**Archaeobotany Working Group Meeting**

16 June 2012

Institute of Archaeology, University of Oxford

Attendees : Lucy Allott (ASE), Eleni Asouti (Uni of Liverpool), Rachel Ballantyne (Uni of Cambridge), Jennifer Bates (Uni of Cambridge), Amy Bogaard (Uni of Oxford), Danielle de Carle (Uni of Sheffield) , Gill Campbell (EH), Wendy Carruthers (Freelance), Dana Challinor (Uni of Oxford), Shawn O'Donnell (Uni of Cambridge), Denise Druce (OA North) Sharen Cook (OA South), Alison Crowther (Uni of Oxford), Lindsey Frieman, Allan Hall (Uni of York), Karine Le Hegarat (ASE), Kath Hunter (OA South), Hengameh Ilkhani Mogadam (Uni of Nottingham), Lisa Lodwick (Uni of Oxford), Lynne Lowrie (NAA), Ceren Kabukcu (Uni of Liverpool), Hayley McParland (Wessex), Don O'Meara (Wardell-Armstrong Archaeology), Julia Meen (OA South), Giedre Motuzaite Matuzeviciute (Uni of Cambridge), Liz Pearson (Worcestershire AAS), Jackeline Robertson (AOC archaeology), Mark Robinson (Uni of Oxford), Erica Rowan (Uni of Oxford), Lisa Snape Kennedy (PCA), Karen Stewart (MOLAS), Anne de Vareillies (CAU), Petra Vaiglova (Uni of Oxford), Angela Vitolo, Jade Whitlam (Uni of Reading), Alice Williams (Uni of Cambridge)

The meeting began at 10am

Morning session
Prof Christopher Ramsey (Director of the Oxford Radiocarbon Accelerator Unit) presented on *Radiocarbon Dating of Plant Material.* He gave an overview of the C14 cycle and the usefulness of plant material for AMS dating, drawing on examples from the Suigetsu core in Japan. AB asked about the problems of residue charred plant remains. CR recommended dating plant remains from multiple contexts in the sequence, which should highlight any residual remains. It's better to date smaller samples from more contexts than larger samples from less contexts. Also OxCal can be used to simulate dating and work out how many dates are needed. LA asked about sample size. CR replied precision declines with smaller samples, although is better to use single entities, it may better to bulk several seeds together. Below 250 micro grams the date range increases rapidly. EA questioned if seeds or bone are better for MAs dating. CR replied ideal option is plant remains from a closed event deposit (burial or jar), but if not possible can use larger samples of bone. DD asked in relation to commercial reports, how many dates are sufficient for Bayesian statistics. CR replied that for the Bayesian methodology samples from 4 or 5 contexts would be sufficient. With wood, you could date rings from either end, then space any extra dates in between. MR asked if CR knew of any offset in dates of aquatic plants due to the offset of mineral carbonate. CR replied that it has been investigated with Egyptian papyrus and no effect was noted.

GC asked for clarification of the effect of industrial pollution on AMS dates in relation to medieval smithing. CR replied wood used in smithing tends to be young, (so exposed to pollution for a limited time) so date provided is reasonably accurate. AH asked how we should regard radiocarbon dates retrieved in the 1960s, 70s and 80s. CR replied they shouldn't necessarily be ignored, but it should be noted that they could be older. It may be possible to include such dates within a model.

EA asked if twigs are suitable for AMS dating. CR replied calibration curves consist of decadal measurements, so anything under 10 years of growth is suitable. A specimen which has only lived for one year is problematic due to annual fluctuations in atmospheric radiocarbon.

Someone asked if plant remains should be extracted from peat for dating or not. CR replied it depends on whether you want a narrow date (single plant remains) or a general layer date. Also depends if you want to date the build up of the peat or the top layer. Preferable to pick out individual plant macros, and date the very small and very large plant fragments and a range in between.

DD asked if you intend to date pollen grains, how should it be extracted. CR replied pollen concentrate is dated, obtained using chemicals and sometimes laser sorters. This area needs more research.

LA asked what information should be included when AMS dates are reports. CR: Lab references and BP date without the calibration and the stable isotope value. Also the model used, eg OxCal

Dr Alison Crowther presented on archaeobotanical results from the Sea Links projects excavations in East Africa. The project is focused on re-examining previously excavated sites in order to retrieve bioarchaeological evidence. Bucket flotation is used to process large samples. EA commented that bucket flotation is inexpensive as well as socially responsible.

The afternoon session was spent looking at a range of tricky and interesting archaeobotanical material.

Prof Mark Robinson led a plant identification walk to an area of medieval hay meadow on opposite to the University Parks.

Minutes compiled by Lisa Lodwick 1/7/2012

Links :

Oxford Radiocarbon Accelerator Unit (links to OxCal programme)
http://c14.arch.ox.ac.uk

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