

ASSESSMENT OF THE  
ENVIRONMENTAL SAMPLES  
FROM AN EVALUATION  
AT OAK STREET HEAD,  
BELLE VUE, SHREWSBURY

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# Assessment of the environmental samples from an evaluation at Oak Street Head, Belle Vue, Shrewsbury

Clare de Rouffignac

## 1 Summary

*Samples were collected from Neolithic and Roman features from the Oak Street Head evaluation. The Neolithic features contained deposits which produced charcoal and hazelnut shell fragments. The Roman feature contained a human cremation, and a number of charred plant remains. All the samples were assessed for the preservation of charred plant remains, and for their potential for radiocarbon dating.*

*The Neolithic charred plant remains are nationally significant in adding to the rare number of Neolithic sites which have produced environmental remains. None of the samples were suitable for radiocarbon dating by conventional means because of their small size.*

## 2 Introduction

A series of environmental samples were collected from an evaluation on the site of a proposed development undertaken in October 1992 by Shropshire County Council at Oak Street Head, Belle Vue, Shrewsbury.

Samples were collected from two features, one of which contained Neolithic pottery, the other containing Neolithic and late Neolithic/early Bronze Age pottery, and a gully containing a possible Roman cremation. The samples consisted both of hand-recovered charcoal and hazelnut fragments, and bulk samples. The samples were collected primarily for assessment of the preservation of environmental remains suitable for radiocarbon dating.

There is only one site in Shropshire which have produced charred plant remains from

the Neolithic. Samples from Neolithic pits at Bromfield produced some charred seeds, including *Corylus avellana* (hazel), *Veronica hederifolia* (ivy-leaved speedwell), *Triticum* sp (wheat) and *Hordeum* sp (barley). The evidence suggested that cereal crops were being cultivated, whilst collection of hazel nuts also took place (Colledge 1982, 287).

Roman environmental remains are more plentiful from the county, with Wroxeter in particular having a wide-ranging sampling strategy for environmental remains from the later Roman town (Armour-Chelu 1990; Monk unpub).

## 3 Aims

The purpose of the assessment is to evaluate the potential of the data collected to contribute to archaeological knowledge and to identify further study necessary.

Three principal aspects will be considered as part of the assessment:

A factual summary, characterising the quantity and perceived quality of the data contained in the site archive;

A statement of the archaeological potential of the data contained in the site archive;

Recommendations on the storage and curation of the data contained in the site archive, and the timescale on which this should be achieved (English Heritage 1991, 15 and 16).

#### 4 Method

All the bulk samples were sieved and sorted by the author. A 500 $\mu$ m mesh was used for the all the bulk samples. For the purposes of this assessment a smaller sub-sample of 2 litres of the total sample residues taken for environmental analysis were examined. All the flots were examined. The sorted plant remains from the flots were then scanned under a low-power EMT-1 light microscope to enable identification.

The seeds were identified as far as possible using the Archaeology Section's comparative collection, a seed identification manual (Berggren 1981) and an illustrated site report (Griffin 1988). Comparative descriptions of charred cereal seeds and chaff from were obtained from Jacomet (1987). Habitat descriptions and common names of plants were obtained from Clapham *et al* (1989).

The sample residues and flots were also scanned for other environmental remains to assess their abundance and preservation.

The small samples of hand-retrieved material collected for possible radiocarbon dating were assessed for their potential by examining the species of wood present, and for the presence of charred hazel (*Corylus avellana*) nuts.

#### 5 Analysis

The samples examined for the assessment are listed below. Table 1 gives the numbers of seeds recovered from the sub-samples, the size of the samples, and the presence and absence of other environmental remains in each sample.

##### 10098 fill of Neolithic ditch 1898 - hand-picked sample

Two fragments of *C avellana* nut were recovered from this sample. The charcoal fragments were all very small and unidentifiable. The weight of the sample including soil was 31g, with the charcoal consisting of less than 4g.

