

## PALAEOLITHIC AND MESOLITHIC PERIODS

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### INTRODUCTION

The Palaeolithic and Mesolithic periods in Wales span almost 250,000 years from the first Neanderthals to the emergence of farming communities 6,000 years ago. Having such a broad time-span to cover the research agenda has a unique set of issues to address when compared with later periods. The climate and landscape have changed many times throughout this time and the destructive effects of the last ice sheet have resulted in the survival of only sporadic evidence for a human presence. The influences of environmental change; and the evolution of humans themselves have led to cultural changes through these periods.

### 1) Relevant recent research undertaken in the last five years

#### Palaeolithic

- *Pontnewydd Cave, Denbighshire* – Preparation of the publication report, involving final post-excavation analysis of work undertaken 1978 – 1995. Prof. Stephen Aldhouse-Green; Elizabeth A. Walker, Amgueddfa Cymru and Rick Peterson, University of Central Lancashire.
- *Pontnewydd Cave, Denbighshire* – A re-analysis of lithic material from Pontnewydd to assess the unusual technological character of the assemblage compared with most British sites of this date, containing as it does evidence for frequent handaxe manufacture. A key question has been whether this relates to particular local factors (raw material availability and technological choice) or a broader geographic pattern, whereby the western edge of north-west Europe (Normandy, Brittany, Wales) retains habitual handaxe manufacture, in contrast to the dominance of Levallois technology in the Thames Valley, north France and the low countries. Beccy Scott, British Museum and Becky Wragg-Sykes, University of Sheffield.
- *Pontnewydd Cave, Denbighshire* – Pontnewydd also represents the north-westernmost edge of the Neanderthal world. Studying the behaviour of organisms, including humans, near the limits of their range sheds light upon the nature of their adaptations and tolerances. In order to understand Neanderthal adaptations on a global scale, then it is necessary to look to marginal presence and to understand how humans occupied this far north-west, and whether this pattern is a 'true' limit to their abilities as colonisers, or a simply an archaeological/preservational pattern. By focussing on a number of sites on the archaeological margins (i.e. Pontnewydd) and near geographical (La Cotte de St. Brelade, Jersey) and climatic (Crayford) boundaries, these questions are being explored. Beccy Scott, British Museum for the Ancient Human Occupation of Britain Project.
- *Coygan Cave, Carmarthenshire* – The handaxes from Coygan have been incorporated into a detailed study of Neanderthal technology. Doctoral research by Becky Wragg-Sykes (University of Sheffield)
- *Coygan Cave, Carmarthenshire* – A detailed re-evaluation of the faunal remains, their stratigraphy and targeted re-dating has led to a new

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interpretation and a detailed reassessment of this last Glacial faunal assemblage. Roger Jacobi, British Museum for the Ancient Human Occupation of Britain Project.

- *Paviland Cave, Gower* – The Early Upper Palaeolithic occupation of Wales has been extensively investigated in order to understand its timing and nature in Britain. Key to this work has been the re-dating of C14 samples using ultrafiltration techniques. This has included the re-dating of the Paviland burial to between 29–28,000 BP, making it the earliest Gravettian occupation of the British Isles and the skeleton the oldest dated Early Modern Human so far known in Europe. This work perhaps reflects the first of two phases of settlement, the latter being represented by wider spread finds of tanged blades across Britain within a later interstadial event. Correlating these episodes of colonisation with climatic change allows human tolerances to be addressed during the early Upper Palaeolithic. Roger Jacobi, British Museum and Tom Higham, University of Oxford for the Ancient Human Occupation of Britain Project.
- *Paviland Cave, Gower, Hoyle's Mouth, Pembrokeshire and Ffynnon Beuno, Denbighshire* – A study of the lithic artefacts from these sites to determine the phases of Aurignacian technologies that are present. Rob Dinnis, University of Sheffield.
- *Kendrick's Cave, Llandudno and Cathole Cave, Gower* – the re-dating of humanly modified bone samples previously dated by C14, but now being re-dated using ultrafiltration techniques in order to determine their dating more accurately and aid the interpretation of human presence in Wales during the late Glacial period. Roger Jacobi, British Museum and Tom Higham, University of Oxford for the Ancient Human Occupation of Britain Project.
- *Cophill Farm, Howick, Chepstow* – Surface investigations through systematic fieldwalking of a lithic scatter of late and final Palaeolithic, Mesolithic and later Prehistoric date. There are very few open-air late Glacial sites known of in Wales, the current project aims to identify the distribution of this scatter before seeking to investigate it more thoroughly through small-scale excavation. Elizabeth A. Walker, Amgueddfa Cymru and Mark Lodwick, Portable Antiquities Scheme.

