

## **PALAEO-ENVIRONMENTAL EVIDENCE**

### *Aims*

The assessment of samples taken from the evaluation, excavation and a final watching brief were undertaken to; demonstrate the presence, range and diversity of remains present and assess their potential to aid with understanding the activities and economy associated with the archaeological evidence and isolate samples, where appropriate, for further analysis and reporting.

### **Palaeo-environmental summary**

The samples were consistently rich in charred cereal grains, mainly barley and free-threshing wheat, but also produced evidence for the cultivation of peas and broad beans probably reflecting dense and intensive occupation during this period in the vicinity of the site. There were few remains of chaff or weeds. The samples showed little variation between them.

### **Introduction and environmental samples taken**

Six bulk samples were taken during the evaluation, eight from the assessment phase and one during the final watching brief. All of the samples all came from probable late Saxon to early medieval/Saxon-Norman features, including eight ditches, three came from pits, and a further from a possible beam slot. The samples were processed for the recovery and assessment of charred plant remains and charcoals.

### **Assessment Results; methods and data**

#### **Charred Plant Remains and Charcoals**

Bulk samples were processed by standard flotation methods; the flot retained on a 0.5 mm mesh, residues fractionated into 5.6 mm, 2mm and 1mm fractions and dried. The coarse fractions (>5.6 mm) were sorted, weighed and discarded. Flots were scanned under a x10 – x40 stereo-binocular microscope and the presence of charred remains quantified (**Table E1**) in order to present data to record the preservation and nature of the charred plant and charcoal remains and assess their potential to address the project and subsidiary aims. Preliminary identifications of dominant or important taxa are noted below, following the nomenclature of Stace (1997).

The flots were generally large and rich in charred remains that was reasonably well preserved. Many of the samples contained high numbers of both large and fine roots that may be indicative of stratigraphic movement, reworking or the degree of contamination by later intrusive elements.

#### *Charred plant remains*

The samples were all broadly similar with little variation between them. This is especially true of the ditch samples. All the samples contained ample evidence for cereal remains, predominately free-threshing wheat (*Triticum aestivum*) and hulled barley (*Hordeum vulgare* s.l). Remains of rye (*Secale cereale*) were also present, particularly in ditches 503 and 407, with grains in pit (608). Chaff remains were rare and consisted predominately of occasional rachis of rye and free-threshing wheat. In the latter case a single well-preserved fragment could be identified as a hexaploid e.g.

bread-wheat (*Triticum aestivum*) or club-wheat (*Triticum compactum*). Many grains of oats (*Avena* sp.), were also present in the samples. These were generally large and possibly represent the cultivated oat (*Avena sativa*), rather than the wild oat (*Avena fatua*). No floret bases which allow such distinction were seen during the assessment, however, it is notable that no awn fragments that are more indicative of the wild species were recovered.

Other crop remains included occasional seeds of broad bean (*Vicia faba*) or pea (*Pisum sativum*), and with respect to wild food resources shells of hazelnut (*Corylus avellana*).

Weed seeds were generally poorly represented in the samples, they included mainly large seeded species that are commonly recorded as grain contaminants, in particular vetches/wild pea (*Vicia/ Lathyrus* sp.), but also corn gromwell (*Lithospermum arvense*), cleavers (*Galium aparine*), persicaria (*Persicaria maculosa/lapathifolia*) knotgrass (*Polygonum aviculare*) and knotted hedge parsley (*Torilis* sp.). Smaller occasional seeds of species such as stinking mayweed (*Anthemis cotula*), meadow grass (*Poa* sp.) and orache (*Atriplex* sp.) were also recovered.

A very small amount of mineralised material was present within a few samples. Such remains had become mineralised through the presence of calcium phosphate, and so may indicate the presence of cess, or may relate to the presence of rotting fish. Little of this material was identified with the exception of seeds of knotted hedge parsley (*Torilis* sp.) from ditch 115 and pit (608). Pit (608) also produced probable mineralised seeds of elder (*Sambucus nigra*) and corn gromwell (*Lithospermum arvense*).

