

## Charcoal & Wood Work Group Meeting

9<sup>th</sup>/10<sup>th</sup> May 2014

McDonald Institute, University of Cambridge

Attendees: Lucy Allott (ASE), Rachel Ballantyne (Cambs Uni), Valentina Bellavia (Inrap, France), Lauren Cadwallader (Cambs Uni), Danielle de Carle (Sheffield Uni), Gill Campbell (English Heritage), Dana Challinor (Uni of Oxford), Zoë Hazell (English Heritage), Rob Jarman (Glos Uni), Cynthia Larbey (Cambs Uni), Julia Meen (OA South), Liz Pearson (Worcs), Ruth Pelling (English Heritage), Alex Pryor (Soton Uni), Karen Stewart (MOLA), Charles Turner (Cambs Uni), Jelte van der Laan (freelance, Netherlands), Jasmijn van der Veen (Groningen Uni, Netherlands), Robyn Veal (Cambs Uni) and James Woodburn (LSE, UCL)

*Apologies:* Nicolien Bottema-Mac Gillavry (freelance, Netherlands), Louise Butterworth (Cambs Uni), Colin Courtney-Mustaphi (York Uni), Alys Vaughn-Williams (freelance)

### ***Friday 9<sup>th</sup> May: afternoon session***

A tour of the archaeological laboratories at the McDonald Institute, was enjoyed by a small group of attendees, followed by a visit to the Botanical Gardens by some and a microscope session by others. Particular examination of the differences between *Castanea* and *Quercus* was considered in the microscope session, with material from the Forest of Dean and Brede High Wood in the Weald.

### ***Saturday 10<sup>th</sup> May***

#### **Session 1: Theory and practice informal workshop**

The morning session began with a discursive talk by Robyn Veal on the anatomical characteristics differentiating the Betulaceae, especially between *Alnus* and *Corylus*. RV commented on the apparent climatic differences in Mediterranean versus UK anatomy, including a consistent presence of spiral thickenings in *Corylus* in the Mediterranean, which are irregularly seen in British specimens (generally absent or faint). The inconsistency of spirals in UK *Corylus* was confirmed by GC and DC.

The distribution of taxa was also briefly mentioned; GC commented that archaeological remains of *Carpinus* are rare in the UK, and that the English Heritage 'regional reviews' are useful starting points for finding records of occurrences. Wood and charcoal reviews are available for: i) the West and East Midlands and the East of England (Murphy, 2001), ii) Southern England (Smith, 2002) and iii) the North of England (Huntley, 2010).

A discussion on coppicing followed and the difficulties/reliability of recognizing it in charcoal. LP asked about the merits of measuring and counting growth rings. Following the methods and features recorded by wood analysts on roundwood stems was advocated to determine ARW; see Ludemann (2006) and Marguerie and Hunot (2007). RV commented on the use of templates. RV suggested holding a workgroup specifically to consider coppicing, perhaps with an appropriate expert.

The second topic – distinguishing *Castanea* and *Quercus* – was presented by DC. General discussion of anatomical features concluded that it is difficult, if not impossible, to distinguish in immature roundwood owing to the (sometimes) tendency of oak not to produce large rays at a young age. RV suggested that wide rays probably relate to environmental conditions: competition and/or water availability eg oak could grow fast without wide rays if there is sufficient water. Other features considered included tangential parenchyma bands, ray structure and uniformity of cells. DC commented on the paucity of identified *Castanea* from English sites of Romano-British date. KS said she had some sweet chestnut waterlogged wood from Alverstoke (Isle of Wight) and Roman London. Briefly, DC commented on distinguishing features between deciduous and evergreen oaks, with a note of warning to watch out for possible confusion with *Tamarix* if working in the Near East.

Next, RV talked about climate and whether we can use charcoal as micro-climatic indicators. Characteristics such as an increase in scalariform perforation plates at higher altitude, larger ray production in drier conditions and more numerous vessels in drier environments. RV presented evidence from the Campania region suggesting that the area was wetter in the Roman period than previously thought.

#### **11.45-1pm Session 2: New work in progress**

This session began with an interesting talk by Lauren Cadwallader on a project investigating oxygen isotope values of cellulose and whether these can be used to reconstruct palaeoclimate (in particular, the Southern Oscillation Index). Her case study on a hardwood tree in Peru revealed some possible limitations of the technique, but also showed some potential for further studies.

Next, Alex Pryor gave a presentation on parenchyma and his work on creating reference material and a database using scanning electron microscopy. The application of this research to Palaeolithic material from Dolní Věstonice II, Czech Republic showed some interesting results. This was followed by Cynthia Larbey, whose research examined the density and spatial patterning of parenchyma from a hearth at Dolní Věstonice II. These results, especially when synthesized with lithic and faunal remains, indicated that hunter-gatherers were cooking and eating roots and tubers, in what may have been a specialist foraging camp.

#### **Other discussion**

Finally, before lunch, there was a quick discussion on topics and venues for the next meeting. DC put forward Eleni Asouti's offer to hold the next meeting in Liverpool in Spring 2015. RV also offered the use of the McDonald Institute to host another meeting – perhaps in the interim and on a specific topic such as coppicing or climate. There was also some discussion on the need to provide web resources and useful papers, with GC offering the EH website (currently housing the CWWG webpage) to upload pdfs.

#### **Afternoon:**

The afternoon session was spent at Flag Fen, with an interesting tour of the waterlogged remains of the Bronze Age causeway, and a viewing of the Must Farm boats which are currently being analysed and conserved.



Photo © Gill Campbell

## References

Huntley, J. 2010 *Northern England: A review of wood and charcoal recovered from archaeological excavations in northern England* English Heritage Research Department Report Series 68-2010

Ludemann, T. 2006 Anthracological analysis of recent charcoal-burning in the Black Forest, SW Germany. In A. Dufraisse (ed.), *Charcoal analysis: new analytical tools and methods for archaeology*. Papers from the Table-Ronde held in Basel 2004, BAR International Series S1483, Archaeopress, Oxford, pp. 61-70.

Marguerie, D. and Hunot, J.-Y. 2007 Charcoal analysis and dendrology: data from archaeological sites in north-western France *Journal of Archaeological Science* 34, 1417-1433

Murphy, M. 2001 *Review of wood and macroscopic charcoal from archaeological sites in the West and East Midlands regions and the East of England*. Centre for Archaeology Reports 23/2001

Smith, W. 2002 *A review of archaeological wood analyses in southern England*. Centre for Archaeology Reports 75/2002

## Further sources

All English Heritage Research (Department) Reports (formerly known as AML and then as CfA reports) can be found online at: <http://research.english-heritage.org.uk/> Many can be downloaded as pdfs.

*Minutes compiled by Dana Challinor, with kind assistance from Zoë Hazell and Gill Campbell.*

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