### Mesolithic

- *Caves of the South Gower Coast* – Small-scale test excavations were undertaken at a number of cave sites on the Gower peninsula during 2004 and 2008 to determine their potential for late Glacial and early Holocene archaeology – Rick Schulting, University of Oxford.
- *Foxhole Cave, Gower* – Excavations have identified the latest known Mesolithic human remains in Wales, dating to c. 5500 cal. BC. Rick Schulting, University of Oxford.
- *Goldcliff, Monmouthshire* – Post-excavation analysis of work on later Mesolithic settlement sites undertaken in the inter-tidal zone of the Severn Coastal communities. Martin Bell, University of Reading.
- *Abbey Road, Rhuddlan* – Cambrian Archaeological Projects.
- *Ynys Enlli, Gwynedd* – Survey and excavation of Later Mesolithic lithic scatters and subsequent post-excavation analysis of the assemblage. Mark

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- Edmonds, University of York, John G. Roberts, Snowdonia National Park, Emmett O'Keeffe and Graeme Warren, University College Dublin.
- *Menai Straits, Gwynedd* – Palaeo-environmental study of the sea-bed identifying early post-glacial peat horizons/land surfaces. Mike Roberts, School of Ocean Sciences, Bangor University.
  - *Moel Llys y Coed, Clwydian hills, Denbighshire* – Later Mesolithic environmental work. Fiona Grant, Ardea Palaeo-environmental and Archaeological Services.
  - *Porth Ruffydd, Ynys Môn* – Later Mesolithic coastal scatter collections. John Hallam.
  - *Shirenewton, Monmouthshire* – Later Mesolithic lithic scatter collection. Ian McFarlane, Chepstow Archaeological Society.
  - *Glaslyn Estuary, Gwynedd* – New Mesolithic coastal scatters and shell middens. Gary Robinson, University of Bangor.
  - *Prestatyn, Denbighshire* – A study of late Mesolithic and early Neolithic shell middens and their environment. M. Armour-Chelu, W.J. Britnell and others.
  - *Esso Terminal at South Hook, Milford Haven, Pembrokeshire* – Developer funded excavation of an early Medieval site that also generated a lithic assemblage of later Mesolithic and early Neolithic date. Dyfed Archaeology Trust and Elizabeth A. Walker, Amgueddfa Cymru.
  - *A40 Robeston Wathen, Pembrokeshire by-pass site* – A lithic scatter site of later Mesolithic and early Neolithic date. Dyfed Archaeology Trust and Elizabeth A. Walker, Amgueddfa Cymru.

## 2) How does work undertaken tie in with the research framework

### Colonisation and recolonisation

- *Pontnewydd Cave, Denbighshire* – Pontnewydd also represents the north-westernmost edge of the Neanderthal world. Studying the behaviour of organisms, including humans, near the limits of their range sheds light upon the nature of their adaptations and tolerances. Beccy Scott, British Museum for the Ancient Human Occupation of Britain Project.
- *Coygan Cave, Carmarthenshire* – A detailed re-evaluation of the faunal remains, their stratigraphy and targeted re-dating has led to a new interpretation and a detailed reassessment of this last Glacial faunal assemblage. Roger Jacobi, British Museum for the Ancient Human Occupation of Britain Project.
- *Paviland Cave, Gower* – The Early Upper Palaeolithic occupation of Wales has been extensively investigated in order to understand its timing and nature in Britain. Key to this work has been the re-dating of C14 samples using ultrafiltration techniques. This has included the re-dating of the Paviland burial to between 29–28,000 BP, making it the earliest Gravettian occupation of the British Isles, and perhaps reflecting the first of two phases of settlement, the latter being represented wider spread finds of tanged blades across Britain within a later interstadial event. Correlating these episodes of colonisation with climatic change allows human tolerances to be addressed during the early Upper Palaeolithic. Roger Jacobi, British Museum and Tom Higham, University of Oxford for the Ancient Human Occupation of Britain Project.