The finds are all in keeping with the late Saxon to early medieval date (Greig 1991). The presence of stinking mayweed in several of the samples can be taken as an indicator of the cultivation of clay soils. The species becomes increasingly prevalent throughout the Saxon period, assumingly associated with the introduction of heavy and mouldboard ploughs that facilitated the cultivation of previously less manageable heavy clays (Stevens 2004).

The similarity of the samples raises the possibility that they may relate to a single burning event that has become dispersed throughout the features. However, more probably they indicate the storage and handling of cereals on a large basis. That the samples contained a mixture of crops, predominately of cereal grains with little chaff or weed seeds probably indicate the burning of cereal grains that arrived and were stored on the settlement as almost clean grain. The burning may come from waste from processing the grain in bulk or the cleaning of stores.

In comparison to the earlier Saxon settlement at Countess Roundabout (Wessex Archaeology 2003) it is notable how much richer these samples are reflecting a denser and more intensive period of occupation in the region. The predominant crops remain however the same, mainly wheat and barley, although neither pea nor broad bean was recovered from the earlier Saxon settlement.

*Charcoal*

Charcoal was noted from the flots of the bulk samples and is recorded in **Table E1**. While charcoal was present in all the samples it was generally poorly represented compared to grain that frequently made up the greater proportion of the flots. It was well represented in ditches 110, 106 and 115 and also in pit 518.

#### **Land and fresh/brackish water molluscs**

During processing of bulk soil samples for the recovery of charred remains, a small number of snails were noted, and recorded (**Table E1**), in the flots. These were almost always of open country species such as *Vallonia* spp. and *Helicella itala*, although a single shell of *Cochlicopa* spp. and also of probable *Trichia* sp. were also noted.

#### **Small animal bones**

During the processing of bulk soil samples for the recovery of charred plant remains and charcoals, a small number of fish bones were noted, and recorded (**Table E1**). These were predominately eel (*Anguinus anguinus*) vertebrae, although occasionally other fish vertebrae and in one case a single otic bullae (ear bones indicative of fish heads) was noted. There were also several small fish bones within pit (608) of a type similar to herring.

### **Potential**

#### **Charred plant remains**

The charred remains have the potential to reveal information about the types of crops cultivated at the settlement and from the limited number of weed seeds a small amount of information on the nature of cultivation at the settlement. The potential in part depends on the likelihood of whether the samples are likely to come from a single event or multiple events. Analysis of multiple samples may possibly be able to shed some light on this possibility. Well dated assemblages of Saxon charred plant remains are relatively rare in Wiltshire and southern England as a whole. These remains may help aid in defining the rural versus 'urban' nature of this activity.

#### **Charcoal**

The charcoal has some potential to indicate the utilisation and management of woodland resources and their use as fuel. Given that such material may come from a single event and is not associated with any specific activity, e.g. drying cereals, metal working etc. such potential is limited.

#### **Land Snails and fresh/brackish water molluscs**

The land snails have no further potential.

#### **Animal bone**

The fish bone has little further potential beyond the recording of eel.

### **Proposals**

#### **Charred plant remains**

It is proposed that four samples are examined. The selection of such samples depends on the likelihood that they come from different events, different phases or their spatial distribution.

#### **Charcoal**

One sample is proposed.

**Land snails**

No further work is proposed.

**Animal bone**

No further work is proposed.

**Acknowledgements**

The samples were processed by Hayley F. Clark, Elaine Simpson and Daniel Tarrant

The samples were assessed by Dr Chris J. Stevens

**References**

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Stace, C., 1997. *New flora of the British Isles*. 2<sup>nd</sup> Edition. Cambridge: Cambridge University Press

Stevens, C. with Robinson M. 2004 Production and consumption: Plant cultivation, 81-82, In Hey, G. (ed.) *Yarnton: Saxon and Medieval Settlement and Landscape. Thames Valley Landscape Monograph*. Oxford: Oxford Archaeology.

