

Lithics workshop (Glasgow 2013)

– summary points from discussion groups

RESIDUE AND USE WEAR (lead: K Hardy)
<ul style="list-style-type: none">• Guidelines needed for excavation strategies, preservation of retention of samples and storage conditions; issues of long-term storage and curation of associated soil samples• Specialist database• Specialist fund for work that cannot be budgeted 'in advance'• Groundwork for capacity building needs to be put into place• Reference collections – use wear on different lithic raw materials used in Scotland and a botanical reference collections• Potential of Marie Curie fellowships via Karen Hardy to support aspects of research and building comparative collections.
EXPERIMENTAL (lead: C Wickham-Jones)
<ul style="list-style-type: none">• Broad Consensus of the importance and value of experimental work and perspectives• Academic study..... where/how is archiving of results/materials done?• Community side.... community involvement in replication experiments, good for getting different perspectives, wider issues of dissemination and access to results an issue• Need to understand the extent of experimental work in Scotland• Opportunity with social media to capture images-You tube and more publicity/visibility and publications• More use of academic journals (e.g. <i>Experimental Archaeology</i>) and encourage submission• Register of experimental work because nothing is collated or evaluated at the moment [Opportunities here to develop and expand pilot experimental archive project - Database for Experimental Archaeology http://www.gla.ac.uk/schools/humanities/research/archaeologyresearch/projects/dexar/]
INTRA –SITE SPATIAL ANALYSIS (lead: Torben Ballin)
<ul style="list-style-type: none">• Onsite recording standards – 1m resolution recovery (as a minimum requirement in terms of spatial data) and responsive to quality and nature of the archaeological deposits• Appropriate resolutions – regarding palimpsests and returns• Context of commercial archaeology – levels of recording and sampling• HS to step-in when brief not being met; contingency
GENERAL DISCUSSION & SUGGESTIONS FOR RECOMMENDATIONS
<ul style="list-style-type: none">• Observation that SCARF did not address general excavation methodologies and sampling, post-excavation or existing museum and other comparative collection issues.• HS guidelines on excavation, recovery, sampling and storage.• Dissemination of knowledge and CPD demand for training• Resource assessment of existing Scottish collections• Issues of capacity to develop specialist analytical work in Scotland• Specialist database/network to promote more integration of specialist studies• Discrete funding to support responsive specialist work outwith normal commercial tendering.• Opportunities to write academic non-specialist accounts of prehistory like Mark Edmonds <i>Stone Tools & Society</i> for Scotland

- Raw materials – images regarding Scottish raw material types available online to enhance general identification and knowledge and also useful for coarse stone types – development of resources.
- Recognising that programmes of sophisticated ICP analysis cannot progress easily because of cost, there is a case for 'lower tech' pilot projects using pXRF to screen assemblages to determine whether they are uniform in terms of material or may represent different sources. John Faithfull is keen on pursuing this with pitchstone and potential for chert.

Enthusiasm for future workshops

- Geoarchaeology – soils
- Metals and metal waste

Call for questions/research priorities and issues on Post its

- Funding: what is routine funding and what is luxury?
- Standardisation of typology
- Ard points: distribution and chronology
- Who will carry out commercial residue analysis on stone to a deadline?
- Organic residue analysis of coarse stone tools
- How significant are individual finds outwith a scatter?
- Back to basics: key features to differentiate natural from cultural in the field – What do I put in my bag?
- Curators need a minimum standard for small medium and large lithics collections, ie what field attributes to record and what techniques to use as basic minimum standard
- Do you think creating a tool for a specific purpose was more important than adhering to a given technique of manufacture
- How much is tool manufacture influenced/restricted by raw material type and availability?
- What evidence do we have of long distance importation of materials from England and Ireland into Scotland
- Geomorphology/palaeogeography: visibility - prospection

Abstracts

Issues of raw material identification – Torben Ballin

The purpose of this presentation is *not* to discuss raw material studies in general – for a general introduction to raw material studies, please see my website, my Academia page, or various online SCARF documents (UP/Meso and Neo panels). Instead, I will discuss some of the problems we have with several specific raw materials in terms of their safe identification, and issues arising from this. ‘Problematic’ raw materials include flint-like materials from the northern part of the Inner Hebrides, as well as from the Western Isles and Orkney; various forms of chert, within and outwith the Southern Uplands; mylonite/baked mudstone from the Western Isles; felsite from Shetland and elsewhere; and a number of less important – but not *unimportant* – raw materials. The correct identification of these raw materials is important to our discussions of prehistoric procurement strategies and exchange relations, as well as to the definition of prehistoric social territories.

The potential of rare earth element (REE) analysis to determine chert sources in southern Scotland - Alan W Owen (School of Geographical & Earth Sciences, University of Glasgow)

The rare earth element (REE) compositions of bedded cherts deposited in ocean basins reflect the environment in which they were deposited. In regions of complex geology, such as southern Scotland, rock successions from very different ocean settings are closely juxtaposed and the REE geochemistry of cherts within them has provided a diagnostic tool to identify their original depositional environments. Rock units with similar origins have cherts with similar REE compositions.

Thus the REE patterns of cherts from the northern part of the Southern Uplands fall into two groups one of which is further subdivisible into two; all are different from those of cherts from near Ballantrae on the Ayrshire coast. Those from Stonehaven are different again whereas cherts from elsewhere along the edge of the Highlands (from Arran and Aberfoyle) are closest to those from the Southern Uplands. These REE fingerprints have the potential to discriminate between the possible areas of extraction of cherts recovered from archaeological settings.

Lithic microwear analysis: beyond tool use - Randolph Donohue and Adrian Evans (Bradford University)

LA-ICP-MS trace element sourcing of flint: examples from the British Late Upper Palaeolithic – Paul Pettitt (Department of Archaeology, University of Durham)

Recently, attempts to characterise major English flint sources using LA-ICP-MS trace element analysis were successfully able to distinguish between sources at a regional level. Analyses of flint artefacts from several Late Upper Palaeolithic sites have allowed a tentative reconstruction of raw material movements in this light. Here I show some of the initial results, identifying aspects of the project that were successful, and in particular areas which will require attention in the future.

Tools and their uses - Karen Hardy (ICREA at the UAB - Catalan Institution for Research & Advanced Training at the Autonomous University of Barcelona)

Lithic production in prehistory was predominantly carried out to produce tools to be used. Today, with virtually nowhere left in the world where we can observe this process at first hand, we have to reconstruct the processes from the material remains that have been left lying all over the landscape.

There are many ways the use of tools can be approximated. First, the aims of the production system has to be identified – what is a tool and what is waste material – often even this can only be determined microscopically. Morphology and morphometrics are very useful to provide functional indicators – how does a piece fit into the hand, how would it have been hafted, how could it have been used? Macro and microscopic use wear analysis is a comparative method that reconstructs the use of a tool on the basis of best-fit with modern replicas used to conduct specific tasks, for example scraping a hide or carving an antler. Residue analysis identifies residual material found adhering to the used edge of a tool and pertaining to the tool's use, which can then be identified either morphologically and/or through chemical analysis. Morphological analysis of residues is again comparative, and is based on modern, reproduced, reference material.

In this discussion we will focus on use wear and residue analyses. Our discussion will attempt to demystify these techniques, which are often little understood outside specialist circles; and unravel some of the misconceptions surrounding them. We will explore their value as specialist, expensive methods, and examine realistic ways forward for their contribution to Scottish prehistory.