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- *Kendrick's Cave, Llandudno and Cathole Cave, Gower* – the re-dating of humanly modified bone samples previously dated by C14, but now being re-dated using ultrafiltration techniques in order to determine their dating more accurately and aid the interpretation of human presence in Wales during the late Glacial period. Roger Jacobi, British Museum and Tom Higham, University of Oxford for the Ancient Human Occupation of Britain Project.
- Work on the lithic evidence for the British Aurignacian suggests two phases of occupation the first occurring during a significant phase of climatic amelioration. Rob Dinnis, University of Sheffield.
- Work by AHOB has incorporated evidence from Welsh cave sites into exploring questions of human colonisation, settlement and changing behaviour across north-west Europe. Wales' position as the north-westernmost edge of the European peninsula actually makes it central to understanding the palimpsest record of mainland Europe; because occupation is interrupted, we can actually start to tease patterns apart in way that we cannot where the record is overprinted by more continuous occupation. Beccy Scott, British Museum for the Ancient Human Occupation of Britain Project.
- *Goldcliff, Monmouthshire* – Post-excavation analysis of work on later Mesolithic settlement sites undertaken in the inter-tidal zone of the Severn Coastal communities. Martin Bell, University of Reading.

### **Settlement patterns and settlement histories**

- *Pontnewydd Cave, Denbighshire* post-excavation project has sought to determine the dating of the human presence at the site. Has looked at the distribution of artefacts at the site and has undertaken sedimentological, climatic and environmental history reconstruction.
- *Pontnewydd Cave, Denbighshire* – A re-analysis of lithic material to assess the unusual technological character of the assemblage compared with most British sites of this date, containing as it does evidence for frequent handaxe manufacture. A key question has been whether this relates to particular local factors (raw material availability and technological choice) or a broader geographic pattern, whereby the western edge of north-west Europe (Normandy, Brittany, Wales) retains habitual handaxe manufacture, in contrast to the dominance of Levallois technology in the Thames Valley, north France and the low countries. Beccy Scott, British Museum and Becky Wragg-Sykes, University of Sheffield.
- *Cophill Farm, Howick, Chepstow* – Surface investigations through systematic fieldwalking of a lithic scatter of late and final Palaeolithic, Mesolithic and later Prehistoric date. There are very few open-air late Glacial sites known of in Wales, the current project aims to identify the distribution of this scatter before seeking to investigate it more thoroughly through small-scale excavation. Elizabeth A. Walker, Amgueddfa Cymru and Mark Lodwick, Portable Antiquities Scheme.
- *Caves of the South Gower Coast* – Small-scale test excavations were undertaken at a number of cave sites on the Gower peninsula during 2004 and 2008 to determine their potential for late Glacial and early Holocene archaeology – Rick Schulting, University of Oxford.

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- Evidence from lithic analysis of Welsh artefacts from the Aurignacian indicates the same technologies are present in Wales as are found on continental Europe. Inferences can therefore be made between settlement patterns and subsistence practices – Rob Dinnis, University of Sheffield.
- *Foxhole Cave, Gower* – Excavations have identified the latest known Mesolithic human remains in Wales, dating to c. 5500 cal. BC. Rick Schulting, University of Oxford.
- *Goldcliff, Monmouthshire* – Post-excavation analysis of work on later Mesolithic settlement sites undertaken in the inter-tidal zone of the Severn Coastal communities. Martin Bell, University of Reading.
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- *Ynys Enlli, Gwynedd* – Survey and excavation of Later Mesolithic lithic scatters and subsequent post-excavation analysis of the assemblage. Mark Edmonds, University of York, John G. Roberts, Snowdonia National Park, Emmett O’Keeffe and Graeme Warren, University College Dublin.
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### **Social organisation and belief systems**