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## Costs and Tasks

task	description		
<b>1.</b>	<b>Pre-analysis tasks</b>		
1.1	Extraction of charred plants and charcoal (4 samples)	EO	1
1	Sieving of one sample	SA	0.25
1	Assessment of sample	SPO	0.25
<b>2</b>	<b>Analysis tasks I</b>		
2.	Charred Plant Remains, 4 samples & report	SPO	2.25
2.	Charcoal Remains, 1 samples & report	SPO	1
<b>3</b>	<b>Management and Monitoring</b>		
3.1	Management and monitoring	EM	0.25
<b>4</b>	<b>Post Analysis tasks</b>		
4.1	Archive	EO	0.25

Table E1. Assessment of the charred plant remains and charcoal

Feature type/no	Context	Sample	size litres	Flot								Residue		analysis
				flot size ml	%root	Grain	Chaff	charred Notes other	Char <sup>1</sup> 4/2 mm	Other	Charcoal >5.6mm			
<b>Pits</b>														
pit 428	429	4	20	100 <sup>20</sup>	A*	-	B	wheat, barley legumes Rumex	1/1ml	moll-t (C)	-			
Pit 518	514	5	20	175 <sup>15</sup>	A*	-	B	wheat, barley pea bean Vicia Galium Atriplex Poa, Anthemis	5/5ml	min - (C)	-			
	515	6	8	250 <sup>60</sup>	A*	C	B	wheat barley oats Bromus Lit arv rachis T-aes (hex)	6/4ml	-	-	P		
Pit	608	100	20	250 <sup>80</sup>	A**	C	B	Vicia faba x2, pea x2-3, barley, f-t wheat, rye+ oats, Galium, Vicia. Anthemis, Odontites. Bromus, Torilis Rumex cf. Agrostemma cone indet <b>Min</b> Torilis, Lit arv. Sambucus	10	moll-t (C) fish - (A) eel-(C) smb -(C) min- (B)	-	P C		
<b>Ditches</b>														
Ditch 110	107	1	16	125 <sup>10</sup>	A**	C	A	barley, f-t wheat, oats, Vicia, poppy head hazelnut, Vicia faba, Gal ap, Torilis, Lit arv	10/8ml	moll-t (C)	-	P		
	108	2	10	160 <sup>30</sup>	A**	C	A	Vicia? faba. Pisum?	5/10ml	eel (C)	-			
	109	3	10	60 <sup>20</sup>	A	-	A	as above poss. more f-t wheat	0.5/2 ml	-	-			
Ditch 106	105	4	10	125 <sup>30</sup>	A*	C	Bh	f-t wheat, oats Vicia/cleavers persicaria rye rachis	10/10 ml	moll-t (C)	-			
Ditch 115	114	5	10	100 <sup>50</sup>	A*	-	C	oats, f-t wheat barley p. aviculare	10/10 ml	fish eel (B) moll-t (B) min (C)	-			
503	502	1	10	60 <sup>2</sup>	A*	C	B(h)	+++f-t wheat, +barley hazelnut, pea/lentil x1 rye rachis, f-t rachis Anthemis Galium Avena	1/6 ml	smb-(B) moll-t (C)	-	P		
407	409	2	20	160 <sup>40</sup>	A*	C	B (h)	Rye& f-t wheat +rachises barley oats Vicia Anthemis	1/1ml	moll-t (C)	-			
507	506	3	20	150 <sup>20</sup>	A*	-	C(h)	oats Bromus, f-t wheat. Vicia/ Lathyrus Lit arv Anthemis	2/2ml	fish-eel (B) smb (C) moll-t (B) min - (C)	-			
416	414	7	20	100 <sup>10</sup>	A*	B	B	f-t wheat barley oats Vicia faba oats Galium Poa	2 /5 ml	moll-t (C)	-			
432	435	8	9	175 <sup>30</sup>	A*	-	B(h)	wheat barley oats hazelnut Bromus	0.2/0.2 ml	-	-			
<b>Beam Slot</b>														
116	117	6	10	60 <sup>40</sup>	A*	-	B	1x f-threshing wheat. vetches	0.5/8 ml	moll-t (C) eel (C)	-			

KEY: A\*\* = exceptional, A\* = 30+ items, A = ≥10 items, B = 9 - 5 items, C = < 5 items, (h) = hazelnuts, smb = small mammal bones; Moll-t = terrestrial molluscs Moll-f = freshwater molluscs; Analysis: C = charcoal, P = plant, M = molluscs. NOTE: <sup>1</sup>flot is total, but flot in superscript = % of rooty material.