##### 10099 fill of Neolithic ditch 1898 - bulk sample

This sample was heavily contaminated with modern roots, and a number of modern seeds were present, including *Fumaria* sp (fumitory) and *Sambucus nigra* (elder).

The charcoal from this sample was again very small, but one fragment was identified as a non-oak diffuse porous species. The flot weighed 6g including the modern seeds and roots.

##### 100100 fill of Neolithic ditch 1938 - hand-picked sample

A single fragment of *C avellana* was recovered from this sample. The sample consisted mostly of soil, and weighed 38g. The charcoal comprised only 3g of the total sample weight.

##### 10101 fill of Neolithic ditch 1938 - bulk sample

Again, this sample was heavily contaminated with modern roots, and modern seeds, including *Fumaria* sp and *Rubus fruticosus* agg (bramble). However, 48 fragments of *C avellana* were recovered, together with some small charcoal fragments. The *C avellana* fragments weighed only 2g, whilst the remainder of the flot weighed 10 including modern roots and seeds and soil fragments.

##### 10102 fill of Neolithic pit 1892 - hand-picked sample

The charcoal noted in this sample was all very fragmentary and could not be identified; no hazelnut fragments were recovered. The total weight of the sample was 13g including soils and roots.

##### 10096 fill of Roman gully 1890 - bulk sample

This sample was the most productive examined from the evaluation. The charred plant remains included cereal seeds, weed seeds and chaff. The cereals identified were *Hordeum* sp (barley), and wheat/rye; a

number of unidentified cereal seeds were also recovered. The chaff consisted of a glume base and rachis fragment of *Triticum spelta* (spelt wheat). The weed seeds which were identified were a single seed of *Rumex* sp (dock) and a Gramineae (grass) seed.

The majority of the charcoal fragments from the sample were identified as *Quercus* sp (oak); the charcoal in total weighed 9g.

The fragments of burnt bone were generally small, and only a single diagnostic fragment was readily apparent. This was a portion of articular surface from what appeared to be the distal end of a human radius.

## 6 Discussion

### 6.1 Neolithic

There are only two other sites in the region where Neolithic environmental remains have been recovered. These are Bromfield, Shropshire (Colledge 1982) and Trelystan, Powys (Milles 1986). There are only 26 sites in England and Wales where charred Neolithic plant remains have been found (Greig 1991, 300). The finds of charred hazelnut fragments from the Oak Street Head evaluation are therefore of considerable significance in adding to the small national record.

Hazelnut shell fragments are the most commonly encountered charred plant remains from the Neolithic, with cereal remains comprising a far smaller portion of the preserved plant remains. It has been suggested that the collection of wild food plants was a usual part of the Neolithic economy, and was carried out in addition to cereal cultivation (Moffett *et al* 1989, 247).

The presence of *C. avellana* in association with late Neolithic/early Bronze Age pottery from Shrewsbury may suggest a long persistence with the Neolithic reliance on collection of fruits and nuts for subsistence as well as agriculture (Jones 1980).

The samples from the Neolithic features were

found to contain many roots and fresh-looking uncharred seeds, including species such as *Fumaria* sp (Fumitory), *S. nigra* (elder) and *Rubus fruticosus* agg (bramble). Similar seeds were noted by Colledge (1982, 287) during examination of samples from the Neolithic features at Bromfield. These were assumed to be probably modern, and a similar conclusion is to be drawn of the seeds recovered from the Oak Street Head Neolithic samples.

The large numbers of roots in the samples does throw into question the contamination levels which could affect the integrity of the charred assemblage. However the charred plant remains which were recovered do not appear to contain any "rogue" species and do probably represent plant species from the Neolithic.

The samples collected for radiocarbon dating from the Neolithic and late Neolithic/early Bronze Age features were all found to be too small to be accurately dated by conventional means, and would require accelerator dating. The minimum size of sample for radiocarbon dating is 8g of pure charcoal; for accelerator dating, the smallest sample size possible to use for dating is 5mg (David Jordan pers comm).