- *Coygan Cave, Carmarthenshire* – The handaxes from Coygan have been incorporated into a detailed study of Neanderthal technology. Doctoral research by Becky Wragg-Sykes (University of Sheffield).
- *Paviland Cave, Gower* – The Early Upper Palaeolithic occupation of Wales has been extensively investigated in order to understand its timing and nature in Britain. Key to this work has been the re-dating of C14 samples using ultrafiltration techniques. This has included the re-dating of the Paviland burial to between 29–28,000 BP, making it the earliest Gravettian occupation of the British Isles, and perhaps reflecting the first of two phases of settlement, the latter being represented wider spread finds of tanged blades across Britain within a later interstadial event. Correlating these episodes of colonisation with climatic change allows human tolerances to be addressed during the early Upper Palaeolithic. Roger Jacobi, British Museum and Tom Higham, University of Oxford for the Ancient Human Occupation of Britain Project.

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- *Paviland Cave, Gower* – A new study of the British Aurignacian has involved new interpretations and study of lithic artefacts from Paviland Cave and other Welsh sites. This has led to the identification of links between Wales, England and Belgium. Doctoral research by Rob Dinnis, University of Sheffield.

### 3) To list any relevant recent literature to add to the bibliography for the periods

Aldhouse-Green, S.H.R. 2004. The Palaeolithic. In M. Aldhouse-Green and R. Howell, *The Gwent County History Volume 1: Gwent in Prehistory and early history*. Cardiff: University of Wales Press, 1–28.

Aldhouse-Green, S., Jackson, H. and Young, T. 2004. Lithics, raw materials and ochre: interrogation of data from the Middle Pleistocene hominid site of Pontnewydd Cave, Wales, Europe. In E.A. Walker, F. Wenban-Smith and F. Healy (eds) *Lithics in Action*, 93–104. Oxford: Lithic Studies Society Occasional Paper 8 and Oxbow Books.

Armour-Chelu, M., Bell, M., Brayshaw, B., Britnell, W.J., Cameron, N., Caseldine, A.E., Dresser, P.Q., Fancourt, E., Gonzalez, S., Healey, E., Johnson, S., Norris-Hill, J., Schulting, R. and Thomas, D. 2007. Shell middens and their environment at Prestatyn, north Wales. In M. Bell *Prehistoric Coastal Communities: The Mesolithic in Western Britain*, CBA Research Report 149, York, 263–315.

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Hankinson, R. and Silvester, R.J. 2009. Caves. The Scheduling Enhancement Programme. Clwyd Powys Archaeological Trust Report 980.

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Jacobi, R.M. and Higham, T.F.G. 2008. The 'Red Lady' ages gracefully: new ultrafiltration AMS determinations from Paviland. *Journal of Human Evolution* 55 (5), 898–907.

Jacobi, R.M. and Higham, T.F.G. (In Press) The British earlier Upper Palaeolithic: settlement and chronology. In N. Ashton, S. Lewis, and C. Stringer (eds) *The Ancient Human Occupation of Britain*. Amsterdam: Elsevier.

McFarlane, I. 2008. Shirenewton. *Archaeology in Wales* 48, 118–119.

Redknap, M. 2008. From cave to church: the origins of early Wales. *Minerva* 19:4, 29–32.

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Schulding, R.J. In press. Staying home for dinner: an isotopic approach to regionality in Mesolithic Atlantic Europe. In: Ingvild Øye, Randi Barndon and Asbjørn Engevik (eds.), *Technology and Regions in a Long Time Perspective*. Bergen.

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Walker, E.A. 2005. Babell, Flintshire. *Archaeology in Wales* 45, 147.

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#### **4) To suggest any amendments to the research questions for the periods**

On the whole respondents have indicated that the three main topics still stand. However, respondents have suggested some new research topics that should be developed to enhance the existing work.

#### **The application of new technologies and new techniques to historic and new collections and sites**

- Roger Jacobi and Tom Higham's work ties in closely to many aspects of the research framework but they are applying new technologies to better refine the chronology of settlement in Wales and Britain as a whole, and refining what we know of patterns of human presence/absence during the early Upper Palaeolithic.
- Rick Schulting's work identifying additional human and faunal remains for dating and isotopic analysis, in order to investigate the question of spatial and temporal variation in Mesolithic diets, specifically as regards the extent of use of marine resources.

