	37.5	33.5	17.5	30	3	litres
Flot Vol.	250	90	20	47	150	185	15	112	200	52	70	6	mls

Key: Remains are charred seeds in the broad sense unless described otherwise. BM = burnt mound. (ULAS Report Angela Monckton 2002)