### 6.2 Roman

The Roman environmental assemblage is not significant in regional or national terms. There are many sites where Roman charred plant remains have been recovered, and there is no lack of sites where Roman cremations are recorded.

The charred plant remains recovered from the fill of the Roman gully (10096) was small, but was unsurprisingly far more varied than that recovered from the Neolithic samples. The cereal remains included at least two species: *Hordeum* sp (barley) and *Triticum spelta* (spelt wheat). The latter was identified using chaff which is far more reliable for identification than seeds (Moffett pers comm). The presence of spelt suggests a late Iron Age/Roman date for the sample (Jones 1978). Spelt was the most commonly utilised

cereal crop during the Roman period (Greig 1991).

The fragments of *Quercus* sp (oak) charcoal were of a quantity sufficient for radiocarbon dating, but as oak is a long-lived species, it is generally not suitable for radiocarbon dating purposes.

The human bone from the cremation cannot be used for radiocarbon dating as it does not contain sufficient collagen as a result of high temperature burning (David Jordan pers comm).

## 7 Recommendations

The Neolithic environmental remains are of national importance and contribute greatly to the significance of the site. If the site is to be excavated it is imperative that an environmental sampling strategy be implemented for the site. This will include:

- a training of site staff in collection of environmental samples;
- b a written sampling strategy;
- c environmental archaeologist to visit the site;
- d assessment of the results;
- e report production and publication.

The significant results from the Neolithic features should be published to enable the information from the evaluation to be available to other researchers. This could take the form of a note in *Circaea*, the national journal of the Association for Environmental Archaeology, and in the *Proceedings of the Prehistoric Society*, as well as regional publication in *West Midlands Archaeology*.

The size of the samples collected for radiocarbon dating was not sufficient for dating by conventional means. This collection of further bulk samples from the Neolithic deposits could enable sufficient material to

be extracted for radiocarbon dating.

Bulk sampling of all early features encountered on future evaluations is also recommended. This would allow the environmental remains to be sufficient for:

- a assessment of the significance of the charred plant remains;
- b concentration of the charred plant remains for radiocarbon dating by conventional means;
- c assessment of the bone assemblage.

Further work on the samples recovered from the evaluation is not required. The Neolithic charred plant remains recovered from the samples from the Oak Street Head evaluation should be stored in glass tubes rather than be discarded. This is because environmental samples from future evaluations on the site may prove not to have sufficient charred remains for radiocarbon dating. The constant refinement of radiocarbon dating may enable the smaller samples to be utilised, or the opportunity for accelerator dating may arise. The other environmental remains, including the cremated bone, should also be curated for the same reasons.

## 8 Conclusions

The find of Neolithic charred plant remains is significant in both regional and national terms. The presence of charred hazelnut fragments is indicative of the collection of wild foods during the Neolithic, and adds to the single site in Shropshire at Bromfield which has produced Neolithic charred plant remains.

The samples collected for radiocarbon dating were all found to be unsuitable for dating by conventional means as they were too small for accurate results.

The Roman sample was confirmed as containing a human cremation, as well as charred plant remains; however the significance of the assemblage is not as great

as that from the Neolithic features.

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**Table 1 Sample size and proportion examined for environmental remains**

Sample number	Sample size	% examined of flot	Seeds	Charcoal	Snails	Bone
10098	8g	100 %	<i>C avellana</i>	few	none	none
10099	6 litres	100 %	modern seeds	some	none	none
10100	10g	100 %	<i>C avellana</i>	few	none	none
10101	6 litres	100 %	<i>C avellana</i> ; modern seeds	none	none	none
10102	10g	100 %	none	few	none	none
10096	4 litres	100 %	charred seeds and chaff	abundant	none	some