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- The possibility of applying other lines of scientific enquiry is also important, specifically strontium isotope analysis to investigate mobility, and aDNA analysis to investigate population relatedness.
- Continued application of new scientific techniques, such as strontium, lead and oxygen isotope analyses to investigate mobility, and the increasing feasibility of aDNA studies.
- The importance of the development of more scientific interdisciplinary research projects e.g. marine science, geomorphology and climate.
- The importance of using Geographical Information Systems (GIS) to map sites, to map areas of specific geographic features as potential areas to search for new capture points; e.g. fissures and dolines in karstic areas where humans are likely to be active and investigate whether they are present.
- Increased use of GIS would enable us to fill in geographical distributions and enable more targeted study of specific landscape types.
- The development of common lithic recording systems and databases to allow wide comparability and application of GIS to these data sets.
- To identify the chronologies, cultural relationships and human behaviours of the occupants of Wales during stages of the Early Upper Palaeolithic and seek comparisons with evidence from elsewhere in Britain and Europe.

### **Raw material studies**

- Raw Material resource management. There is still mileage in defining where the raw materials (particularly for lithics) occur in the natural world together with processes which might concentrate them making specific locations more likely.
- Increased research into the manipulation of raw materials. For instance study of heat treatment of flint in Mesolithic times may be more common than we have previously thought and that the macroscopic characteristics usually used to suggest heating underestimates the level of heating going on.
- Application of science-based e.g. thin sectioning of raw materials on a national scale.

### **Increased study of the river-bed and off-shore archaeological resource and their potential**

- The importance of monitoring the intertidal and offshore resource that is key to both the Palaeolithic and Mesolithic periods. Aggregate dredging may be destroying this evidence, and coastal erosion is certainly destroying evidence. A model might be developed along the lines of those in Denmark for the Mesolithic, to identify areas with high potential and to seek to target research here.
- More work trying to locate material from capture points other than caves - and the offshore/intertidal avenue is a good one to pursue; for instance, around Jersey, there are MIS 5e peat deposits exposed at low tide, and gravels underlie these. Work needs to be done to map offshore deposits and to undertake bathymetry.
- To undertake systematic attempts to check the gravels of the lowest reaches of the Rivers Usk, Wye and Severn for evidence of human

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presence. Terraces in much of the upper reaches of these rivers will have been obliterated by the Last Glacial Maximum.

All respondents have also stated that the need to situate the Research Agenda for Wales within wider British and European contexts and continues to be very appropriate. It is essential that Wales should be seen to be a part of the broader European picture, and thus the importance of linking it to national and international research agendas is essential.

Research should also reflect the uniqueness of the Welsh record, especially during the Upper Palaeolithic. For this record is interrupted by environmental change and especially ice advance. Thus it is possible to delimit different episodes of colonisation and from this to reconstruct the limits of human survivorship in ways that you can't in mainland Europe.

### **5) Evidence of where the research framework has been used, for example as a means of justifying research or funding.**

- The Research Framework is quoted in the Clwyd Powys Archaeological Trust annual project grant proposals to Cadw.
- Rick Schulting has drawn attention to the framework in funding applications to the British Academy, and the Society of Antiquaries of London for work on Gower.
- It has possibly been used in funding applications for the Bardsey Project
- In Gwynedd the Gwynedd Archaeological Trust have quoted it in some larger development control assessments and briefs e.g. coastal/flood defence work and other near coast developments e.g. Anglesey Motor circuit, Parc Cybi commercial estate, Holyhead.

Others have said that as much of the Developer Funded work tends to be reactive that it is unlikely to be used, unless it can be reasonably well predicted that deposits or finds of a specific date may be discovered. The two main lithic scatters discovered in Pembrokeshire were in response to development, rather than designing a research project to fit into the Research Agenda.

### **This document has been prepared from contributions submitted by:**

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Dr Rick Schulting, University of Oxford

Dr Beccy Scott, British Museum (Ancient Human Occupation of Britain Research Project)

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